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October 25, 2016

Ms. Danielle Miles
Environmental Engineer, Division of Environmental Remediation
New York State Department of Environmental Conservation
6274 East Avon-Lima Rd., Avon, NY 14414

Subject: August 9, 2016 Groundwater Monitoring Sampling Summary
Former Monarch Chemicals Facility - 61 Gates Avenue in Geneva, New York 14456
NYSDEC Voluntary Cleanup Program (VCP) Site No.V00119-8

Dear Ms. Miles:

Pinnacle Engineering, Inc., (Pinnacle), on behalf of the H.B. Fuller Company (H.B. Fuller) is pleased to submit data and sampling results for an August 2016 groundwater monitoring event completed at the Former Monarch Chemicals Facility, 61 Gates Avenue, Geneva, New York (Site), as shown on Figure 1. With the anticipated redevelopment of the Univar truck bay located at the northeast corner of the Basic Chemical Solutions, LLC (BCS) plant, and the need to abandon groundwater monitoring wells related to this activity, H.B. Fuller completed a groundwater sampling event prior to that work. This letter report is prepared pursuant to the Voluntary Cleanup Agreement (VCA) between H.B. Fuller and the New York State Department of Environmental Conservation (NYSDEC), VCP No. V00119-8. The data presented in this report will be incorporated into the *Site Management Plan* (SMP) being revised to address such groundwater issues.

August 9, 2016 Groundwater Sampling Event

In anticipation of the construction of a new truck scale and canopy in the northeast corner of the BCS property (Figure 2), Univar submitted an *Interim Site Management Plan* (ISMP), dated August 12, 2016 to NYSDEC for review and approval. NYSDEC approved the ISMP August 24, 2016, which necessitated the abandonment of two (2) wells in the vicinity – MW-119 and MW-120 (Figure 2) . H.B. Fuller mobilized to the Site on August 7, 2016 and began monitoring and data collection prior to the well abandonment program. A round of groundwater levels indicated that the majority (58%) of wells were dry, which is not atypical for the glacial sediments underlying the Site during summer months. Deeper nested wells, and wells away from the slope adjacent to the drainage ditch contained sufficient groundwater to sample. A table summarizing the potentiometric water level measurements are presented below.

	August 9, 2016 Potentiometric Elevation Summary											
Date	**MW-114**	**MW-115**	**MW-115d**	**MW-116**	**MW-117**	**MW-118**	**MW-119**	**MW-120**	**MW-121**	**MW-122**	**MW-124s**	**MW-124d**
8/9/2016	dry	dry	447.96	dry	455.43	452.12	449.71	dry	dry	dry	dry	444.12

These data provide a groundwater flow direction consistent with historical flowpaths, from west to east across the Site, and toward the drainage ditch (Figure 3). Groundwater sampling forms are included in Attachment 1 of this report. Potentiometric levels declined site-wide to historic or near historic lows, as noted on hydrographs included in Attachment 2. As represented by this, and previous groundwater monitoring events, evapotranspiration exerts a great influence on groundwater conditions across the Site.

Groundwater samples were collected August 9, 2016 for laboratory analysis of volatile organic compounds (VOCs) via EPA Test Method 8260C. As noted in the *Decision Document* (NYSDEC, July 2016) the Site contaminants of concern (COCs) are:

Tetrachloroethene (PCE)	1,1,1-Trichloroethane (111TCA)
cis-1,2-Dichloroethene (cDCE)	1,1-Dichloroethane (11DCA)
Trichloroethene (TCE)	Chloroethane
Vinyl chloride (VC)	

Attachment 3, consisting of TestAmerica Laboratory Analytical Report SDG 480-104343-1, is included with this report.

The groundwater monitoring program included collecting a sample duplicate at MW-115d. The analytical program also included an equipment blank collected with distilled water at MW-118, and a trip blank was also analyzed with this sample data group (SDG).

August 9, 2016 Groundwater Sampling Summary

Field measurements of well stabilization parameters were collected from four (4) of the five (5) wells containing groundwater – MW-115d, MW-117, MW-118, and MW-124d. Well MW-119 was sampled, but did not contain sufficient water for measuring field parameters. Wells MW-114, MW-115, MW-116, MW-120, MW-121, MW-122, and MW-124s were dry. Despite declining water levels, wells containing groundwater stabilized during sampling (except MW-119), as noted on the development charts and data contained in Attachment 4. These data are summarized below.

Stabilization Field Parameter Measurements – August 9, 2016

	Date Measured	pH (SU)	Temp. (°C)	Cond. (umhos/cm)	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)
MW-115d	08/09/16	7.23	17.76	921	2.64	0.48	-39.3
MW-117	08/09/16	6.65	17.16	1,033	787	4.15	-68
MW-118	08/09/16	6.69	16.85	2,000	75.5	0.84	-161.9
MW-119	08/09/16	--	--	--	--	--	--
MW-124d	08/09/16	6.74	15.57	1,577	568	2.06	-88.4

-- = insufficient water

Groundwater analytical results are summarized on Table 1, attached to this report, and presented in Figures 4 through 15, as described below. The historical VOC groundwater sampling summary is included in Table 2, enclosed with this report.

As provided in prior monitoring reports, the groundwater VOC source area is located at depth, adjacent to MW-118 and beneath an above ground storage tank (AST) basin, with groundwater flow west to east across the Site. Surface discharge occurs in a topographically lower drainage ditch which parallels the eastern property boundary. Therefore, the source area near MW-118 is upgradient of the proposed truck scale, and monitoring well MW-119 is located downgradient of the truck scale. Monitoring well MW-120 was dry during this sampling event, but is also located between the MW-118 source area and the drainage ditch. The depth to groundwater on August 9, 2016 at MW-119 was greater than thirteen (13) feet below ground surface (bgs). Both monitoring wells MW-119 and MW-120 were abandoned August 9, 2016 after the groundwater sampling event (Attachment 8).

Figure 4, Tetrachloroethene (PCE) Concentrations in Groundwater; August 9, 2016 indicates that PCE was not detected at or above the laboratory method detection limit (MDL) at any monitoring location. PCE MDLs ranged from <1 to <5 ug/L. The NYSDEC groundwater cleanup standard (6 CRR-NY 703.5) for PCE is 5 ug/L. The source area does not contain detectable PCE contamination, nor does downgradient groundwater monitoring locations.

Figure 5, Trichloroethene (TCE) Concentrations in Groundwater; August 9, 2016 indicates that TCE was not detected at or above the laboratory MDL at any monitoring location. TCE MDLs ranged from <1 to <5 ug/L. The NYSDEC groundwater cleanup standard for TCE is 5 ug/L. The source area does not contain detectable TCE, nor does downgradient groundwater monitoring locations.

Figure 6, 1,1-Dichloroethene (11DCE) Concentrations in Groundwater; August 9, 2016 indicates that 11DCE was detected at an estimated (J flag) concentration of 0.32 ug/L at monitoring well MW-117. This was the only location detecting 11DCE at or above the laboratory MDL, which varied from <1 to <5 ug/L. The NYSDEC groundwater cleanup standard for 11DCE is 5 ug/L. 11DCE is a degradation, or chlorinated solvent breakdown product.

Figure 7, cis-1,2-Dichloroethene (cDCE) Concentrations in Groundwater; August 9, 2016 indicates that cDCE was detected at an estimated (J flag) concentration of 1.6 ug/L at monitoring well MW-118. This was the only location detecting cDCE at or above the laboratory MDL, which varied from <1 to <5 ug/L. The NYSDEC groundwater cleanup standard for cDCE is 5 ug/L. cDCE is a degradation, or breakdown product of PCE and TCE

Figure 8, Vinyl chloride (VC) Concentrations in Groundwater; August 9, 2016 indicates that VC was not detected at or above the laboratory MDL at any monitoring location. VC MDLs ranged from <1 to <5 ug/L. The NYSDEC groundwater cleanup standard for VC is 2 ug/L. The source area does not contain detectable VC contamination, nor does downgradient groundwater monitoring locations. VC is a degradation, or breakdown product of PCE and TCE

Figure 9, 1,1,1-Trichloroethane (111TCA) Concentrations in Groundwater; August 9, 2016 indicates that 111TCA was not detected at or above the laboratory MDL at any monitoring location. 111TCA MDLs ranged from <1 to <5 ug/L. The NYSDEC groundwater cleanup standard for 111TCA is 5 ug/L. The source area does not contain detectable 111TCA contamination, nor does downgradient groundwater monitoring locations.

Figure 10, 1,1-Dichloroethane (11DCA) Concentrations in Groundwater; August 9, 2016 indicates that 11DCA, a daughter product in the Interim Remedial Measure (IRM) enhanced reductive dechlorination (ERD) of 111TCA, was detected at MW-117 and MW-124d at an estimated (J flag) concentrations of 0.94 ug/L and 4.3 ug/L, respectively. 11DCA was detected at MW-118 at 9.7 ug/L, and at MW-119 at 29 ug/L. 11DCA was not detected in upgradient monitoring well MW-115d with an MDL of <1 ug/L. The NYSDEC groundwater cleanup standard for 11DCA is 5 ug/L, and noted on Table 1.

Figure 11, Acetone Concentrations in Groundwater; August 9, 2016 indicates that Acetone was detected at monitoring well MW-118 at a concentration of 77 ug/L, and was the only location detecting Acetone at or above the laboratory MDL, which ranged from <10 to <50 ug/L. The NYSDEC groundwater cleanup standard for Acetone is 50 ug/L.

Figure 12, Chloroethane Concentrations in Groundwater; August 9, 2016 depicts Chloroethane, a daughter product in the IRM ERD program, was detected at MW-115d at a concentrations of 18 ug/L, at MW-118 at 9.9 ug/L, and at MW-119 at a concentration of 7 ug/L. Chloroethane was not detected at upgradient monitoring well MW-117 with an MDL of <1 ug/L, or in downgradient well MW-124d with an MDL of <5 ug/L. The NYSDEC groundwater cleanup standard for Chloroethane is 5 ug/L, as noted on Table 1.

Figure 13, 2-Butanone (MEK) Concentrations in Groundwater; August 9, 2016 indicates that MEK was detected at MW-118 at a concentration of 14 ug/L. MEK was not detected at or above the laboratory MDL at any other monitoring location with detection limits ranging from <10 to <50 ug/L. The NYSDEC groundwater cleanup standard for 2-Butanone is 50 ug/L.

Figure 14, Total VOCs (TVOC) Concentrations in Groundwater; August 9, 2016 indicates that the sum of VOCs above the MDL in EPA Test Method 8260C included 18 ug/L total VOCs at MW-115d, 1.26 ug/L total VOCs at MW-117, 112 ug/L total VOCs at MW-118, 36 ug/L total VOCs at MW-119, and at MW-124d total VOCs were detected at 4.3 ug/L, as noted on Table 2.

The August 9, 2016 groundwater monitoring event, despite limited groundwater in the majority of wells, is considered representative of the historic groundwater conditions at the Site (Figure 15).

August 9, 2016 Groundwater Sampling Discussion

As noted from data presented in Table 2, the isoconcentration graphs in Attachment 5 and Attachment 6, and the historical statistical trend analysis in Attachment 7. Groundwater concentrations continue their eight (8) year downward trend. Primary chlorinated solvents, PCE, TCE, and 111TCA were not detected in groundwater in August 2016. Concentrations of degradation products 11DCA, 11DCE, cDCE, and Chloroethane were the only compounds detected above NYSDEC groundwater standards, and these compounds will continue to decrease in concentration due to the IRM and sustained groundwater anaerobic environment. Acetone and MEK, not Site COCs, will decrease as the level of available carbon is depleted in the groundwater flow system. Consistent with historical Site trends, static water levels in summer months often result in dry wells, and the groundwater observation network does not monitor an aquifer. Groundwater exposure is also minimized due to prolonged dry conditions when no groundwater discharge occurs to the drainage ditch. Even a decade ago when groundwater VOC concentrations were orders of magnitude higher than now, there were no water quality impacts above state standards to surface water.

PCE groundwater impacts (Figure 4), TCE groundwater impacts (Figure 5), and 111TCA groundwater impacts (Figure 9) indicate no chlorinated solvents were detected upgradient or downgradient of the BCS building, thus potential soil vapor intrusion (SVI) issues are ameliorated. As previously demonstrated through sampling, Carbon Tetrachloride (CT) is not a COC for H.B. Fuller in, or below, the BCS facility. Each of the eleven (11) groundwater monitoring events following IRM implementation provides predictable data and trends of the intended outcome of the ERD program. The IRM demonstrates the efficiency and efficacy of this corrective action program. All available data suggests a single source of chlorinated compounds to groundwater, which were directly affected and remediated by the IRM. There are no, or limited, chlorinated compounds introduced to the groundwater flow system, so the remaining VOCs will continue to be degradation products of the primary chlorinated solvents (PCE, TCE, 111TCA). Those daughter products (11DCA, 11DCE, cDCE, VC, Chloroethane) will continue to degrade without additional VOC sources in this sustained anaerobic environment. There are no human or ecologic receptors to groundwater at the Site.

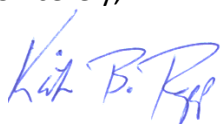
Groundwater Monitoring Recommendations

With the abandonment of groundwater wells MW-119 and MW-120 from the monitoring network, monitoring wells with historical groundwater impacts less than the NYSDEC groundwater cleanup standards (6 CRR-NY 703.5 - 703.5 Water quality standards for taste-, color- and odor-producing, toxic and other deleterious substances), wells MW-117, MW-121, and MW-124d will be abandoned. If additional sampling indicates other wells below NYSDEC groundwater cleanup standards those will be abandoned as well.

This data will be incorporated into the revised *Site Management Plan*, which is expected to be submitted to NYSDEC November 30, 2016.

If you have any questions please feel free to contact me at (763) 277-8422.

Sincerely,



Keith B. Rapp
Senior Hydrogeologist\Senior Project Manager
PINNACLE ENGINEERING, INC.

Attachment 1 – Groundwater Sampling Forms
Attachment 2 – Well Hydrographs
Attachment 3 – Laboratory Analytical Report SDG 480-104343-1
Attachment 4 – Well Stabilization Charts
Attachment 5 – Well Isoconcentration Graphs (Linear)
Attachment 6 – Well Isoconcentration Graphs (Logarithmic)
Attachment 7 – Mann-Kendall Statistical Trend Analysis for Groundwater Wells
Attachment 8 – Monitoring Well MW-119 and MW-120 Abandonment Logs

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Table 2 – Groundwater Sampling Summary – VOCs
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Figure 6 – 1,1-Dichloroethene (11DCE) Concentrations in Groundwater; August 9, 2016
Figure 7 – cis-1,2-Dichloroethene (cDCE) Concentrations in Groundwater; August 9, 2016
Figure 8 – Vinyl chloride (VC) Concentrations in Groundwater; August 9, 2016
Figure 9 – 1,1,1-Trichloroethane (111TCA) Concentrations in Groundwater; August 9, 2016
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Figure 11 – Acetone Concentrations in Groundwater; August 9, 2016
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Figure 13 – 2-Butanone (MEK) Concentrations in Groundwater; August 9, 2016
Figure 14 – Total VOCs Concentrations in Groundwater; August 9, 2016
Figure 15 – Areas Exceeding NYSDEC Groundwater Cleanup Standards; August 9, 2016

cc:	Kristin Colberg	- H.B. Fuller\St. Paul
	Justin Deming	- NYSDOH\Albany
	Julia Kenney	- NYSDOH\Albany
	Bernette Schilling	- NYSDEC\Avon
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Tables

Table 1
August 9, 2016 Groundwater Monitoring Well Sampling Summary - VOCs
Former Monarch Chemicals Facility
61 Gates Avenue, Geneva, Ontario County, New York
VCP No. V00119-8

	Sampling Date	Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans 1,2-Dichloroethene	Vinyl chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Benzene	Ethylbenzene	Acetone	Chloroethane	2-Butanone (MEK)
703.5 Standard		5	5	5	5	5	2	5	5	1	5	50	5	50
	DATE	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
MW-114	8/9/2016	dry												
MW-115	8/9/2016	dry												
MW-115d	8/9/2016	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	18	< 10
MW-116	8/9/2016	dry												
MW-117	8/9/2016	< 1	< 1	J 0.32	< 1	< 1	< 1	< 1	J 0.94	< 1	< 1	< 10	< 1	< 10
MW-118	8/9/2016	< 2	< 2	< 2	J 1.6	< 2	< 2	< 2	9.7	< 2	< 2	77	9.9	14
MW-119	8/9/2016	< 4	< 4	< 4	< 4	< 4	< 4	< 4	29	< 4	< 4	< 40	7	< 40
MW-120	8/9/2016	dry												
MW-121	8/9/2016	dry												
MW-122	8/9/2016	dry												
MW-124s	8/9/2016	dry												
MW-124d	8/9/2016	< 5	< 5	< 5	< 5	< 5	< 5	< 5	J 4.3	< 5	< 5	< 50	< 5	< 50

dry well
Compound exceeds 703.5 Water quality standard

Table 2
Groundwater Sampling Summary - VOCs
Former Monarch Chemicals Facility
61 Gates Avenue, Geneva, Ontario County, New York
VCP No. V00119-8

		Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans 1,2-Dichloroethene	Vinyl chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	Chloroform	Chloromethane	Chlorobenzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methylene Chloride	Benzene	Toluene	Ethylbenzene	Xylene (total)	Cyclohexane	Isopropylbenzene	Acetone	1,2-Dichloroethane	2-Hexanone	Chloroethane	Methyl Acetate	Carbon disulfide	1,1,2,2-tetrachloroethane	methylcyclohexane	TVOCs
703.5 Standard		5	5	5	5	5	2	5	1	5	7	5	5	NA	NA	5	1	5	5	5	NA	5	50	0.6	NA	5	NA	60	5	NA	
	DATE	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
MW-114	**10/18/2005**	37	24	2	4	< 10	< 10	7	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	74
MW-114	**1/12/2006**	98	33	3	6	< 10	2	14	< 10	3	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	159
MW-114	**4/8/2008**	62	18	1.6	4.2	< 1	1	6.9	< 1	2.2	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	96
MW-114	**8/5/2008**	75	30	3.7	7.3	< 1	2.2	13	< 1	4	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	2.2	< 1	< 5	< 1	< 1	< 1	< 1	< 1	137
MW-114	**11/17/2008**	71	23	2.8	5.5	< 1	1.5	9	< 1	3.2	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	7	< 1	< 5	< 1	< 1	< 1	< 1	< 1	123
MW-114	**4/28/2009**	53	16	1.9	4.5	< 1	1.4	7.3	< 1	2.3	0.8	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	87
MW-114	**8/4/2009**	23	57	2.6	17	< 1	2.4	11	< 1	4	1.3	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	118
MW-114	**4/14/2010**	36	20	1.4	8.6	< 1	1.3	5.7	< 1	2.3	0.9	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	76
MW-114	**8/10/2010**	5.4	37	2.2	41	< 1	1.2	7.8	< 1	5	1.2	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	101
MW-114	**11/17/2010**	6.6	24	1.2	43	< 1	1.4	3.8	< 1	2.2	2.4	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	85
MW-114	**4/20/2011**	10	12	< 1	16	< 1	1.1	2.9	< 1	1.3	2.3	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	46
MW-114	**12/10/2011**	6.3	10	0.94	29	< 1	1	2.6	< 1	1.5	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	51
MW-114	**3/27/2013**	0.57	5.9	0.89	36	< 1	1.8	1.6	< 1	2.1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	49
MW-115	**10/18/2005**	34	11	9	15	< 10	8	38	< 10	50	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	166
MW-115	**1/12/2006**	42	< 10	< 10	< 10	< 10	< 10	4	< 10	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	47
MW-115	**9/26/2007**	23	2.8	3	3.4	< 1	< 1	9	< 1	11	0.2	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	52
MW-115	**4/8/2008**	13	< 1	< 1	< 1	< 1	< 1	1.5	< 1	1.2	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	16
MW-115	**8/5/2008**	30	7.7	8.8	9.4	< 1	2.9	22	< 1	34	0.5	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	115
MW-115	**11/17/2008**	30	9.1	16	16	< 1	9.2	24	< 1	47	0.8	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	10	< 5	< 1	< 1	< 1	< 1	< 1	162
MW-115	**4/28/2009**	22	3.9	2.4	4.4	< 1	0.72	9.6	< 1	12	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	55
MW-115	**8/3/2009**	33	9.5	7.7	13	< 1	3.7	22	0.3	33	0.5	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	123
MW-115	**4/14/2010**	21	6	2	5.6	< 1	< 1	9.1	< 1	12	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	56
MW-115	**8/10/2010**	18	5.3	3	5.9	< 1	< 1	7.3	< 1	12	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	52
MW-115	**11/17/2010**	29	11	4.1	17	< 1	1.1	8.8	< 1	13	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	84
MW-115	**4/18/2011**	18	3.4	1	3.6	< 1	< 1	3.1	< 1	7.3	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	36
MW-115	**12/9/2011**	17	8.1	2.9	70	< 1	2.1	4.5	< 1	13	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	118
MW-115	**3/27/2013**	14	4.6	1.8	60	< 1	2.5	1.1	< 1	14	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	0.67	< 1	< 1	< 1	< 1	99
MW-115d	**11/16/2010**	< 1	< 1	0.61	< 1	< 1	< 1	< 1	< 1	2.4	< 1	< 1	< 1	4.3	< 1	< 1	< 1	< 1	< 1	< 2	< 1	< 1	17	< 1	< 5	< 1	< 1	1.2	< 1	< 1	26
MW-115d	**4/19/2011**	1.6	< 1	1.2	< 1	< 1	< 1	< 1	< 1	4	< 1	< 1	< 1	< 10	< 1	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	7
MW-115d	**12/9/2011**	< 1	< 1	0.81	< 1	< 1	< 1	< 1	< 1	2	< 1	< 1	< 1	< 10	< 1	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	3
MW-115d	**3/27/2013**	< 1	< 1	0.75	< 1	< 1	< 1	< 1	< 1	2	< 1	< 1	< 1	< 10	< 1	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	3
MW-115d	**8/9/2016**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	18	< 2.5	< 1	< 1	< 1	18
MW-116	**10/18/2005**	1100	130	38	140	2	11	440	< 10	11	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	1,872
MW-116	**1/12/2006**	1100	110	14	110	< 50	< 50	440	< 50	10	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	1,784
MW-116	**4/8/2008**	180	22	3.5	19	< 1	2.4	68	< 1	4.8	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	300
MW-116	**8/5/2008**	530	62	14	40	0.5	6.5	260	< 1	9.3	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	2.4	< 1	< 5	< 1	< 1	< 1	< 1	< 1	925
MW-116	**11/18/2008**	3.6	1.1	< 1	1.4	< 1	< 1	< 1	< 1	2.4	< 2	< 2	< 2	3.3	< 5	< 2	< 2	< 2	< 2	< 3	< 1	< 1	23	< 1	< 5	< 1	< 1	< 1	< 1	< 1	32
MW-116	**4/28/2009**	0.37	< 1	< 1	14	< 1	1.3	< 1	< 1	0.78	< 2	0.88	< 2	5.1	< 5	< 2	< 2	< 2	< 2	< 3	< 1	< 1	33	< 1	< 5	2.6	< 1	< 1	< 1	< 1	58
MW-116	**8/4/2009**	< 1	0.53	< 1	1.9	0.4	0.75	< 1	< 1	3.6	< 2	< 1	< 2	< 5	< 5	< 2	3.2	< 2	1	< 3	< 1	< 1	3.2	< 1	< 5	1.6	< 1	< 1	< 1	< 1	16
MW-116	**4/14/2010**	< 1	< 1	< 1	0.88	< 1	< 1	< 1	< 1	1.1	< 2	< 1	< 2	< 5	< 5	< 2	0.8	< 2	< 1	< 3	< 1	< 1	< 10	< 1	< 5	3.1	< 1	< 1	< 1	< 1	6
MW-116	**8/11/2010**	< 1	0.92	< 1	2.7	1.2	1.1	< 1	< 1	2	< 2	< 1	< 2	< 10	< 5	< 2	1.3	< 2	< 1	< 3	< 1	< 1	< 10	< 1	< 5	17	< 1	< 1	< 1	< 1	26
MW-116	**11/17/2010**	< 1	0.77	< 1	1.4	< 1	< 1	< 1	< 1	3.1	< 2	< 1	< 2	< 10	< 5	< 2	0.5	< 2	< 1	< 3	< 1	< 1	< 10	< 1	< 5	2.4	< 1	< 1	< 1	< 1	8
MW-116	**4/20/2011**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1	< 2	< 10	< 5	< 2	< 1	< 2	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	0
MW-116	**12/10/2011**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.2	< 2	< 1	< 2	< 10	< 5	< 2	< 1	< 2	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	1
MW-116	**3/29/2013**	< 1	4.3	< 1	13	< 1	6.1	< 1	< 1	5.6	< 2	< 1	< 2	< 10	< 5	< 2	1.1	< 2	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	30
MW-117	**10/18/2005**	1	< 10	< 10	3	< 10	< 10	1	< 10	< 10	< 10	< 10	< 10	2	< 10	< 10	< 10	< 10	69	58	2	28	< 5	< 1	< 5	< 1	< 1	< 1	< 1	5	169
MW-117	**1/12/2006**	3	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	3
MW-117	**9/26/2007**	< 4	< 4	< 4	4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 20	< 20	< 4	< 4	< 4	71	33	0.7	27	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	136
MW-117	**4/8/2008**	2.8	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	3
MW-117	**8/5/2008**	4.1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	14	< 3	< 1	7	6.4	< 1	< 5	< 1	< 1	< 1	< 1	< 1	31
MW-117	**11/17/2008**	26	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	17	< 3	< 1	25	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	68
MW-117	**4/28/2009**	4	0.73	< 1	0.41	< 1	< 1	< 1	< 1	< 1	< 1	0.51	< 1	3.4	< 5	< 1	0.5	< 1	2	< 3	< 1	1	< 5	< 1	< 5	0.95	< 1	< 1	< 1	< 1	13
MW-117	**8/4/2009**	2.1	< 1	< 1	6.9	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	10	< 5	< 1	0.5	< 1	1	1	< 1	85	< 1	1.4	0.95	< 1	< 1	< 1	< 1	< 1	110
MW-117	**4/15/2010**	2.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	9.6	< 5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 5	< 1	< 1	0.8	< 1	< 1	13
MW-117	**8/10/2010**	< 1	< 1	< 1	7	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	11	< 5	< 1	0.6	< 1	2	< 1	< 1	1	37	< 1	< 5	< 1	< 1	< 1	< 1	< 1	58
MW-117	**11/18/2010**	< 1	< 1	< 1	1.9	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 5	< 1	0.6	< 1	1	< 1	< 1	1	14	< 1	< 5	< 1	< 1	< 1	< 1	< 1	19
MW-117	**4/19/2011**	< 1	1.2	< 1	1.2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	2	< 0.8	< 1	1	16	< 1	< 5	< 1	< 1	< 1	< 1	0.4	22
MW-117	**12/10/2011**	< 1	1.3	< 1	1.6	< 1	< 1	< 1	< 1	0.64	< 1	< 1	< 1	< 10	< 5	< 1	< 1	0.7	1	0.7	< 1	1	9.7	< 1	< 5	< 1	< 1	< 1	< 1	< 1	17
MW-117	**3/29/2013**	< 1	< 5	< 1	4.9	< 1	< 1	< 1	< 5	< 1	< 1	< 1	< 1	< 50	< 25	< 1	< 1	< 5	11	5.1	< 1	6	17	< 1	< 5	< 1	< 1	< 1	< 1	< 1	44
MW-117	**8/9/2016**	< 1	< 1	0.32	< 1	< 1	< 1	< 1	< 1	0.94	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 2.5	< 1	< 1	< 1	1.26

Table 2
Groundwater Sampling Summary - VOCs
Former Monarch Chemicals Facility
61 Gates Avenue, Geneva, Ontario County, New York
VCP No. V00119-8

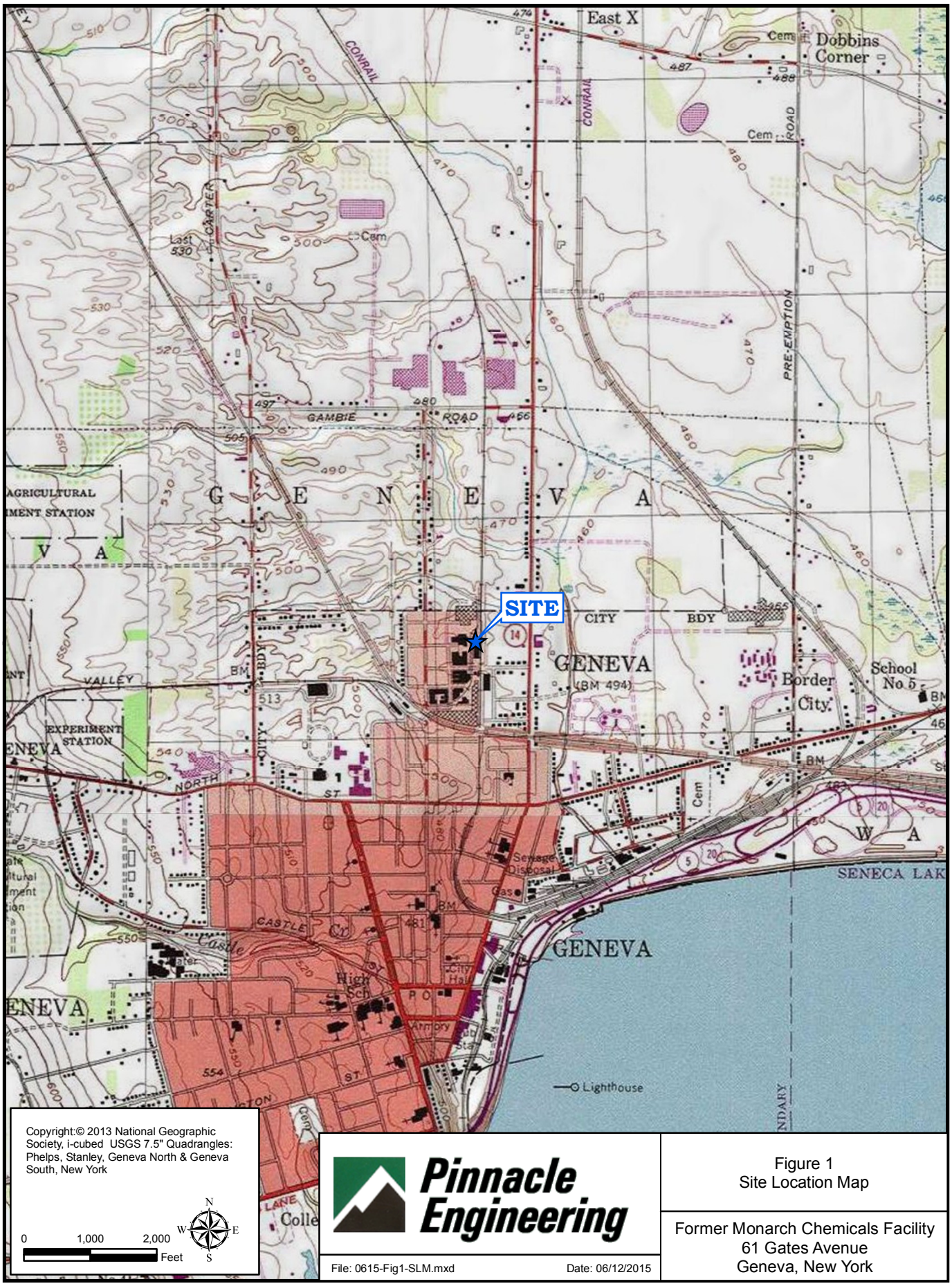
		Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans 1,2-Dichloroethene	Vinyl chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	Chloroform	Chloromethane	Chlorobenzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methylene Chloride	Benzene	Toluene	Ethylbenzene	Xylene (total)	Cyclohexane	Isopropylbenzene	Acetone	1,2-Dichloroethane	2-Hexanone	Chloroethane	Methyl Acetate	Carbon disulfide	1,1,2,2-tetrachloroethane	methylcyclohexane	TVOCs
703.5 Standard		5	5	5	5	5	2	5	1	5	7	5	5	NA	NA	5	1	5	5	5	NA	5	50	0.6	NA	5	NA	60	5	NA	
DATE		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
MW-118	10/18/2005	1800	1100	110	1400	14	510	530	< 10	250	10	< 10	< 10	< 10	48	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	37	< 10	5,809
MW-118	1/12/2006	4900	2700	240	3600	< 250	1000	3900	< 250	480	< 250	< 250	< 250	< 250	< ###	56	< 250	< 250	< ###	< 250	< 330	< ###	< 330	< 250	< 250	< 250	< 250	< 250	< 250	< 250	17,126
MW-118	9/26/2007	3000	1100	450	2000	< 330	400	7700	< 330	390	< 330	< 330	< 330	< 1700	< ###	< 330	< 330	< 330	< ###	< 670	< 330	< ###	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	15,061
MW-118	4/9/2008	3100	1700	1100	2300	32	630	4900	16	670	12	< 1	< 1	< 5	< 5	3.9	0.8	0.9	< 1	3.3	< 1	< 1	4.6	2.1	540	< 1	< 1	< 1	< 1	< 1	15,004
MW-118	8/4/2008	3200	1500	580	2400	26	800	3000	8.9	500	7.5	< 1	< 1	< 5	< 5	< 1	0.9	0.8	< 1	2.3	< 1	< 1	< 10	1.3	< 5	2.8	< 1	< 1	< 1	< 1	12,023
MW-118	11/18/2008	8.4	450	10	210	< 8	49	24	< 8	57	4.2	< 8	< 8	42	< 8	< 8	< 8	< 8	< 8	< 8	< 1	< 1	100	< 1	< 5	< 1	< 1	< 1	< 1	< 1	955
MW-118	4/29/2009	< 10	11	490	7800	100	310	1700	6.7	1400	3.9	< 8	< 8	38	< 8	4.8	< 8	< 8	< 8	< 8	< 1	< 1	240	< 1	< 5	< 1	< 1	< 1	< 1	< 1	12,098
MW-118	8/4/2009	< 10	< 10	460	10000	130	550	2300	6.5	1500	< 10	< 8	< 8	49	< 8	< 10	< 8	< 8	< 8	< 1	< 1	< 1	130	2.9	< 5	< 1	< 1	< 1	< 1	< 1	15,128
MW-118	4/15/2010	< 25	< 25	110	2200	60	1500	1100	6.5	700	< 25	< 25	< 8	< 120	< 25	< 10	< 25	< 25	< 25	< 25	< 1	< 1	98	< 1	< 5	< 1	< 1	< 1	< 1	< 1	5,768
MW-118	8/10/2010	< 10	< 10	6.8	170	25	460	260	< 10	600	< 10	< 10	< 8	31	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	100	< 1	< 5	< 1	< 1	< 1	< 1	< 1	1,653
MW-118	11/17/2010	3	1.9	5	72	7.9	150	160	< 10	260	< 10	< 10	< 8	14	< 10	0.6	0.6	0.7	< 10	1.9	< 1	< 1	120	0.7	< 5	2.8	2	4.2	< 1	< 1	807
MW-118	4/19/2011	9.2	34	8.6	93	15	120	78	0.49	470	< 10	< 10	< 8	22	< 10	0.8	0.8	0.9	< 10	1.5	< 1	< 1	110	1.1	< 5	15	1.1	4.2	< 1	< 1	981
MW-118	12/10/2011	1.1	2.9	< 1	4.8	4.3	13	10	< 1	250	< 10	< 10	< 8	18	< 10	0.5	1.1	1	< 1	1.3	< 1	< 1	100	< 1	< 5	18	< 1	0.4	< 1	< 1	426
MW-118	3/29/2013	< 1	0.83	< 1	2.1	< 1	< 1	< 1	< 1	0.9	< 1	< 1	< 1	6.2	< 5	< 1	< 1	< 1	< 2	< 1	< 1	< 1	58	< 1	< 5	35	1.1	< 1	< 1	< 1	104
MW-118	3/24/2015	< 2	< 2	< 2	2.3	< 2	< 2	< 2	< 2	5.7	< 2	< 2	< 2	< 20	< 10	1.7	< 2	< 2	< 2	< 2	< 2	< 2	30	< 2	< 10	23	< 5	< 2	< 2	< 2	63
MW-118	8/9/2016	< 2	< 2	< 2	1.6	< 2	< 2	< 2	< 2	9.7	< 2	< 2	< 2	14	< 10	< 2	< 2	< 2	< 2	< 4	< 2	< 2	77	< 2	< 10	9.9	< 5	< 2	< 2	< 2	112
MW-119	10/18/2005	34	110	2	91	2	8	73	1	44	4	< 10	< 10	< 10	< 10	< 10	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	370
MW-119	1/12/2006	21	64	1	56	1	4	44	< 10	42	2	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	245
MW-119	9/26/2007	8.1	64	1.6	45	1.2	1.3	45	< 2.5	60	1.9	< 2.5	< 2.5	< 12	< 12	< 2.5	< 2.5	< 2.5	< 3	< 5	< 2.5	< 3	< 20	< 1	< 20	< 5	< 1	< 1	< 1	< 1	228
MW-119	4/9/2008	24	58	1.4	49	0.8	2	31	0.6	33	2.2	< 1	< 1	< 5	< 5	< 1	0.8	< 1	< 1	< 3	< 1	< 1	< 1	< 1	< 5	1.7	< 1	< 1	< 1	< 1	205
MW-119	8/6/2008	34	110	1.4	93	1.1	4.9	52	0.89	29	3.3	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1	< 1	< 1	330
MW-119	11/18/2008	6.9	42	2.4	45	1.5	24	18	< 1	62	2	< 1	< 1	19	< 5	1	1.1	< 1	< 1	< 3	< 1	< 1	8.5	< 1	< 5	3.3	< 1	< 1	< 1	< 1	237
MW-119	4/28/2009	< 1	0.7	0.51	31	1.5	25	8.7	< 1	65	0.5	0.87	< 1	< 5	< 5	< 1	1.3	< 1	< 1	< 3	< 1	< 1	18	0.3	< 5	3	< 1	< 1	< 1	< 1	156
MW-119	8/4/2009	< 1	1.1	< 1	12	1.6	30	3.7	< 1	45	< 1	0.87	< 1	2.9	< 5	< 1	0.9	< 1	< 1	< 3	< 1	< 1	11	0.3	< 5	1.7	< 1	< 1	< 1	< 1	111
MW-119	4/15/2010	< 1	0.84	< 1	< 1	< 1	0.95	< 1	< 1	6.3	< 1	< 1	< 1	< 1	< 5	< 1	1.4	< 1	< 1	< 3	< 1	< 1	10	< 1	< 5	110	1.3	0.9	< 1	< 1	132
MW-119	8/11/2010	< 1	0.55	< 1	0.85	< 1	< 1	< 1	< 1	1.2	< 1	< 1	< 1	11	< 5	< 1	0.8	< 1	< 1	< 3	< 1	< 1	15	< 1	< 5	51	1.3	< 1	< 1	< 1	83
MW-119	11/15/2010	< 1	1.3	< 1	0.85	< 1	< 1	< 1	< 1	3.4	< 1	< 1	< 1	7.1	< 5	< 1	0.9	< 1	< 1	< 3	< 1	< 1	23	< 1	< 5	24	1.3	< 1	< 1	< 1	62
MW-119	4/20/2011	< 1	2.3	< 1	4.5	< 1	5.2	< 1	< 1	27	< 1	< 1	< 1	< 10	< 5	< 1	2.3	< 1	< 1	< 3	< 1	< 1	3.9	< 1	< 5	19	< 1	< 1	< 1	< 1	59
MW-119	12/10/2011	< 1	0.58	< 1	< 1	1	< 1	< 1	< 1	37	< 1	< 1	< 1	< 10	< 5	< 1	3	< 1	< 1	< 3	< 1	< 1	3.5	< 1	< 5	14	< 1	< 1	< 1	< 1	58
MW-119	3/29/2013	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	15	< 1	< 1	< 1	< 10	< 5	< 1	1.1	< 1	< 1	< 3	< 1	< 1	< 20	< 1	< 5	17	< 1	< 1	< 1	< 1	33
MW-119	8/9/2016	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	29	< 4	< 4	< 4	< 40	< 20	< 4	< 4	< 4	< 4	< 8	< 4	< 4	< 40	< 4	< 20	7	< 10	< 4	< 4	< 4	36
MW-120	10/18/2005	6	11	< 10	26	< 10	4	11	< 10	20	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 10	< 10	< 1	< 1	< 1	< 1	78
MW-120	1/12/2006	4	12	1	36	< 10	9	19	< 10	25	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 10	< 10	< 1	< 1	< 1	< 1	107
MW-120	4/8/2008	11	17	< 1	32	< 1	3.8	17	< 1	19	2	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	102
MW-120	8/5/2008	4.4	11	0.72	37	0.5	4.1	14	< 1	23	1.3	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	7	< 1	< 5	< 1	< 1	< 1	< 1	< 1	103
MW-120	11/17/2008	8.8	19	1.5	49	0.5	5.3	24	< 1	28	1.4	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	137
MW-120	4/28/2009	8.4	17	0.74	42	0.6	4.9	19	< 1	21	0.9	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	115
MW-120	8/4/2009	7.4	16	0.92	40	0.6	8.7	19	< 1	25	0.5	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	118
MW-120	4/15/2010	5.5	13	0.65	38	< 1	6.9	14	< 1	20	0.8	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	99
MW-120	8/10/2010	3.7	12	1.2	34	< 1	5.8	15	< 1	24	0.6	< 1	< 1	< 10	< 10	< 1	< 1	< 1	< 1	< 3	< 1	< 1	3	< 1	< 5	< 1	< 1	1.5	< 1	< 1	101
MW-120	11/16/2010	5.8	14	1.4	40	< 1	1.4	16	< 1	24	0.7	< 1	< 1	< 10	< 10	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1	< 1	< 1	103
MW-120	4/21/2011	3.1	7.4	1.5	23	< 1	3.2	10	< 1	17	2	< 1	< 1	< 10	< 10	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	67
MW-120	12/10/2011	5.6	18	0.91	31	< 1	4.6	14	< 1	23	2	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	97
MW-120	3/29/2013	4.4	12	0.9	30	< 1	3.8	9	< 1	15	0.6	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	1.5	< 1	0.5	< 1	< 1	78
MW-120	3/24/2015	1.9	4.7	< 1	13	< 1	3.6	3.4	< 1	11	< 1	< 1	< 1	< 10	< 5	0.4	< 1	< 1	< 1	< 2	< 1	< 2	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	38
MW-121	10/18/2005	7	11	6	24	< 10	3	4	< 10	15	< 10	< 10	< 10	< 10	18	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 10	< 1	< 1	< 1	< 1	< 1	88
MW-121	1/12/2006	3	6	2	11	< 10	2	3	< 10	9	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 10	< 1	< 1	< 1	< 1	< 1	36
MW-121	11/21/2006	1.5	3.7	< 1	5.1	< 1	< 1	1.8	< 1	2.2	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	14
MW-121	4/8/2008	1.2	2.7	< 1	2.7	< 1	< 1	1.5	< 1	1.6	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	10
MW-121	8/5/2008	4.7	4.1	< 1	9.3	< 1	< 1	4.5	< 1	6.2	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	18	< 1	< 5	< 1	< 1	< 1	< 1	< 1	47
MW-121	11/17/2008	8.4	7.7	< 1	12	< 1	2.1	4.4	< 1	8.1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	43
MW-121	4/27/2009	0.7	3.1	< 1	5.7	< 1	< 1	2.2	< 1	3.7	< 1	< 1	< 1	2.5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	18
MW-121	8/3/2009	13	8.7	0.37	18	< 1	7.1	5.4	< 1	12	0.5	< 1	< 1	2.3	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	0.2	< 5	< 1	< 1	< 1	< 1	< 1	68
MW-121	4/14/2010	4.6	5.2	< 1	7.3	< 1	1.4	2.9	< 1	5.1	< 1	< 1	< 1	2.3	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	27
MW-121	11/14/2010	13	6.3	0.68	16	< 1	7.7	2.8	< 1	12	< 1	< 1	< 1	< 1.3	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	58
MW-121	4/17/2011	0.97	1.8	< 1	3.1	< 1	< 1	< 1	< 1	1.6	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	7
MW-121	12/11/2011	3.9	5.2	< 1	6.4	< 1	3	1.7	< 1	6.6	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	27
MW-121	3/28/2013	3.1	3.7	< 1	4.6	< 1	0.96	1	< 1	4.2	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	1	< 1	< 1	19

Table 2
Groundwater Sampling Summary - VOCs
Former Monarch Chemicals Facility
61 Gates Avenue, Geneva, Ontario County, New York
VCP No. V00119-8

		Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans 1,2-Dichloroethene	Vinyl chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	Chloroform	Chloromethane	Chlorobenzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methylene Chloride	Benzene	Toluene	Ethylbenzene	Xylene (total)	Cyclohexane	Isopropylbenzene	Acetone	1,2-Dichloroethane	2-Hexanone	Chloroethane	Methyl Acetate	Carbon disulfide	1,1,2,2-tetrachloroethane	methylcyclohexane	TVOCs
703.5 Standard		**5**	**5**	**5**	**5**	**5**	**2**	**5**	**1**	**5**	**7**	**5**	**5**	**NA**	**NA**	**5**	**1**	**5**	**5**	**5**	**NA**	**5**	**50**	**0.6**	**NA**	**5**	**NA**	**60**	**5**	**NA**	
DATE		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
MW-122	**10/18/2005**	10	100	31	1400	36	310	170	2	160	< 10	< 10	< 10	< 10	< 10	< 10	2	< 10	< 10	< 10	< 1	< 1	< 25	< 1	< 10	< 1	< 1	< 1	< 1	< 1	2,221
MW-122	**1/12/2006**	11	79	26	1600	27	450	160	< 10	180	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 25	< 1	< 10	< 1	< 1	< 1	< 1	< 1	2,533
MW-122	**11/21/2006**	2.8	29	11	760	13	210	55	< 10	91	< 10	< 10	< 10	< 50	< 50	< 10	< 10	< 10	< 10	< 30	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	1,172
MW-122	**4/7/2008**	4.7	68	24	1200	33	650	160	1.2	240	< 1	< 1	< 1	< 5	< 5	< 1	1.6	1.1	< 1	0.9	< 1	< 1	< 10	0.6	< 5	2.3	< 1	< 1	< 1	< 1	2,387
MW-122	**8/4/2008**	7.2	83	37	1600	45	1000	180	1.8	330	< 1	< 1	< 1	< 5	< 5	< 1	2.1	< 1	< 1	< 3	< 1	< 1	2.5	1.1	< 5	2.8	< 1	< 1	< 1	< 1	3,293
MW-122	**11/17/2008**	< 20	43	20	1200	21	580	81	< 20	160	< 1	< 1	< 1	< 5	< 5	< 1	< 20	< 1	< 1	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	2,105
MW-122	**4/27/2009**	< 20	44	16	1000	22	510	73	< 20	140	< 20	< 20	< 20	< 100	< 20	< 20	< 20	< 20	< 20	< 40	< 1	< 1	< 100	< 1	< 5	< 1	< 1	< 1	< 1	< 1	1,805
MW-122	**8/3/2009**	< 10	30	9.1	590	13	360	47	< 20	93	< 20	< 20	< 20	< 100	< 20	< 20	< 20	< 20	< 20	< 40	< 1	< 1	< 100	< 1	< 5	< 1	< 1	< 1	< 1	< 1	1,142
MW-122	**4/14/2010**	< 5	18	4.2	270	6.7	340	21	< 5	75	< 5	< 5	< 5	< 25	< 20	< 5	< 5	< 5	< 4	< 5	< 1	< 1	< 25	< 1	< 5	< 1	< 1	< 1	< 1	< 1	735
MW-122	**11/16/2010**	< 5	14	2.7	150	5	190	12	< 5	76	< 5	< 5	< 5	< 25	< 20	< 5	< 5	< 5	< 4	< 5	< 1	< 1	< 25	< 1	< 5	2.6	< 1	< 1	< 1	< 1	452
MW-122	**4/17/2011**	< 1	0.57	2.7	2.9	< 1	11	0.83	< 5	9.9	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	1.4	< 1	< 1	< 1	< 1	29
MW-122	**12/11/2011**	< 1	1.1	2.7	3.3	0.9	10	1.1	< 5	27	< 1	< 1	< 1	< 10	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	13	< 1	< 5	2.3	< 1	< 1	< 1	< 1	61
MW-122	**3/28/2013**	0.99	3.9	0.49	23	2.8	27	3.2	< 5	87	< 1	< 1	< 1	< 10	< 5	< 1	0.5	< 1	< 1	< 2	< 1	< 1	4.6	< 1	< 5	30	< 1	< 1	< 1	< 1	183
MW-123	**10/18/2005**	230	56	64	18	< 10	1	6	< 10	260	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	635
MW-123	**1/12/2006**	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	1
MW-123	**11/21/2006**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0
MW-123	**9/25/2007**	11	5.1	6.7	3	< 3.3	< 3.3	1.2	< 3.3	89	< 3.3	< 3.3	< 3.3	< 17	< 17	< 3.3	< 3.3	< 3.3	< 3	< 3.3	< 3.3	< 3	< 10	< 3.3	< 10	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	116
MW-123	**4/7/2008**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	0
MW-123	**8/4/2008**	2.2	1.4	2.6	1.8	< 1	< 1	1.1	< 1	14	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	23
MW-123	**11/17/2008**	0.44	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 3	< 1	< 1	5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	5
MW-123	**4/27/2009**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	0
MW-123	**8/3/2009**	0.72	< 1	1.2	0.54	< 1	< 1	0.27	< 1	4.1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	7
MW-123	**4/14/2010**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 1	< 5	< 1	< 1	< 1	< 1	< 1	0
MW-123	**8/11/2010**	26	12	13	4.7	< 1	1.1	1.1	< 1	32	< 1	< 1	< 1	< 10	< 10	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	90
MW-123	**11/18/2010**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 10	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	0
MW-124s	**8/18/2008**	< 1	0.94	< 1	5.1	9.2	13	0.98	< 1	130	< 1	< 1	< 1	1.5	< 5	< 1	< 1	1.8	7	8.3	< 1	< 1	6.8	< 1	< 5	6.2	< 1	< 1	< 1	< 1	189
MW-124s	**11/18/2008**	< 4	< 4	< 1	5.2	6.7	4.3	< 4	< 1	160	< 1	2.8	< 1	34	< 5	< 1	< 1	11	36	37	< 1	< 1	23	< 1	< 5	14	< 1	< 1	< 1	< 1	334
MW-124s	**4/28/2009**	< 1	0.83	< 1	4.7	7	3.3	0.7	< 1	130	< 1	< 1	< 1	33	< 5	< 1	0.2	15	37	45	< 1	1	110	0.4	< 5	7	< 1	< 1	< 1	< 1	402
MW-124s	**8/4/2009**	< 1	0.51	< 1	1.3	7.2	1.4	< 1	< 1	4.5	< 1	< 1	< 1	10	< 5	< 1	< 1	17	34	35	< 1	1	39	0.3	< 5	100	< 1	3.1	< 1	< 1	254
MW-124s	**4/14/2010**	< 2	< 2	< 2	< 2	5.9	< 2	< 2	< 2	1.2	< 2	< 2	< 2	< 10	< 5	< 2	< 2	2.6	23	18	< 1	< 1	6.7	< 1	< 5	0	< 1	1.2	< 1	< 1	59
MW-124s	**8/11/2010**	< 1	0.9	< 1	3.3	8.1	< 2	< 2	< 2	3.6	< 2	< 2	< 2	5.8	< 10	< 2	< 2	2.1	20	18	< 1	< 1	8.4	< 1	< 5	86	< 1	1.1	< 1	< 1	157
MW-124s	**11/15/2010**	< 1	< 1	< 1	1.1	4.2	< 2	< 2	< 2	19	< 2	< 2	< 2	< 10	< 10	< 2	< 2	< 1	16	< 5.3	< 1	< 1	7.4	< 1	< 5	58	< 1	< 1	< 1	< 1	106
MW-124s	**4/19/2011**	< 1	< 1	< 1	1.5	6.9	1.3	< 2	< 2	38	< 2	< 2	< 2	< 10	< 10	< 2	< 2	0.9	19	15	< 1	< 1	< 10	< 1	< 5	50	< 1	< 1	< 1	< 1	133
MW-124s	**12/10/2011**	< 1	< 1	< 1	< 1	3.7	< 1	< 1	< 2	32	< 2	< 2	< 2	< 10	< 5	< 1	< 2	< 1	5	5	< 1	< 1	3.9	< 1	< 5	20	< 1	< 1	< 1	< 1	70
MW-124s	**3/29/2013**	< 1	< 1	< 1	< 1	3.6	< 1	< 1	< 2	8.6	< 2	< 2	< 2	< 10	< 5	< 1	< 2	< 1	2	5	< 1	< 1	< 20	< 1	< 5	57	< 1	< 1	< 1	< 1	76
MW-124d	**8/18/2008**	< 1	49	31	260	2.4	81	0.7	< 1	460	1.1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	1	< 3	< 1	< 1	4.9	0.6	< 5	5	< 1	< 1	< 1	< 1	891
MW-124d	**11/18/2008**	< 1	120	34	1600	20	770	< 20	< 20	510	< 20	< 1	< 1	54	< 5	< 1	< 1	< 1	< 20	< 3	< 1	< 1	< 10	< 1	< 5	< 1	< 1	< 1	< 1	< 1	3,108
MW-124d	**4/28/2009**	4.2	30	27	1300	15	760	44	< 5	720	< 5	2.2	< 1	72	< 5	4.3	< 1	3.2	< 5	4.2	< 1	< 1	20	1.5	< 5	7.3	< 1	< 1	< 1	< 1	3,015
MW-124d	**8/4/2009**	< 5	17	17	720	12	510	8.4	< 5	470	< 5	< 5	< 1	76	< 5	4.3	< 1	< 5	1	< 10	< 1	< 1	9.4	< 1	< 5	5	< 1	< 1	< 1	< 1	1,850
MW-124d	**4/15/2010**	< 10	< 10	< 10	210	13	59	< 10	< 10	570	< 10	< 10	< 10	830	< 50	< 10	< 10	< 10	< 10	< 10	< 1	< 1	110	< 1	< 5	69	< 1	< 1	< 1	< 1	1,861
MW-124d	**8/11/2010**	< 8	< 8	< 8	110	9.9	42	< 8	< 8	470	< 8	< 8	< 8	280	< 50	< 10	< 10	< 10	< 10	< 10	< 1	< 1	93	< 1	< 5	51	< 1	< 1	< 1	< 1	1,056
MW-124d	**11/15/2010**	< 8	< 8	< 8	76	8.6	39	< 8	< 8	340	< 8	< 8	< 8	350	< 50	< 10	< 10	< 10	< 10	< 10	< 1	< 1	53	< 1	< 5	100	< 1	< 1	< 1	< 1	967
MW-124d	**4/21/2011**	< 1	1.1	0.98	47	7.2	12	< 1	< 1	220	< 1	< 1	< 1	500	< 50	< 10	0.9	1.1	< 1	< 2	< 1	< 1	76	2.8	< 5	110	3	< 1	< 1	< 1	982
MW-124d	**12/10/2011**	< 1	0.61	1.3	32	17	12	< 1	< 1	280	< 1	< 1	< 1	130	< 5	< 1	1.1	1.1	< 1	< 2	< 1	< 1	27	2.8	3.5	140	0.7	< 1	< 1	< 1	649
MW-124d	**3/29/2013**	< 1	< 5	< 5	4.9	< 5	< 5	< 1	< 1	4.6	< 1	< 1	< 1	17	< 5	< 1	< 5	< 5	< 1	< 2	< 1	< 1	23	< 5	< 25	140	< 5	< 1	< 1	< 1	190
MW-124d	**8/9/2016**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	4.3	< 5	< 5	< 5	< 50	< 25	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 50	< 5	< 25	< 5	< 13	< 5	< 5	< 5	4.3

< = less than conc. in ug/L

Figures



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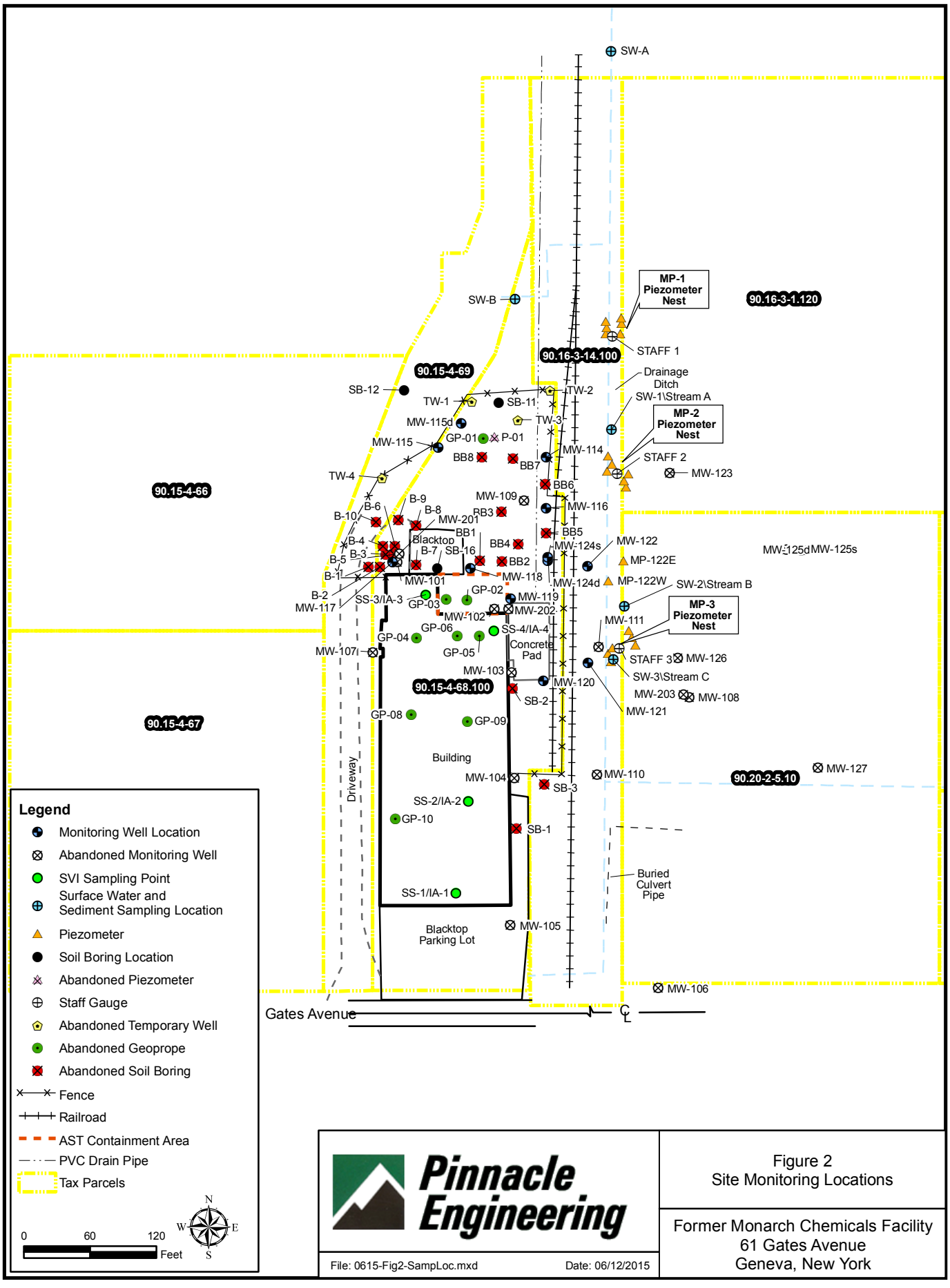
File: 0615-Fig1-SLM.mxd Date: 06/12/2015

Figure 1
Site Location Map

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York



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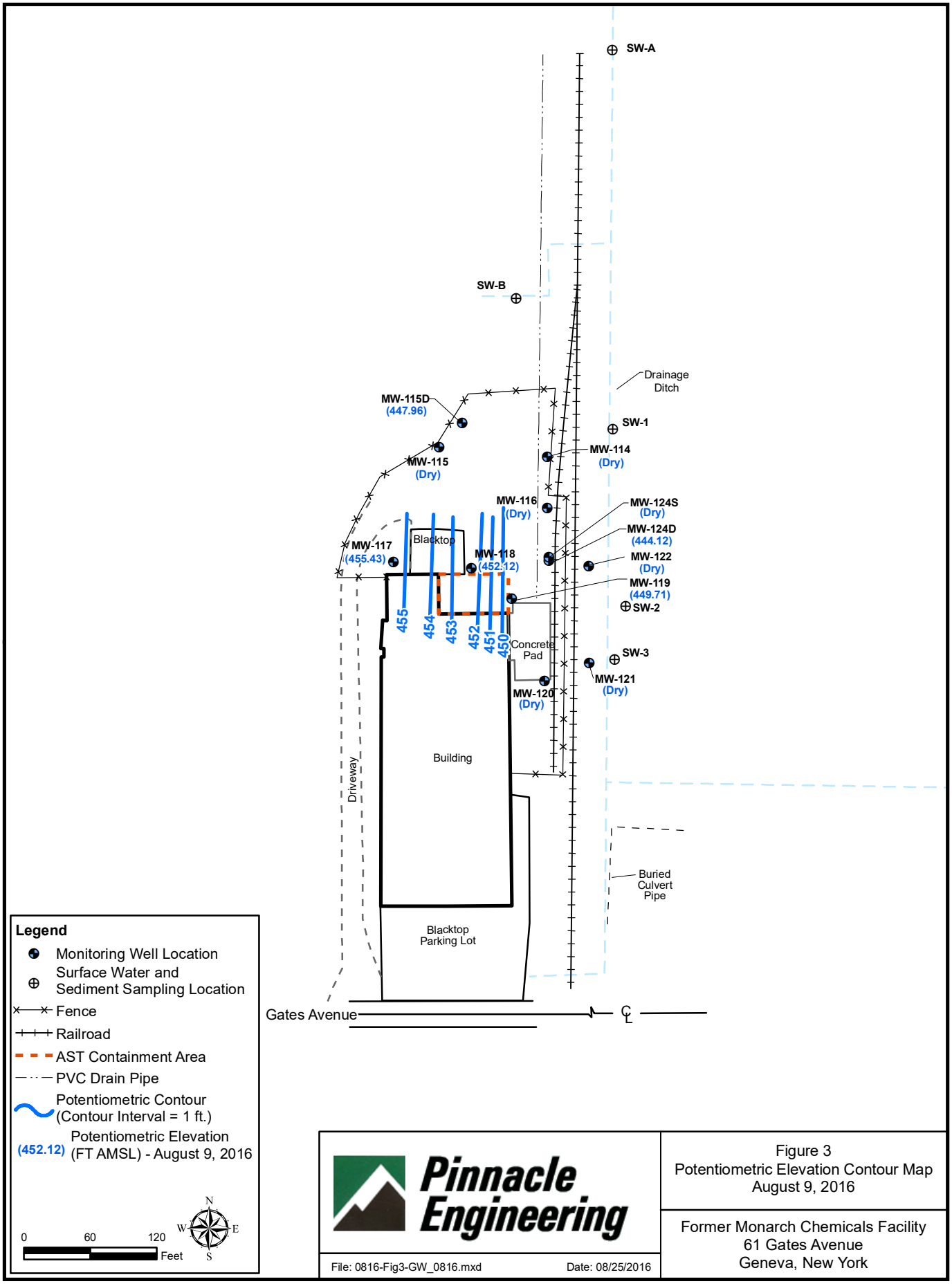
File: 0615-Fig2-SampLoc.mxd

Date: 06/12/2015

Figure 2
Site Monitoring Locations

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York



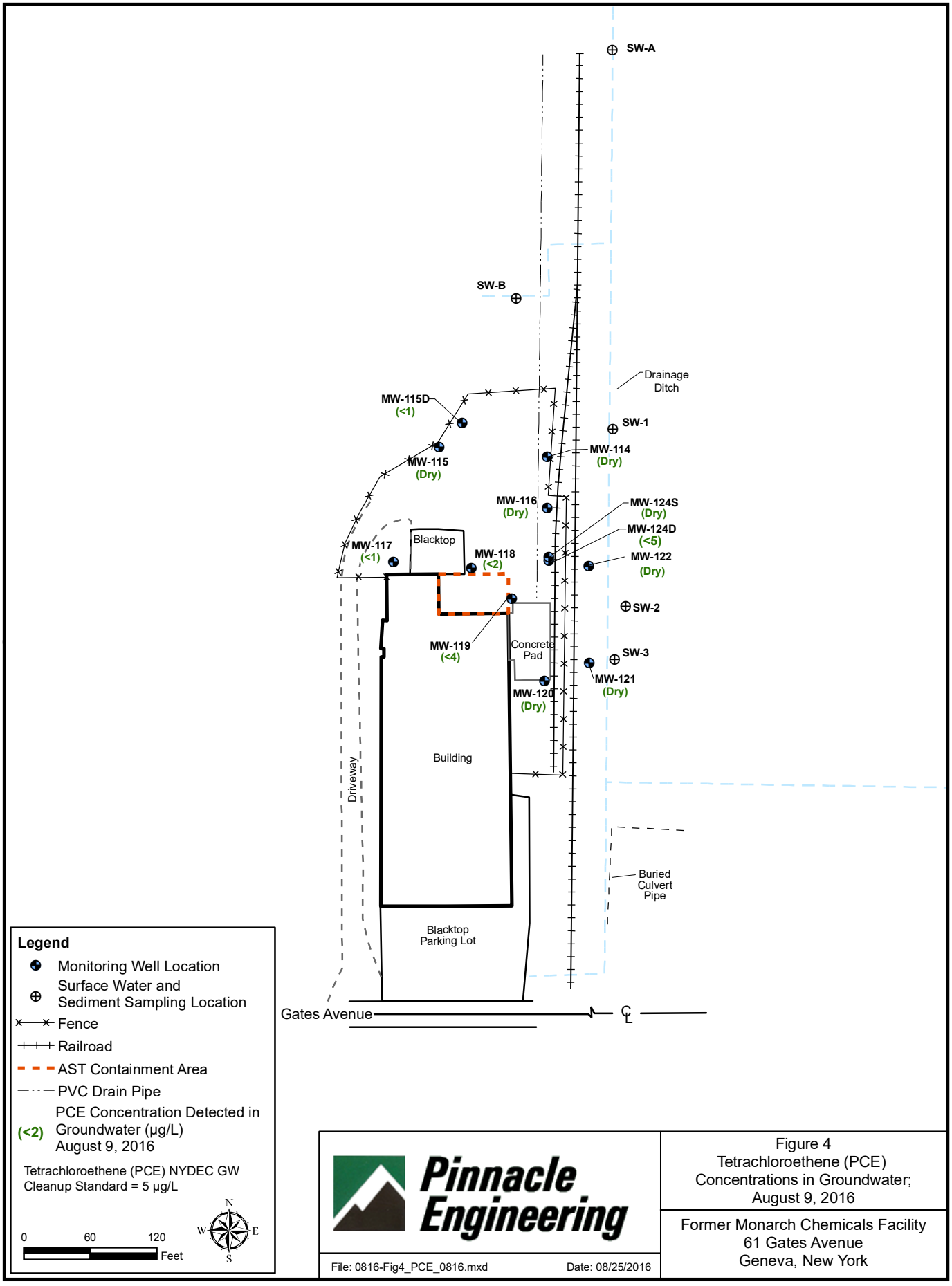
Pinnacle Engineering

File: 0816-Fig3-GW_0816.mxd

Date: 08/25/2016

Figure 3
Potentiometric Elevation Contour Map
August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York



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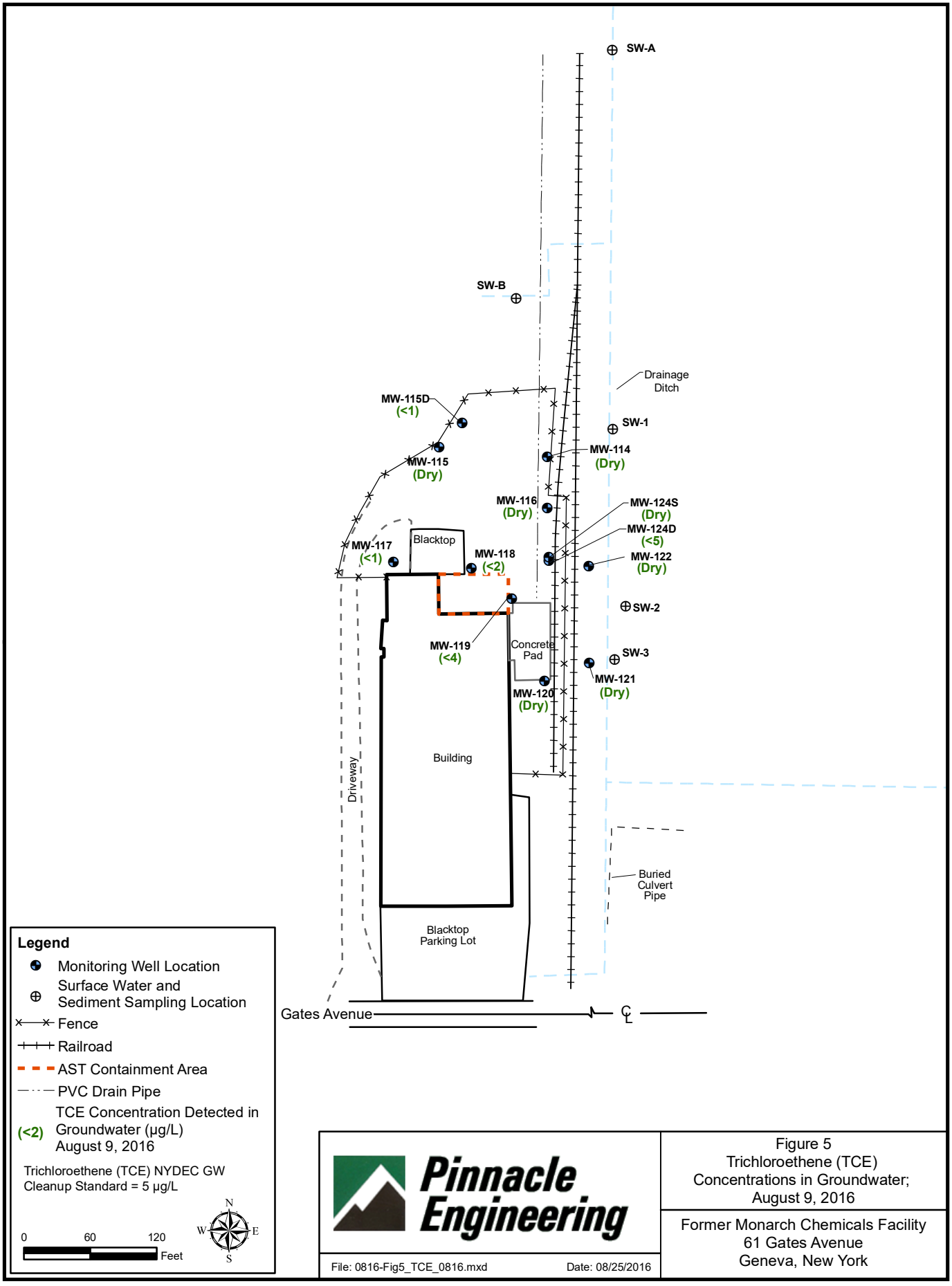
File: 0816-Fig4_PCE_0816.mxd

Date: 08/25/2016

Figure 4
Tetrachloroethene (PCE) Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York



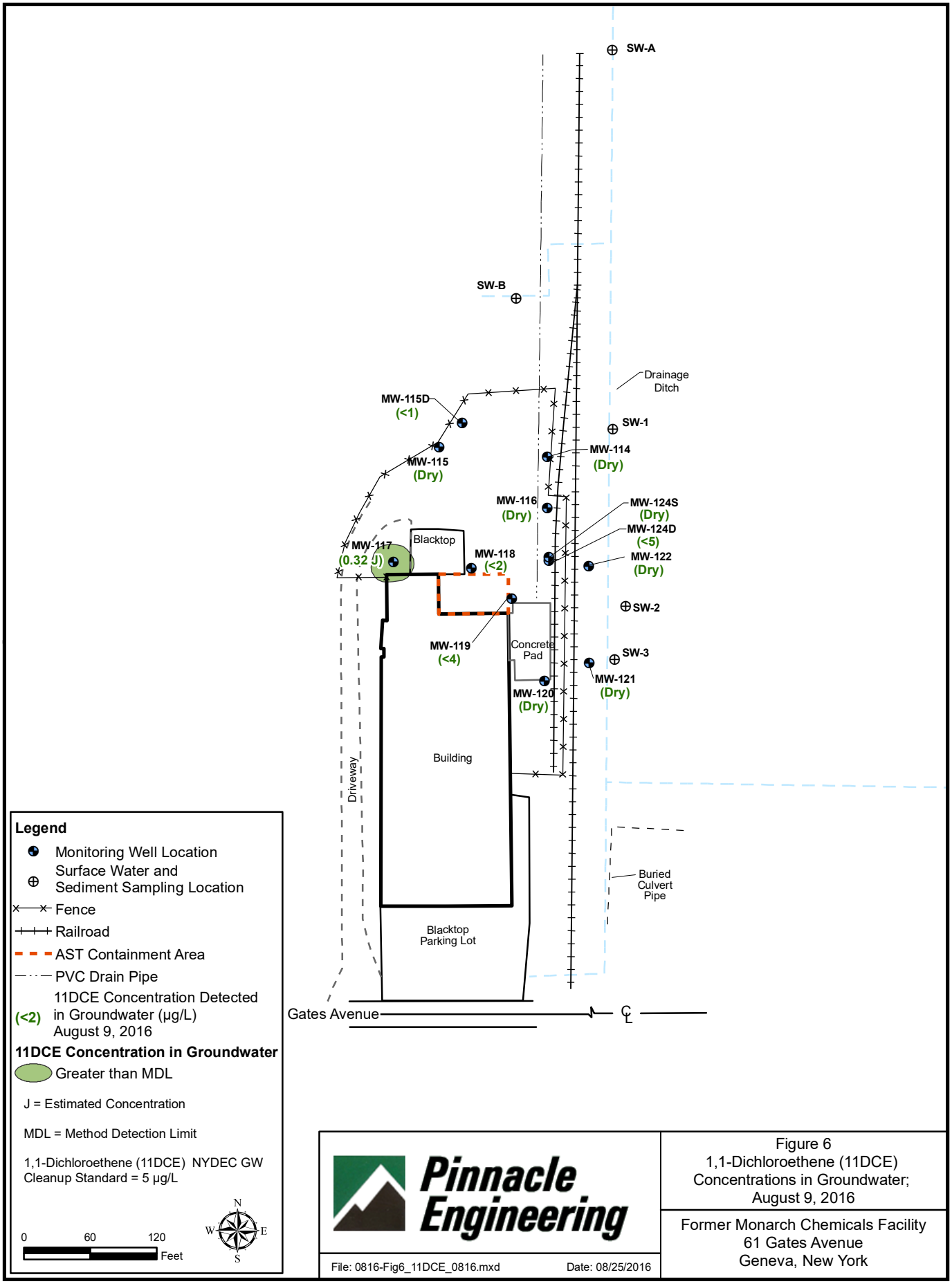
Pinnacle Engineering

File: 0816-Fig5_TCE_0816.mxd

Date: 08/25/2016

Figure 5
Trichloroethene (TCE) Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York

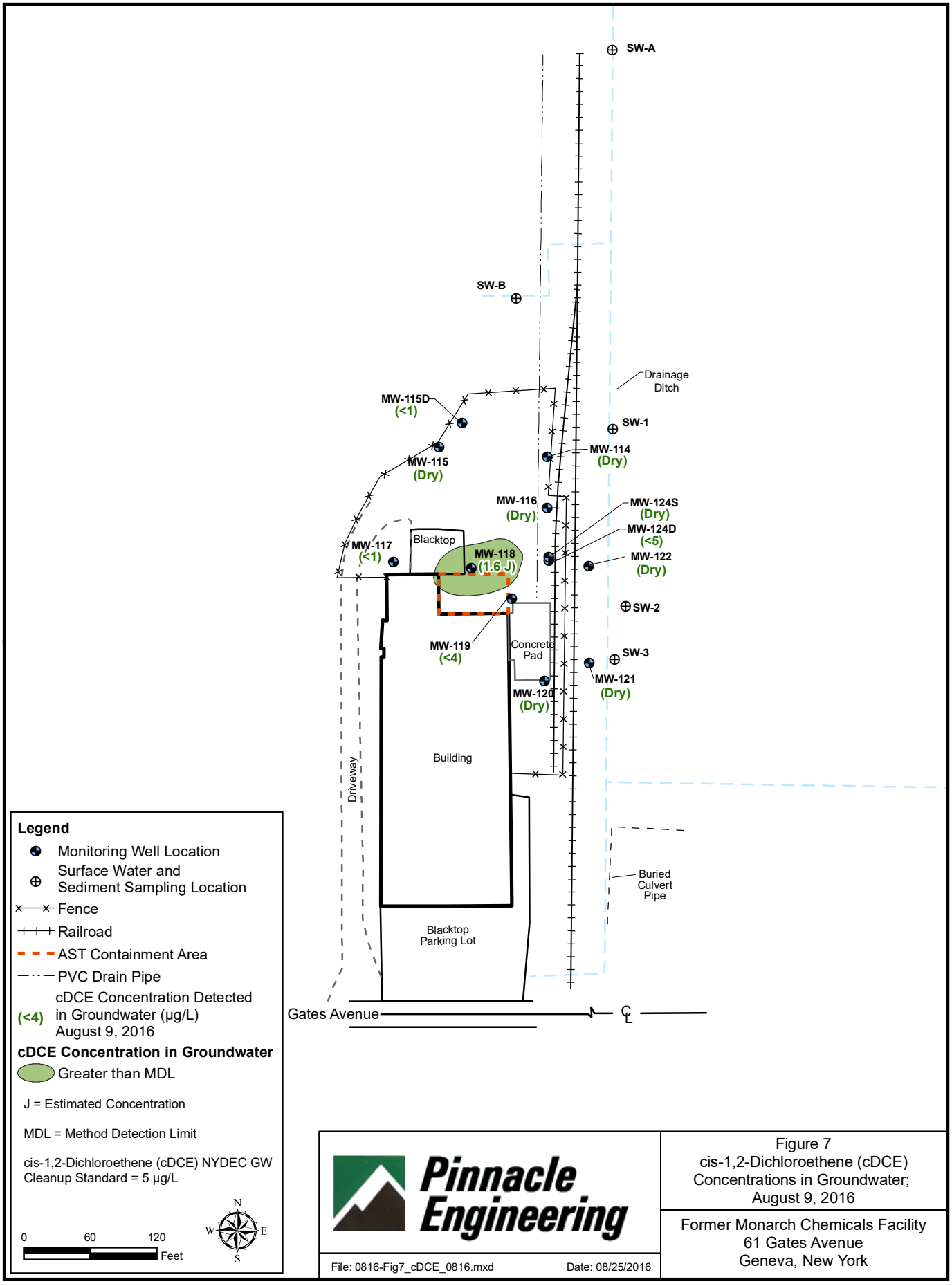


Pinnacle Engineering

File: 0816-Fig6_11DCE_0816.mxd Date: 08/25/2016

Figure 6
1,1-Dichloroethene (11DCE) Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York

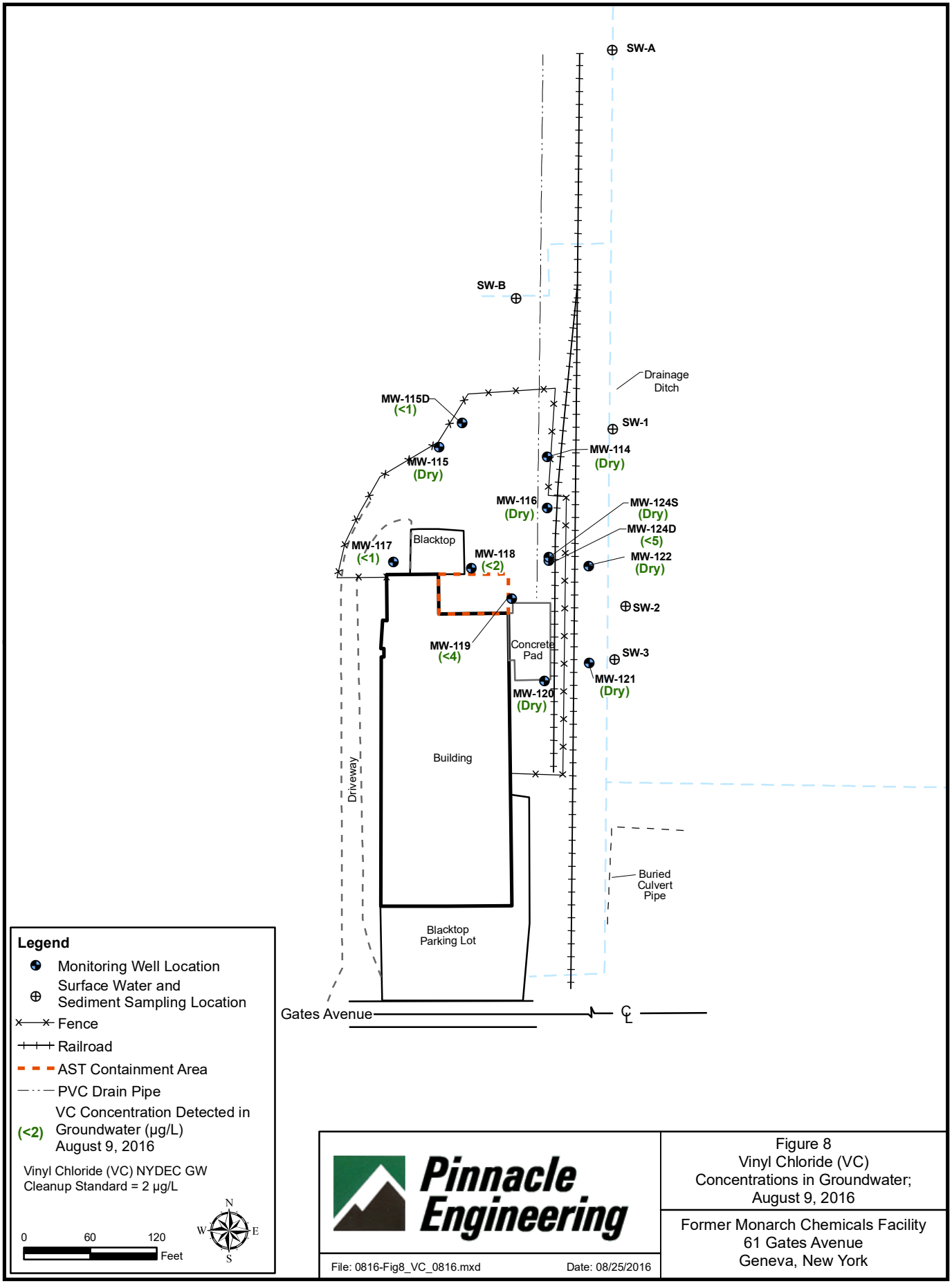


Pinnacle Engineering

File: 0816-Fig7_cDCE_0816.mxd Date: 08/25/2016

Figure 7
cis-1,2-Dichloroethene (cDCE) Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York



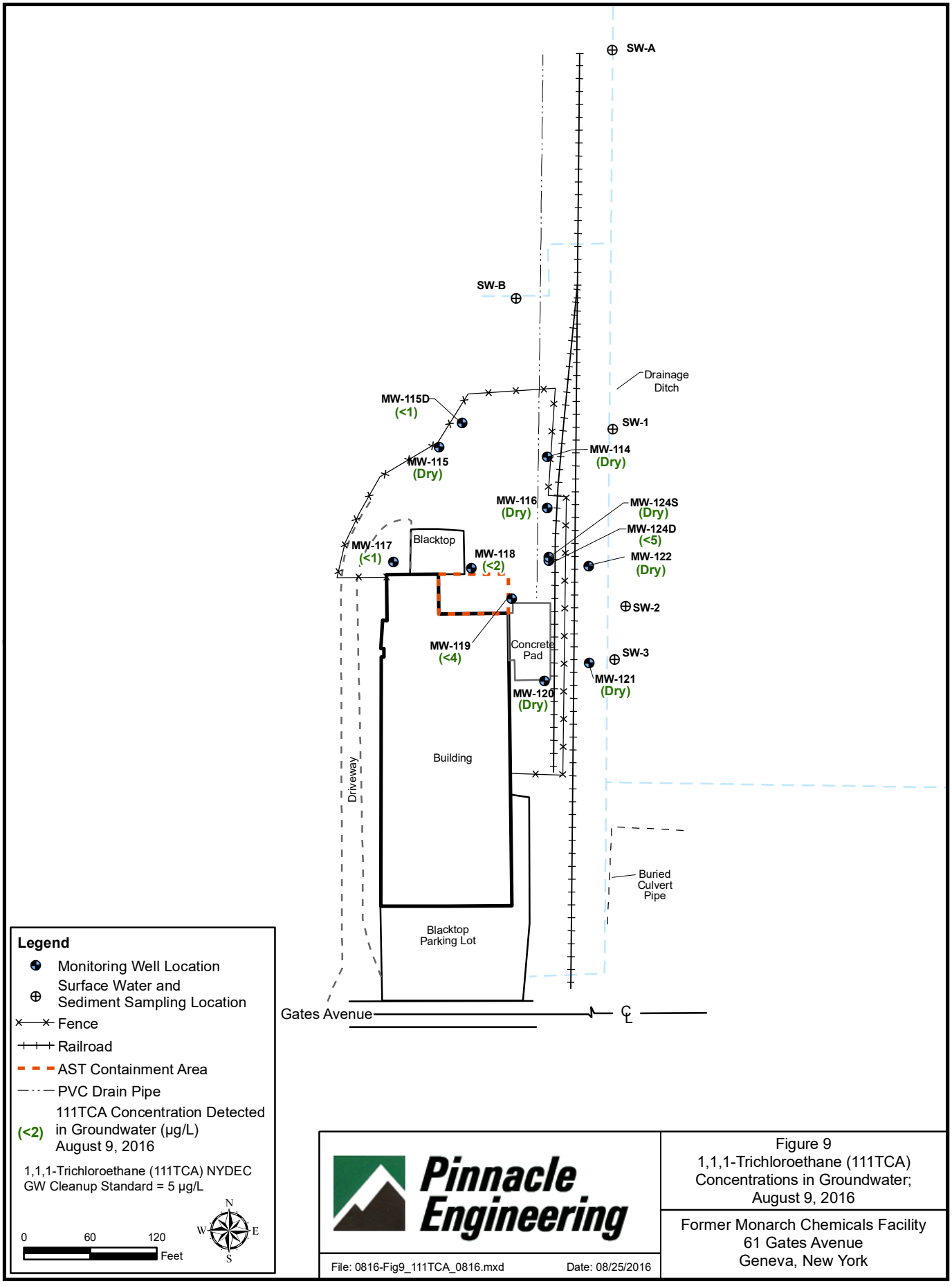
Pinnacle Engineering

File: 0816-Fig8_VC_0816.mxd

Date: 08/25/2016

Figure 8
Vinyl Chloride (VC) Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York

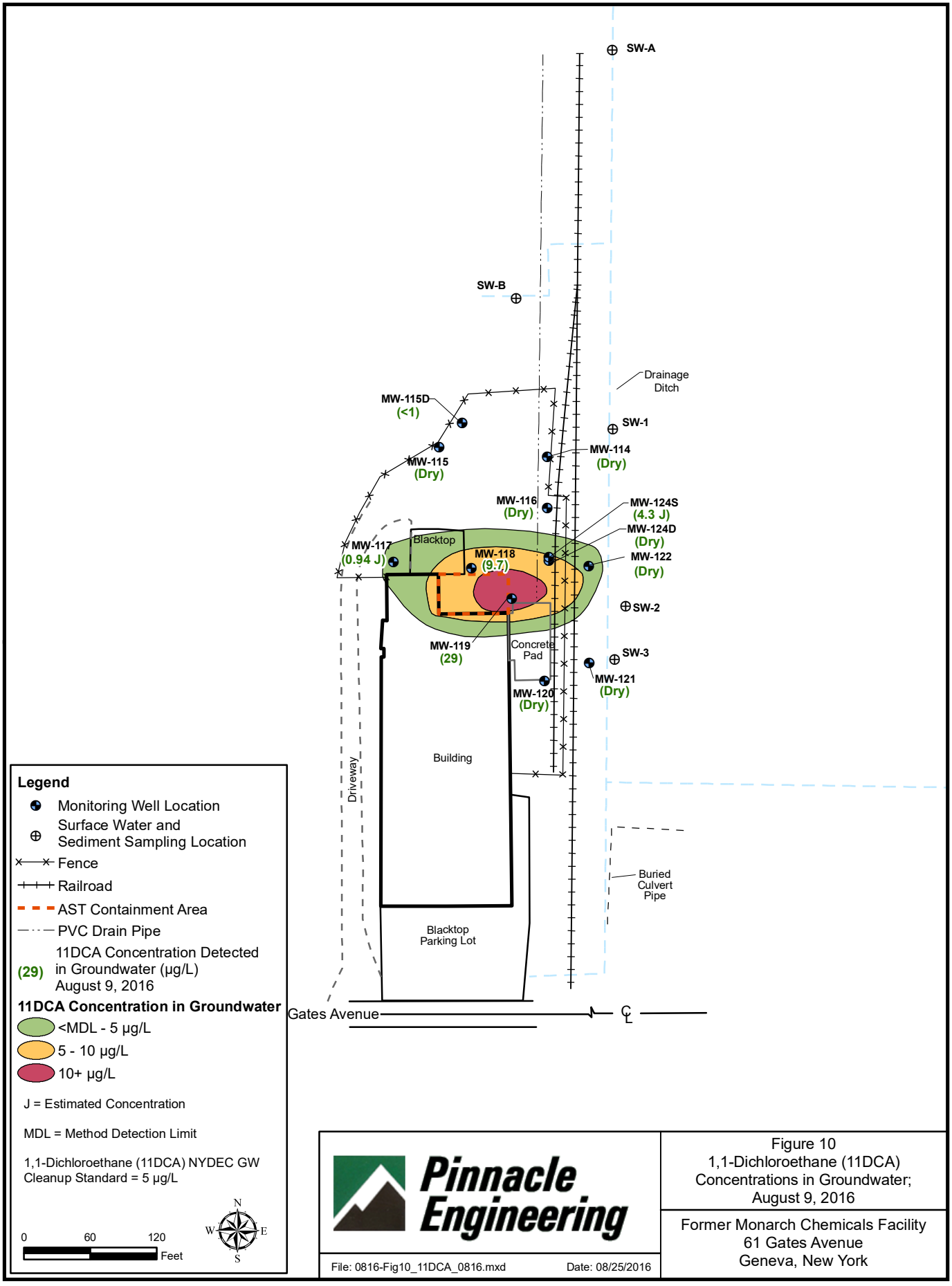


Pinnacle Engineering

File: 0816-Fig9_111TCA_0816.mxd Date: 08/25/2016

Figure 9
1,1,1-Trichloroethane (111TCA) Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York

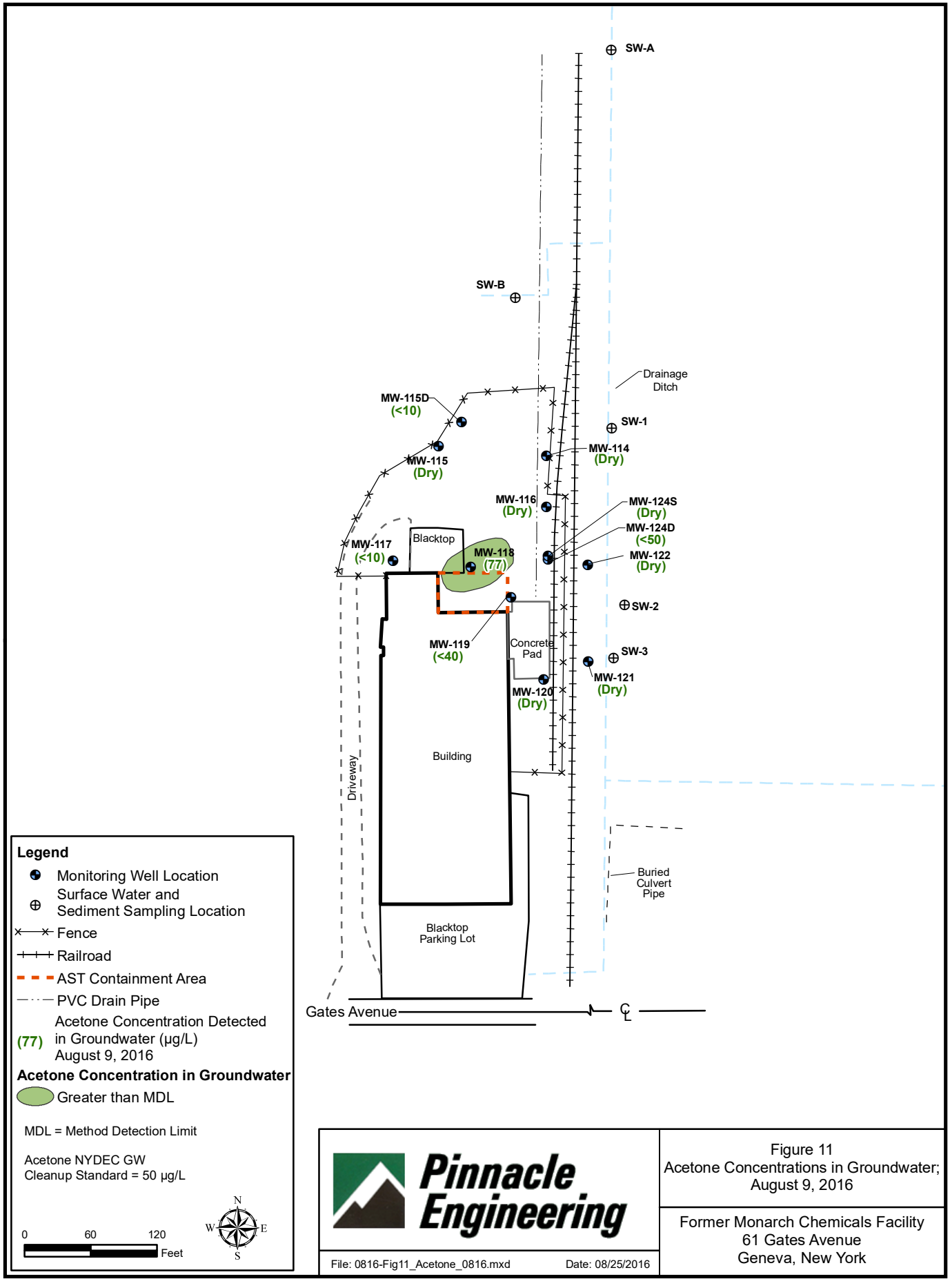


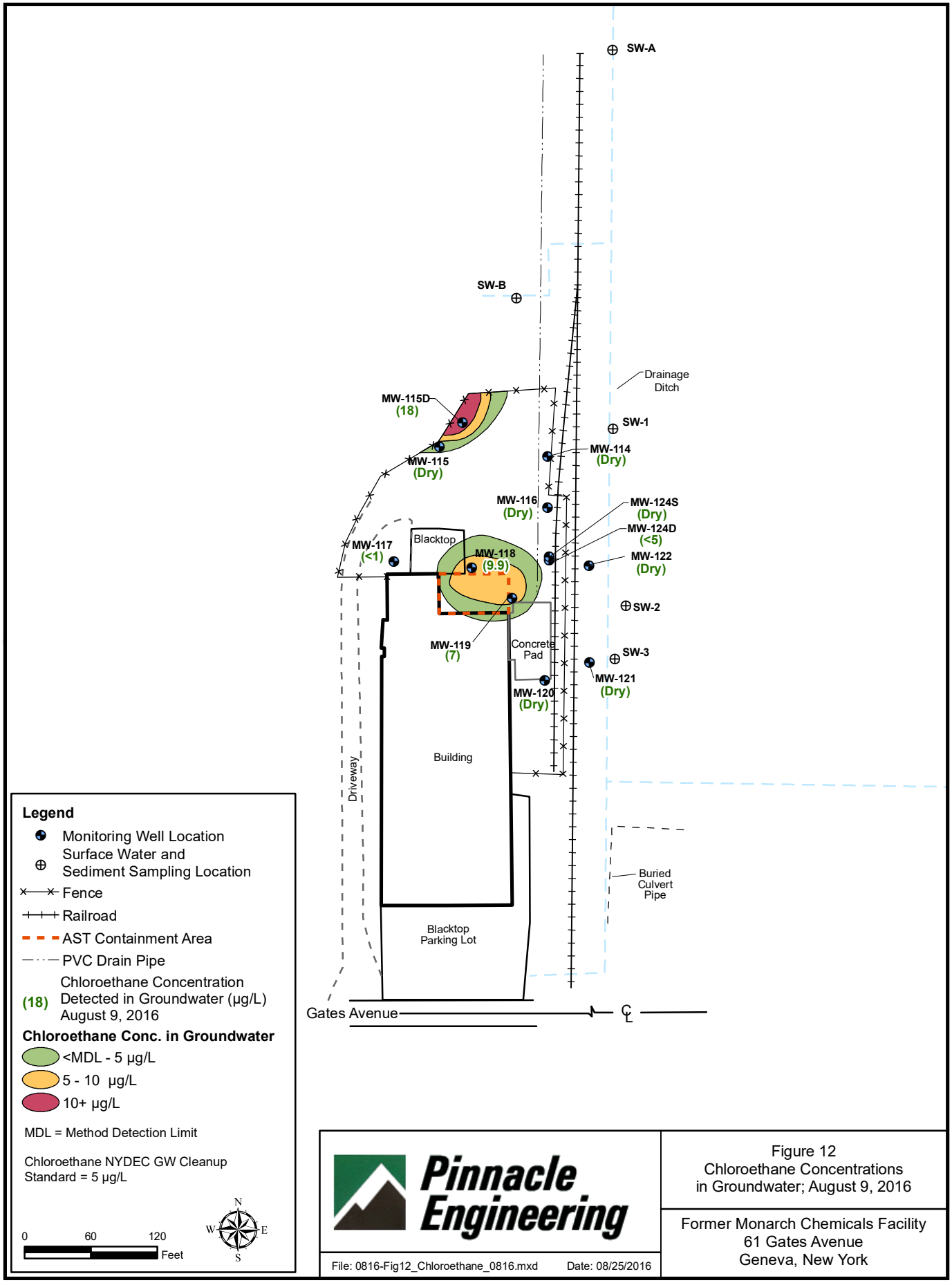
Pinnacle Engineering

File: 0816-Fig10_11DCA_0816.mxd Date: 08/25/2016

Figure 10
1,1-Dichloroethane (11DCA) Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York


SW-A
SW-B
Drainage Ditch
MW-115D (<10)
SW-1
MW-114 (Dry)
MW-115 (Dry)
MW-116 (Dry)
MW-124S (Dry)
MW-124D (<50)
MW-122 (Dry)
MW-117 (<10)
Blacktop
MW-118 (77)
SW-2
MW-119 (<40)
Concrete Pad
SW-3
MW-121 (Dry)
MW-120 (Dry)
Building
Driveway
Buried Culvert Pipe
Blacktop Parking Lot
Gates Avenue
Legend
Monitoring Well Location
Surface Water and Sediment Sampling Location
Fence
Railroad
AST Containment Area
PVC Drain Pipe
(77) Acetone Concentration Detected in Groundwater (µg/L) August 9, 2016
Acetone Concentration in Groundwater
Greater than MDL
MDL = Method Detection Limit
Acetone NYDEC GW Cleanup Standard = 50 µg/L
0 60 120 Feet
N W E S
Pinnacle Engineering
File: 0816-Fig11_Acetone_0816.mxd
Date: 08/25/2016
Figure 11
Acetone Concentrations in Groundwater; August 9, 2016
Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York

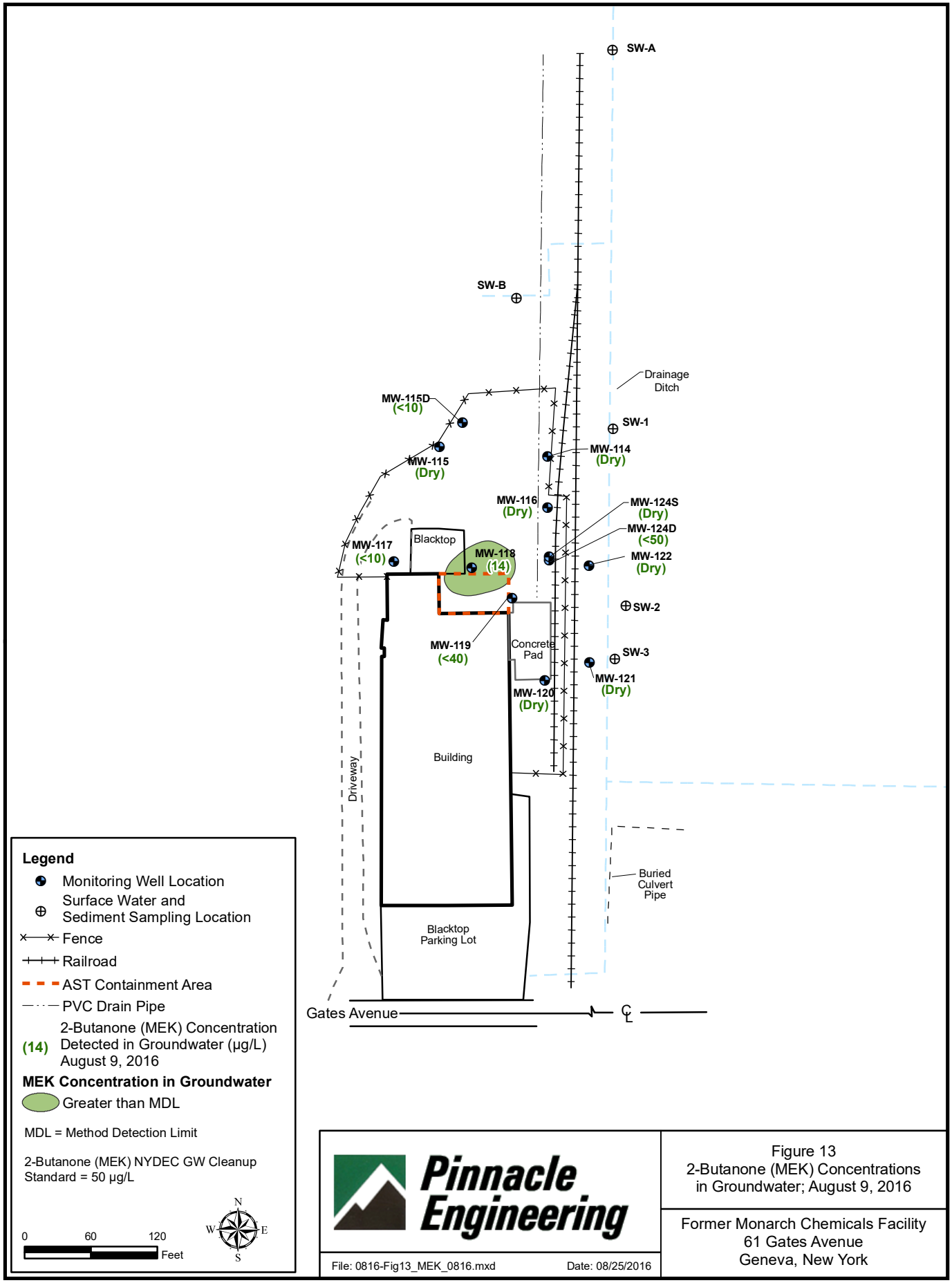


Pinnacle Engineering

File: 0816-Fig12_Chloroethane_0816.mxd Date: 08/25/2016

Figure 12
Chloroethane Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York

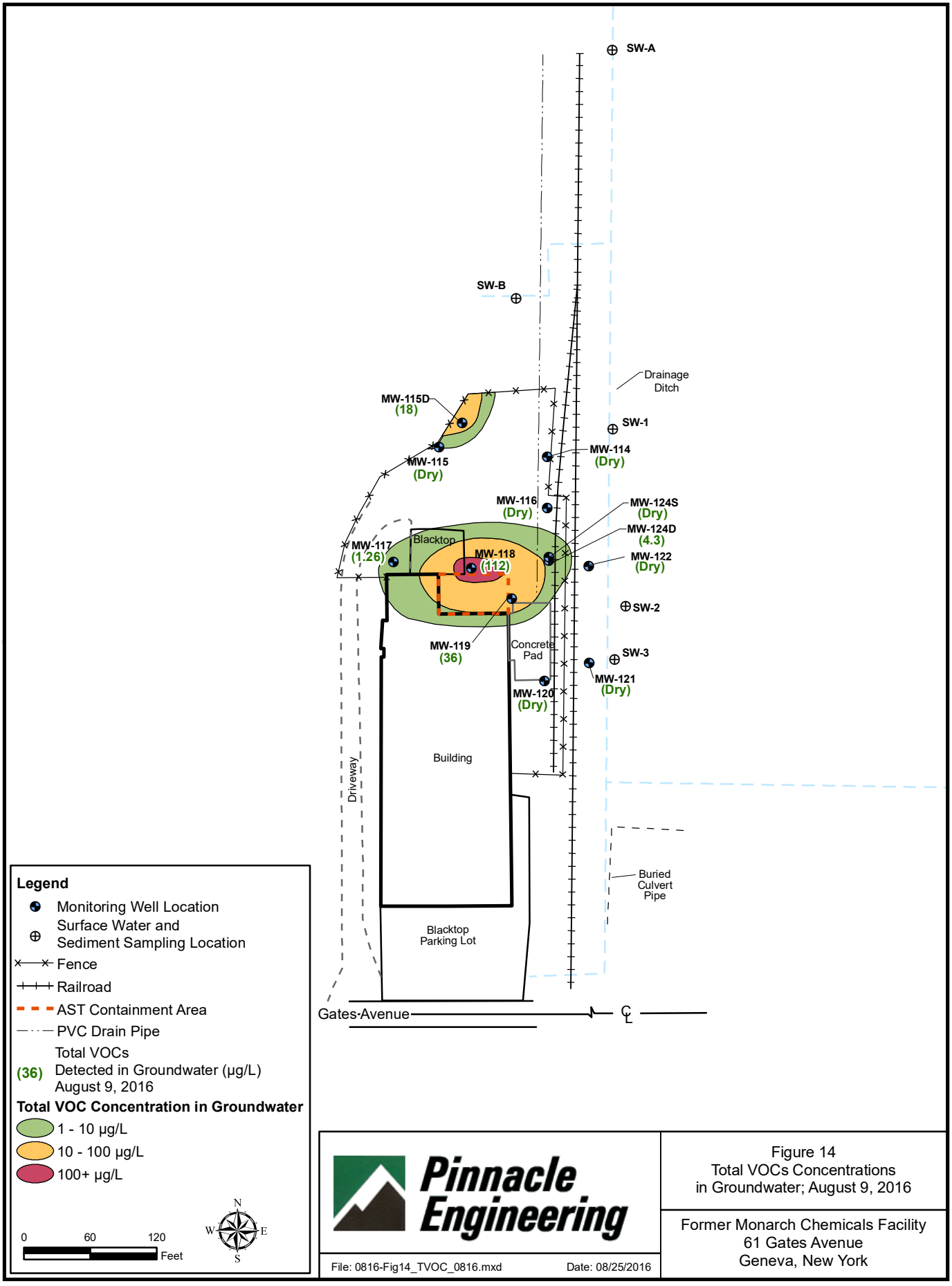


Pinnacle Engineering

File: 0816-Fig13_MEK_0816.mxd Date: 08/25/2016

Figure 13
2-Butanone (MEK) Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York



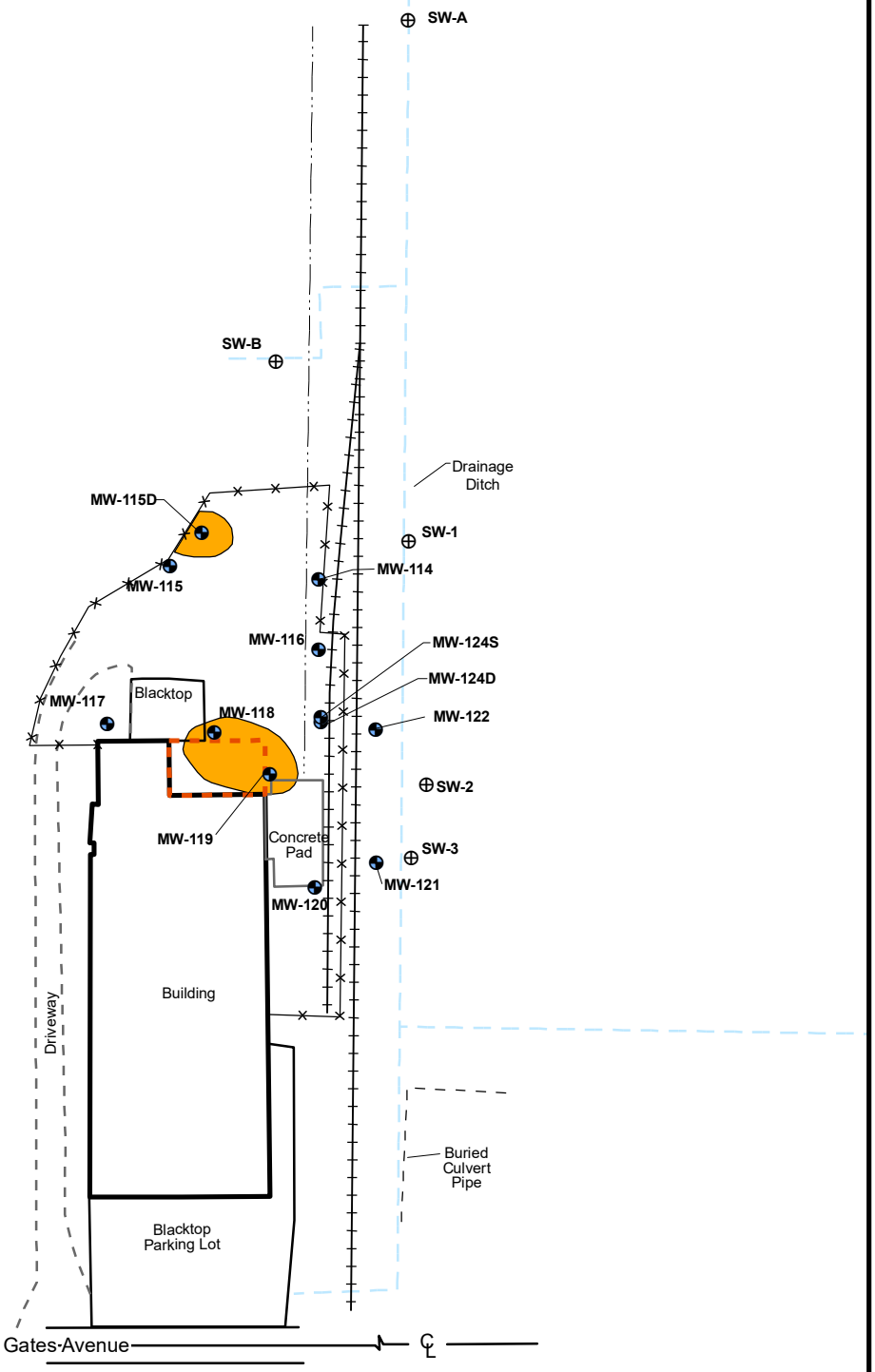
Pinnacle Engineering

File: 0816-Fig14_TVOC_0816.mxd

Date: 08/25/2016

Figure 14
Total VOCs Concentrations in Groundwater; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York



Pinnacle Engineering

File: 0816-Fig15_NYSDEC_0816.mxd Date: 08/25/2016

Figure 15
Areas Exceeding NYSDEC Groundwater Cleanup Standards; August 9, 2016

Former Monarch Chemicals Facility
61 Gates Avenue
Geneva, New York

Attachment 1
Groundwater Sampling Forms

Pinnacle Engineering — Well Sampling Form

Project Name: Geneva Groundwater Monitoring | Well #: 119 | Unique Well #: 119

Pinnacle Project No.: R013023.000 | Client Name: H.B. Fuller

Location: Geneva, NY | Well Material: (PVC) Steel Other

Date: 3/3/16 | Time: 19:00 | Conditions: sunny 80°F

Free Product: Yes (No) | Amount removed: N/A | Page: of

WATER LEVEL & SAMPLE DATA

Casing Diameter: 2 inches — $\pi r^2 h \times 7.48\ gal/cuft$ = 0.08 Gal casing vol

Total Depth		Water Level	X	Diameter²	X	#Well Volumes	X 0.0408 =	Purge Volume/GAL
13.48	-	12.97						
0.51'								

Purge Method: bailer

VOLUME	COLOR	ODOR	TEMP (°C)	DO (mg/L)	SPC (uS/cm)	pH (SU)	ORP (mV)	TURB (NTU)	Comments

NOTES: (decon. procedures, equipment status, etc.)
first bailer 6" - filled 2½ 40 ml vials, had quite a bit of a problem w/ a bubble in first vial
second bailer 3" - filled last vial
third bailer ¼"
fourth bailer - no water

sample time 19:20

Surface Water

SAMPLE ID	DEPTH	TIME

could not get parameters as well bailed dry
sample was heavily sediment laden

Collected by (Print/Signature): Bob Wojciak R C Wojciak

Field QC:

Office QC:

Other:

Filename: WellSamplingForm_Rev20160302
Date Printed: 3/2/2016

Pinnacle Engineering

Well Sampling Form

Project Name: Geneva Groundwater Monitoring   Well #: 118   Unique Well #: 118

Pinnacle Project No.: R013023.000   Client Name: H.B. Fuller

Location: Geneva, NY   Well Material: (PVC) Steel Other

Date: 8/9/16   Time: Conditions: SUNNY 75°F

Free Product: Yes (No)   Amount removed: N/A   Page: of

WATER LEVEL & SAMPLE DATA

Casing Diameter: 2 inches $\pi r^2 h$ = WATER COLUMN VOLUME (cu ft) x 7.48 = .45 = gal

3.1415 x

13.02 - 10.28 x ____ x ____ X 0.0408 = ____

Total Depth 2.74' Water Level   Diameter²   #Well Volumes   Purge Volume/GAL

Purge Method: PERISTALTIC PUMP - LOW FLOW SAMPLE METHOD

	VOLUME	COLOR	ODOR	TEMP (°C)	DO (mg/L)	SPC (uS/cm)	pH (SU)	ORP (mV)	TURB (NTU)	Comments
9:50	150 ml/min									DTW
10:00				16.85	0.84	.0020	6.69	-161.9	75.5	12.90
10:02										PUMP DRY
8/9/16	grab sample			sample time		20:00				
	bailer had 9" of water ← sample from this bailer									
	second bailer had 2" of water } COU									
	third bailer had > 1" water									

NOTES: (decon. procedures, equipment status, etc.)

TUBE VOL 17' x (1/8 / 12)² x π x 7.48 = .0066 GAL + 300 ml for flo cell

Surface Water

SAMPLE ID	DEPTH	TIME

well pumped dry w/ peristaltic in the morning. Bailed dry in the evening - Little recovery, low yield

Collected by (Print/Signature): Bob Wojciak R. C. Wojciak

Field QC:

Office QC:

Other:

Filename: WellSamplingForm_Rev20160302

Date Printed: 3/2/2016

Pinnacle Engineering

Well Sampling Form

Project Name: Geneva Groundwater Monitoring | Well #: 117 | Unique Well #: 117

Pinnacle Project No.: R013023.000 | Client Name: H.B. Fuller

Location: Geneva, NY | Well Material: (PVC) Steel Other

Date: 8/9/16 | Time: | Conditions: SUNNY BREEZY, 84°F

Free Product: Yes (No) | Amount removed: N/A | Page: | of

WATER LEVEL & SAMPLE DATA

Casing Diameter: 2 inches

0.88 Gal = 1 WELL VOLUME

13.40	-	8.01	X	2"	X		X 0.0408 =	
Total Depth	5.39	Water Level		Diameter^2		#Well Volumes		Purge Volume/GAL

Purge Method: BAILER

VOLUME	COLOR	ODOR	TEMP (°C)	DO (mg/L)	SPC (uS/cm)	pH (SU)	ORP (mV)	TURB (NTU)	Comments
1GAL	BLACK SED		17.16	4.15	0.001033	6.65	-68	787	HEAVILY SEDIMENT LADEN

NOTES: (decon. procedures, equipment status, etc.)

BAILED WELL, STARTED TO RUN DRY @ 1ST VOLUME TOOK SAMPLE, THEN MEASURED PARAMETER NEARLY BAILED DRY

FLOW CELL WAS IN SUN, USE T READING W/ CAUTION

Surface Water

SAMPLE ID	DEPTH	TIME

SAMPLE TIME 14:00

Collected by (Print/Signature): Bob Wojciak R A Wojciak

Field QC:

Office QC:

Other:

Filename: WellSamplingForm_Rev20160302

Date Printed: 3/2/2016

Pinnacle Engineering — Well Sampling Form

Project Name: Geneva Groundwater Monitoring Well #: 115D Unique Well #: 115D

Pinnacle Project No.: R013023.000 Client Name: H.B. Fuller

Location: Geneva, NY Well Material: (PVC) Steel Other

Date: 8/9/16 Time: Conditions: SUNNY, BREEZY 89°F

Free Product: Yes No Amount removed: Page: of

WATER LEVEL & SAMPLE DATA

Casing Diameter: 2" inches $\pi r^2 h \times 7.48$ = well vol gal = 1.56 gal

23.67 (Total Depth) − 14.10 (Water Level) = 9.57' X ____ (Diameter²) X ____ (#Well Volumes) X 0.0408 = ____ (Purge Volume/GAL)

Purge Method: PERISTALTIC PUMP - LOW FLOW SAMPLE METHOD

VOLUME	COLOR	ODOR	TEMP (°C)	DO (mg/L)	SPC (uS/cm)	pH (SU)	ORP (mV)	TURB (NTU)	Comments
150ML/MIN									begin pumping
15:30	NONE	NONE	17.87	1.22	0.000921	7.23	-37.6	23.7	DTW 15.18
15:35			17.96	0.85	0.000916	7.21	-38.5	8.90	15.30
15:40			18.00	0.71	0.000910	7.23	-32.2	4.99	15.32
15:45			17.99	0.63	0.000912	7.28	-33.4	4.65	15.33
15:50			17.76	0.48	0.000911	7.28	-39.3	2.64	15.33
15:55									

NOTES: (decon. procedures, equipment status, etc.)
Sample after 15:55 parameter readings
Sample time 16:00

alternated bottles to get sample & duplicate sample

first, 115D sample
then, dupe sample
↓
115D
dupe

Surface Water

SAMPLE ID	DEPTH	TIME

DUPLICATE TAKEN HERE
used sample time of 00:00 for duplicate

Collected by (Print/Signature): Bob Wojciak R.A. Wojciak

Field QC:

Office QC:

Other:

Filename: WellSamplingForm_Rev20160302
Date Printed: 3/2/2016

Pinnacle Engineering

Well Sampling Form

Project Name: Geneva Groundwater Monitoring | Well #: 124D | Unique Well #: 124D

Pinnacle Project No.: R013023.000 | Client Name: H.B. Fuller

Location: Geneva, NY | Well Material: (PVC) Steel Other

Date: 8/9/16 | Time: | Conditions: SUNNY, BREEZY 86°F

Free Product: Yes (No) | Amount removed: N/A | Page: | of

WATER LEVEL & SAMPLE DATA

Casing Diameter: 2 inches $\pi r^2 h' \times 7.48\ gal/cuft = 0.33\ gal$ well volume

Total Depth	Water Level	Diameter^2	#Well Volumes	Purge Volume/GAL
20.25'	18.21'	X	X	X 0.0408 =
2.04'				

Purge Method: bailing

VOLUME	COLOR	ODOR	TEMP (°C)	DO (mg/L)	SPC (uS/cm)	pH (SU)	ORP (mV)	TURB (NTU)	Comments
1 GAL	NONE	DAIRY FAINT LIKE ODOR	15.57	2.06	0.001577	6.74	-88.4	568	
sampled after 3 well volumes then took parameters to insure sample collection in case well ran dry									

NOTES: (decon. procedures, equipment status, etc.)

Sample time (9:00

Surface Water

SAMPLE ID	DEPTH	TIME

Collected by (Print/Signature): Bob Wojciak

Field QC:

Office QC:

Other:

Filename: WellSamplingForm_Rev20160302

Date Printed: 3/2/2016

Pinnacle Engineering

Well Sampling Form

Project Name: Geneva Groundwater Monitoring Well #: TRIP BLANK Unique Well #: TRIP BLANK

Pinnacle Project No.: R013023.000 Client Name: H.B. Fuller

Location: Geneva, NY Well Material: N/A PVC Steel Other

Date: 8/9/16 Time: 19:30 Conditions: SUNNY 75°

Free Product: N/A Yes No Amount removed: Page: of

WATER LEVEL & SAMPLE DATA

Casing Diameter: _____ inches

_____	-	_____	X	_____	X	_____	X 0.0408 =	_____
Total Depth		Water Level		Diameter^2		#Well Volumes		Purge Volume/GAL

Purge Method: _____

VOLUME	COLOR	ODOR	TEMP (°C)	DO (mg/L)	SPC (uS/cm)	pH (SU)	ORP (mV)	TURB (NTU)	Comments

NOTES: (decon. procedures, equipment status, etc.)
used distilled water into 2 - 40 ml purge & trap vials
used sample time of 00:00 on the COC

Surface Water

SAMPLE ID	DEPTH	TIME

Collected by (Print/Signature): Bob Wojciak R.A. Wojciak

Field QC: _____

Office QC: _____

Other: _____

Filename: WellSamplingForm_Rev20160302

Date Printed: 3/2/2016

Pinnacle Engineering

Well Sampling Form

Project Name: Geneva Groundwater Monitoring Well #: EQUIPMENT BLANK Unique Well #:

Pinnacle Project No.: R013023.000 Client Name: H.B. Fuller

Location: Geneva, NY Well Material: N/A PVC Steel Other

Date: 8/9/16 Time: 19:45 Conditions: SUNNY 75°F

N/A Free Product: Yes No Amount removed: Page: of

WATER LEVEL & SAMPLE DATA

N/A Casing Diameter: _____ inches

_____	-	_____	X	_____	X	_____	X 0.0408 =	_____
Total Depth		Water Level		Diameter^2		#Well Volumes		Purge Volume/GAL

Purge Method: _____

VOLUME	COLOR	ODOR	TEMP (°C)	DO (mg/L)	SPC (uS/cm)	pH (SU)	ORP (mV)	TURB (NTU)	Comments

NOTES: (decon. procedures, equipment status, etc.)
used distilled water & 1' bailer to obtain sample
bailer was then used @ 118

sample time 19:45

Surface Water

SAMPLE ID	DEPTH	TIME

Collected by (Print/Signature): Bob Wojciak R.C. Wojciak

Field QC: _____

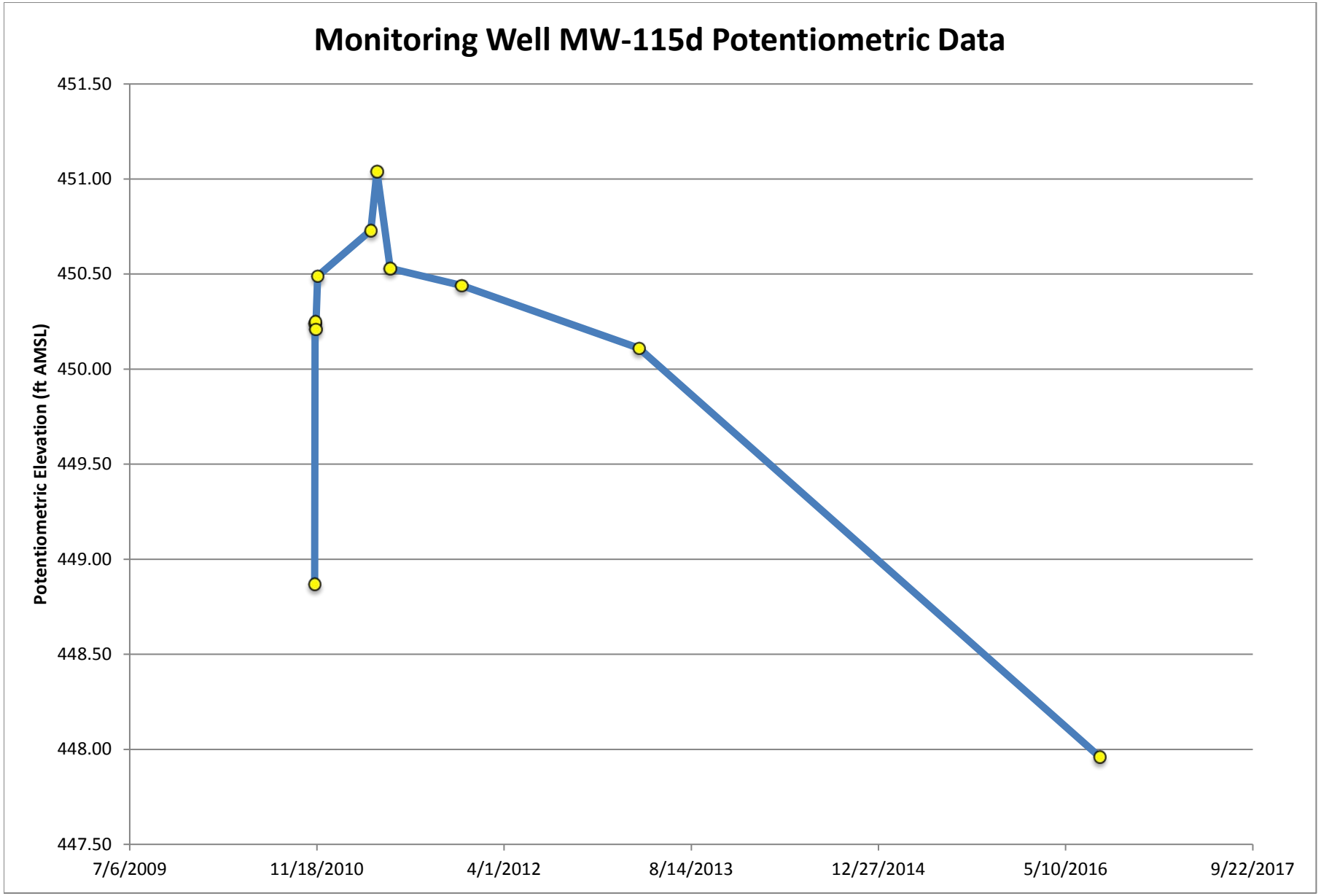
Office QC: _____

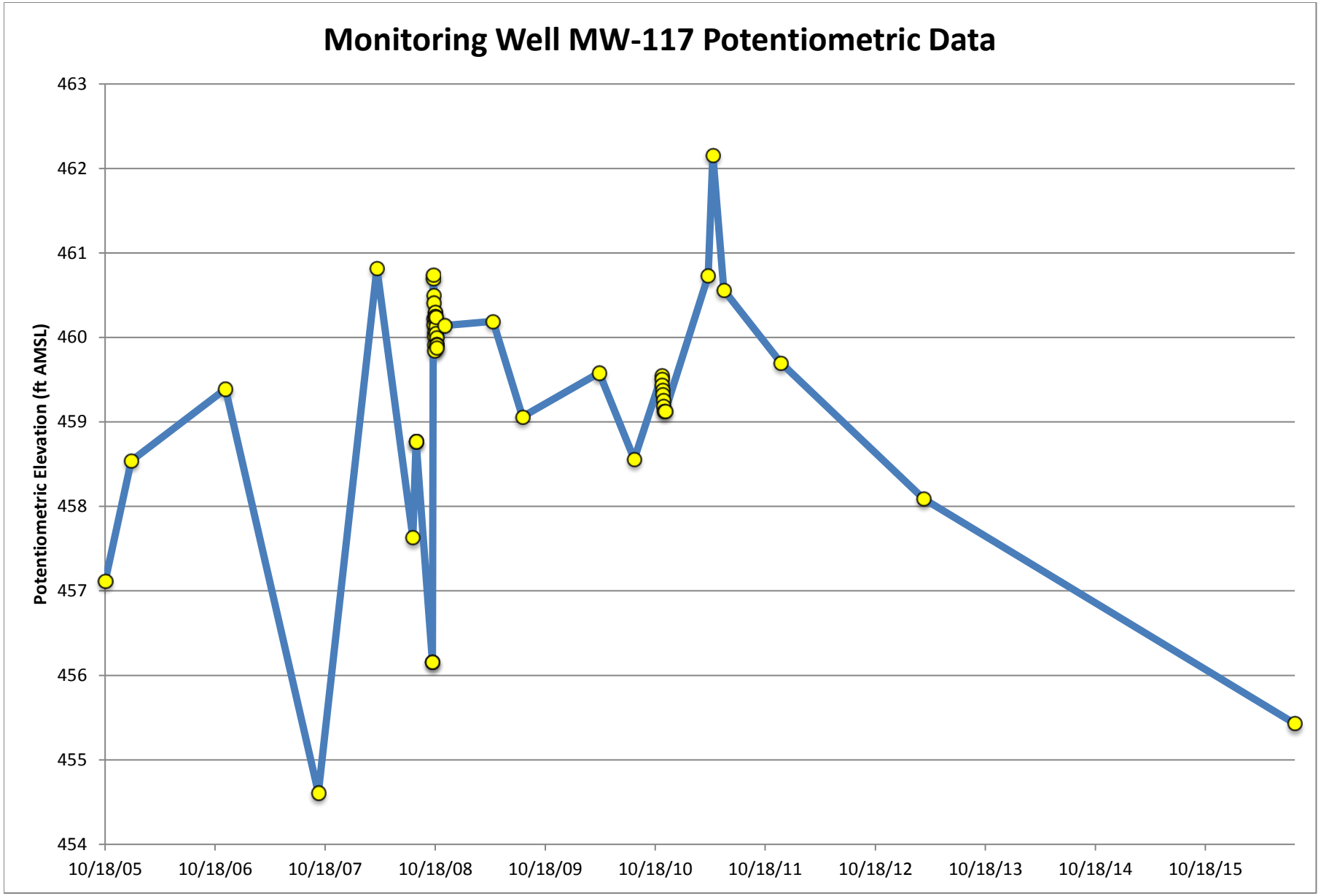
Other: _____

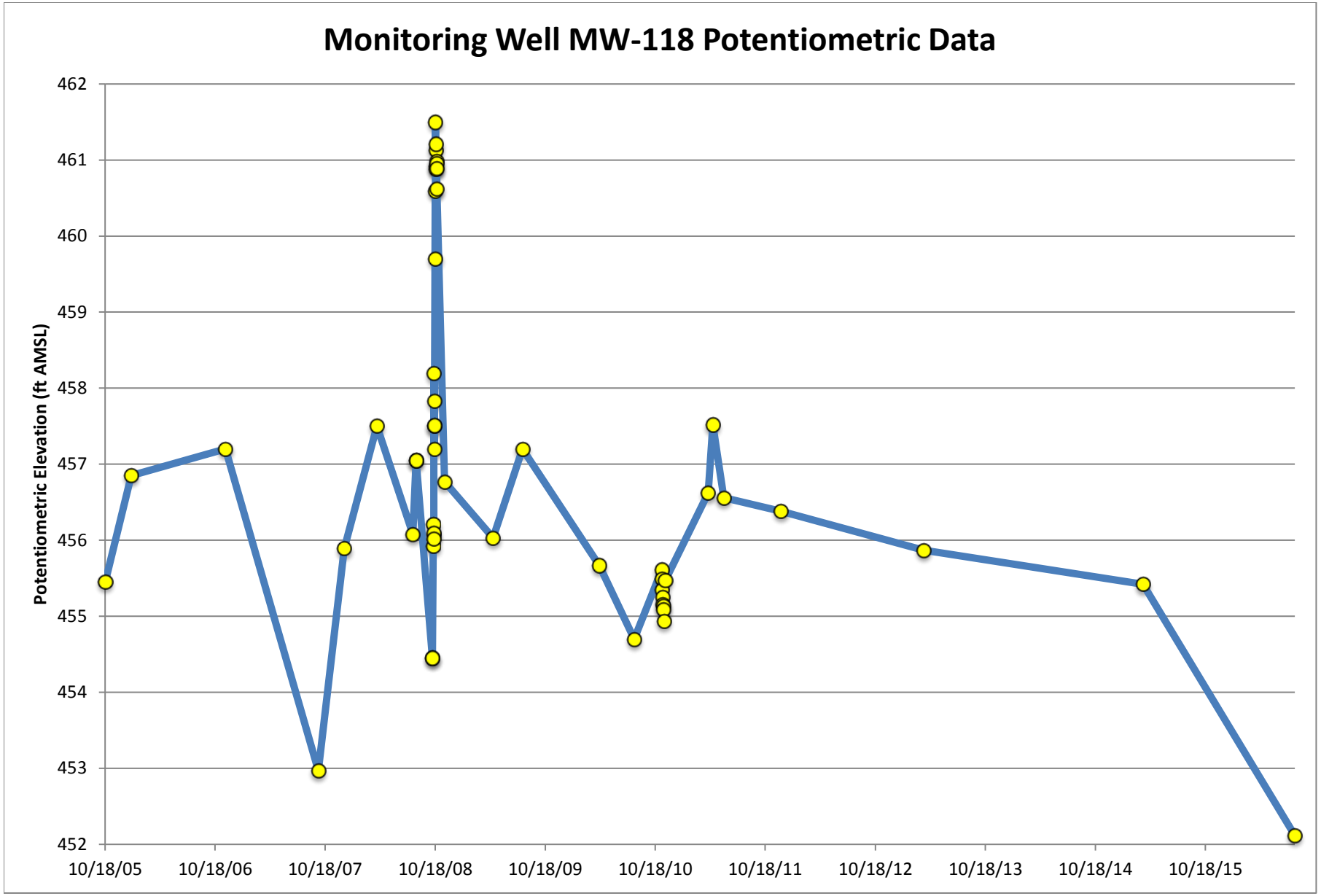
Filename: WellSamplingForm_Rev20160302

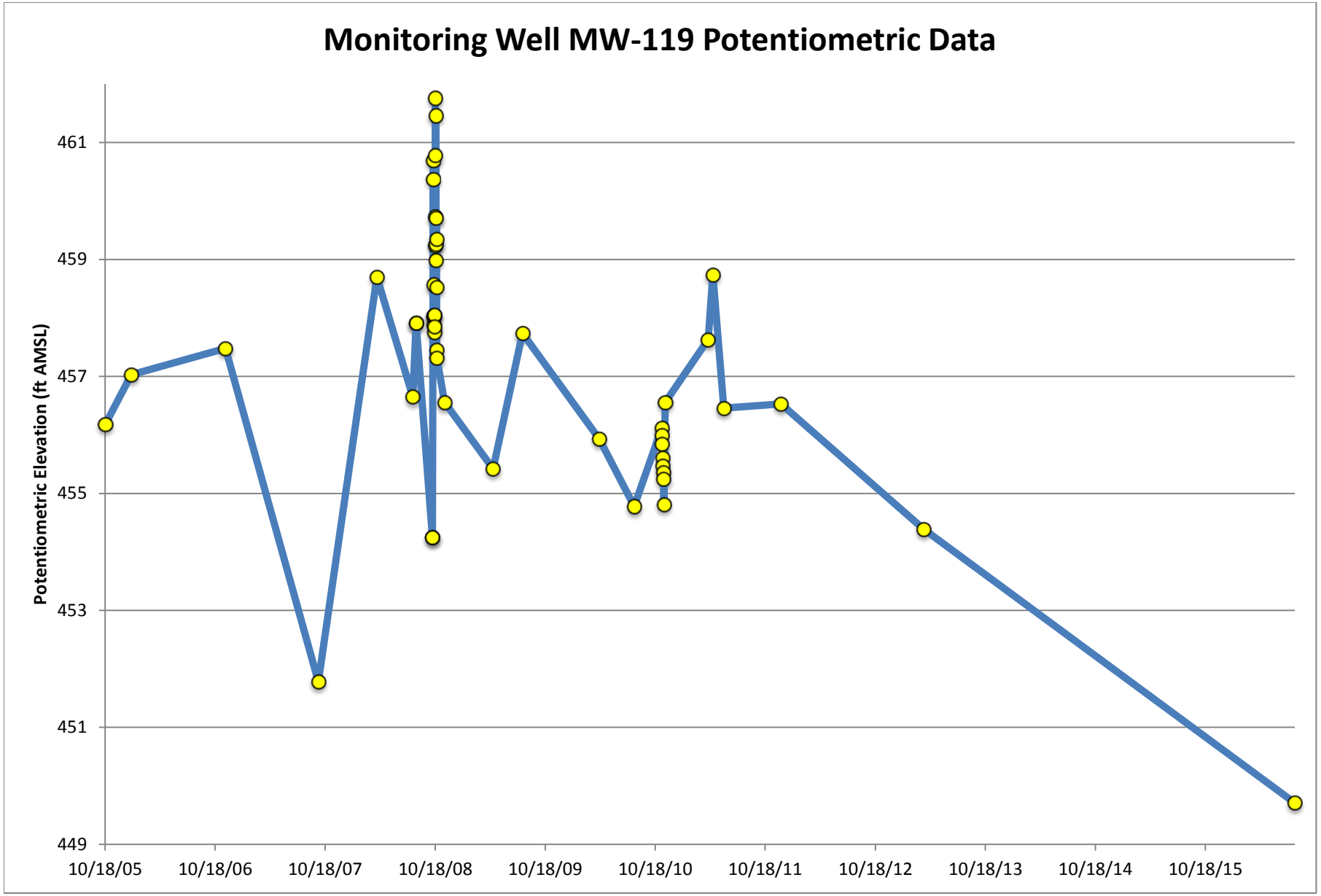
Date Printed: 3/2/2016

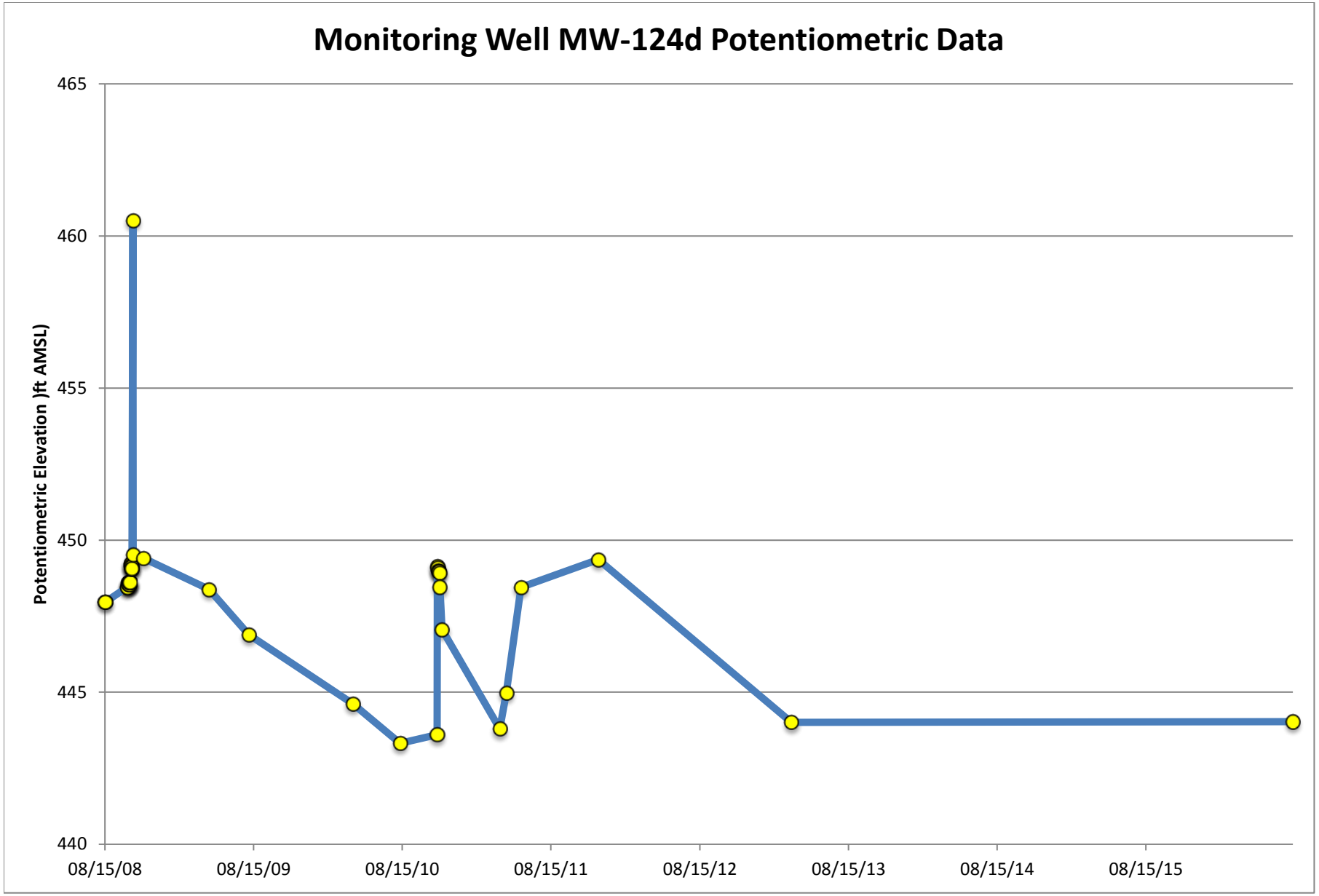
Attachment 2
Well Hydrographs


Monitoring Well MW-115d Potentiometric Data
Potentiometric Elevation (ft AMSL)
451.50
451.00
450.50
450.00
449.50
449.00
448.50
448.00
447.50
7/6/2009
11/18/2010
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017


Monitoring Well MW-117 Potentiometric Data
Potentiometric Elevation (ft AMSL)
463
462
461
460
459
458
457
456
455
454
10/18/05
10/18/06
10/18/07
10/18/08
10/18/09
10/18/10
10/18/11
10/18/12
10/18/13
10/18/14
10/18/15


Monitoring Well MW-118 Potentiometric Data
Potentiometric Elevation (ft AMSL)
462
461
460
459
458
457
456
455
454
453
452
10/18/05
10/18/06
10/18/07
10/18/08
10/18/09
10/18/10
10/18/11
10/18/12
10/18/13
10/18/14
10/18/15


Monitoring Well MW-119 Potentiometric Data
Potentiometric Elevation (ft AMSL)
461
459
457
455
453
451
449
10/18/05
10/18/06
10/18/07
10/18/08
10/18/09
10/18/10
10/18/11
10/18/12
10/18/13
10/18/14
10/18/15


Monitoring Well MW-124d Potentiometric Data
Potentiometric Elevation)ft AMSL)
465
460
455
450
445
440
08/15/08
08/15/09
08/15/10
08/15/11
08/15/12
08/15/13
08/15/14
08/15/15

August 9, 2016 Potentiometric Elevation Summary
Former Monarch Chemicals
61 Gates Avenue, Geneva, NY

Date	Potentiometric Elevation Summary											
	MW-114	MW-115	MW-115d	MW-116	MW-117	MW-118	MW-119	MW-120	MW-121	MW-122	MW-124s	MW-124d
8/9/2016	dry	dry	447.96	dry	455.43	452.12	449.71	dry	dry	dry	dry	444.12

Attachment 3
Laboratory Analytical Report SDG 480-104343-1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-104343-1
Client Project/Site: HB Fuller

For:
Pinnacle Engineering, Inc
11541 95th Avenue North
Minneapolis, Minnesota 55369

Attn: Mr. Keith B Rapp

Authorized for release by:
8/18/2016 8:22:35 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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)

Case Narrative

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Job ID: 480-104343-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-104343-1

Receipt
The samples were received on 8/10/2016 12:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

GC/MS VOA
Method(s) 8260C: The following Volatile samples was composited by the laboratory on 8-16-2016: MW 117 (480-104343-2). Regulatory defined guidance for in-laboratory compositing of samples, is currently not available. Laboratory sample compositing was performed using established laboratory standard operating procedures. Compositing was performed due to sediment.

Method(s) 8260C: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: MW 119 (480-104343-1), MW 124 D (480-104343-4), MW 118 (480-104343-5). The sample was analyzed within 7 days per EPA recommendation.

Method(s) 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW 119 (480-104343-1), MW 118 (480-104343-5), MW 124 D (480-104343-4). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-315912 recovered above the upper control limit for Carbon tetrachloride, 1,1,2-Trichloro-1,2,2-trifluoroethane, and Dibromochloromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data has been reported. The following sample is impacted: MW 119 (480-104343-1).

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-315946 recovered above the upper control limit for Carbon tetrachloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: TRIP BLANK (480-104343-8).

Method(s) 8260C: The laboratory control sample (LCS) for analytical batch 480-315912 recovered outside control limits for the following analytes: Bromoform and Bromodichloromethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data has been reported for the following affected analytes MW 119 (480-104343-1) .

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Client Sample ID: MW 119 — Lab Sample ID: 480-104343-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	29		4.0	1.5	ug/L	4		8260C	Total/NA
Chloroethane	7.0		4.0	1.3	ug/L	4		8260C	Total/NA

Client Sample ID: MW 117 — Lab Sample ID: 480-104343-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.94	J	1.0	0.38	ug/L	1		8260C	Total/NA
1,1-Dichloroethene	0.32	J	1.0	0.29	ug/L	1		8260C	Total/NA

Client Sample ID: MW 115 D — Lab Sample ID: 480-104343-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroethane	18		1.0	0.32	ug/L	1		8260C	Total/NA

Client Sample ID: MW 124 D — Lab Sample ID: 480-104343-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	4.3	J	5.0	1.9	ug/L	5		8260C	Total/NA

Client Sample ID: MW 118 — Lab Sample ID: 480-104343-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	9.7		2.0	0.76	ug/L	2		8260C	Total/NA
2-Butanone (MEK)	14	J	20	2.6	ug/L	2		8260C	Total/NA
Acetone	77		20	6.0	ug/L	2		8260C	Total/NA
Chloroethane	9.9		2.0	0.64	ug/L	2		8260C	Total/NA
cis-1,2-Dichloroethene	1.6	J	2.0	1.6	ug/L	2		8260C	Total/NA

Client Sample ID: DUPLICATE — Lab Sample ID: 480-104343-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	49		10	3.0	ug/L	1		8260C	Total/NA

Client Sample ID: EQUIPMENT BLANK — Lab Sample ID: 480-104343-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.7	J	10	3.0	ug/L	1		8260C	Total/NA
Bromodichloromethane	2.3		1.0	0.39	ug/L	1		8260C	Total/NA
Chloroform	12		1.0	0.34	ug/L	1		8260C	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 480-104343-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromodichloromethane	2.3		1.0	0.39	ug/L	1		8260C	Total/NA
Chloroform	13		1.0	0.34	ug/L	1		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Client Sample ID: MW 119
Date Collected: 08/08/16 19:20
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-1
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	ND		4.0	3.3	ug/L			08/15/16 00:18	4
1,1,2,2-Tetrachloroethane	ND		4.0	0.84	ug/L			08/15/16 00:18	4
1,1,2-Trichloroethane	ND		4.0	0.92	ug/L			08/15/16 00:18	4
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		4.0	1.2	ug/L			08/15/16 00:18	4
1,1-Dichloroethane	**29**		4.0	1.5	ug/L			08/15/16 00:18	4
1,1-Dichloroethene	ND		4.0	1.2	ug/L			08/15/16 00:18	4
1,2,4-Trichlorobenzene	ND		4.0	1.6	ug/L			08/15/16 00:18	4
1,2-Dibromo-3-Chloropropane	ND		4.0	1.6	ug/L			08/15/16 00:18	4
1,2-Dibromoethane	ND		4.0	2.9	ug/L			08/15/16 00:18	4
1,2-Dichlorobenzene	ND		4.0	3.2	ug/L			08/15/16 00:18	4
1,2-Dichloroethane	ND		4.0	0.84	ug/L			08/15/16 00:18	4
1,2-Dichloropropane	ND		4.0	2.9	ug/L			08/15/16 00:18	4
1,3-Dichlorobenzene	ND		4.0	3.1	ug/L			08/15/16 00:18	4
1,4-Dichlorobenzene	ND		4.0	3.4	ug/L			08/15/16 00:18	4
2-Hexanone	ND		20	5.0	ug/L			08/15/16 00:18	4
2-Butanone (MEK)	ND		40	5.3	ug/L			08/15/16 00:18	4
4-Methyl-2-pentanone (MIBK)	ND		20	8.4	ug/L			08/15/16 00:18	4
Acetone	ND		40	12	ug/L			08/15/16 00:18	4
Benzene	ND		4.0	1.6	ug/L			08/15/16 00:18	4
Bromodichloromethane	ND	*	4.0	1.6	ug/L			08/15/16 00:18	4
Bromoform	ND	*	4.0	1.0	ug/L			08/15/16 00:18	4
Bromomethane	ND		4.0	2.8	ug/L			08/15/16 00:18	4
Carbon disulfide	ND		4.0	0.76	ug/L			08/15/16 00:18	4
Carbon tetrachloride	ND		4.0	1.1	ug/L			08/15/16 00:18	4
Chlorobenzene	ND		4.0	3.0	ug/L			08/15/16 00:18	4
Dibromochloromethane	ND		4.0	1.3	ug/L			08/15/16 00:18	4
Chloroethane	**7.0**		4.0	1.3	ug/L			08/15/16 00:18	4
Chloroform	ND		4.0	1.4	ug/L			08/15/16 00:18	4
Chloromethane	ND		4.0	1.4	ug/L			08/15/16 00:18	4
cis-1,2-Dichloroethene	ND		4.0	3.2	ug/L			08/15/16 00:18	4
cis-1,3-Dichloropropene	ND		4.0	1.4	ug/L			08/15/16 00:18	4
Cyclohexane	ND		4.0	0.72	ug/L			08/15/16 00:18	4
Dichlorodifluoromethane	ND		4.0	2.7	ug/L			08/15/16 00:18	4
Ethylbenzene	ND		4.0	3.0	ug/L			08/15/16 00:18	4
Isopropylbenzene	ND		4.0	3.2	ug/L			08/15/16 00:18	4
Methyl acetate	ND		10	5.2	ug/L			08/15/16 00:18	4
Methyl tert-butyl ether	ND		4.0	0.64	ug/L			08/15/16 00:18	4
Methylcyclohexane	ND		4.0	0.64	ug/L			08/15/16 00:18	4
Methylene Chloride	ND		4.0	1.8	ug/L			08/15/16 00:18	4
Styrene	ND		4.0	2.9	ug/L			08/15/16 00:18	4
Tetrachloroethene	ND		4.0	1.4	ug/L			08/15/16 00:18	4
Toluene	ND		4.0	2.0	ug/L			08/15/16 00:18	4
trans-1,2-Dichloroethene	ND		4.0	3.6	ug/L			08/15/16 00:18	4
trans-1,3-Dichloropropene	ND		4.0	1.5	ug/L			08/15/16 00:18	4
Trichloroethene	ND		4.0	1.8	ug/L			08/15/16 00:18	4
Trichlorofluoromethane	ND		4.0	3.5	ug/L			08/15/16 00:18	4
Vinyl chloride	ND		4.0	3.6	ug/L			08/15/16 00:18	4
Xylenes, Total	ND		8.0	2.6	ug/L			08/15/16 00:18	4

Client Sample ID: MW 119

Date Collected: 08/08/16 19:20
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-1
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*77 - 120*		*08/15/16 00:18*	*4*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/15/16 00:18*	*4*
4-Bromofluorobenzene (Surr)	*111*		*73 - 120*		*08/15/16 00:18*	*4*

Client Sample ID: MW 117

Date Collected: 08/09/16 14:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-2
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	ND		1.0	0.82	ug/L			08/16/16 22:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/16/16 22:40	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/16/16 22:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/16/16 22:40	1
1,1-Dichloroethane	**0.94**	**J**	1.0	0.38	ug/L			08/16/16 22:40	1
1,1-Dichloroethene	**0.32**	**J**	1.0	0.29	ug/L			08/16/16 22:40	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/16/16 22:40	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/16/16 22:40	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/16/16 22:40	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/16/16 22:40	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/16/16 22:40	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/16/16 22:40	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/16/16 22:40	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/16/16 22:40	1
2-Hexanone	ND		5.0	1.2	ug/L			08/16/16 22:40	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/16/16 22:40	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/16/16 22:40	1
Acetone	ND		10	3.0	ug/L			08/16/16 22:40	1
Benzene	ND		1.0	0.41	ug/L			08/16/16 22:40	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/16/16 22:40	1
Bromoform	ND		1.0	0.26	ug/L			08/16/16 22:40	1
Bromomethane	ND		1.0	0.69	ug/L			08/16/16 22:40	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/16/16 22:40	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/16/16 22:40	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/16/16 22:40	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/16/16 22:40	1
Chloroethane	ND		1.0	0.32	ug/L			08/16/16 22:40	1
Chloroform	ND		1.0	0.34	ug/L			08/16/16 22:40	1
Chloromethane	ND		1.0	0.35	ug/L			08/16/16 22:40	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/16/16 22:40	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/16/16 22:40	1
Cyclohexane	ND		1.0	0.18	ug/L			08/16/16 22:40	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/16/16 22:40	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/16/16 22:40	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/16/16 22:40	1
Methyl acetate	ND		2.5	1.3	ug/L			08/16/16 22:40	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/16/16 22:40	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/16/16 22:40	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/16/16 22:40	1
Styrene	ND		1.0	0.73	ug/L			08/16/16 22:40	1

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Client Sample ID: MW 117

Date Collected: 08/09/16 14:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		1.0	0.36	ug/L			08/16/16 22:40	1
Toluene	ND		1.0	0.51	ug/L			08/16/16 22:40	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/16/16 22:40	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/16/16 22:40	1
Trichloroethene	ND		1.0	0.46	ug/L			08/16/16 22:40	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/16/16 22:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/16/16 22:40	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/16/16 22:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*77 - 120*		*08/16/16 22:40*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/16/16 22:40*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*08/16/16 22:40*	*1*

Client Sample ID: MW 115 D

Date Collected: 08/09/16 16:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-3

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	ND		1.0	0.82	ug/L			08/16/16 23:05	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/16/16 23:05	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/16/16 23:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/16/16 23:05	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/16/16 23:05	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/16/16 23:05	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/16/16 23:05	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/16/16 23:05	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/16/16 23:05	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/16/16 23:05	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/16/16 23:05	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/16/16 23:05	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/16/16 23:05	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/16/16 23:05	1
2-Hexanone	ND		5.0	1.2	ug/L			08/16/16 23:05	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/16/16 23:05	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/16/16 23:05	1
Acetone	ND		10	3.0	ug/L			08/16/16 23:05	1
Benzene	ND		1.0	0.41	ug/L			08/16/16 23:05	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/16/16 23:05	1
Bromoform	ND		1.0	0.26	ug/L			08/16/16 23:05	1
Bromomethane	ND		1.0	0.69	ug/L			08/16/16 23:05	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/16/16 23:05	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/16/16 23:05	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/16/16 23:05	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/16/16 23:05	1
Chloroethane	**18**		1.0	0.32	ug/L			08/16/16 23:05	1
Chloroform	ND		1.0	0.34	ug/L			08/16/16 23:05	1
Chloromethane	ND		1.0	0.35	ug/L			08/16/16 23:05	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/16/16 23:05	1

Client Sample ID: MW 115 D

Date Collected: 08/09/16 16:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/16/16 23:05	1
Cyclohexane	ND		1.0	0.18	ug/L			08/16/16 23:05	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/16/16 23:05	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/16/16 23:05	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/16/16 23:05	1
Methyl acetate	ND		2.5	1.3	ug/L			08/16/16 23:05	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/16/16 23:05	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/16/16 23:05	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/16/16 23:05	1
Styrene	ND		1.0	0.73	ug/L			08/16/16 23:05	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/16/16 23:05	1
Toluene	ND		1.0	0.51	ug/L			08/16/16 23:05	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/16/16 23:05	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/16/16 23:05	1
Trichloroethene	ND		1.0	0.46	ug/L			08/16/16 23:05	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/16/16 23:05	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/16/16 23:05	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/16/16 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*		*08/16/16 23:05*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/16 23:05*	*1*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*08/16/16 23:05*	*1*

Client Sample ID: MW 124 D

Date Collected: 08/09/16 19:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-4

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	ND		5.0	4.1	ug/L			08/16/16 23:30	5
1,1,2,2-Tetrachloroethane	ND		5.0	1.1	ug/L			08/16/16 23:30	5
1,1,2-Trichloroethane	ND		5.0	1.2	ug/L			08/16/16 23:30	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.6	ug/L			08/16/16 23:30	5
1,1-Dichloroethane	**4.3**	**J**	5.0	1.9	ug/L			08/16/16 23:30	5
1,1-Dichloroethene	ND		5.0	1.5	ug/L			08/16/16 23:30	5
1,2,4-Trichlorobenzene	ND		5.0	2.1	ug/L			08/16/16 23:30	5
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/L			08/16/16 23:30	5
1,2-Dibromoethane	ND		5.0	3.7	ug/L			08/16/16 23:30	5
1,2-Dichlorobenzene	ND		5.0	4.0	ug/L			08/16/16 23:30	5
1,2-Dichloroethane	ND		5.0	1.1	ug/L			08/16/16 23:30	5
1,2-Dichloropropane	ND		5.0	3.6	ug/L			08/16/16 23:30	5
1,3-Dichlorobenzene	ND		5.0	3.9	ug/L			08/16/16 23:30	5
1,4-Dichlorobenzene	ND		5.0	4.2	ug/L			08/16/16 23:30	5
2-Hexanone	ND		25	6.2	ug/L			08/16/16 23:30	5
2-Butanone (MEK)	ND		50	6.6	ug/L			08/16/16 23:30	5
4-Methyl-2-pentanone (MIBK)	ND		25	11	ug/L			08/16/16 23:30	5
Acetone	ND		50	15	ug/L			08/16/16 23:30	5
Benzene	ND		5.0	2.1	ug/L			08/16/16 23:30	5
Bromodichloromethane	ND		5.0	2.0	ug/L			08/16/16 23:30	5

Client Sample ID: MW 124 D

Lab Sample ID: 480-104343-4

Date Collected: 08/09/16 19:00

Matrix: Water

Date Received: 08/10/16 12:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	ND		5.0	1.3	ug/L			08/16/16 23:30	5
Bromomethane	ND		5.0	3.5	ug/L			08/16/16 23:30	5
Carbon disulfide	ND		5.0	0.95	ug/L			08/16/16 23:30	5
Carbon tetrachloride	ND		5.0	1.4	ug/L			08/16/16 23:30	5
Chlorobenzene	ND		5.0	3.8	ug/L			08/16/16 23:30	5
Dibromochloromethane	ND		5.0	1.6	ug/L			08/16/16 23:30	5
Chloroethane	ND		5.0	1.6	ug/L			08/16/16 23:30	5
Chloroform	ND		5.0	1.7	ug/L			08/16/16 23:30	5
Chloromethane	ND		5.0	1.8	ug/L			08/16/16 23:30	5
cis-1,2-Dichloroethene	ND		5.0	4.1	ug/L			08/16/16 23:30	5
cis-1,3-Dichloropropene	ND		5.0	1.8	ug/L			08/16/16 23:30	5
Cyclohexane	ND		5.0	0.90	ug/L			08/16/16 23:30	5
Dichlorodifluoromethane	ND		5.0	3.4	ug/L			08/16/16 23:30	5
Ethylbenzene	ND		5.0	3.7	ug/L			08/16/16 23:30	5
Isopropylbenzene	ND		5.0	4.0	ug/L			08/16/16 23:30	5
Methyl acetate	ND		13	6.5	ug/L			08/16/16 23:30	5
Methyl tert-butyl ether	ND		5.0	0.80	ug/L			08/16/16 23:30	5
Methylcyclohexane	ND		5.0	0.80	ug/L			08/16/16 23:30	5
Methylene Chloride	ND		5.0	2.2	ug/L			08/16/16 23:30	5
Styrene	ND		5.0	3.7	ug/L			08/16/16 23:30	5
Tetrachloroethene	ND		5.0	1.8	ug/L			08/16/16 23:30	5
Toluene	ND		5.0	2.6	ug/L			08/16/16 23:30	5
trans-1,2-Dichloroethene	ND		5.0	4.5	ug/L			08/16/16 23:30	5
trans-1,3-Dichloropropene	ND		5.0	1.9	ug/L			08/16/16 23:30	5
Trichloroethene	ND		5.0	2.3	ug/L			08/16/16 23:30	5
Trichlorofluoromethane	ND		5.0	4.4	ug/L			08/16/16 23:30	5
Vinyl chloride	ND		5.0	4.5	ug/L			08/16/16 23:30	5
Xylenes, Total	ND		10	3.3	ug/L			08/16/16 23:30	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*		*08/16/16 23:30*	*5*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/16 23:30*	*5*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*08/16/16 23:30*	*5*

Client Sample ID: MW 118

Lab Sample ID: 480-104343-5

Date Collected: 08/09/16 20:00

Matrix: Water

Date Received: 08/10/16 12:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			08/16/16 03:02	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			08/16/16 03:02	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			08/16/16 03:02	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.62	ug/L			08/16/16 03:02	2
1,1-Dichloroethane	**9.7**		2.0	0.76	ug/L			08/16/16 03:02	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			08/16/16 03:02	2
1,2,4-Trichlorobenzene	ND		2.0	0.82	ug/L			08/16/16 03:02	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			08/16/16 03:02	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			08/16/16 03:02	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			08/16/16 03:02	2

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Client Sample ID: MW 118
Date Collected: 08/09/16 20:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		2.0	0.42	ug/L			08/16/16 03:02	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			08/16/16 03:02	2
1,3-Dichlorobenzene	ND		2.0	1.6	ug/L			08/16/16 03:02	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			08/16/16 03:02	2
2-Hexanone	ND		10	2.5	ug/L			08/16/16 03:02	2
2-Butanone (MEK)	**14**	**J**	20	2.6	ug/L			08/16/16 03:02	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			08/16/16 03:02	2
Acetone	**77**		20	6.0	ug/L			08/16/16 03:02	2
Benzene	ND		2.0	0.82	ug/L			08/16/16 03:02	2
Bromodichloromethane	ND		2.0	0.78	ug/L			08/16/16 03:02	2
Bromoform	ND		2.0	0.52	ug/L			08/16/16 03:02	2
Bromomethane	ND		2.0	1.4	ug/L			08/16/16 03:02	2
Carbon disulfide	ND		2.0	0.38	ug/L			08/16/16 03:02	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			08/16/16 03:02	2
Chlorobenzene	ND		2.0	1.5	ug/L			08/16/16 03:02	2
Dibromochloromethane	ND		2.0	0.64	ug/L			08/16/16 03:02	2
Chloroethane	**9.9**		2.0	0.64	ug/L			08/16/16 03:02	2
Chloroform	ND		2.0	0.68	ug/L			08/16/16 03:02	2
Chloromethane	ND		2.0	0.70	ug/L			08/16/16 03:02	2
cis-1,2-Dichloroethene	**1.6**	**J**	2.0	1.6	ug/L			08/16/16 03:02	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			08/16/16 03:02	2
Cyclohexane	ND		2.0	0.36	ug/L			08/16/16 03:02	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			08/16/16 03:02	2
Ethylbenzene	ND		2.0	1.5	ug/L			08/16/16 03:02	2
Isopropylbenzene	ND		2.0	1.6	ug/L			08/16/16 03:02	2
Methyl acetate	ND		5.0	2.6	ug/L			08/16/16 03:02	2
Methyl tert-butyl ether	ND		2.0	0.32	ug/L			08/16/16 03:02	2
Methylcyclohexane	ND		2.0	0.32	ug/L			08/16/16 03:02	2
Methylene Chloride	ND		2.0	0.88	ug/L			08/16/16 03:02	2
Styrene	ND		2.0	1.5	ug/L			08/16/16 03:02	2
Tetrachloroethene	ND		2.0	0.72	ug/L			08/16/16 03:02	2
Toluene	ND		2.0	1.0	ug/L			08/16/16 03:02	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			08/16/16 03:02	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			08/16/16 03:02	2
Trichloroethene	ND		2.0	0.92	ug/L			08/16/16 03:02	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			08/16/16 03:02	2
Vinyl chloride	ND		2.0	1.8	ug/L			08/16/16 03:02	2
Xylenes, Total	ND		4.0	1.3	ug/L			08/16/16 03:02	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*77 - 120*		*08/16/16 03:02*	*2*
Toluene-d8 (Surr)	*92*		*80 - 120*		*08/16/16 03:02*	*2*
4-Bromofluorobenzene (Surr)	*106*		*73 - 120*		*08/16/16 03:02*	*2*

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Client Sample ID: DUPLICATE
Date Collected: 08/09/16 00:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-6
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	ND		1.0	0.82	ug/L			08/16/16 23:55	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/16/16 23:55	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/16/16 23:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/16/16 23:55	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/16/16 23:55	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/16/16 23:55	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/16/16 23:55	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/16/16 23:55	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/16/16 23:55	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/16/16 23:55	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/16/16 23:55	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/16/16 23:55	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/16/16 23:55	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/16/16 23:55	1
2-Hexanone	ND		5.0	1.2	ug/L			08/16/16 23:55	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/16/16 23:55	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/16/16 23:55	1
Acetone	**49**		10	3.0	ug/L			08/16/16 23:55	1
Benzene	ND		1.0	0.41	ug/L			08/16/16 23:55	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/16/16 23:55	1
Bromoform	ND		1.0	0.26	ug/L			08/16/16 23:55	1
Bromomethane	ND		1.0	0.69	ug/L			08/16/16 23:55	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/16/16 23:55	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/16/16 23:55	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/16/16 23:55	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/16/16 23:55	1
Chloroethane	ND		1.0	0.32	ug/L			08/16/16 23:55	1
Chloroform	ND		1.0	0.34	ug/L			08/16/16 23:55	1
Chloromethane	ND		1.0	0.35	ug/L			08/16/16 23:55	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/16/16 23:55	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/16/16 23:55	1
Cyclohexane	ND		1.0	0.18	ug/L			08/16/16 23:55	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/16/16 23:55	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/16/16 23:55	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/16/16 23:55	1
Methyl acetate	ND		2.5	1.3	ug/L			08/16/16 23:55	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/16/16 23:55	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/16/16 23:55	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/16/16 23:55	1
Styrene	ND		1.0	0.73	ug/L			08/16/16 23:55	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/16/16 23:55	1
Toluene	ND		1.0	0.51	ug/L			08/16/16 23:55	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/16/16 23:55	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/16/16 23:55	1
Trichloroethene	ND		1.0	0.46	ug/L			08/16/16 23:55	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/16/16 23:55	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/16/16 23:55	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/16/16 23:55	1

Client Sample ID: DUPLICATE

Lab Sample ID: 480-104343-6

Date Collected: 08/09/16 00:00
Matrix: Water
Date Received: 08/10/16 12:10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		08/16/16 23:55	1
Toluene-d8 (Surr)	97		80 - 120		08/16/16 23:55	1
4-Bromofluorobenzene (Surr)	97		73 - 120		08/16/16 23:55	1

Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-104343-7

Date Collected: 08/09/16 19:45
Matrix: Water
Date Received: 08/10/16 12:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/16/16 03:26	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/16/16 03:26	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/16/16 03:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/16/16 03:26	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/16/16 03:26	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/16/16 03:26	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/16/16 03:26	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/16/16 03:26	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/16/16 03:26	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/16/16 03:26	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/16/16 03:26	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/16/16 03:26	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/16/16 03:26	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/16/16 03:26	1
2-Hexanone	ND		5.0	1.2	ug/L			08/16/16 03:26	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/16/16 03:26	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/16/16 03:26	1
Acetone	**3.7**	**J**	10	3.0	ug/L			08/16/16 03:26	1
Benzene	ND		1.0	0.41	ug/L			08/16/16 03:26	1
Bromodichloromethane	**2.3**		1.0	0.39	ug/L			08/16/16 03:26	1
Bromoform	ND		1.0	0.26	ug/L			08/16/16 03:26	1
Bromomethane	ND		1.0	0.69	ug/L			08/16/16 03:26	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/16/16 03:26	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/16/16 03:26	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/16/16 03:26	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/16/16 03:26	1
Chloroethane	ND		1.0	0.32	ug/L			08/16/16 03:26	1
Chloroform	**12**		1.0	0.34	ug/L			08/16/16 03:26	1
Chloromethane	ND		1.0	0.35	ug/L			08/16/16 03:26	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/16/16 03:26	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/16/16 03:26	1
Cyclohexane	ND		1.0	0.18	ug/L			08/16/16 03:26	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/16/16 03:26	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/16/16 03:26	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/16/16 03:26	1
Methyl acetate	ND		2.5	1.3	ug/L			08/16/16 03:26	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/16/16 03:26	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/16/16 03:26	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/16/16 03:26	1
Styrene	ND		1.0	0.73	ug/L			08/16/16 03:26	1

Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-104343-7

Date Collected: 08/09/16 19:45

Matrix: Water

Date Received: 08/10/16 12:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		1.0	0.36	ug/L			08/16/16 03:26	1
Toluene	ND		1.0	0.51	ug/L			08/16/16 03:26	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/16/16 03:26	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/16/16 03:26	1
Trichloroethene	ND		1.0	0.46	ug/L			08/16/16 03:26	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/16/16 03:26	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/16/16 03:26	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/16/16 03:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*77 - 120*		*08/16/16 03:26*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*08/16/16 03:26*	*1*
4-Bromofluorobenzene (Surr)	*109*		*73 - 120*		*08/16/16 03:26*	*1*

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-104343-8

Date Collected: 08/09/16 00:00

Matrix: Water

Date Received: 08/10/16 12:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/15/16 18:19	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/15/16 18:19	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/15/16 18:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/15/16 18:19	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/15/16 18:19	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/15/16 18:19	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/15/16 18:19	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/15/16 18:19	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/15/16 18:19	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/15/16 18:19	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/15/16 18:19	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/15/16 18:19	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/15/16 18:19	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/15/16 18:19	1
2-Hexanone	ND		5.0	1.2	ug/L			08/15/16 18:19	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/15/16 18:19	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/15/16 18:19	1
Acetone	ND		10	3.0	ug/L			08/15/16 18:19	1
Benzene	ND		1.0	0.41	ug/L			08/15/16 18:19	1
Bromodichloromethane	**2.3**		1.0	0.39	ug/L			08/15/16 18:19	1
Bromoform	ND		1.0	0.26	ug/L			08/15/16 18:19	1
Bromomethane	ND		1.0	0.69	ug/L			08/15/16 18:19	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/15/16 18:19	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/15/16 18:19	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/15/16 18:19	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/15/16 18:19	1
Chloroethane	ND		1.0	0.32	ug/L			08/15/16 18:19	1
Chloroform	**13**		1.0	0.34	ug/L			08/15/16 18:19	1
Chloromethane	ND		1.0	0.35	ug/L			08/15/16 18:19	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/15/16 18:19	1

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Client Sample ID: TRIP BLANK
Date Collected: 08/09/16 00:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-8
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/15/16 18:19	1
Cyclohexane	ND		1.0	0.18	ug/L			08/15/16 18:19	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/15/16 18:19	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/15/16 18:19	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/15/16 18:19	1
Methyl acetate	ND		2.5	1.3	ug/L			08/15/16 18:19	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/15/16 18:19	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/15/16 18:19	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/15/16 18:19	1
Styrene	ND		1.0	0.73	ug/L			08/15/16 18:19	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/15/16 18:19	1
Toluene	ND		1.0	0.51	ug/L			08/15/16 18:19	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/15/16 18:19	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/15/16 18:19	1
Trichloroethene	ND		1.0	0.46	ug/L			08/15/16 18:19	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/15/16 18:19	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/15/16 18:19	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/15/16 18:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*08/15/16 18:19*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*08/15/16 18:19*	*1*
4-Bromofluorobenzene (Surr)	*109*		*73 - 120*		*08/15/16 18:19*	*1*

Surrogate Summary

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		12DCE	TOL	BFB
Lab Sample ID	Client Sample ID	(77-120)	(80-120)	(73-120)
480-104343-1	MW 119	109	97	111
480-104343-2	MW 117	94	98	98
480-104343-3	MW 115 D	98	99	99
480-104343-4	MW 124 D	97	99	98
480-104343-5	MW 118	109	92	106
480-104343-6	DUPLICATE	98	97	97
480-104343-7	EQUIPMENT BLANK	103	92	109
480-104343-8	TRIP BLANK	101	95	109
LCS 480-315912/5	Lab Control Sample	111	96	112
LCS 480-315946/4	Lab Control Sample	99	96	112
LCS 480-316070/4	Lab Control Sample	103	93	112
LCS 480-316261/5	Lab Control Sample	100	99	102
MB 480-315912/7	Method Blank	100	95	110
MB 480-315946/6	Method Blank	101	94	111
MB 480-316070/6	Method Blank	106	93	109
MB 480-316261/7	Method Blank	96	99	99

Surrogate Legend

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

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

Lab Sample ID: MB 480-315912/7
Matrix: Water
Analysis Batch: 315912

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	ND		1.0	0.82	ug/L			08/14/16 22:08	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/14/16 22:08	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/14/16 22:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/14/16 22:08	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/14/16 22:08	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/14/16 22:08	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/14/16 22:08	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/14/16 22:08	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/14/16 22:08	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/14/16 22:08	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/14/16 22:08	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/14/16 22:08	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/14/16 22:08	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/14/16 22:08	1
2-Hexanone	ND		5.0	1.2	ug/L			08/14/16 22:08	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/14/16 22:08	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/14/16 22:08	1
Acetone	ND		10	3.0	ug/L			08/14/16 22:08	1
Benzene	ND		1.0	0.41	ug/L			08/14/16 22:08	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/14/16 22:08	1
Bromoform	ND		1.0	0.26	ug/L			08/14/16 22:08	1
Bromomethane	ND		1.0	0.69	ug/L			08/14/16 22:08	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/14/16 22:08	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/14/16 22:08	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/14/16 22:08	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/14/16 22:08	1
Chloroethane	ND		1.0	0.32	ug/L			08/14/16 22:08	1
Chloroform	ND		1.0	0.34	ug/L			08/14/16 22:08	1
Chloromethane	ND		1.0	0.35	ug/L			08/14/16 22:08	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/14/16 22:08	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/14/16 22:08	1
Cyclohexane	ND		1.0	0.18	ug/L			08/14/16 22:08	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/14/16 22:08	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/14/16 22:08	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/14/16 22:08	1
Methyl acetate	ND		2.5	1.3	ug/L			08/14/16 22:08	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/14/16 22:08	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/14/16 22:08	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/14/16 22:08	1
Styrene	ND		1.0	0.73	ug/L			08/14/16 22:08	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/14/16 22:08	1
Toluene	ND		1.0	0.51	ug/L			08/14/16 22:08	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/14/16 22:08	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/14/16 22:08	1
Trichloroethene	ND		1.0	0.46	ug/L			08/14/16 22:08	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/14/16 22:08	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/14/16 22:08	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/14/16 22:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		77 - 120		08/14/16 22:08	1
Toluene-d8 (Surr)	95		80 - 120		08/14/16 22:08	1
4-Bromofluorobenzene (Surr)	110		73 - 120		08/14/16 22:08	1

Lab Sample ID: LCS 480-315912/5
Matrix: Water
Analysis Batch: 315912

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	25.0	29.6		ug/L		118	73 - 126
1,1,2,2-Tetrachloroethane	25.0	23.8		ug/L		95	76 - 120
1,1,2-Trichloroethane	25.0	28.0		ug/L		112	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	31.4		ug/L		126	61 - 148
1,1-Dichloroethane	25.0	28.7		ug/L		115	77 - 120
1,1-Dichloroethene	25.0	27.0		ug/L		108	66 - 127
1,2,4-Trichlorobenzene	25.0	26.8		ug/L		107	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	26.3		ug/L		105	56 - 134
1,2-Dibromoethane	25.0	25.8		ug/L		103	77 - 120
1,2-Dichlorobenzene	25.0	23.4		ug/L		93	80 - 124
1,2-Dichloroethane	25.0	27.9		ug/L		112	75 - 120
1,2-Dichloropropane	25.0	27.8		ug/L		111	76 - 120
1,3-Dichlorobenzene	25.0	24.2		ug/L		97	77 - 120
1,4-Dichlorobenzene	25.0	23.8		ug/L		95	80 - 120
2-Hexanone	125	126		ug/L		100	65 - 127
2-Butanone (MEK)	125	136		ug/L		109	57 - 140
4-Methyl-2-pentanone (MIBK)	125	128		ug/L		102	71 - 125
Acetone	125	141		ug/L		113	56 - 142
Benzene	25.0	25.5		ug/L		102	71 - 124
Bromodichloromethane	25.0	30.6	*	ug/L		123	80 - 122
Bromoform	25.0	34.5	*	ug/L		138	61 - 132
Bromomethane	25.0	25.3		ug/L		101	55 - 144
Carbon disulfide	25.0	28.6		ug/L		115	59 - 134
Carbon tetrachloride	25.0	32.3		ug/L		129	72 - 134
Chlorobenzene	25.0	27.6		ug/L		110	80 - 120
Dibromochloromethane	25.0	30.6		ug/L		122	75 - 125
Chloroethane	25.0	25.3		ug/L		101	69 - 136
Chloroform	25.0	27.9		ug/L		111	73 - 127
Chloromethane	25.0	25.3		ug/L		101	68 - 124
cis-1,2-Dichloroethene	25.0	27.1		ug/L		108	74 - 124
cis-1,3-Dichloropropene	25.0	28.4		ug/L		114	74 - 124
Cyclohexane	25.0	28.8		ug/L		115	59 - 135
Dichlorodifluoromethane	25.0	28.1		ug/L		112	59 - 135
Ethylbenzene	25.0	26.7		ug/L		107	77 - 123
Isopropylbenzene	25.0	23.2		ug/L		93	77 - 122
Methyl acetate	125	137		ug/L		109	74 - 133
Methyl tert-butyl ether	25.0	27.8		ug/L		111	77 - 120
Methylcyclohexane	25.0	27.8		ug/L		111	68 - 134
Methylene Chloride	25.0	26.6		ug/L		107	75 - 124
Styrene	25.0	27.0		ug/L		108	80 - 120
Tetrachloroethene	25.0	25.4		ug/L		102	74 - 122
Toluene	25.0	26.3		ug/L		105	80 - 122
trans-1,2-Dichloroethene	25.0	26.6		ug/L		106	73 - 127
trans-1,3-Dichloropropene	25.0	27.8		ug/L		111	80 - 120

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

Lab Sample ID: LCS 480-315912/5
Matrix: Water
Analysis Batch: 315912

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	25.0	30.3		ug/L		121	74 - 123
Trichlorofluoromethane	25.0	27.4		ug/L		109	62 - 150
Vinyl chloride	25.0	25.5		ug/L		102	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*77 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*112*		*73 - 120*

Lab Sample ID: MB 480-315946/6
Matrix: Water
Analysis Batch: 315946

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	ND		1.0	0.82	ug/L			08/15/16 11:12	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/15/16 11:12	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/15/16 11:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/15/16 11:12	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/15/16 11:12	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/15/16 11:12	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/15/16 11:12	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/15/16 11:12	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/15/16 11:12	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/15/16 11:12	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/15/16 11:12	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/15/16 11:12	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/15/16 11:12	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/15/16 11:12	1
2-Hexanone	ND		5.0	1.2	ug/L			08/15/16 11:12	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/15/16 11:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/15/16 11:12	1
Acetone	ND		10	3.0	ug/L			08/15/16 11:12	1
Benzene	ND		1.0	0.41	ug/L			08/15/16 11:12	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/15/16 11:12	1
Bromoform	ND		1.0	0.26	ug/L			08/15/16 11:12	1
Bromomethane	ND		1.0	0.69	ug/L			08/15/16 11:12	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/15/16 11:12	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/15/16 11:12	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/15/16 11:12	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/15/16 11:12	1
Chloroethane	ND		1.0	0.32	ug/L			08/15/16 11:12	1
Chloroform	ND		1.0	0.34	ug/L			08/15/16 11:12	1
Chloromethane	ND		1.0	0.35	ug/L			08/15/16 11:12	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/15/16 11:12	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/15/16 11:12	1
Cyclohexane	ND		1.0	0.18	ug/L			08/15/16 11:12	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/15/16 11:12	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/15/16 11:12	1

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

Lab Sample ID: MB 480-315946/6
Matrix: Water
Analysis Batch: 315946

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		1.0	0.79	ug/L			08/15/16 11:12	1
Methyl acetate	ND		2.5	1.3	ug/L			08/15/16 11:12	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/15/16 11:12	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/15/16 11:12	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/15/16 11:12	1
Styrene	ND		1.0	0.73	ug/L			08/15/16 11:12	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/15/16 11:12	1
Toluene	ND		1.0	0.51	ug/L			08/15/16 11:12	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/15/16 11:12	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/15/16 11:12	1
Trichloroethene	ND		1.0	0.46	ug/L			08/15/16 11:12	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/15/16 11:12	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/15/16 11:12	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/15/16 11:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*08/15/16 11:12*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*08/15/16 11:12*	*1*
4-Bromofluorobenzene (Surr)	*111*		*73 - 120*		*08/15/16 11:12*	*1*

Lab Sample ID: LCS 480-315946/4
Matrix: Water
Analysis Batch: 315946

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	25.0	25.4		ug/L		102	73 - 126
1,1,2,2-Tetrachloroethane	25.0	23.7		ug/L		95	76 - 120
1,1,2-Trichloroethane	25.0	26.6		ug/L		106	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	26.9		ug/L		107	61 - 148
1,1-Dichloroethane	25.0	24.8		ug/L		99	77 - 120
1,1-Dichloroethene	25.0	24.3		ug/L		97	66 - 127
1,2,4-Trichlorobenzene	25.0	26.8		ug/L		107	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	28.0		ug/L		112	56 - 134
1,2-Dibromoethane	25.0	25.2		ug/L		101	77 - 120
1,2-Dichlorobenzene	25.0	23.8		ug/L		95	80 - 124
1,2-Dichloroethane	25.0	25.1		ug/L		100	75 - 120
1,2-Dichloropropane	25.0	24.2		ug/L		97	76 - 120
1,3-Dichlorobenzene	25.0	24.3		ug/L		97	77 - 120
1,4-Dichlorobenzene	25.0	24.1		ug/L		96	80 - 120
2-Hexanone	125	122		ug/L		98	65 - 127
2-Butanone (MEK)	125	117		ug/L		94	57 - 140
4-Methyl-2-pentanone (MIBK)	125	123		ug/L		98	71 - 125
Acetone	125	125		ug/L		100	56 - 142
Benzene	25.0	22.7		ug/L		91	71 - 124
Bromodichloromethane	25.0	26.2		ug/L		105	80 - 122
Bromoform	25.0	31.7		ug/L		127	61 - 132
Bromomethane	25.0	21.9		ug/L		88	55 - 144

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

Lab Sample ID: LCS 480-315946/4
Matrix: Water
Analysis Batch: 315946

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbon disulfide	25.0	25.0		ug/L		100	59 - 134
Carbon tetrachloride	25.0	27.0		ug/L		108	72 - 134
Chlorobenzene	25.0	26.6		ug/L		106	80 - 120
Dibromochloromethane	25.0	27.6		ug/L		110	75 - 125
Chloroethane	25.0	21.7		ug/L		87	69 - 136
Chloroform	25.0	24.5		ug/L		98	73 - 127
Chloromethane	25.0	21.1		ug/L		84	68 - 124
cis-1,2-Dichloroethene	25.0	24.7		ug/L		99	74 - 124
cis-1,3-Dichloropropene	25.0	24.5		ug/L		98	74 - 124
Cyclohexane	25.0	24.2		ug/L		97	59 - 135
Dichlorodifluoromethane	25.0	23.7		ug/L		95	59 - 135
Ethylbenzene	25.0	26.1		ug/L		105	77 - 123
Isopropylbenzene	25.0	23.1		ug/L		93	77 - 122
Methyl acetate	125	120		ug/L		96	74 - 133
Methyl tert-butyl ether	25.0	24.4		ug/L		98	77 - 120
Methylcyclohexane	25.0	23.9		ug/L		96	68 - 134
Methylene Chloride	25.0	23.2		ug/L		93	75 - 124
Styrene	25.0	26.1		ug/L		104	80 - 120
Tetrachloroethene	25.0	24.4		ug/L		97	74 - 122
Toluene	25.0	25.6		ug/L		103	80 - 122
trans-1,2-Dichloroethene	25.0	22.5		ug/L		90	73 - 127
trans-1,3-Dichloropropene	25.0	26.9		ug/L		107	80 - 120
Trichloroethene	25.0	25.5		ug/L		102	74 - 123
Trichlorofluoromethane	25.0	23.4		ug/L		93	62 - 150
Vinyl chloride	25.0	22.1		ug/L		89	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*112*		*73 - 120*

Lab Sample ID: MB 480-316070/6
Matrix: Water
Analysis Batch: 316070

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	ND		1.0	0.82	ug/L			08/15/16 22:50	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/15/16 22:50	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/15/16 22:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/15/16 22:50	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/15/16 22:50	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/15/16 22:50	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/15/16 22:50	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/15/16 22:50	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/15/16 22:50	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/15/16 22:50	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/15/16 22:50	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/15/16 22:50	1

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

Lab Sample ID: MB 480-316070/6
Matrix: Water
Analysis Batch: 316070

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/15/16 22:50	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/15/16 22:50	1
2-Hexanone	ND		5.0	1.2	ug/L			08/15/16 22:50	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/15/16 22:50	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/15/16 22:50	1
Acetone	ND		10	3.0	ug/L			08/15/16 22:50	1
Benzene	ND		1.0	0.41	ug/L			08/15/16 22:50	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/15/16 22:50	1
Bromoform	ND		1.0	0.26	ug/L			08/15/16 22:50	1
Bromomethane	ND		1.0	0.69	ug/L			08/15/16 22:50	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/15/16 22:50	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/15/16 22:50	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/15/16 22:50	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/15/16 22:50	1
Chloroethane	ND		1.0	0.32	ug/L			08/15/16 22:50	1
Chloroform	ND		1.0	0.34	ug/L			08/15/16 22:50	1
Chloromethane	ND		1.0	0.35	ug/L			08/15/16 22:50	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/15/16 22:50	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/15/16 22:50	1
Cyclohexane	ND		1.0	0.18	ug/L			08/15/16 22:50	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/15/16 22:50	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/15/16 22:50	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/15/16 22:50	1
Methyl acetate	ND		2.5	1.3	ug/L			08/15/16 22:50	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/15/16 22:50	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/15/16 22:50	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/15/16 22:50	1
Styrene	ND		1.0	0.73	ug/L			08/15/16 22:50	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/15/16 22:50	1
Toluene	ND		1.0	0.51	ug/L			08/15/16 22:50	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/15/16 22:50	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/15/16 22:50	1
Trichloroethene	ND		1.0	0.46	ug/L			08/15/16 22:50	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/15/16 22:50	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/15/16 22:50	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/15/16 22:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*77 - 120*		*08/15/16 22:50*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*08/15/16 22:50*	*1*
4-Bromofluorobenzene (Surr)	*109*		*73 - 120*		*08/15/16 22:50*	*1*

Lab Sample ID: LCS 480-316070/4
Matrix: Water
Analysis Batch: 316070

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			25.0	26.6		ug/L		107	73 - 126		

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

Lab Sample ID: LCS 480-316070/4
Matrix: Water
Analysis Batch: 316070

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	25.0	23.0		ug/L		92	76 - 120
1,1,2-Trichloroethane	25.0	25.1		ug/L		100	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	28.9		ug/L		115	61 - 148
1,1-Dichloroethane	25.0	25.4		ug/L		101	77 - 120
1,1-Dichloroethene	25.0	25.7		ug/L		103	66 - 127
1,2,4-Trichlorobenzene	25.0	25.4		ug/L		102	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	26.7		ug/L		107	56 - 134
1,2-Dibromoethane	25.0	24.5		ug/L		98	77 - 120
1,2-Dichlorobenzene	25.0	22.6		ug/L		90	80 - 124
1,2-Dichloroethane	25.0	24.5		ug/L		98	75 - 120
1,2-Dichloropropane	25.0	25.1		ug/L		100	76 - 120
1,3-Dichlorobenzene	25.0	23.5		ug/L		94	77 - 120
1,4-Dichlorobenzene	25.0	22.9		ug/L		92	80 - 120
2-Hexanone	125	120		ug/L		96	65 - 127
2-Butanone (MEK)	125	122		ug/L		98	57 - 140
4-Methyl-2-pentanone (MIBK)	125	123		ug/L		98	71 - 125
Acetone	125	128		ug/L		103	56 - 142
Benzene	25.0	22.8		ug/L		91	71 - 124
Bromodichloromethane	25.0	26.6		ug/L		106	80 - 122
Bromoform	25.0	31.7		ug/L		127	61 - 132
Bromomethane	25.0	23.2		ug/L		93	55 - 144
Carbon disulfide	25.0	25.4		ug/L		102	59 - 134
Carbon tetrachloride	25.0	28.6		ug/L		114	72 - 134
Chlorobenzene	25.0	26.1		ug/L		104	80 - 120
Dibromochloromethane	25.0	27.8		ug/L		111	75 - 125
Chloroethane	25.0	21.9		ug/L		87	69 - 136
Chloroform	25.0	24.6		ug/L		98	73 - 127
Chloromethane	25.0	21.6		ug/L		86	68 - 124
cis-1,2-Dichloroethene	25.0	24.0		ug/L		96	74 - 124
cis-1,3-Dichloropropene	25.0	25.1		ug/L		101	74 - 124
Cyclohexane	25.0	26.3		ug/L		105	59 - 135
Dichlorodifluoromethane	25.0	25.5		ug/L		102	59 - 135
Ethylbenzene	25.0	26.0		ug/L		104	77 - 123
Isopropylbenzene	25.0	22.3		ug/L		89	77 - 122
Methyl acetate	125	118		ug/L		94	74 - 133
Methyl tert-butyl ether	25.0	24.1		ug/L		96	77 - 120
Methylcyclohexane	25.0	26.5		ug/L		106	68 - 134
Methylene Chloride	25.0	24.5		ug/L		98	75 - 124
Styrene	25.0	25.5		ug/L		102	80 - 120
Tetrachloroethene	25.0	23.8		ug/L		95	74 - 122
Toluene	25.0	25.3		ug/L		101	80 - 122
trans-1,2-Dichloroethene	25.0	24.1		ug/L		96	73 - 127
trans-1,3-Dichloropropene	25.0	26.3		ug/L		105	80 - 120
Trichloroethene	25.0	26.5		ug/L		106	74 - 123
Trichlorofluoromethane	25.0	25.0		ug/L		100	62 - 150
Vinyl chloride	25.0	23.7		ug/L		95	65 - 133

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

Lab Sample ID: LCS 480-316070/4
Matrix: Water
Analysis Batch: 316070

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*103*		*77 - 120*
Toluene-d8 (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*112*		*73 - 120*

Lab Sample ID: MB 480-316261/7
Matrix: Water
Analysis Batch: 316261

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	ND		1.0	0.82	ug/L			08/16/16 21:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/16/16 21:23	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/16/16 21:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/16/16 21:23	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/16/16 21:23	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/16/16 21:23	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/16/16 21:23	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/16/16 21:23	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/16/16 21:23	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/16/16 21:23	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/16/16 21:23	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/16/16 21:23	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/16/16 21:23	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/16/16 21:23	1
2-Hexanone	ND		5.0	1.2	ug/L			08/16/16 21:23	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/16/16 21:23	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/16/16 21:23	1
Acetone	ND		10	3.0	ug/L			08/16/16 21:23	1
Benzene	ND		1.0	0.41	ug/L			08/16/16 21:23	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/16/16 21:23	1
Bromoform	ND		1.0	0.26	ug/L			08/16/16 21:23	1
Bromomethane	ND		1.0	0.69	ug/L			08/16/16 21:23	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/16/16 21:23	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/16/16 21:23	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/16/16 21:23	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/16/16 21:23	1
Chloroethane	ND		1.0	0.32	ug/L			08/16/16 21:23	1
Chloroform	ND		1.0	0.34	ug/L			08/16/16 21:23	1
Chloromethane	ND		1.0	0.35	ug/L			08/16/16 21:23	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/16/16 21:23	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/16/16 21:23	1
Cyclohexane	ND		1.0	0.18	ug/L			08/16/16 21:23	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/16/16 21:23	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/16/16 21:23	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/16/16 21:23	1
Methyl acetate	ND		2.5	1.3	ug/L			08/16/16 21:23	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/16/16 21:23	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/16/16 21:23	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/16/16 21:23	1

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

Lab Sample ID: MB 480-316261/7
Matrix: Water
Analysis Batch: 316261

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0	0.73	ug/L			08/16/16 21:23	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/16/16 21:23	1
Toluene	ND		1.0	0.51	ug/L			08/16/16 21:23	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/16/16 21:23	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/16/16 21:23	1
Trichloroethene	ND		1.0	0.46	ug/L			08/16/16 21:23	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/16/16 21:23	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/16/16 21:23	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/16/16 21:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*77 - 120*		*08/16/16 21:23*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/16 21:23*	*1*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*08/16/16 21:23*	*1*

Lab Sample ID: LCS 480-316261/5
Matrix: Water
Analysis Batch: 316261

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	25.0	23.9		ug/L		96	73 - 126
1,1,2,2-Tetrachloroethane	25.0	23.3		ug/L		93	76 - 120
1,1,2-Trichloroethane	25.0	23.5		ug/L		94	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.3		ug/L		89	61 - 148
1,1-Dichloroethane	25.0	23.5		ug/L		94	77 - 120
1,1-Dichloroethene	25.0	22.8		ug/L		91	66 - 127
1,2,4-Trichlorobenzene	25.0	24.2		ug/L		97	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	22.4		ug/L		90	56 - 134
1,2-Dibromoethane	25.0	23.3		ug/L		93	77 - 120
1,2-Dichlorobenzene	25.0	23.0		ug/L		92	80 - 124
1,2-Dichloroethane	25.0	23.4		ug/L		94	75 - 120
1,2-Dichloropropane	25.0	23.5		ug/L		94	76 - 120
1,3-Dichlorobenzene	25.0	23.5		ug/L		94	77 - 120
1,4-Dichlorobenzene	25.0	22.7		ug/L		91	80 - 120
2-Hexanone	125	120		ug/L		96	65 - 127
2-Butanone (MEK)	125	120		ug/L		96	57 - 140
4-Methyl-2-pentanone (MIBK)	125	116		ug/L		93	71 - 125
Acetone	125	121		ug/L		96	56 - 142
Benzene	25.0	23.3		ug/L		93	71 - 124
Bromodichloromethane	25.0	23.8		ug/L		95	80 - 122
Bromoform	25.0	23.8		ug/L		95	61 - 132
Bromomethane	25.0	22.6		ug/L		90	55 - 144
Carbon disulfide	25.0	21.2		ug/L		85	59 - 134
Carbon tetrachloride	25.0	24.5		ug/L		98	72 - 134
Chlorobenzene	25.0	23.1		ug/L		92	80 - 120
Dibromochloromethane	25.0	23.6		ug/L		94	75 - 125
Chloroethane	25.0	22.3		ug/L		89	69 - 136

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

Lab Sample ID: LCS 480-316261/5
Matrix: Water
Analysis Batch: 316261

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	25.0	22.9		ug/L		92	73 - 127
Chloromethane	25.0	20.5		ug/L		82	68 - 124
cis-1,2-Dichloroethene	25.0	22.8		ug/L		91	74 - 124
cis-1,3-Dichloropropene	25.0	24.6		ug/L		98	74 - 124
Cyclohexane	25.0	25.5		ug/L		102	59 - 135
Dichlorodifluoromethane	25.0	19.2		ug/L		77	59 - 135
Ethylbenzene	25.0	22.8		ug/L		91	77 - 123
Isopropylbenzene	25.0	23.7		ug/L		95	77 - 122
Methyl acetate	125	117		ug/L		94	74 - 133
Methyl tert-butyl ether	25.0	24.2		ug/L		97	77 - 120
Methylcyclohexane	25.0	25.3		ug/L		101	68 - 134
Methylene Chloride	25.0	23.5		ug/L		94	75 - 124
Styrene	25.0	23.4		ug/L		94	80 - 120
Tetrachloroethene	25.0	23.0		ug/L		92	74 - 122
Toluene	25.0	23.0		ug/L		92	80 - 122
trans-1,2-Dichloroethene	25.0	23.1		ug/L		92	73 - 127
trans-1,3-Dichloropropene	25.0	24.1		ug/L		97	80 - 120
Trichloroethene	25.0	23.8		ug/L		95	74 - 123
Trichlorofluoromethane	25.0	23.5		ug/L		94	62 - 150
Vinyl chloride	25.0	22.3		ug/L		89	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*

GC/MS VOA

Analysis Batch: 315912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-104343-1	MW 119	Total/NA	Water	8260C	
MB 480-315912/7	Method Blank	Total/NA	Water	8260C	
LCS 480-315912/5	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 315946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-104343-8	TRIP BLANK	Total/NA	Water	8260C	
MB 480-315946/6	Method Blank	Total/NA	Water	8260C	
LCS 480-315946/4	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 316070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-104343-5	MW 118	Total/NA	Water	8260C	
480-104343-7	EQUIPMENT BLANK	Total/NA	Water	8260C	
MB 480-316070/6	Method Blank	Total/NA	Water	8260C	
LCS 480-316070/4	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 316261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-104343-2	MW 117	Total/NA	Water	8260C	
480-104343-3	MW 115 D	Total/NA	Water	8260C	
480-104343-4	MW 124 D	Total/NA	Water	8260C	
480-104343-6	DUPLICATE	Total/NA	Water	8260C	
MB 480-316261/7	Method Blank	Total/NA	Water	8260C	
LCS 480-316261/5	Lab Control Sample	Total/NA	Water	8260C	

Lab Chronicle

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Client Sample ID: MW 119
Date Collected: 08/08/16 19:20
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	315912	08/15/16 00:18	GTG	TAL BUF

Client Sample ID: MW 117
Date Collected: 08/09/16 14:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	316261	08/16/16 22:40	GTG	TAL BUF

Client Sample ID: MW 115 D
Date Collected: 08/09/16 16:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	316261	08/16/16 23:05	GTG	TAL BUF

Client Sample ID: MW 124 D
Date Collected: 08/09/16 19:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		5	316261	08/16/16 23:30	GTG	TAL BUF

Client Sample ID: MW 118
Date Collected: 08/09/16 20:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	316070	08/16/16 03:02	GTG	TAL BUF

Client Sample ID: DUPLICATE
Date Collected: 08/09/16 00:00
Date Received: 08/10/16 12:10

Lab Sample ID: 480-104343-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	316261	08/16/16 23:55	GTG	TAL BUF

Lab Chronicle

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-104343-7

Date Collected: 08/09/16 19:45

Matrix: Water

Date Received: 08/10/16 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	316070	08/16/16 03:26	GTG	TAL BUF

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-104343-8

Date Collected: 08/09/16 00:00

Matrix: Water

Date Received: 08/10/16 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	315946	08/15/16 18:19	RRS	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Laboratory: TestAmerica Buffalo

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-17

Method Summary

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

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

Protocol References:

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

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Pinnacle Engineering, Inc
Project/Site: HB Fuller

TestAmerica Job ID: 480-104343-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-104343-1	MW 119	Water	08/08/16 19:20	08/10/16 12:10
480-104343-2	MW 117	Water	08/09/16 14:00	08/10/16 12:10
480-104343-3	MW 115 D	Water	08/09/16 16:00	08/10/16 12:10
480-104343-4	MW 124 D	Water	08/09/16 19:00	08/10/16 12:10
480-104343-5	MW 118	Water	08/09/16 20:00	08/10/16 12:10
480-104343-6	DUPLICATE	Water	08/09/16 00:00	08/10/16 12:10
480-104343-7	EQUIPMENT BLANK	Water	08/09/16 19:45	08/10/16 12:10
480-104343-8	TRIP BLANK	Water	08/09/16 00:00	08/10/16 12:10

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
PINNACLE ENGR	KEITH RAPP	8/10/16	295264
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
	763·277·8422		
City MAPLE GROVE	**State** MN	**Zip Code**	**Site Contact**	**Lab Contact**
Project Name and Location (State) HB FULLER GENEVA, NY	**Carrier/Waybill Number**	
Contract/Purchase Order/Quote No.		

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 8260B	Special Instructions/ Conditions of Receipt
MW 119	8/8/16	19:20		✓						3			✓	SEDIMENT — BUBBLE IN ONE VIAL
MW 117	8/9/16	14:00		✓						3			✓	SEDIMENT
MW 115D	8/9/16	16:00		✓						3			✓	
MW 124D	8/9/16	19:00		✓						3			✓	
MW 118	8/9/16	20:00		✓						3			✓	SEDIMENT
DUPLICATE	8/9/16	00:00		✓						3			✓	
EQUIPMENT BLANK	8/9/16	19:45		✓						3			✓	
TRIP BLANK	8/9/16	00:00		✓						2			✓	

480-104343 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: R.A. Wyatt	8/10/16	12:10	1. Received By:	8-10-16	1210
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

#1 3.8°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Page 33 of 34

8/18/2016

Login Sample Receipt Checklist

Client: Pinnacle Engineering, Inc

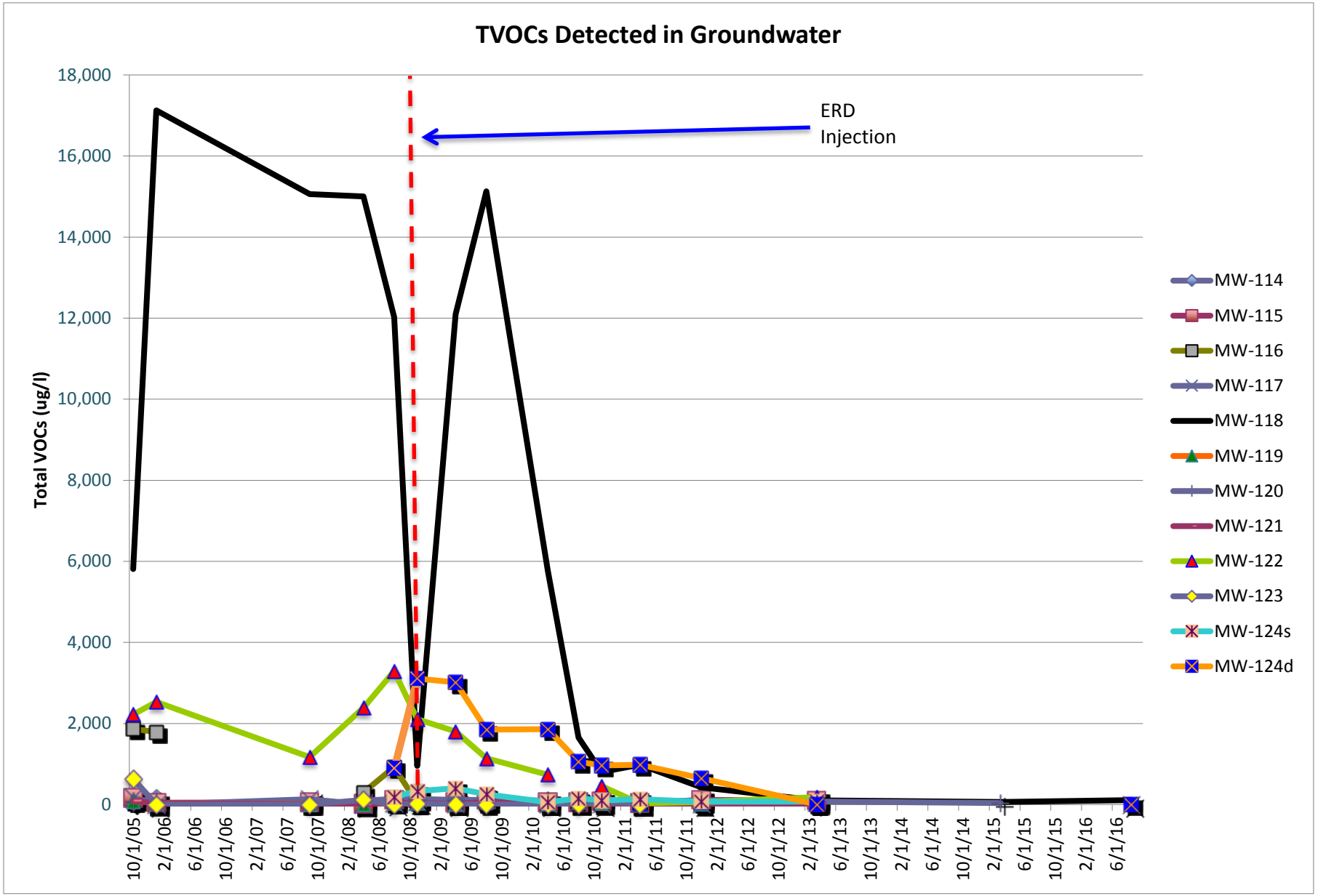
Job Number: 480-104343-1

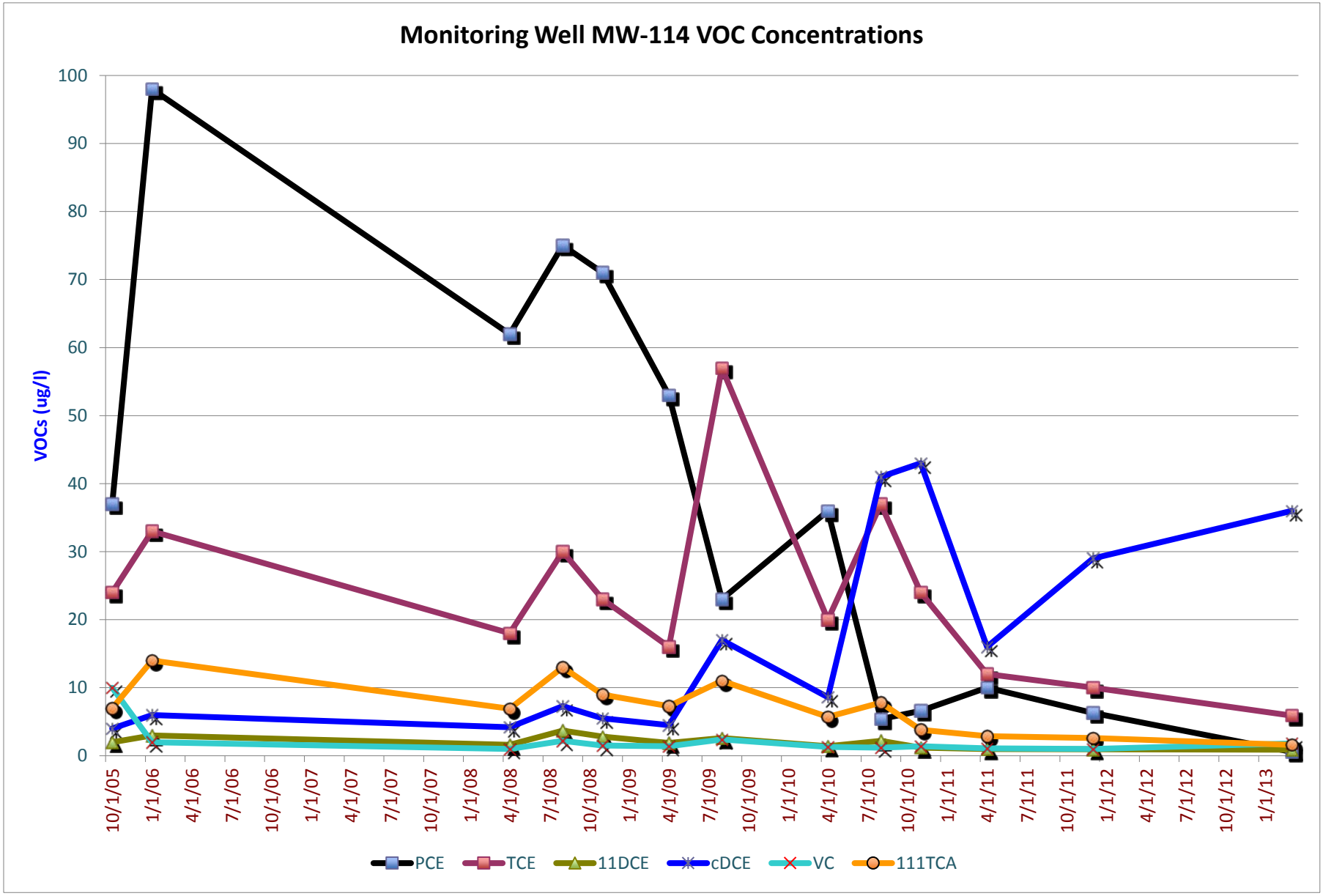
Login Number: 104343
List Number: 1
Creator: Hulbert, Michael J

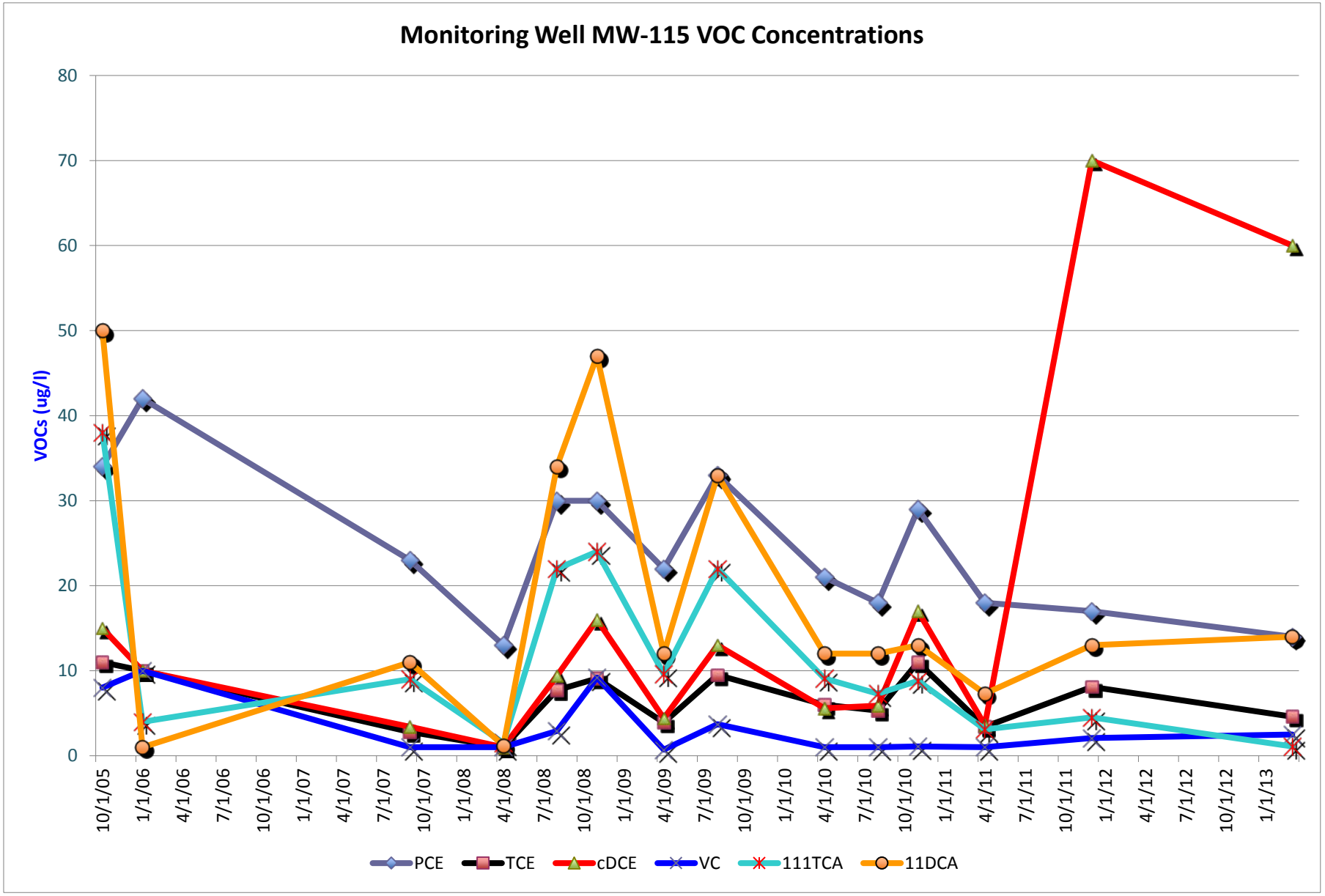
List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
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	
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	PINNACLE ENGR.
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Attachment 5
Well Isoconcentration Graphs (Linear)


TVOCs Detected in Groundwater
Total VOCs (ug/l)
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
ERD
Injection
10/1/05
2/1/06
6/1/06
10/1/06
2/1/07
6/1/07
10/1/07
2/1/08
6/1/08
10/1/08
2/1/09
6/1/09
10/1/09
2/1/10
6/1/10
10/1/10
2/1/11
6/1/11
10/1/11
2/1/12
6/1/12
10/1/12
2/1/13
6/1/13
10/1/13
2/1/14
6/1/14
10/1/14
2/1/15
6/1/15
10/1/15
2/1/16
6/1/16
MW-114
MW-115
MW-116
MW-117
MW-118
MW-119
MW-120
MW-121
MW-122
MW-123
MW-124s
MW-124d


Monitoring Well MW-114 VOC Concentrations
VOCs (ug/l)
100
90
80
70
60
50
40
30
20
10
0
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
PCE
TCE
11DCE
cDCE
VC
111TCA


Monitoring Well MW-115 VOC Concentrations
VOCs (ug/l)
80
70
60
50
40
30
20
10
0
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
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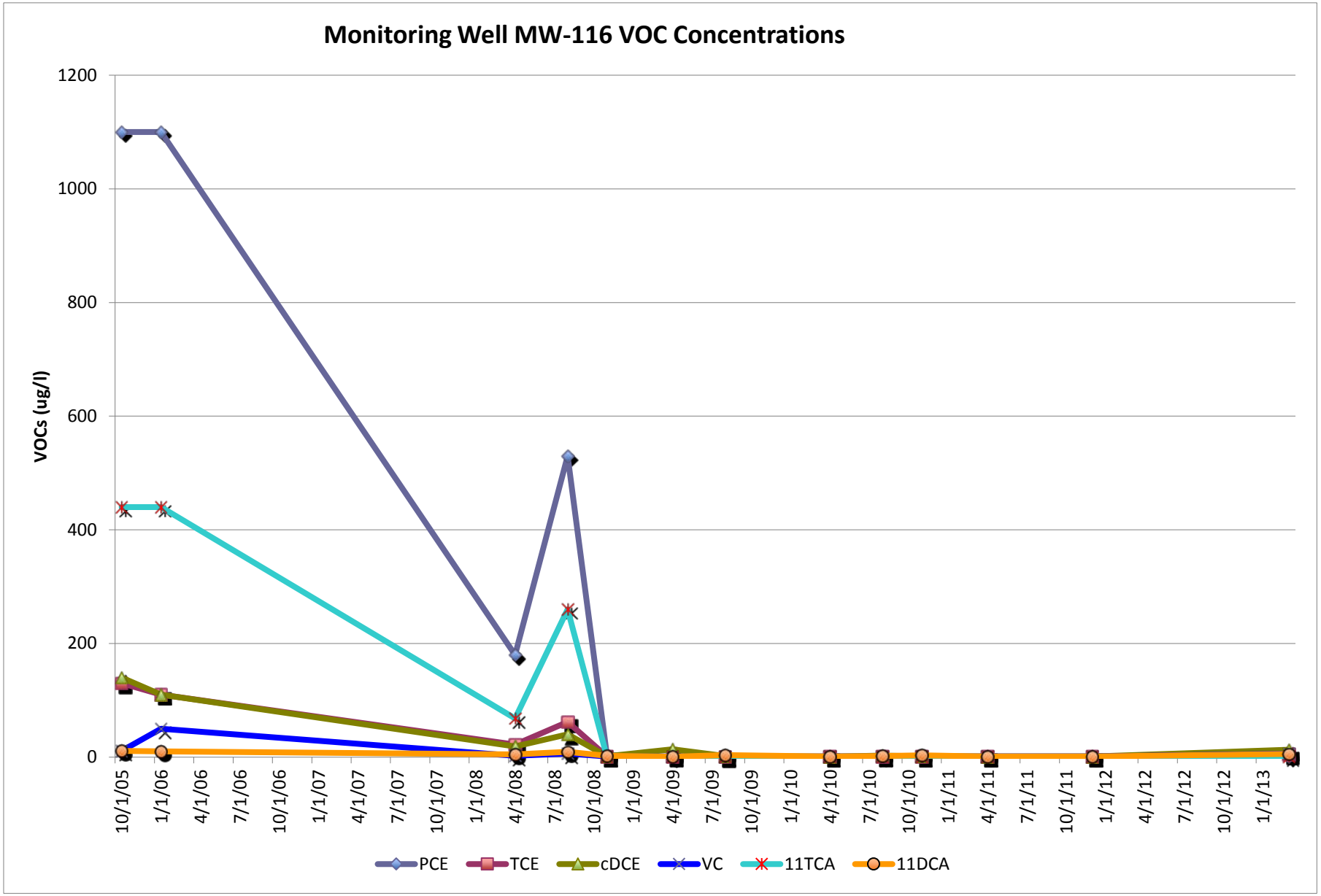
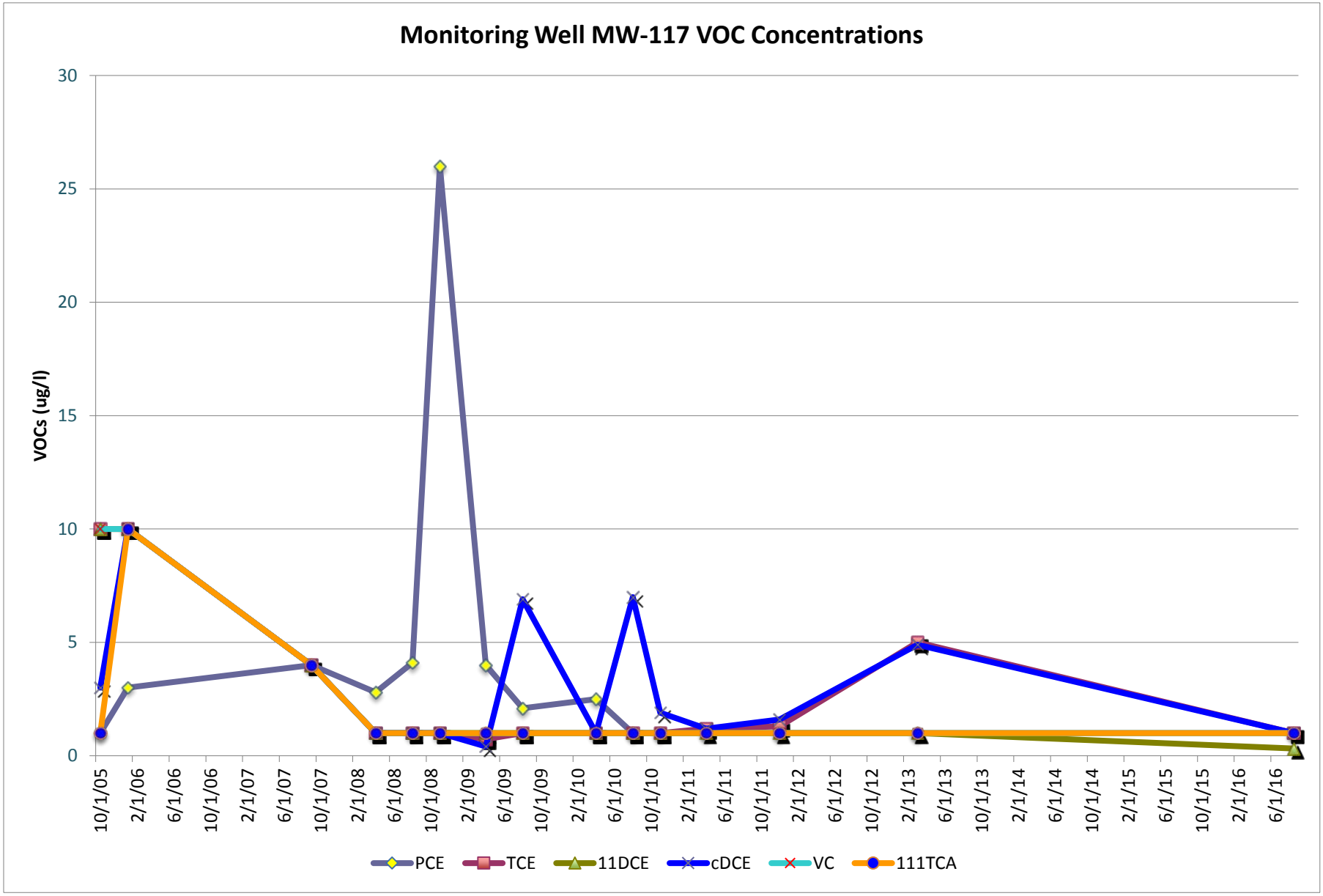
7/1/12
10/1/12
1/1/13
PCE
TCE
cDCE
VC
111TCA
11DCA


Monitoring Well MW-116 VOC Concentrations
VOCs (ug/l)
1200
1000
800
600
400
200
0
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
PCE
TCE
cDCE
VC
11TCA
11DCA


Monitoring Well MW-117 VOC Concentrations
VOCs (ug/l)
30
25
20
15
10
5
0
10/1/05
2/1/06
6/1/06
10/1/06
2/1/07
6/1/07
10/1/07
2/1/08
6/1/08
10/1/08
2/1/09
6/1/09
10/1/09
2/1/10
6/1/10
10/1/10
2/1/11
6/1/11
10/1/11
2/1/12
6/1/12
10/1/12
2/1/13
6/1/13
10/1/13
2/1/14
6/1/14
10/1/14
2/1/15
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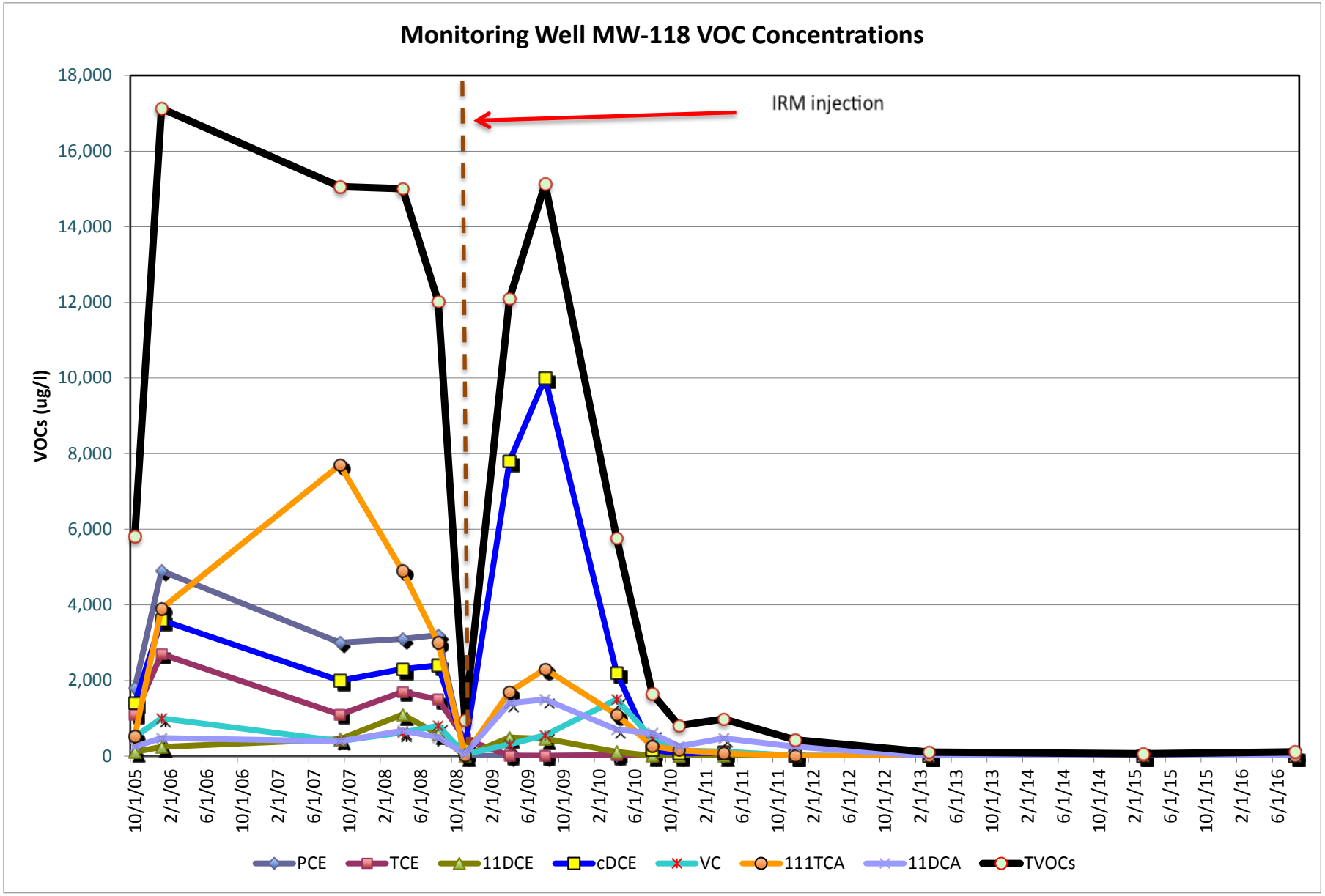
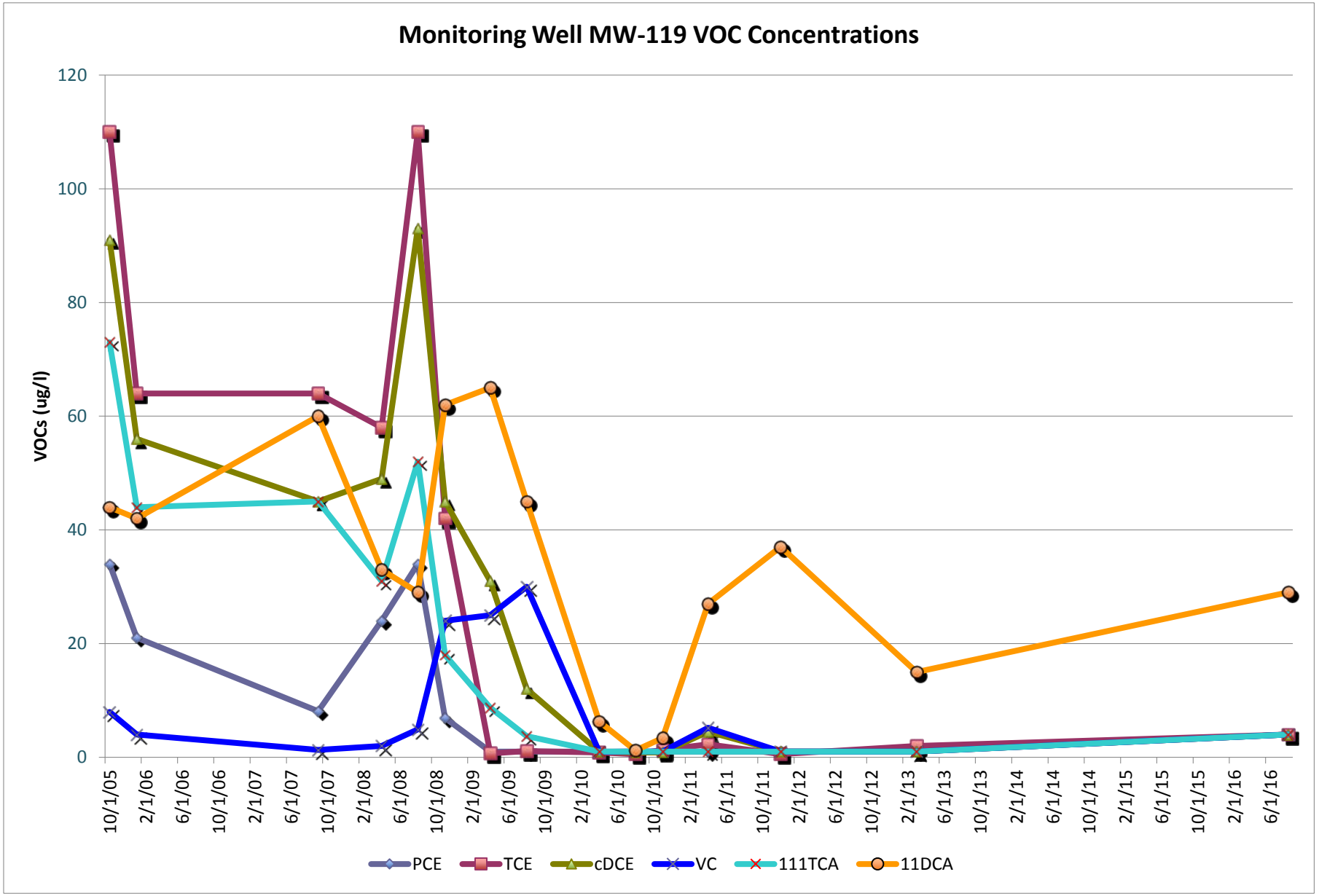
10/1/15
2/1/16
6/1/16
PCE
TCE
11DCE
cDCE
VC
111TCA


Monitoring Well MW-118 VOC Concentrations
IRM injection
VOCs (ug/l)
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
10/1/05
2/1/06
6/1/06
10/1/06
2/1/07
6/1/07
10/1/07
2/1/08
6/1/08
10/1/08
2/1/09
6/1/09
10/1/09
2/1/10
6/1/10
10/1/10
2/1/11
6/1/11
10/1/11
2/1/12
6/1/12
10/1/12
2/1/13
6/1/13
10/1/13
2/1/14
6/1/14
10/1/14
2/1/15
6/1/15
10/1/15
2/1/16
6/1/16
PCE
TCE
11DCE
cDCE
VC
111TCA
11DCA
TVOCs


Monitoring Well MW-119 VOC Concentrations
VOCs (ug/l)
120
100
80
60
40
20
0
10/1/05
2/1/06
6/1/06
10/1/06
2/1/07
6/1/07
10/1/07
2/1/08
6/1/08
10/1/08
2/1/09
6/1/09
10/1/09
2/1/10
6/1/10
10/1/10
2/1/11
6/1/11
10/1/11
2/1/12
6/1/12
10/1/12
2/1/13
6/1/13
10/1/13
2/1/14
6/1/14
10/1/14
2/1/15
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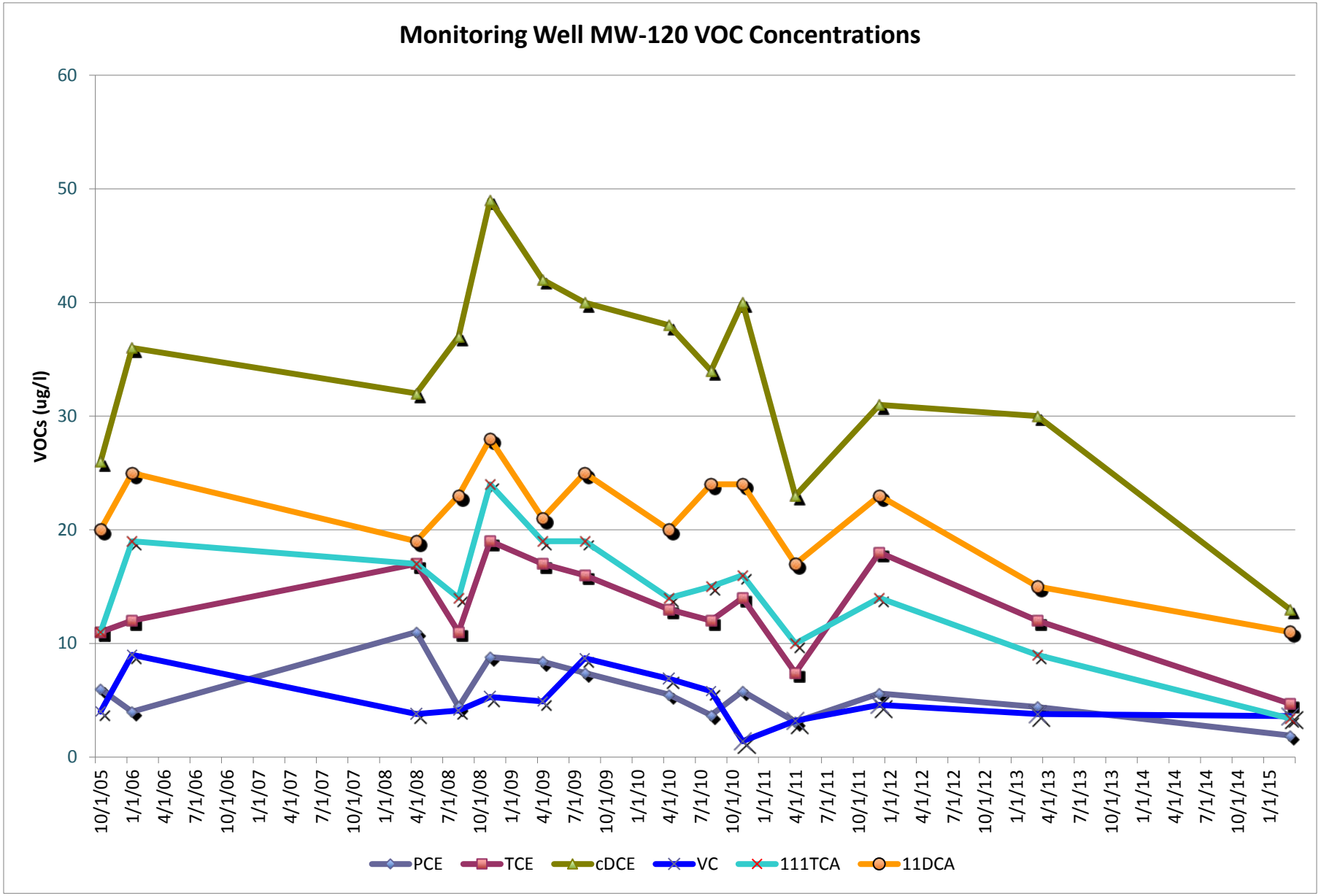
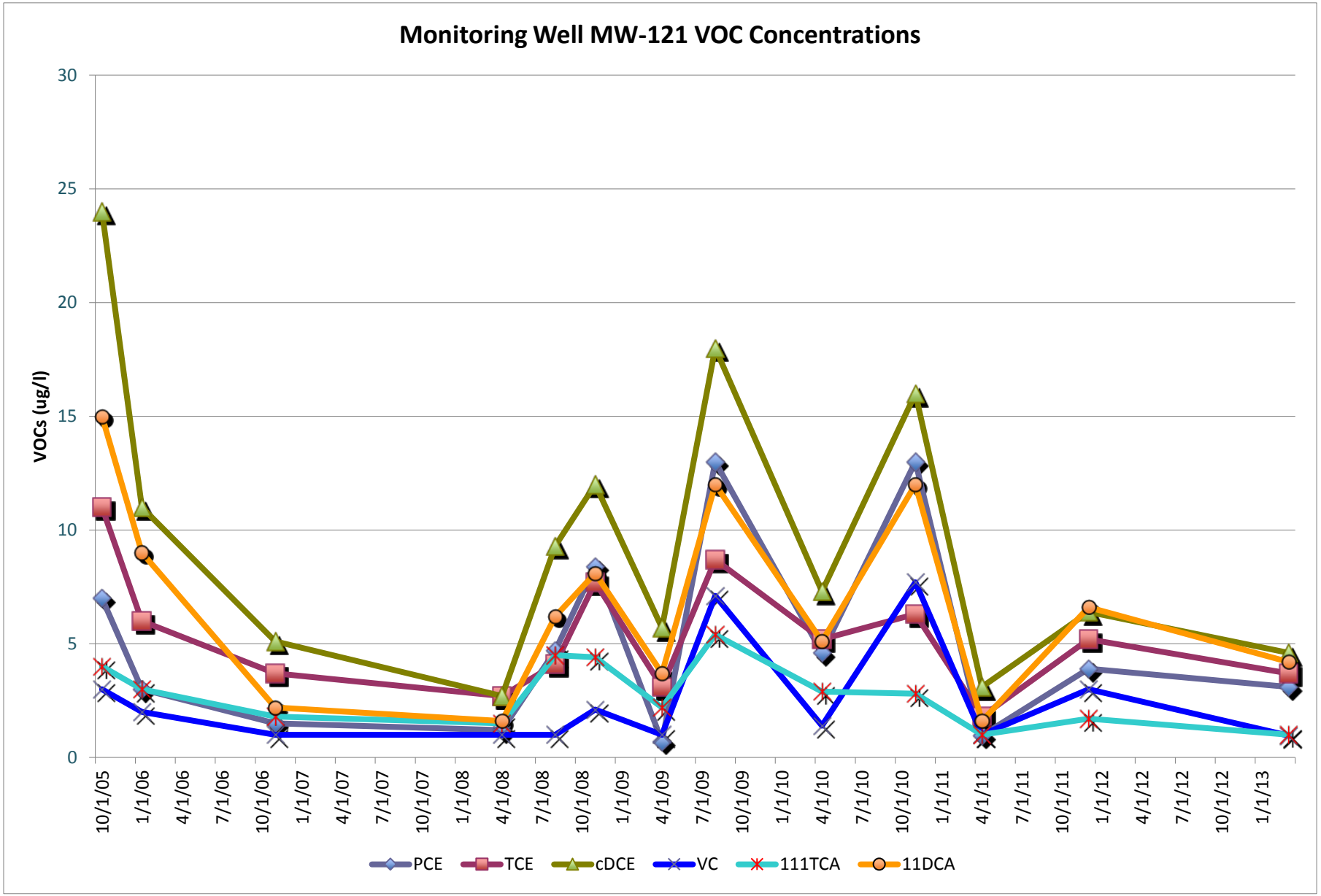
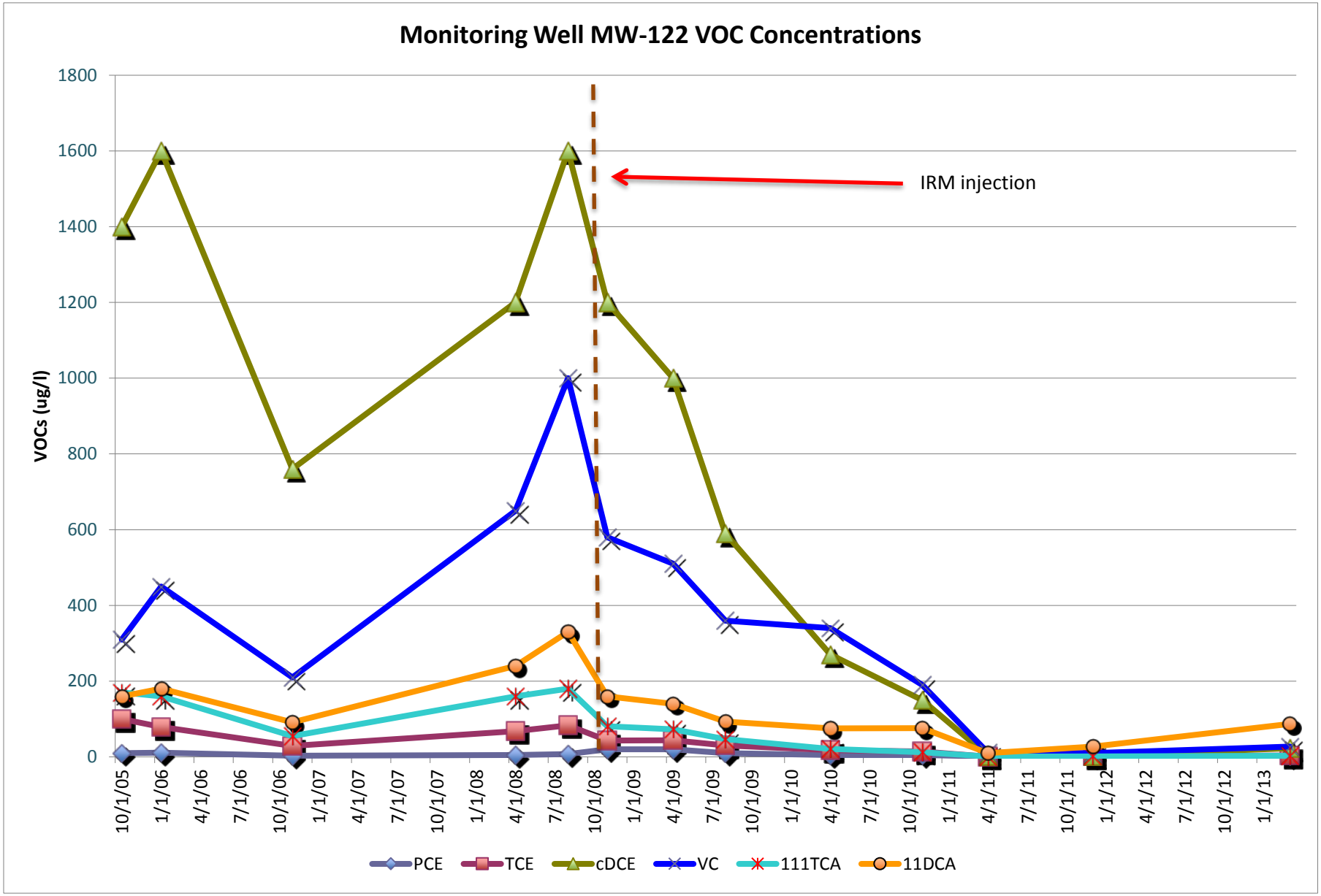
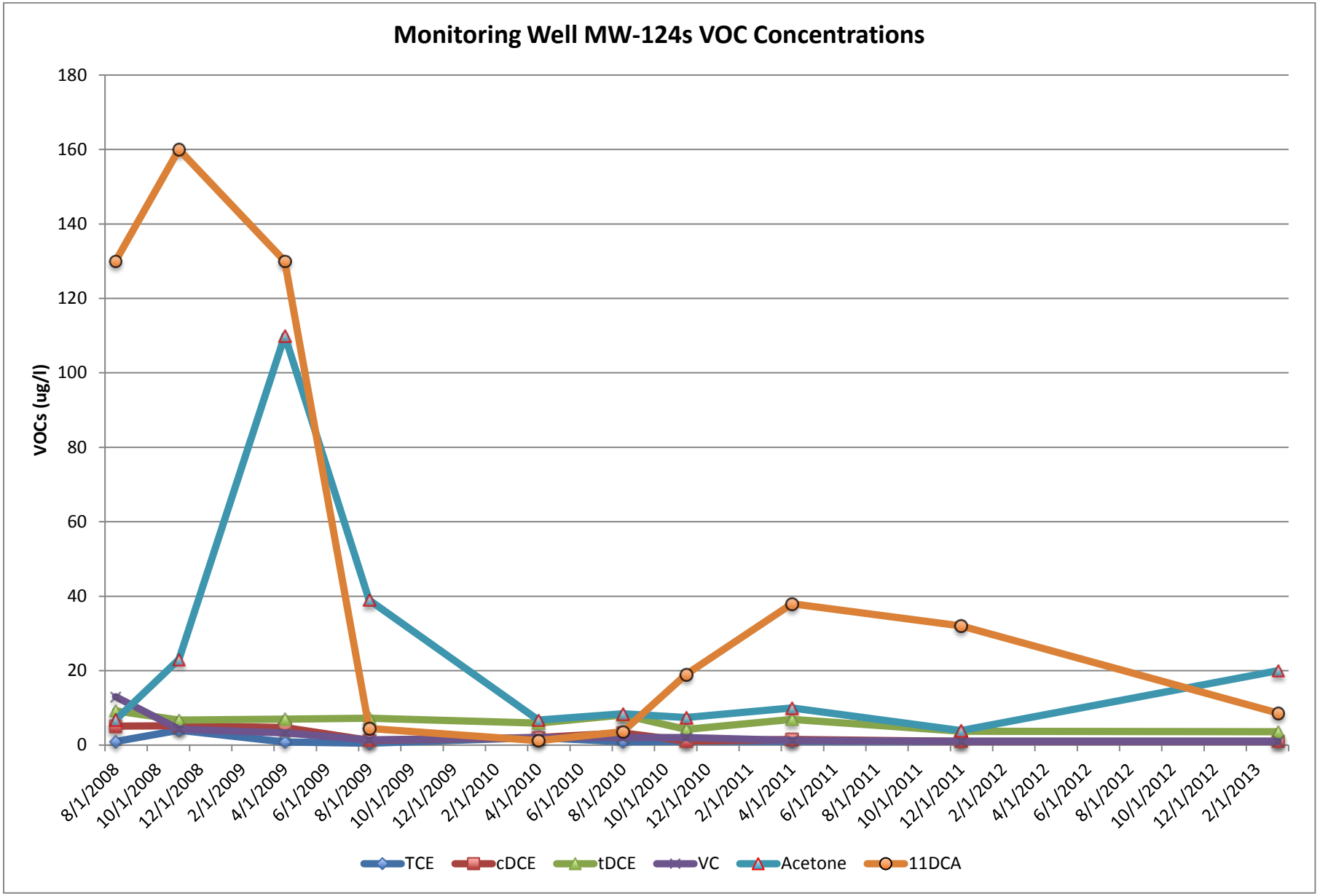
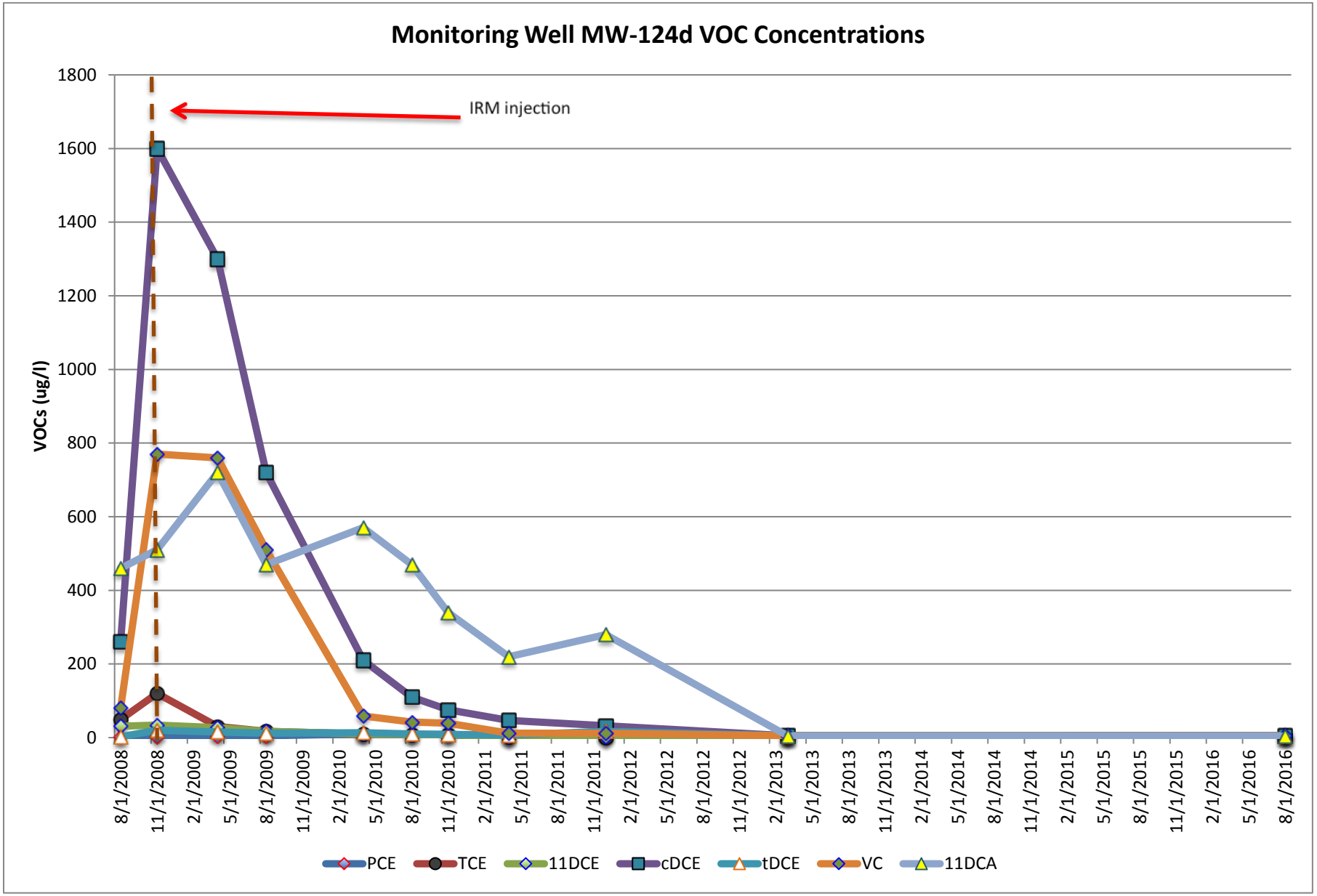
6/1/16
PCE
TCE
cDCE
VC
111TCA
11DCA

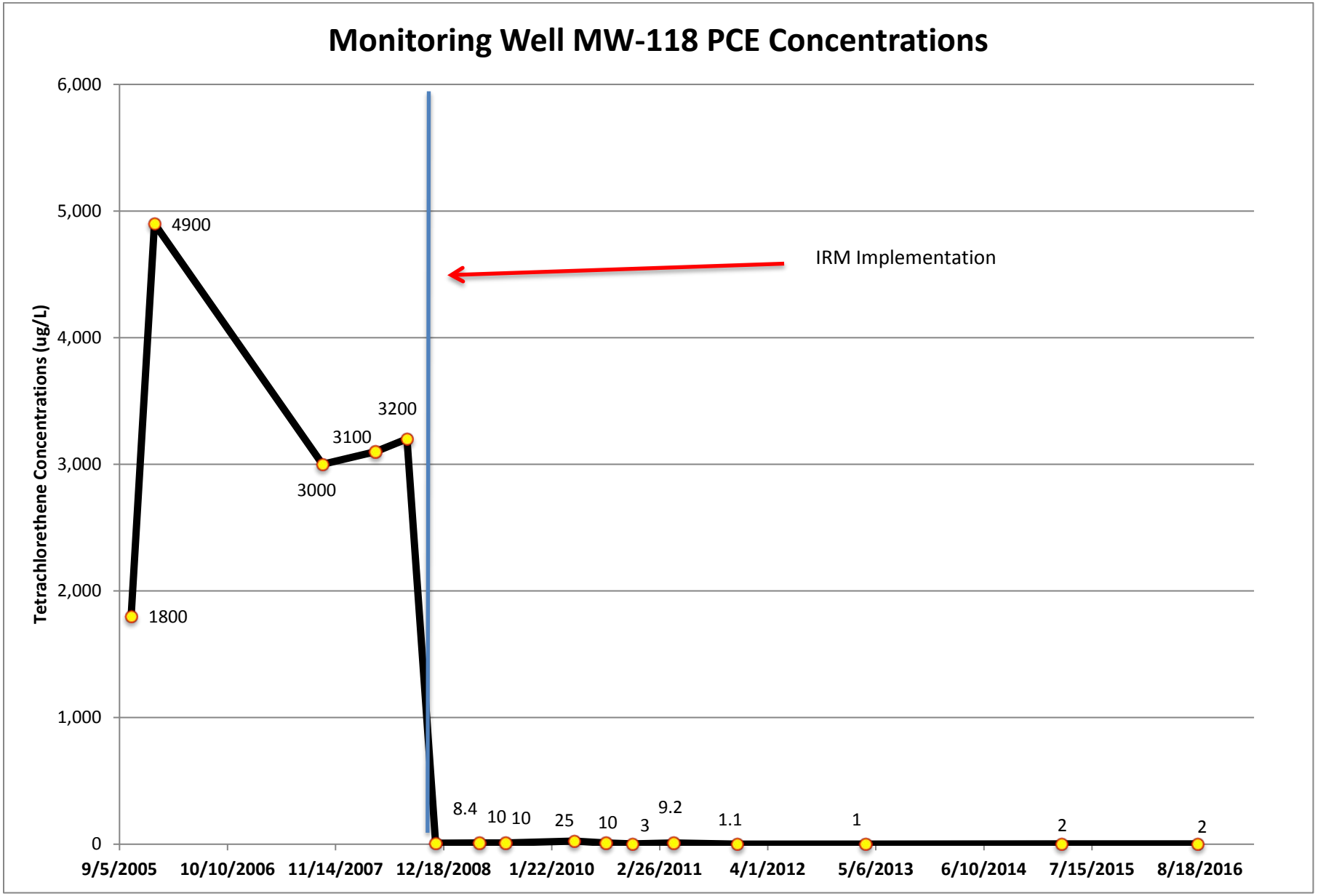

Monitoring Well MW-120 VOC Concentrations
VOCs (ug/l)
60
50
40
30
20
10
0
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
4/1/13
7/1/13
10/1/13
1/1/14
4/1/14
7/1/14
10/1/14
1/1/15
PCE
TCE
cDCE
VC
111TCA
11DCA

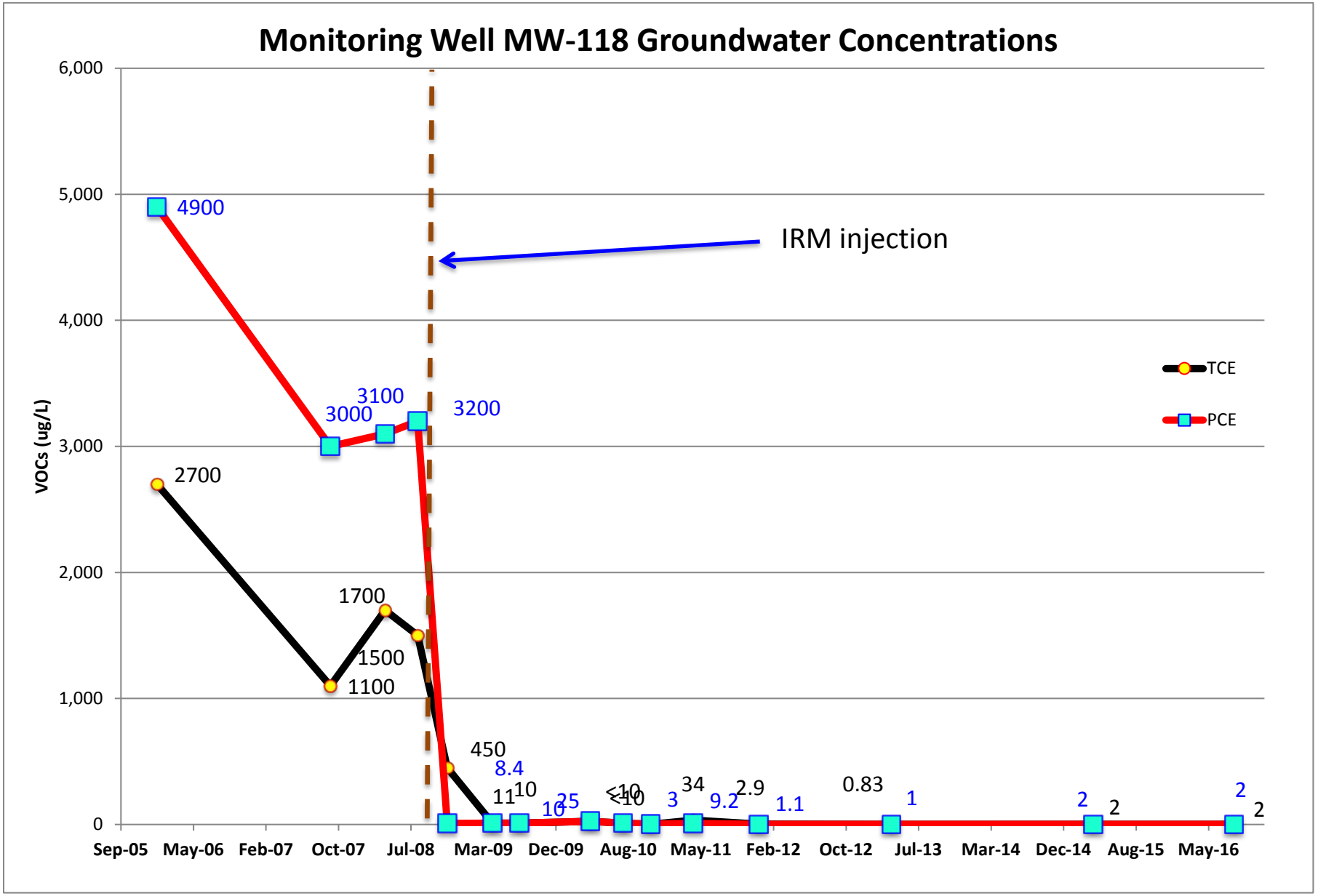

Monitoring Well MW-121 VOC Concentrations
VOCs (ug/l)
30
25
20
15
10
5
0
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
PCE
TCE
cDCE
VC
111TCA
11DCA


Monitoring Well MW-122 VOC Concentrations
VOCs (ug/l)
1800
1600
1400
1200
1000
800
600
400
200
0
IRM injection
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
PCE
TCE
cDCE
VC
111TCA
11DCA

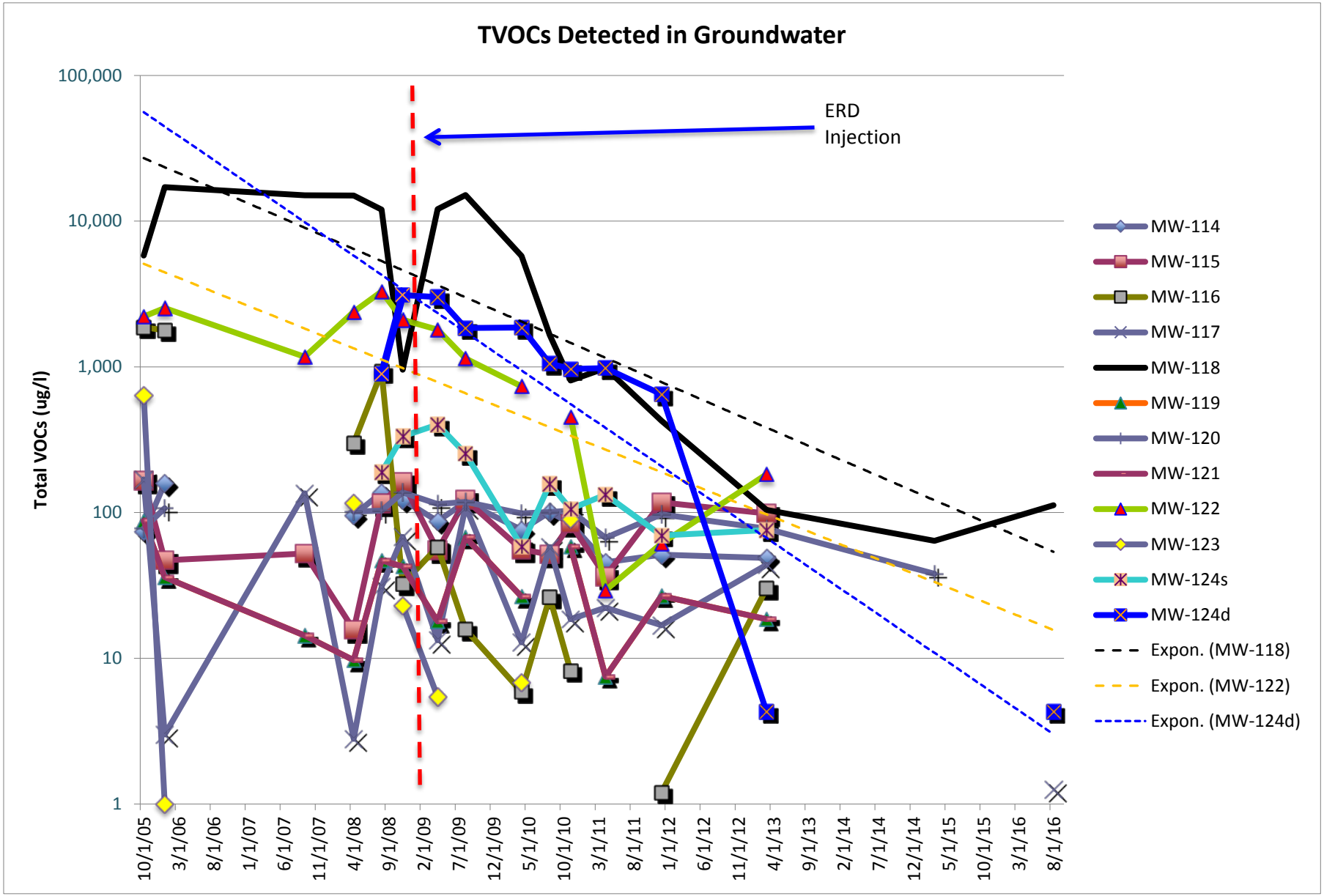

Monitoring Well MW-124s VOC Concentrations
VOCs (ug/l)
180
160
140
120
100
80
60
40
20
0
8/1/2008
10/1/2008
12/1/2008
2/1/2009
4/1/2009
6/1/2009
8/1/2009
10/1/2009
12/1/2009
2/1/2010
4/1/2010
6/1/2010
8/1/2010
10/1/2010
12/1/2010
2/1/2011
4/1/2011
6/1/2011
8/1/2011
10/1/2011
12/1/2011
2/1/2012
4/1/2012
6/1/2012
8/1/2012
10/1/2012
12/1/2012
2/1/2013
TCE
cDCE
tDCE
VC
Acetone
11DCA

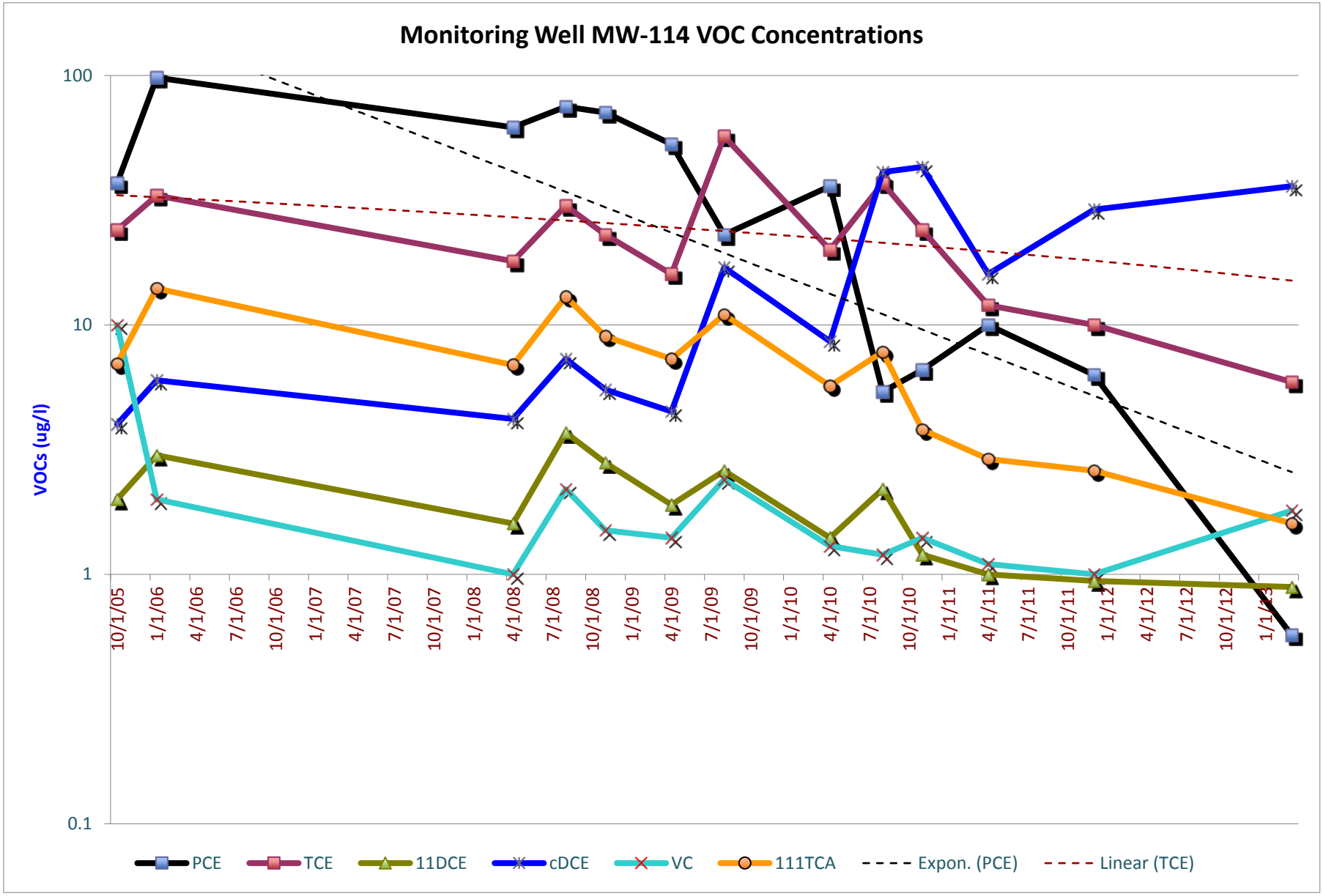

Monitoring Well MW-124d VOC Concentrations
VOCs (ug/l)
1800
1600
1400
1200
1000
800
600
400
200
0
IRM injection
8/1/2008
11/1/2008
2/1/2009
5/1/2009
8/1/2009
11/1/2009
2/1/2010
5/1/2010
8/1/2010
11/1/2010
2/1/2011
5/1/2011
8/1/2011
11/1/2011
2/1/2012
5/1/2012
8/1/2012
11/1/2012
2/1/2013
5/1/2013
8/1/2013
11/1/2013
2/1/2014
5/1/2014
8/1/2014
11/1/2014
2/1/2015
5/1/2015
8/1/2015
11/1/2015
2/1/2016
5/1/2016
8/1/2016
PCE
TCE
11DCE
cDCE
tDCE
VC
11DCA

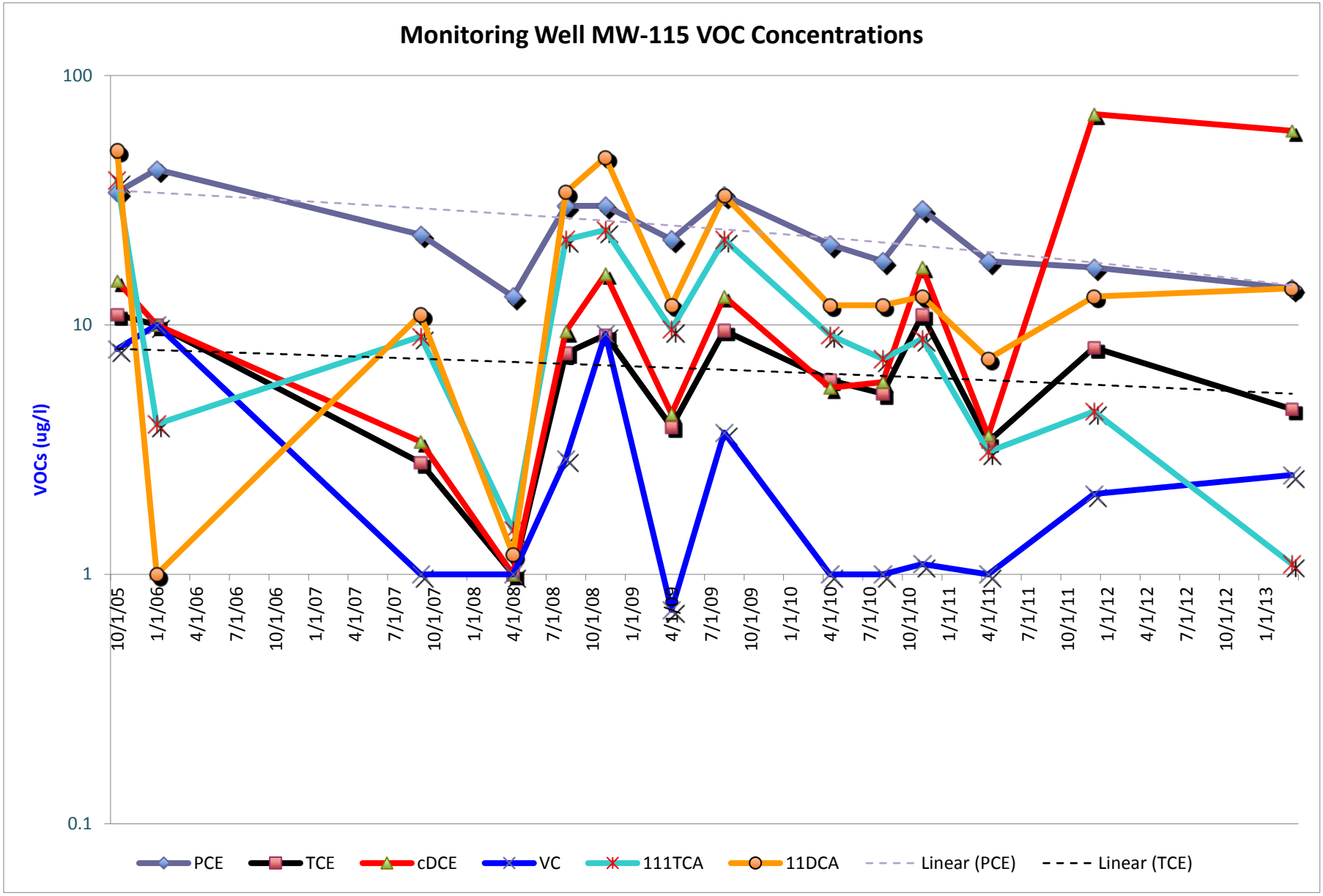

Monitoring Well MW-118 PCE Concentrations
Tetrachlorethene Concentrations (ug/L)
6,000
5,000
4,000
3,000
2,000
1,000
0
4900
1800
3000
3100
3200
8.4
10
10
25
10
3
9.2
1.1
1
2
2
IRM Implementation
9/5/2005
10/10/2006
11/14/2007
12/18/2008
1/22/2010
2/26/2011
4/1/2012
5/6/2013
6/10/2014
7/15/2015
8/18/2016

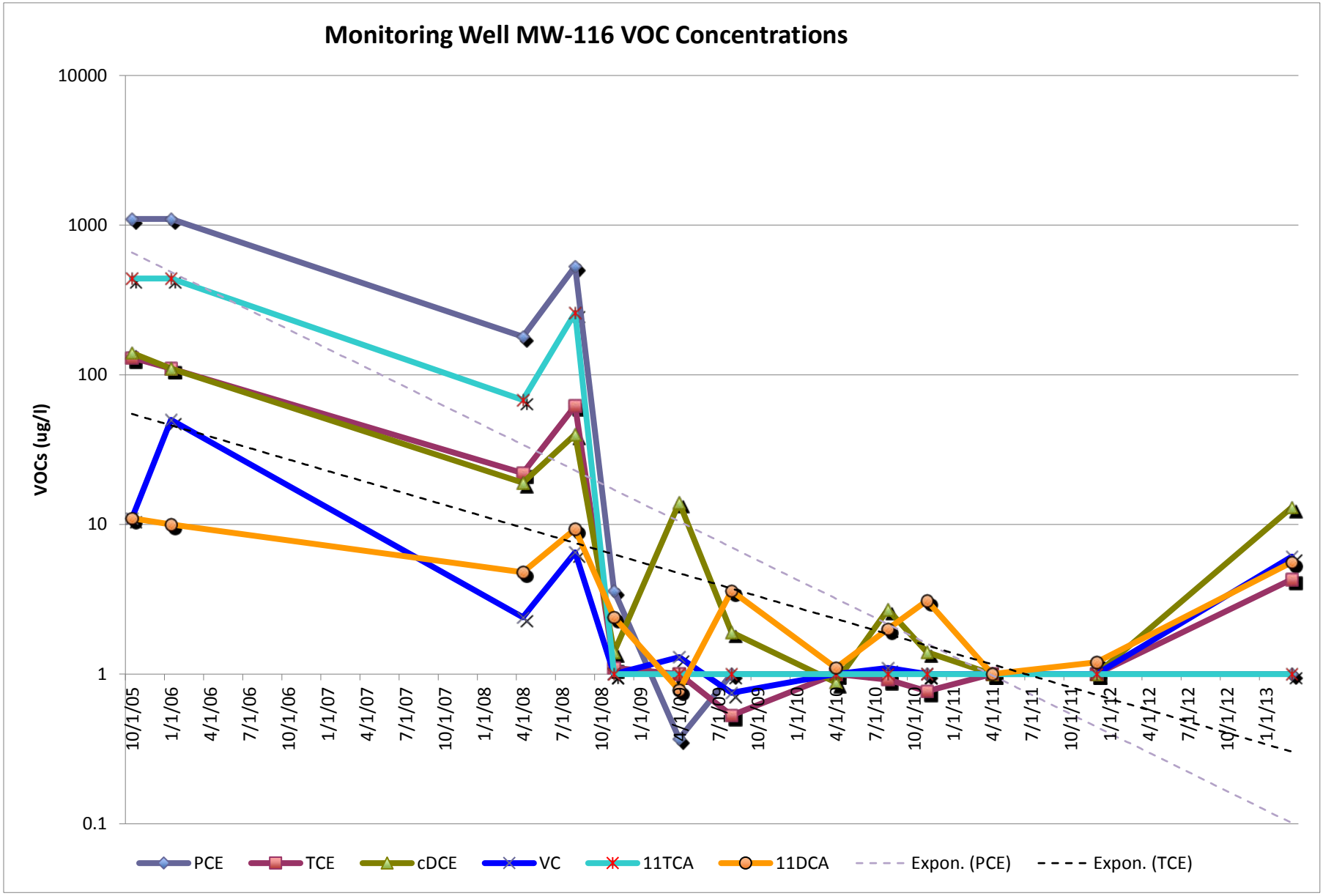

Monitoring Well MW-118 Groundwater Concentrations
VOCs (ug/L)
6,000
5,000
4,000
3,000
2,000
1,000
0
IRM injection
TCE
PCE
4900
3000
3100
3200
2700
1700
1500
1100
450
8.4
11
10
10
25
<10
<10
3
34
9.2
2.9
1.1
0.83
1
2
2
2
2
Sep-05
May-06
Feb-07
Oct-07
Jul-08
Mar-09
Dec-09
Aug-10
May-11
Feb-12
Oct-12
Jul-13
Mar-14
Dec-14
Aug-15
May-16

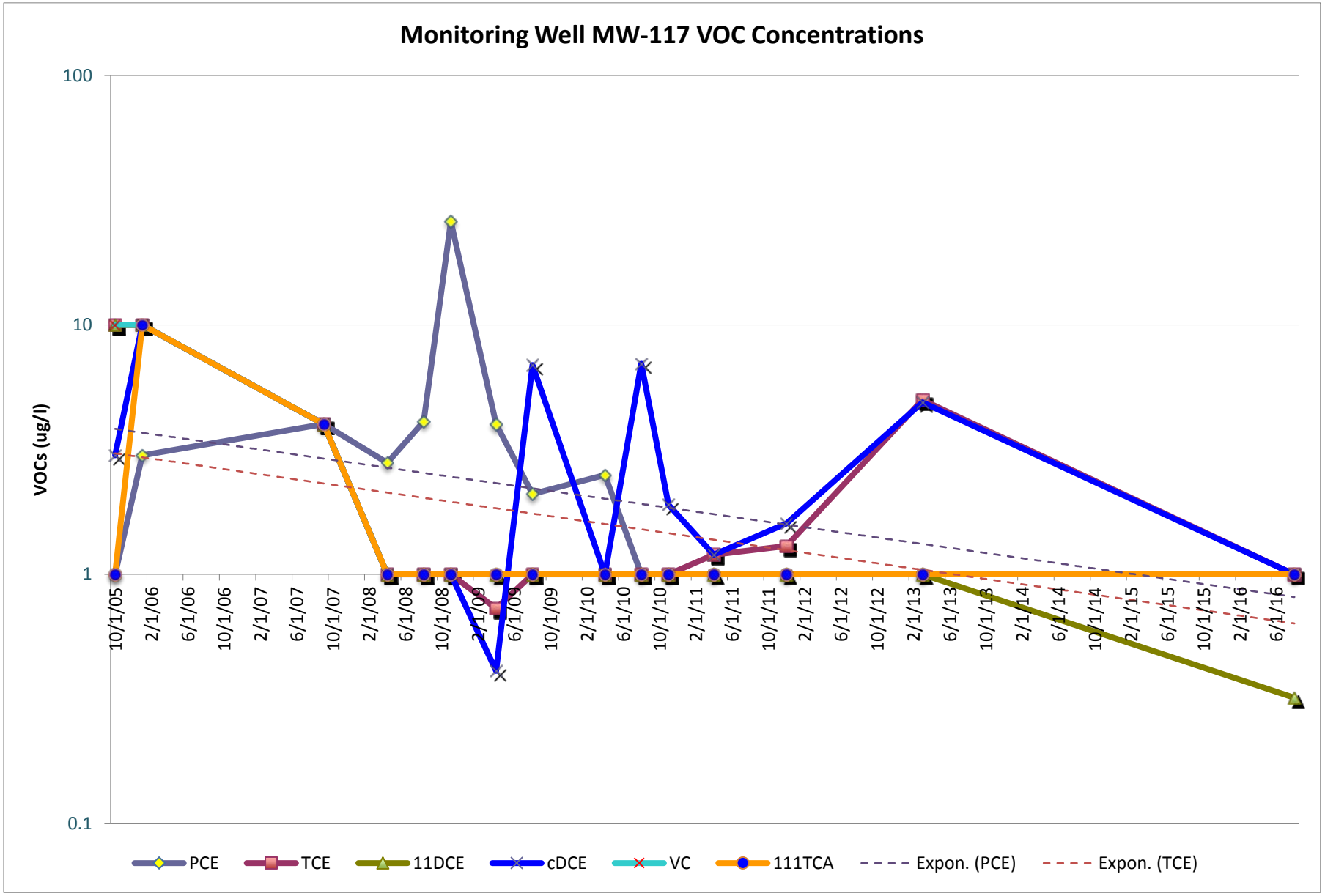
Attachment 6
Well Isoconcentration Graphs (Logarithmic)

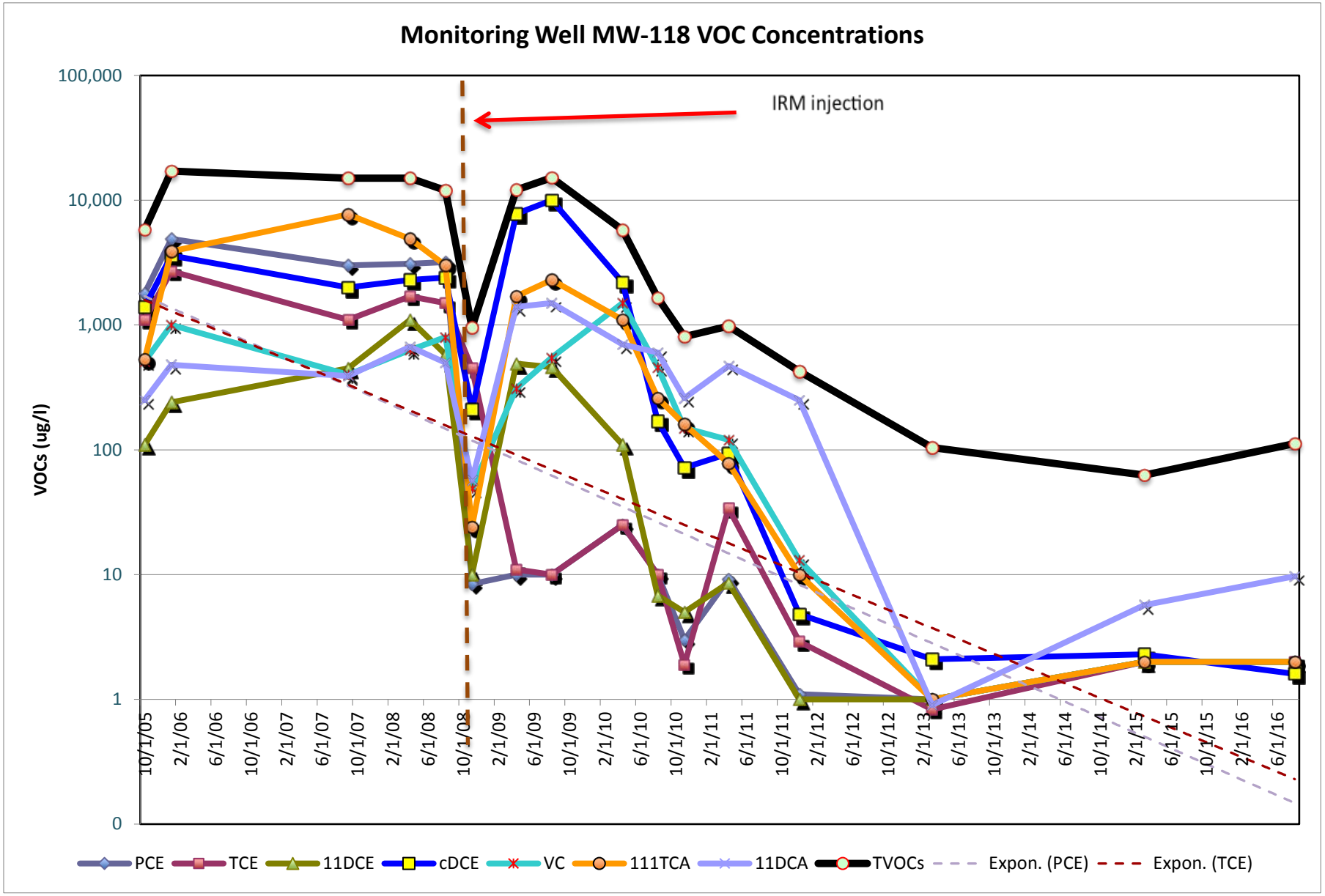

TVOCs Detected in Groundwater
Total VOCs (ug/l)
100,000
10,000
1,000
100
10
1
ERD
Injection
10/1/05
3/1/06
8/1/06
1/1/07
6/1/07
11/1/07
4/1/08
9/1/08
2/1/09
7/1/09
12/1/09
5/1/10
10/1/10
3/1/11
8/1/11
1/1/12
6/1/12
11/1/12
4/1/13
9/1/13
2/1/14
7/1/14
12/1/14
5/1/15
10/1/15
3/1/16
8/1/16
MW-114
MW-115
MW-116
MW-117
MW-118
MW-119
MW-120
MW-121
MW-122
MW-123
MW-124s
MW-124d
Expon. (MW-118)
Expon. (MW-122)
Expon. (MW-124d)

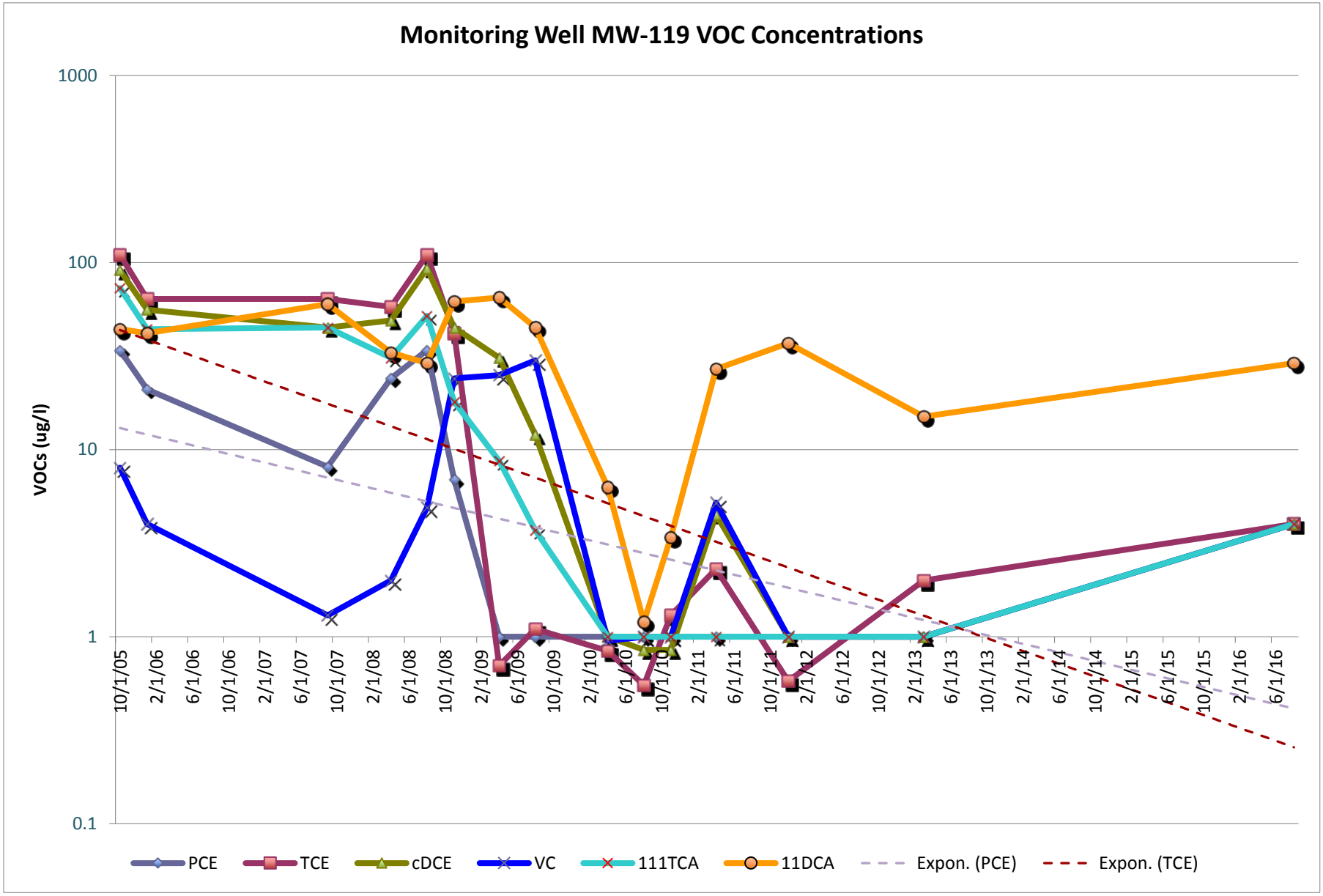

Monitoring Well MW-114 VOC Concentrations
VOCs (ug/l)
100
10
1
0.1
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
PCE
TCE
11DCE
cDCE
VC
111TCA
Expon. (PCE)
Linear (TCE)

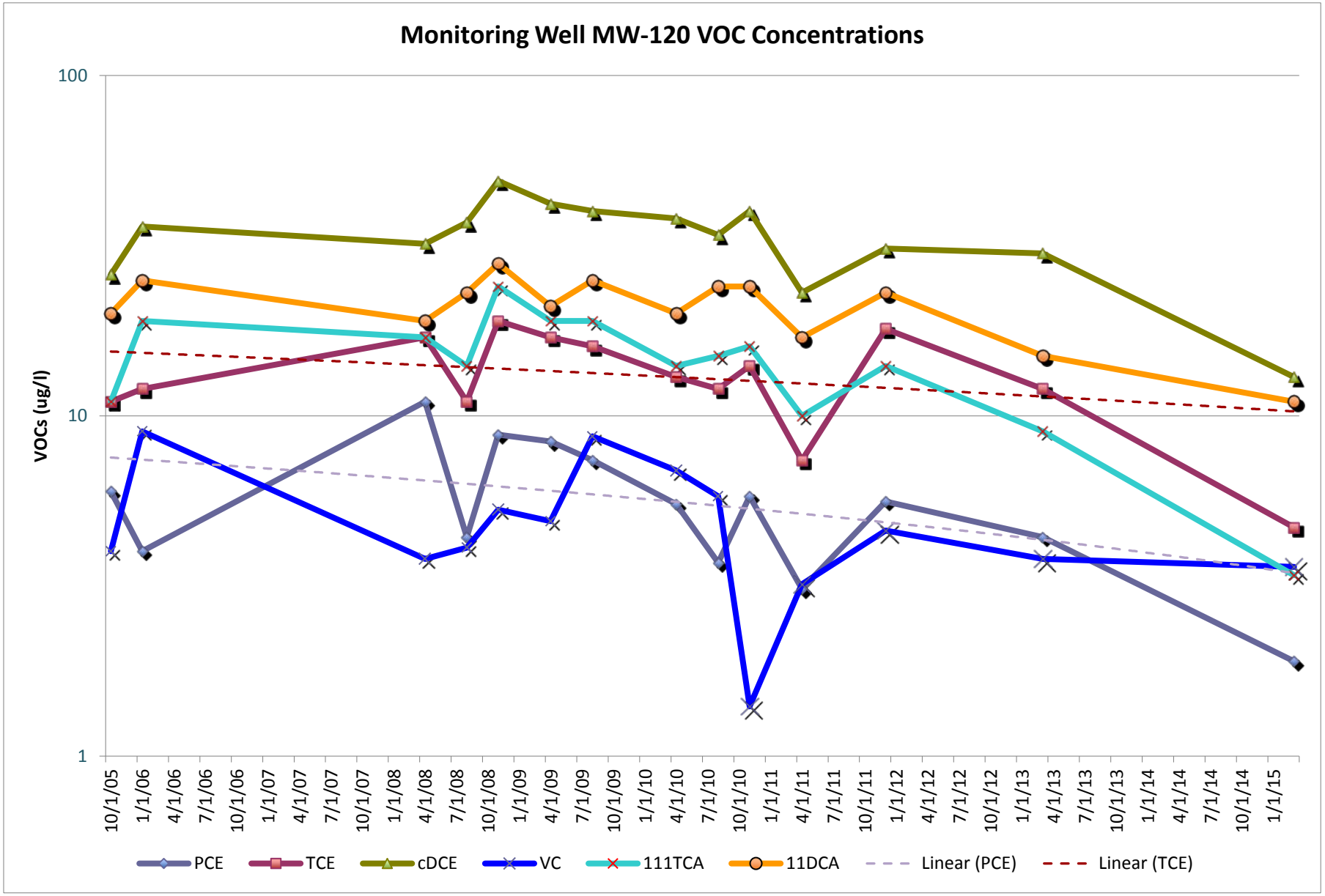

Monitoring Well MW-115 VOC Concentrations
VOCs (ug/l)
100
10
1
0.1
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
PCE
TCE
cDCE
VC
111TCA
11DCA
Linear (PCE)
Linear (TCE)

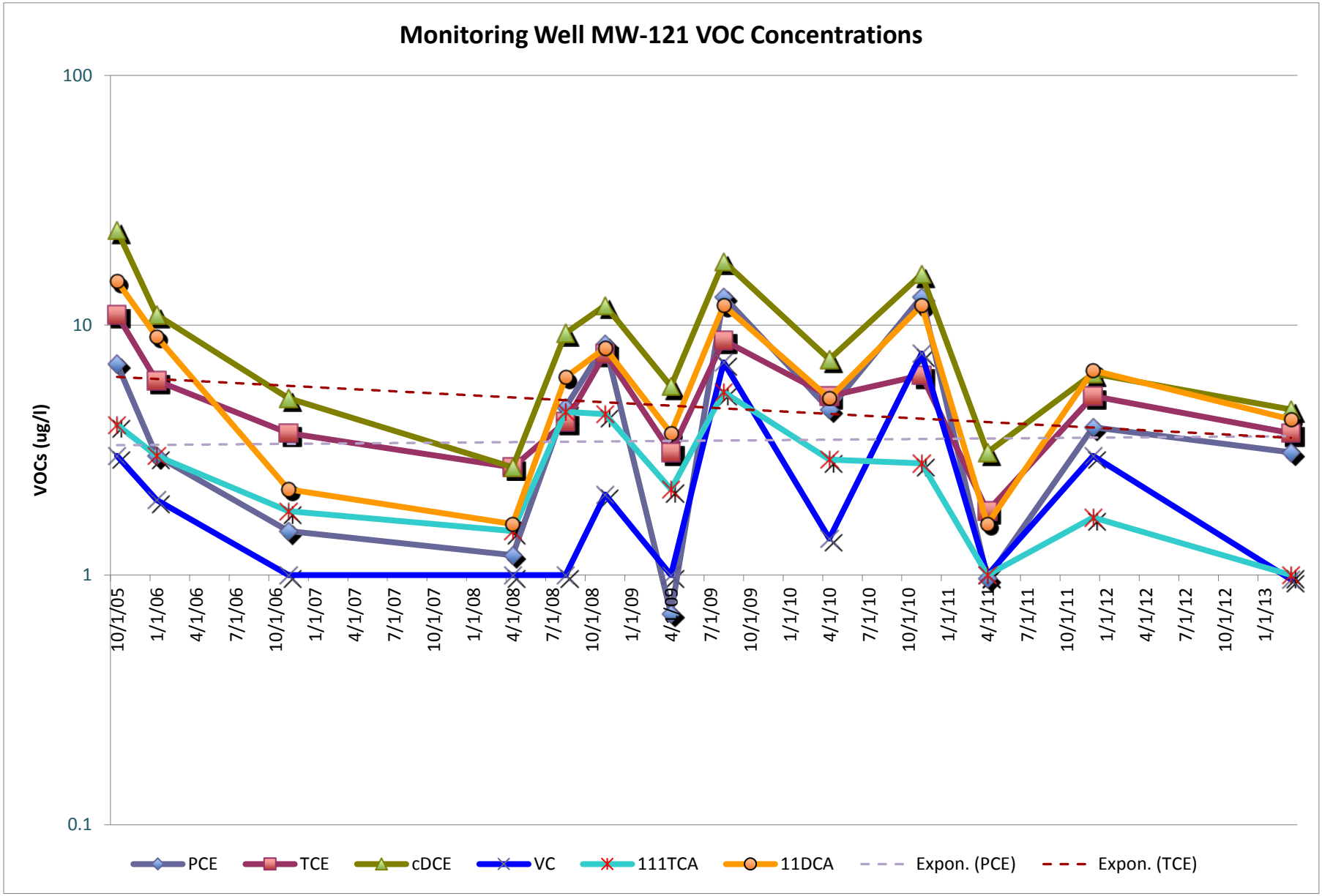

Monitoring Well MW-116 VOC Concentrations
VOCs (ug/l)
10000
1000
100
10
1
0.1
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
PCE
TCE
cDCE
VC
11TCA
11DCA
Expon. (PCE)
Expon. (TCE)

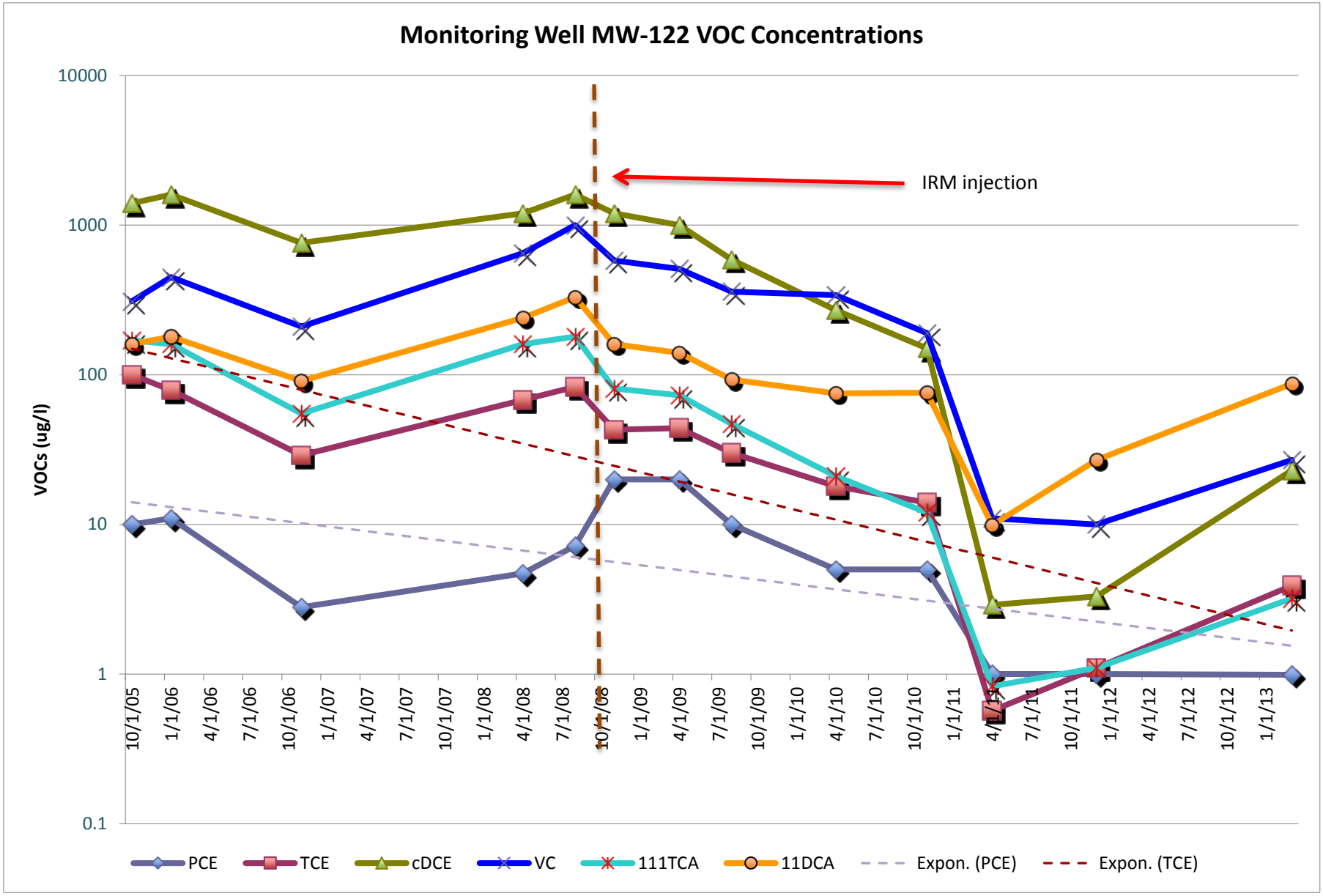

Monitoring Well MW-117 VOC Concentrations
VOCs (ug/l)
100
10
1
0.1
10/1/05
2/1/06
6/1/06
10/1/06
2/1/07
6/1/07
10/1/07
2/1/08
6/1/08
10/1/08
2/1/09
6/1/09
10/1/09
2/1/10
6/1/10
10/1/10
2/1/11
6/1/11
10/1/11
2/1/12
6/1/12
10/1/12
2/1/13
6/1/13
10/1/13
2/1/14
6/1/14
10/1/14
2/1/15
6/1/15
10/1/15
2/1/16
6/1/16
PCE
TCE
11DCE
cDCE
VC
111TCA
Expon. (PCE)
Expon. (TCE)

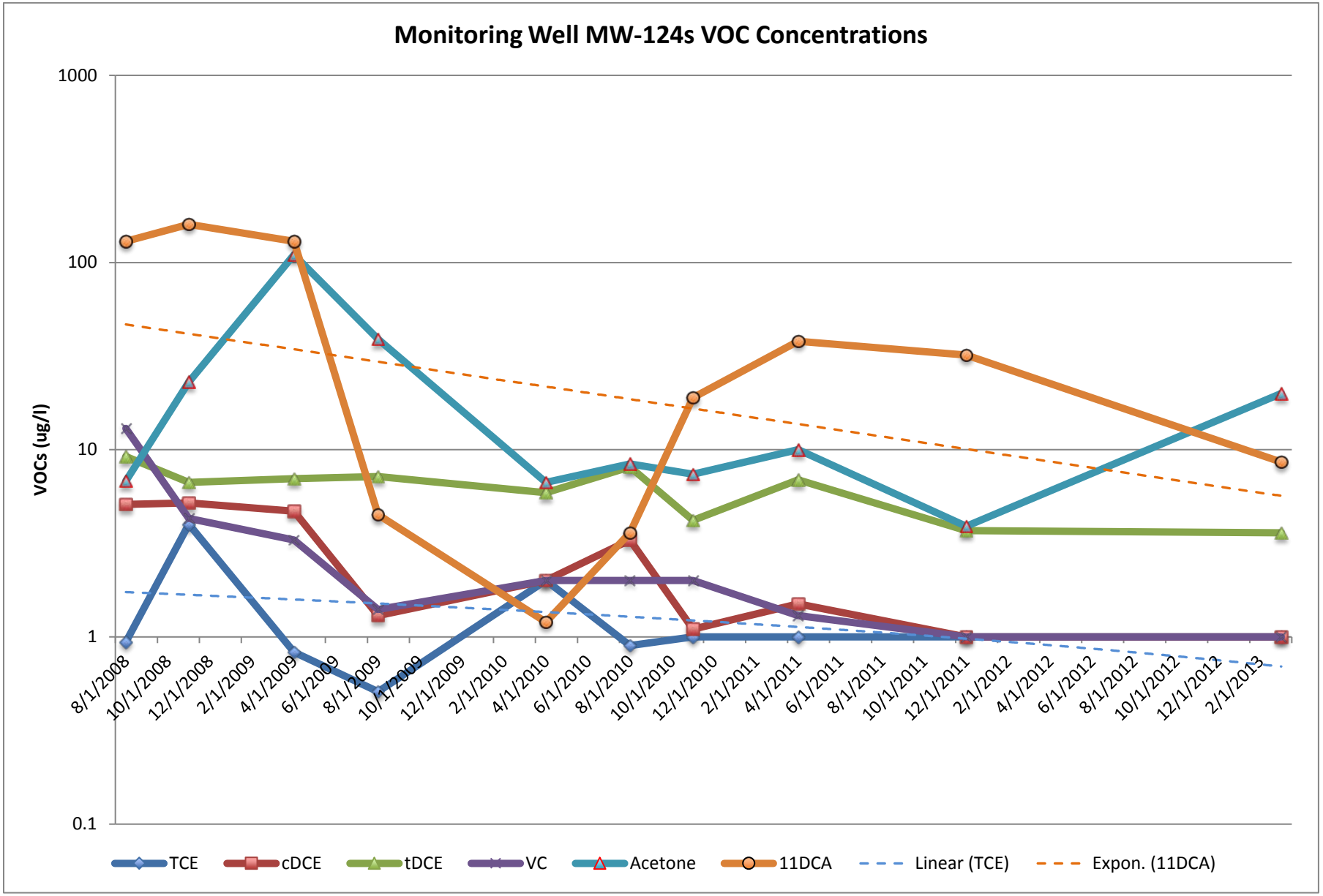

Monitoring Well MW-118 VOC Concentrations
IRM injection
VOCs (ug/l)
100,000
10,000
1,000
100
10
1
0
10/1/05
2/1/06
6/1/06
10/1/06
2/1/07
6/1/07
10/1/07
2/1/08
6/1/08
10/1/08
2/1/09
6/1/09
10/1/09
2/1/10
6/1/10
10/1/10
2/1/11
6/1/11
10/1/11
2/1/12
6/1/12
10/1/12
2/1/13
6/1/13
10/1/13
2/1/14
6/1/14
10/1/14
2/1/15
6/1/15
10/1/15
2/1/16
6/1/16
PCE
TCE
11DCE
cDCE
VC
111TCA
11DCA
TVOCs
Expon. (PCE)
Expon. (TCE)

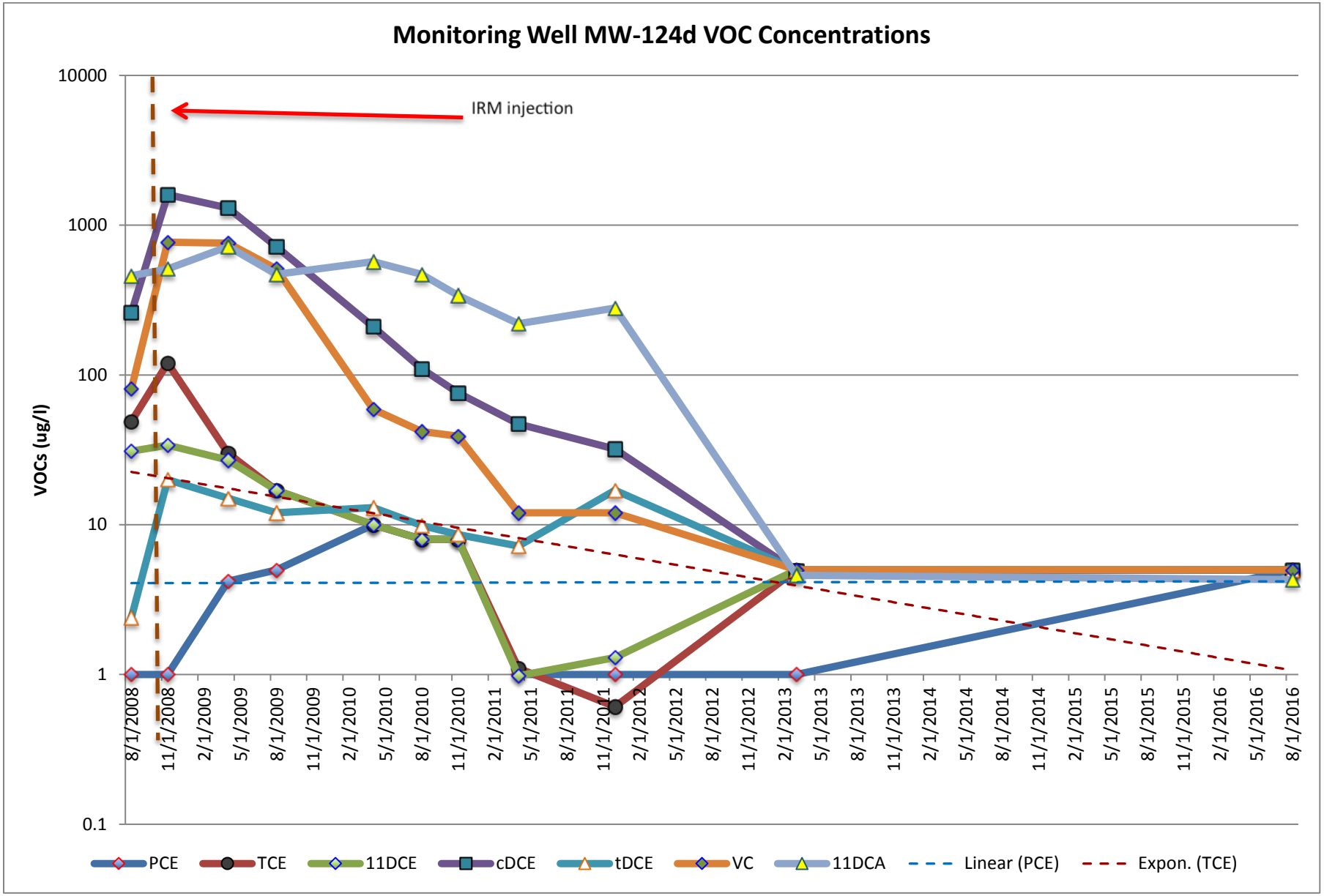

Monitoring Well MW-119 VOC Concentrations
VOCs (ug/l)
1000
100
10
1
0.1
10/1/05
2/1/06
6/1/06
10/1/06
2/1/07
6/1/07
10/1/07
2/1/08
6/1/08
10/1/08
2/1/09
6/1/09
10/1/09
2/1/10
6/1/10
10/1/10
2/1/11
6/1/11
10/1/11
2/1/12
6/1/12
10/1/12
2/1/13
6/1/13
10/1/13
2/1/14
6/1/14
10/1/14
2/1/15
6/1/15
10/1/15
2/1/16
6/1/16
PCE
TCE
cDCE
VC
111TCA
11DCA
Expon. (PCE)
Expon. (TCE)

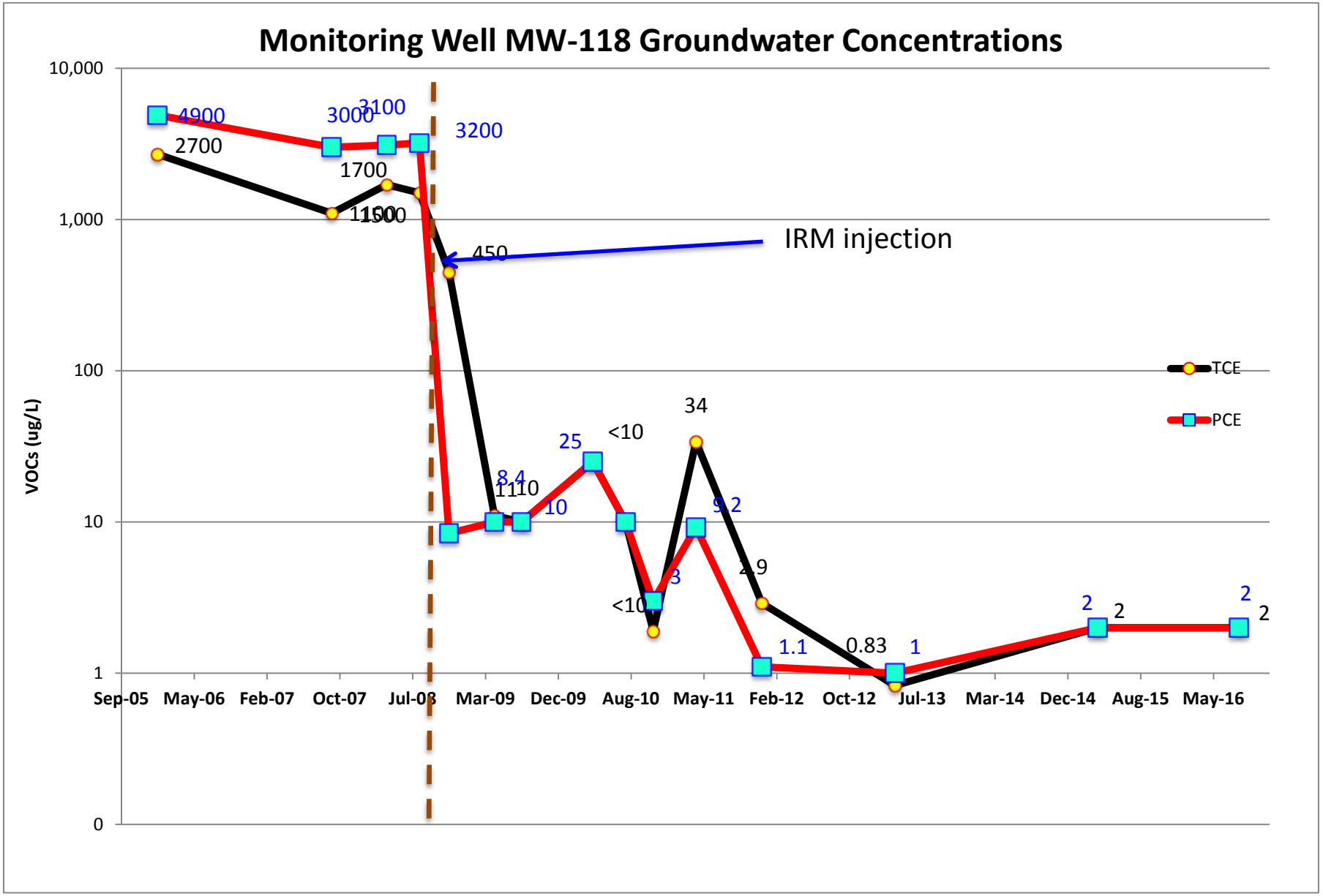

Monitoring Well MW-120 VOC Concentrations
VOCs (ug/l)
100
10
1
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
4/1/13
7/1/13
10/1/13
1/1/14
4/1/14
7/1/14
10/1/14
1/1/15
PCE
TCE
cDCE
VC
111TCA
11DCA
Linear (PCE)
Linear (TCE)


Monitoring Well MW-121 VOC Concentrations
VOCs (ug/l)
100
10
1
0.1
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
PCE
TCE
cDCE
VC
111TCA
11DCA
Expon. (PCE)
Expon. (TCE)


Monitoring Well MW-122 VOC Concentrations
VOCs (ug/l)
10000
1000
100
10
1
0.1
IRM injection
10/1/05
1/1/06
4/1/06
7/1/06
10/1/06
1/1/07
4/1/07
7/1/07
10/1/07
1/1/08
4/1/08
7/1/08
10/1/08
1/1/09
4/1/09
7/1/09
10/1/09
1/1/10
4/1/10
7/1/10
10/1/10
1/1/11
4/1/11
7/1/11
10/1/11
1/1/12
4/1/12
7/1/12
10/1/12
1/1/13
PCE
TCE
cDCE
VC
111TCA
11DCA
Expon. (PCE)
Expon. (TCE)


Monitoring Well MW-124s VOC Concentrations
VOCs (ug/l)
1000
100
10
1
0.1
8/1/2008
10/1/2008
12/1/2008
2/1/2009
4/1/2009
6/1/2009
8/1/2009
10/1/2009
12/1/2009
2/1/2010
4/1/2010
6/1/2010
8/1/2010
10/1/2010
12/1/2010
2/1/2011
4/1/2011
6/1/2011
8/1/2011
10/1/2011
12/1/2011
2/1/2012
4/1/2012
6/1/2012
8/1/2012
10/1/2012
12/1/2012
2/1/2013
TCE
cDCE
tDCE
VC
Acetone
11DCA
Linear (TCE)
Expon. (11DCA)


Monitoring Well MW-124d VOC Concentrations
VOCs (ug/l)
10000
1000
100
10
1
0.1
IRM injection
8/1/2008
11/1/2008
2/1/2009
5/1/2009
8/1/2009
11/1/2009
2/1/2010
5/1/2010
8/1/2010
11/1/2010
2/1/2011
5/1/2011
8/1/2011
11/1/2011
2/1/2012
5/1/2012
8/1/2012
11/1/2012
2/1/2013
5/1/2013
8/1/2013
11/1/2013
2/1/2014
5/1/2014
8/1/2014
11/1/2014
2/1/2015
5/1/2015
8/1/2015
11/1/2015
2/1/2016
5/1/2016
8/1/2016
PCE
TCE
11DCE
cDCE
tDCE
VC
11DCA
Linear (PCE)
Expon. (TCE)


Monitoring Well MW-118 Groundwater Concentrations
VOCs (ug/L)
10,000
1,000
100
10
1
0
Sep-05
May-06
Feb-07
Oct-07
Jul-08
Mar-09
Dec-09
Aug-10
May-11
Feb-12
Oct-12
Jul-13
Mar-14
Dec-14
Aug-15
May-16
IRM injection
TCE
PCE
4900
3000
3100
3200
2700
1700
450
1110
8.4
10
25
<10
34
9.2
<10
3
2.9
1.1
0.83
1
2
2
2
2

Attachment 7
Mann-Kendall Statistical Trend Analysis for Groundwater Wells

Mann-Kendall Statistical Analysis Matrix of Water Quality Trends
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

	PCE	TCE	111TCA	11DCE	11DCA	cDCE	VC	Acetone	Chloro-ethane	CT	Ethyl Benzene	Xylenes	MEK	Isopropyl-benzene	MEC	TVOCs
MW-114	decrease	decrease	decrease	decrease	decrease	increase	stable	-	-	-	-	-	-	-	-	-
MW-115	decrease	stable	decrease	decrease	stable	no trend	no trend	-	-	-	-	-	-	-	-	-
MW-115d	stable	stable	-	no trend	PD	-	-	stable	no trend	-	-	-	no trend	-	-	-
MW-116	decrease	decrease	decrease	decrease	decrease	decrease	PD	-	-	-	-	-	-	-	-	-
MW-117	decrease	-	-	-	-	no trend	-	no trend	-	-	PD	stable	-	PD	-	-
MW-118	decrease	decrease	decrease	decrease	decrease	decrease	decrease	-	-	-	-	-	-	-	-	-
MW-119	decrease	decrease	decrease	-	PD	decrease	no trend	-	increase	-	-	-	-	-	-	-
MW-120	decrease	PD	decrease	-	decrease	decrease	stable	-	-	-	-	-	-	-	-	-
MW-121	stable	stable	PD	-	stable	stable	stable	-	-	-	-	-	-	-	-	-
MW-122	decrease	decrease	decrease	-	decrease	decrease	decrease	-	PI	-	-	-	-	-	-	-
MW-123	no trend	no trend	no trend	no trend	no trend	no trend	-	-	-	-	-	-	-	-	-	-
MW-124s	-	no trend	no trend	-	no trend	decrease	-	PD	no trend	-	-	decrease	-	-	-	-
MW-124d	-	decrease	-	decrease	decrease	decrease	decrease	-	increase	-	-	-	no trend	-	-	-
SW-1	-	-	-	stable	no trend	no trend	-	stable	-	-	-	-	-	-	no trend	no trend
SW-2	-	-	-	stable	decrease	stable	-	no trend	-	-	-	-	-	-	no trend	stable
SW-3	-	-	-	stable	decrease	no trend	-	no trend	-	-	-	-	-	-	no trend	decrease
SS-1	decrease	stable	stable	-	-	-	-	-	-	no trend	-	-	-	-	-	-
SS-2	stable	decrease	decrease	-	-	-	-	-	-	no trend	-	-	-	-	-	-
SS-3	no trend	no trend	no trend	-	-	-	-	-	-	stable	-	-	-	-	-	-
SS-4	stable	no trend	stable	-	-	-	-	-	-	stable	-	-	-	-	-	-

PI = Probably Increasing
PD = Probably Decreasing
PCE = tetrachloroethene
TCE = trichloroethene
111TCA = 1,1,1-trichloroethane
11DCA = 1,1-dichloroethane
11DCE = 1,1-dichloroethene
cDCE = cis-1,2-dichloroethene
VC = vinyl chloride
CT= carbon tetrachloride
MEK = methyl ethyl ketone
MEC = methylene chloride
TVOCs = Total VOCs
-- = not analyzed

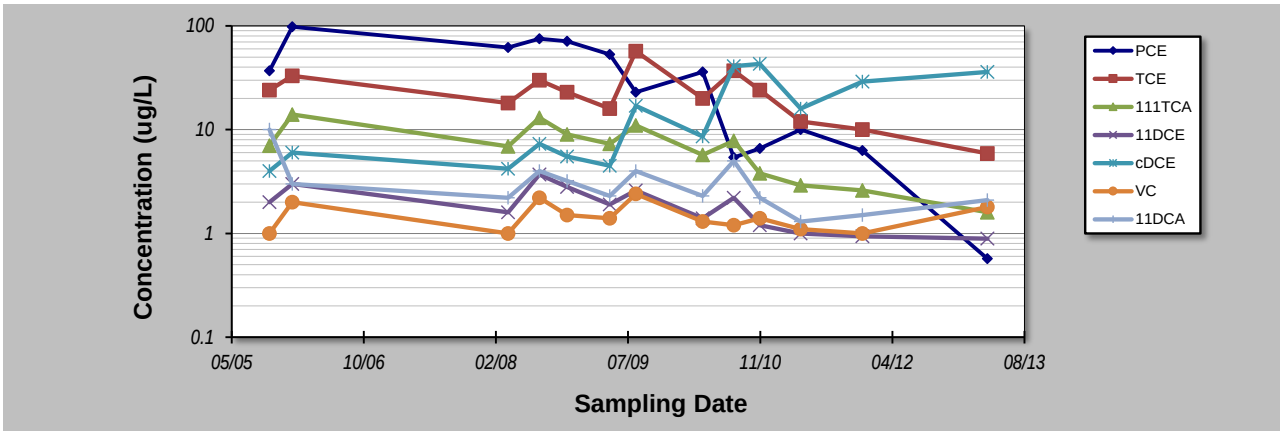
Mann-Kendall Statistical Analysis of Select Wells - MW-114
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: 22-Jun-15
Facility Name: Former Monarch Chemical Facility
Conducted By: Keith Rapp

Job ID: R013023.000
Constituent: MW-114
Concentration Units: ug/L

Sampling Point ID:	PCE	TCE	111TCA	11DCE	cDCE	VC	11DCA
Sampling Event	Sampling Date	MW-114 CONCENTRATION (ug/L)						
1	18-Oct-05	37	24	7	2	4	1	10
2	12-Jan-06	98	33	14	3	6	2	3
3	8-Apr-08	62	18	6.9	1.6	4.2	1	2.2
4	5-Aug-08	75	30	13	3.7	7.3	2.2	4
5	17-Nov-08	71	23	9	2.8	5.5	1.5	3.2
6	28-Apr-09	53	16	7.3	1.9	4.5	1.4	2.3
7	4-Aug-09	23	57	11	2.6	17	2.4	4
8	14-Apr-10	36	20	5.7	1.4	8.6	1.3	2.3
9	10-Aug-10	5.4	37	7.8	2.2	41	1.2	5
10	17-Nov-10	6.6	24	3.8	1.2	43	1.4	2.2
11	20-Apr-11	10	12	2.9	1	16	1.1	1.3
12	10-Dec-11	6.3	10	2.6	0.94	29	1	1.5
13	27-Mar-13	0.57	5.9	1.6	0.89	36	1.8	2.1
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.86	0.56	0.55	0.46	0.87	0.32	0.69
Mann-Kendall Statistic (S):		-54	-31	-48	-50	50	-8	-35
Confidence Factor:		>99.9%	96.7%	99.9%	99.9%	99.9%	66.2%	98.2%
Concentration Trend:		Decreasing	Decreasing	Decreasing	Decreasing	Increasing	Stable	Decreasing



Notes:

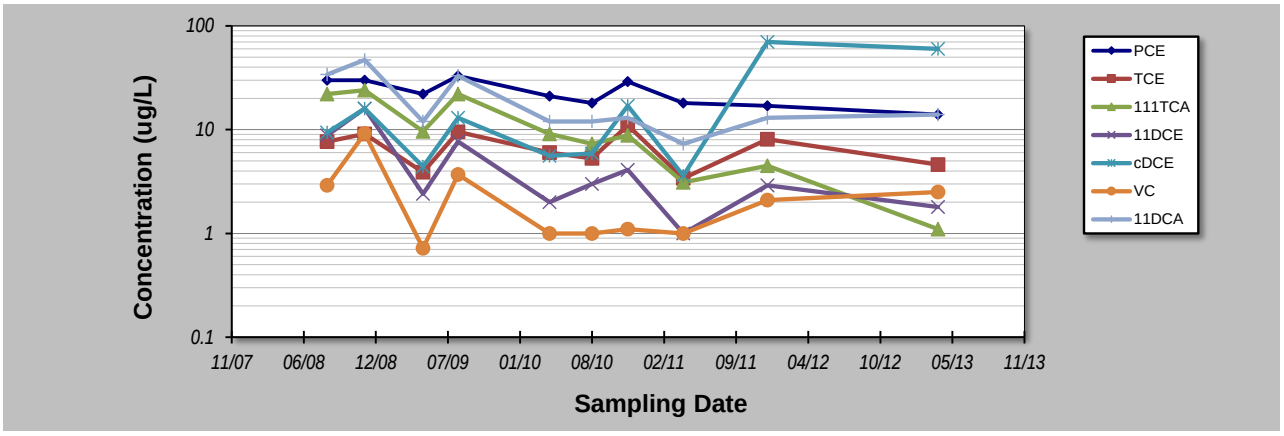
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-115
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jun-15	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-115
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	111TCA	11DCE	cDCE	VC	11DCA
Sampling Event	Sampling Date	MW-115 CONCENTRATION (ug/L)						
1	5-Aug-08	30	7.7	22	8.8	9.4	2.9	34
2	17-Nov-08	30	9.1	24	16	16	9.2	47
3	28-Apr-09	22	3.9	9.6	2.4	4.4	0.72	12
4	3-Aug-09	33	9.5	22	7.7	13	3.7	33
5	14-Apr-10	21	6	9.1	2	5.6	1	12
6	10-Aug-10	18	5.3	7.3	3	5.9	1	12
7	17-Nov-10	29	11	8.8	4.1	17	1.1	13
8	20-Apr-11	18	3.4	3.1	1	3.6	1	7.3
9	10-Dec-11	17	8.1	4.5	2.9	70	2.1	13
10	27-Mar-13	14	4.6	1.1	1.8	60	2.5	14
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.29	0.38	0.75	0.93	1.17	1.01	0.67
Mann-Kendall Statistic (S):		-31	-7	-36	-23	11	-2	-11
Confidence Factor:		99.8%	70.0%	>99.9%	97.7%	81.0%	53.5%	81.0%
Concentration Trend:		Decreasing	Stable	Decreasing	Decreasing	No Trend	No Trend	Stable



Notes:

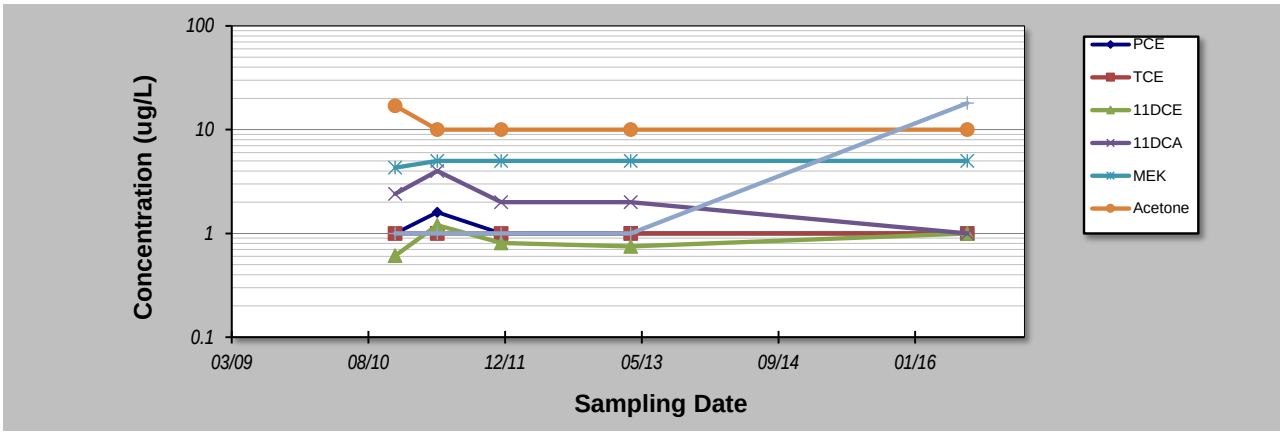
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-115d
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Aug-16	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-115d
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	11DCE	11DCA	MEK	Acetone	Chloroethane
Sampling Event	Sampling Date	MW-115D CONCENTRATION (ug/L)						
1	16-Nov-10	1	1	0.61	2.4	4.3	17	1
2	19-Apr-11	1.6	1	1.2	4	5	10	1
3	9-Dec-11	1	1	0.81	2	5	10	1
4	27-Mar-13	1	1	0.75	2	5	10	1
5	9-Aug-16	1	1	1	1	5	10	18
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.24	0.00	0.26	0.48	0.06	0.27	1.73
Mann-Kendall Statistic (S):		-2	0	2	-7	4	-4	4
Confidence Factor:		59.2%	40.8%	59.2%	92.1%	75.8%	75.8%	75.8%
Concentration Trend:		Stable	Stable	No Trend	Prob. Decreasing	No Trend	Stable	No Trend



Notes:

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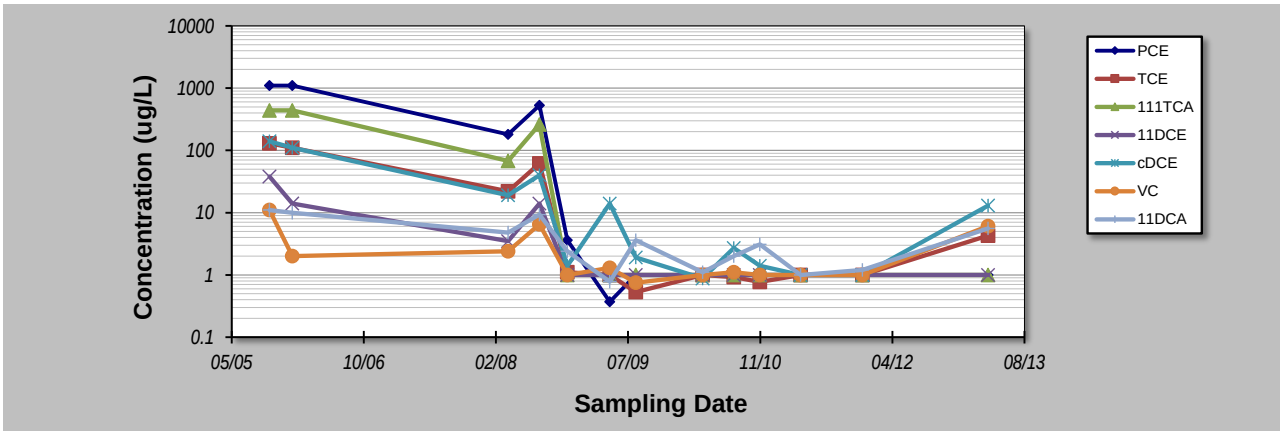
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-116
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jun-15	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-116
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	111TCA	11DCE	cDCE	VC	11DCA
Sampling Event	Sampling Date	MW-116 CONCENTRATION (ug/L)						
1	18-Oct-05	1100	130	440	38	140	11	11
2	12-Jan-06	1100	110	440	14	110	2	10
3	8-Apr-08	180	22	68	3.5	19	2.4	4.8
4	5-Aug-08	530	62	260	14	40	6.5	9.3
5	18-Nov-08	3.6	1.1	1	1	1.4	1	2.4
6	28-Apr-09	0.37	1	1	1	14	1.3	0.78
7	4-Aug-09	1	0.53	1	1	1.9	0.75	3.6
8	14-Apr-10	1	1	1	1	0.88	1	1.1
9	10-Aug-10	1	0.92	1	1	2.7	1.1	2
10	17-Nov-10	1	0.77	1	1	1.4	1	3.1
11	20-Apr-11	1	1	1	1	1	1	1
12	10-Dec-11	1	1	1	1	1	1	1.2
13	29-Mar-13	1	4.3	1	1	13	6.1	5.6
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		1.85	1.76	1.81	1.78	1.71	1.13	0.84
Mann-Kendall Statistic (S):		-40	-36	-39	-39	-44	-26	-32
Confidence Factor:		99.3%	98.5%	99.1%	99.1%	99.7%	93.6%	97.1%
Concentration Trend:		Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Prob. Decreasing	Decreasing



Notes:

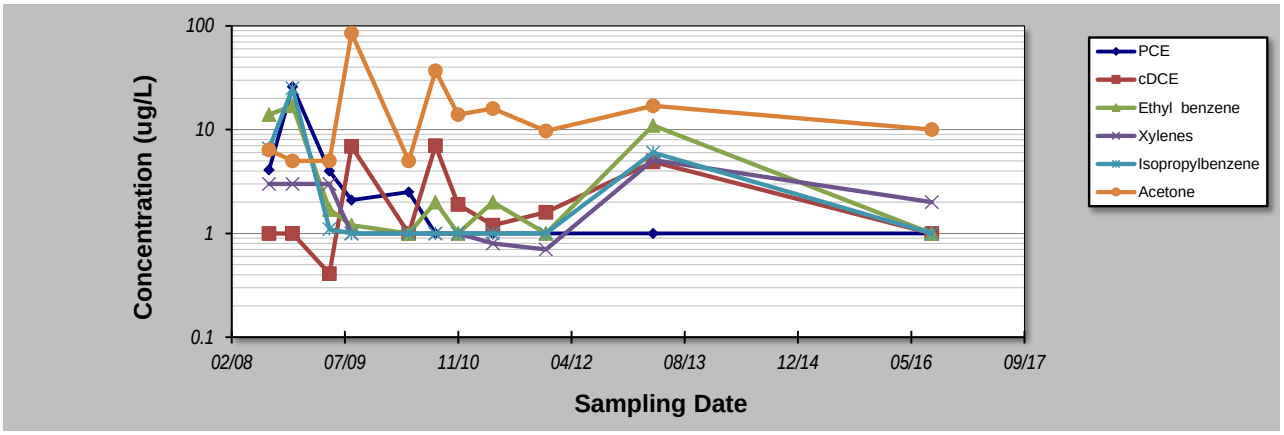
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-117
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Aug-16	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-117
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	PCE	cDCE	Ethyl benzene	Xylenes	Isopropylbenzene	Acetone	
Sampling Event	Sampling Date	MW-117 CONCENTRATION (ug/L)						
1	5-Aug-08	4.1	1	14	3	6.6	6.4	
2	17-Nov-08	26	1	17	3	25	5	
3	28-Apr-09	4	0.41	1.7	3	1.1	5	
4	4-Aug-09	2.1	6.9	1.2	1	1	85	
5	14-Apr-10	2.5	1	1	1	1	5	
6	10-Aug-10	1	7	2	1	1	37	
7	17-Nov-10	1	1.9	1	1	1	14	
8	20-Apr-11	1	1.2	2	0.8	1	16	
9	10-Dec-11	1	1.6	1	0.7	1	9.7	
10	27-Mar-13	1	4.9	11	5.1	6	17	
11	9-Aug-16	1	1	1	2	1	10	
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		1.81	0.98	1.26	0.72	1.74	1.24	
Mann-Kendall Statistic (S):		-36	11	-18	-16	-18	12	
Confidence Factor:		99.8%	77.7%	90.5%	87.5%	90.5%	79.9%	
Concentration Trend:		Decreasing	No Trend	Prob. Decreasing	Stable	Prob. Decreasing	No Trend	



Notes:

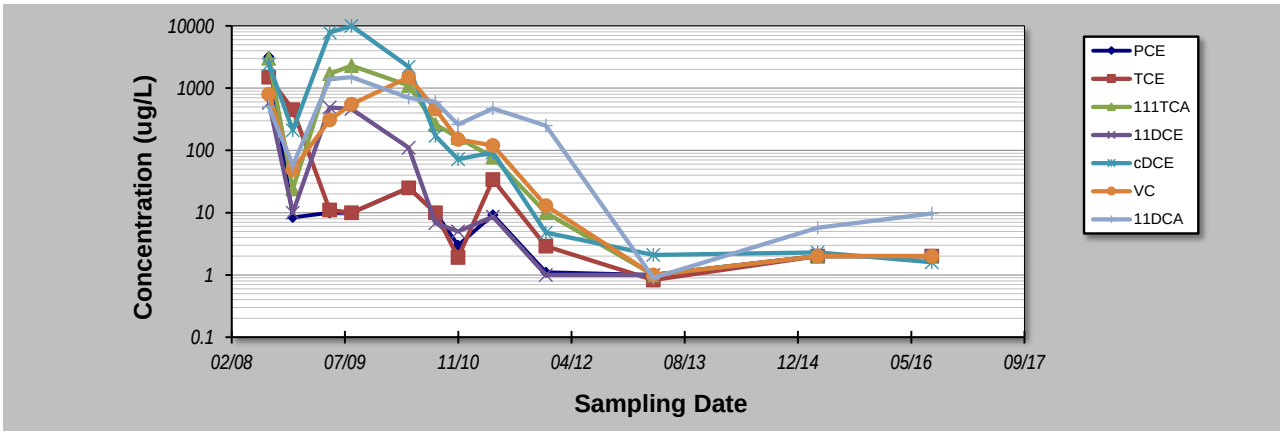
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-118
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Aug-16	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-118
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	111TCA	11DCE	cDCE	VC	11DCA
Sampling Event	Sampling Date	MW-118 CONCENTRATION (ug/L)						
1	4-Aug-08	3200	1500	3000	580	2400	800	500
2	18-Nov-08	8.4	450	24	10	210	49	57
3	29-Apr-09	10	11	1700	490	7800	310	1400
4	4-Aug-09	10	10	2300	460	10000	550	1500
5	14-Apr-10	25	25	1100	110	2200	1500	700
6	10-Aug-10	10	10	260	6.8	170	460	600
7	17-Nov-10	3	1.9	160	5	72	150	260
8	20-Apr-11	9.2	34	78	8.6	93	120	470
9	10-Dec-11	1.1	2.9	10	1	4.8	13	250
10	29-Mar-13	1	0.83	1	1	2.1	1	0.9
11	24-Mar-15	2	2	2	2	2.3	2	5.7
12	9-Aug-16	2	2	2	2	1.6	2	9.7
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		3.37	2.56	1.47	1.62	1.78	1.37	1.07
Mann-Kendall Statistic (S):		-38	-40	-47	-46	-50	-39	-34
Confidence Factor:		99.6%	99.7%	>99.9%	100.0%	>99.9%	99.7%	99.0%
Concentration Trend:		Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing



Notes:

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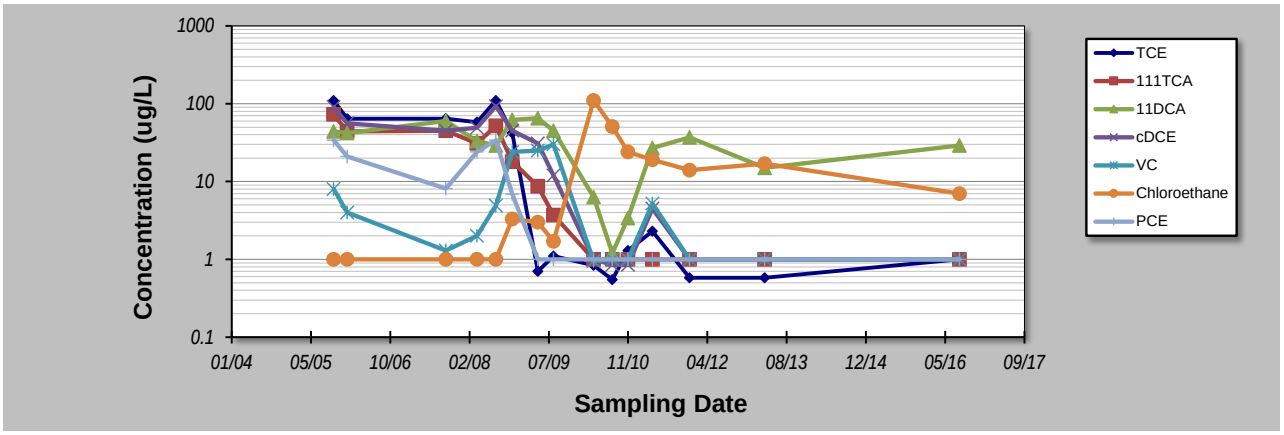
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-119
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Aug-16	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-119
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	TCE	111TCA	11DCA	cDCE	VC	Chloroethane	PCE
Sampling Event	Sampling Date	MW-119 CONCENTRATION (ug/L)						
1	18-Oct-05	110	73	44	91	8	1	34
2	12-Jan-06	64	44	42	56	4	1	21
3	26-Sep-07	64	45	60	45	1.3	1	8.1
4	9-Apr-08	58	31	33	49	2	1	24
5	6-Aug-08	110	52	29	93	4.9	1	34
6	18-Nov-08	42	18	62	45	24	3.3	6.9
7	28-Apr-09	0.7	8.7	65	31	25	3	1
8	4-Aug-09	1.1	3.7	45	12	30	1.7	1
9	14-Apr-10	0.84	1	6.3	1	0.95	110	1
10	10-Aug-10	0.55	1	1.2	0.85	1	51	1
11	17-Nov-10	1.3	1	3.4	0.85	1	24	1
12	20-Apr-11	2.3	1	27	4.5	5.2	19	1
13	10-Dec-11	0.58	1	37	1	1	14	1
14	29-Mar-13	0.58	1	15	1	1	17	1
15	9-Aug-16	1	1	29	1	1	7	1
16								
17								
18								
19								
20								
Coefficient of Variation:		1.35	1.27	0.62	1.14	1.37	1.71	1.37
Mann-Kendall Statistic (S):		-60	-76	-34	-69	-27	49	-58
Confidence Factor:		99.9%	>99.9%	94.9%	>99.9%	89.9%	99.2%	99.9%
Concentration Trend:		Decreasing	Decreasing	Prob. Decreasing	Decreasing	No Trend	Increasing	Decreasing



Notes:

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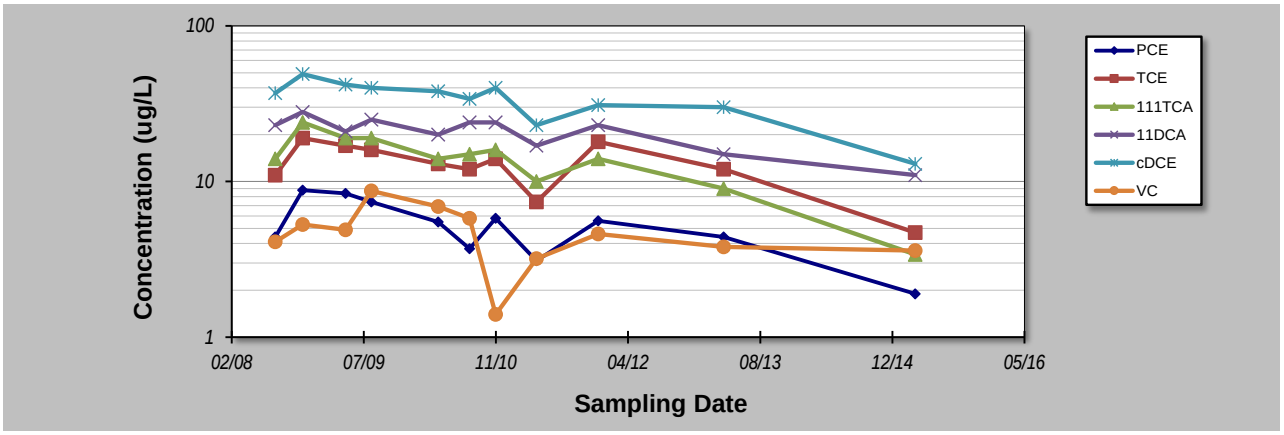
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-120
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jun-15	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-120
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	111TCA	11DCA	cDCE	VC	
Sampling Event	Sampling Date	MW-120 CONCENTRATION (ug/L)						
1	5-Aug-08	4.4	11	14	23	37	4.1	
2	17-Nov-08	8.8	19	24	28	49	5.3	
3	28-Apr-09	8.4	17	19	21	42	4.9	
4	4-Aug-09	7.4	16	19	25	40	8.7	
5	14-Apr-10	5.5	13	14	20	38	6.9	
6	10-Aug-10	3.7	12	15	24	34	5.8	
7	17-Nov-10	5.8	14	16	24	40	1.4	
8	20-Apr-11	3.1	7.4	10	17	23	3.2	
9	10-Dec-11	5.6	18	14	23	31	4.6	
10	29-Mar-13	4.4	12	9	15	30	3.8	
11	24-Mar-15	1.9	4.7	3.4	11	13	3.6	
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.40	0.34	0.39	0.24	0.29	0.41	
Mann-Kendall Statistic (S):		-28	-20	-33	-29	-36	-17	
Confidence Factor:		98.4%	92.9%	99.5%	98.7%	99.8%	89.1%	
Concentration Trend:		Decreasing	Prob. Decreasing	Decreasing	Decreasing	Decreasing	Stable	



Notes:

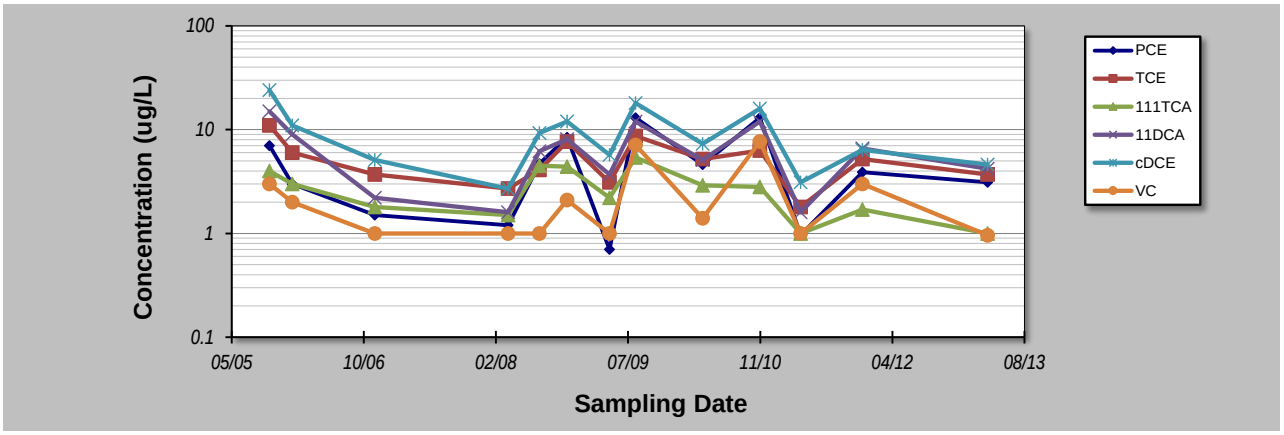
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-121
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jun-15	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-121
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	111TCA	11DCA	cDCE	VC	
Sampling Event	Sampling Date	MW-121 CONCENTRATION (ug/L)						
1	18-Oct-05	7	11	4	15	24	3	
2	12-Jan-06	3	6	3	9	11	2	
3	21-Nov-06	1.5	3.7	1.8	2.2	5.1	1	
4	8-Apr-08	1.2	2.7	1.5	1.6	2.7	1	
5	5-Aug-08	4.7	4.1	4.5	6.2	9.3	1	
6	17-Nov-08	8.4	7.7	4.4	8.1	12	2.1	
7	27-Apr-09	0.7	3.1	2.2	3.7	5.7	1	
8	3-Aug-09	13	8.7	5.4	12	18	7.1	
9	14-Apr-10	4.6	5.2	2.9	5.1	7.3	1.4	
10	17-Nov-10	13	6.3	2.8	12	16	7.7	
11	20-Apr-11	0.97	1.8	1	1.6	3.1	1	
12	10-Dec-11	3.9	5.2	1.7	6.6	6.4	3	
13	28-Mar-13	3.1	3.7	1	4.2	4.6	0.96	
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.84	0.49	0.51	0.64	0.67	0.93	
Mann-Kendall Statistic (S):		-1	-14	-27	-10	-16	-3	
Confidence Factor:		50.0%	78.2%	94.3%	70.5%	81.6%	54.8%	
Concentration Trend:		Stable	Stable	Prob. Decreasing	Stable	Stable	Stable	



Notes:

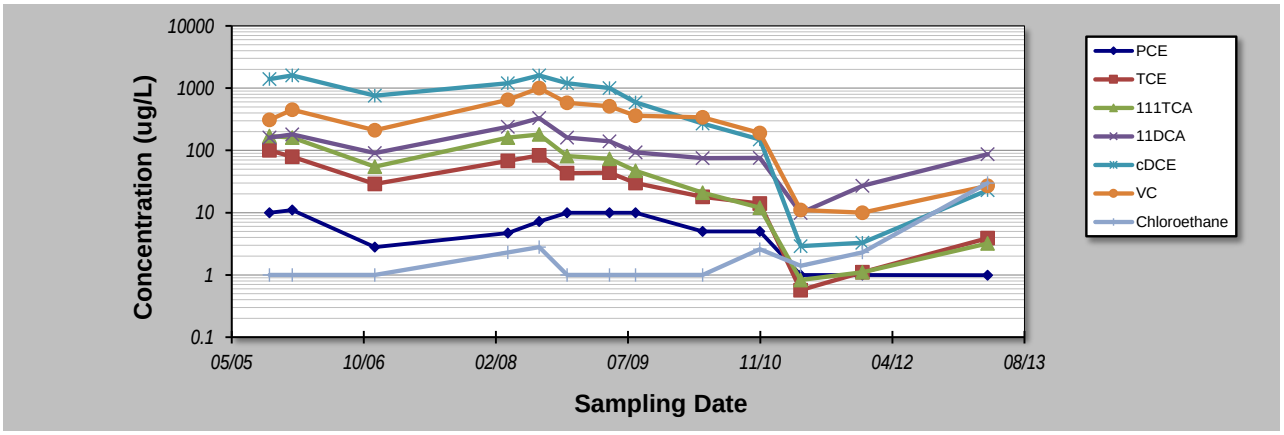
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-122
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jun-15	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-122
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	111TCA	11DCA	cDCE	VC	Chloroethane
Sampling Event	Sampling Date	MW-122 CONCENTRATION (ug/L)						
1	18-Oct-05	10	100	170	160	1400	310	1
2	12-Jan-06	11	79	160	180	1600	450	1
3	21-Nov-06	2.8	29	55	91	760	210	1
4	7-Apr-08	4.7	68	160	240	1200	650	2.3
5	4-Aug-08	7.2	83	180	330	1600	1000	2.8
6	17-Nov-08	10	43	81	160	1200	580	1
7	27-Apr-09	10	44	73	140	1000	510	1
8	3-Aug-09	10	30	47	93	590	360	1
9	14-Apr-10	5	18	21	75	270	340	1
10	17-Nov-10	5	14	12	76	150	190	2.6
11	20-Apr-11	1	0.57	0.83	9.9	2.9	11	1.4
12	10-Dec-11	1	1.1	1.1	27	3.3	10	2.3
13	28-Mar-13	0.99	3.9	3.2	87	23	27	30
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.64	0.85	0.94	0.68	0.82	0.80	2.13
Mann-Kendall Statistic (S):		-36	-56	-57	-43	-56	-38	28
Confidence Factor:		98.5%	>99.9%	>99.9%	99.6%	>99.9%	98.9%	95.0%
Concentration Trend:		Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Prob. Increasing



Notes:

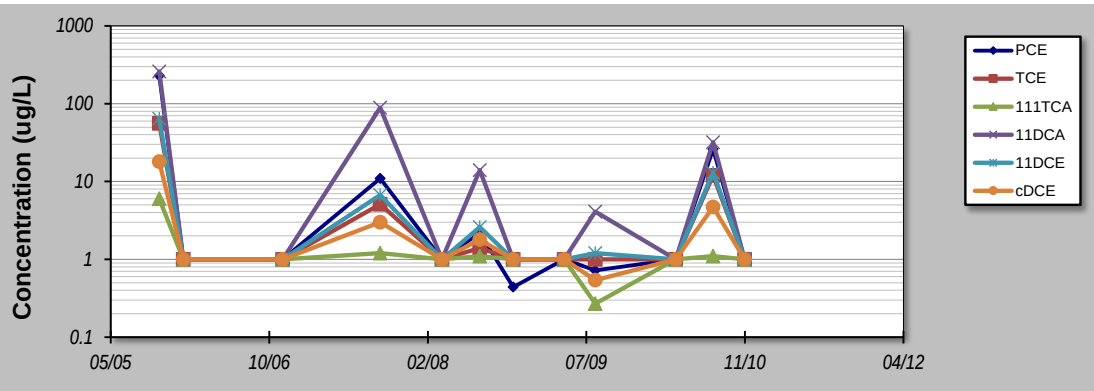
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-123
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jun-15	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-123
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	111TCA	11DCA	11DCE	cDCE	
Sampling Event	Sampling Date	MW-123 CONCENTRATION (ug/L)					
1	28-Oct-05	230	56	6	260	64	18
2	12-Jan-06	1	1	1	1	1	1
3	21-Nov-06	1	1	1	1	1	1
4	25-Sep-07	11	5.1	1.2	89	6.7	3
5	7-Apr-08	1	1	1	1	1	1
6	4-Aug-08	2.2	1.4	1.1	14	2.6	1.8
7	17-Nov-08	0.44	1	1	1	1	1
8	27-Apr-09	1	1	1	1	1	1
9	3-Aug-09	0.72	1	0.27	4.1	1.2	0.54
10	14-Apr-10	1	1	1	1	1	1
11	10-Aug-10	26	12	1.1	32	13	4.7
12	17-Nov-10	1	1	1	1	1	1
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		2.85	2.30	1.06	2.24	2.29	1.68
Mann-Kendall Statistic (S):		-11	-10	-16	-9	-7	-13
Confidence Factor:		74.9%	72.7%	84.5%	70.4%	65.6%	79.0%
Concentration Trend:		No Trend	No Trend	No Trend	No Trend	No Trend	No Trend



Notes:

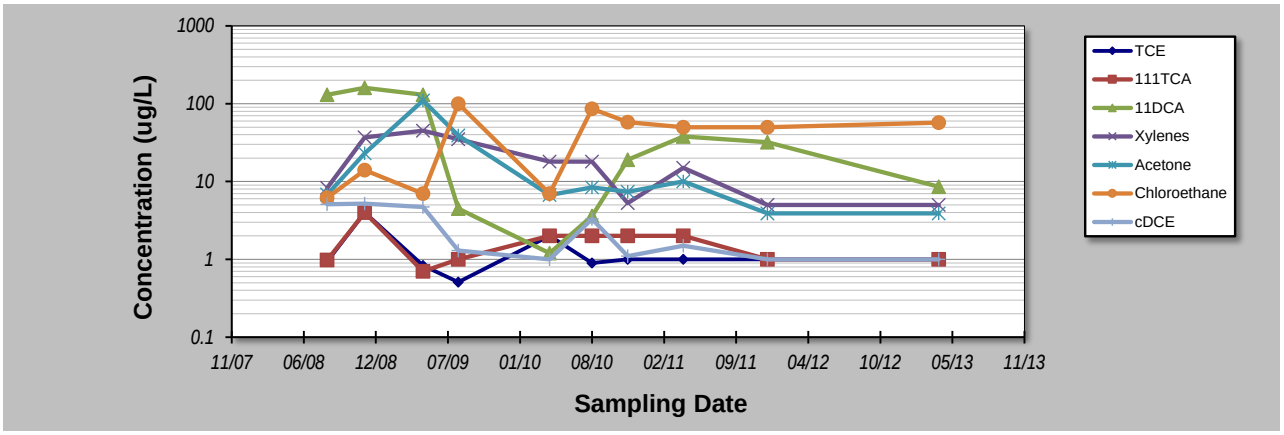
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-124s
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	22-Jun-15	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-124s
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	TCE	111TCA	11DCA	Xylenes	Acetone	Chloroethane	cDCE
Sampling Event	Sampling Date	MW-124S CONCENTRATION (ug/L)						
1	5-Aug-08	0.94	0.98	130	8.3	6.8	6.2	5.1
2	17-Nov-08	4	4	160	37	23	14	5.2
3	28-Apr-09	0.83	0.7	130	45	110	7	4.7
4	4-Aug-09	0.51	1	4.5	35	39	100	1.3
5	14-Apr-10	2	2	1.2	18	6.7	7	1
6	10-Aug-10	0.9	2	3.6	18	8.4	86	3.3
7	17-Nov-10	1	2	19	5.3	7.4	58	1.1
8	20-Apr-11	1	2	38	15	10	50	1.5
9	10-Dec-11	1	1	32	5	3.9	50	1
10	29-Mar-13	1	1	8.6	5	3.9	57	1
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.77	0.59	1.18	0.77	1.50	0.78	0.73
Mann-Kendall Statistic (S):		5	2	-12	-27	-18	13	-28
Confidence Factor:		63.6%	53.5%	83.2%	99.2%	93.4%	85.4%	99.4%
Concentration Trend:		No Trend	No Trend	No Trend	Decreasing	Prob. Decreasing	No Trend	Decreasing



Notes:

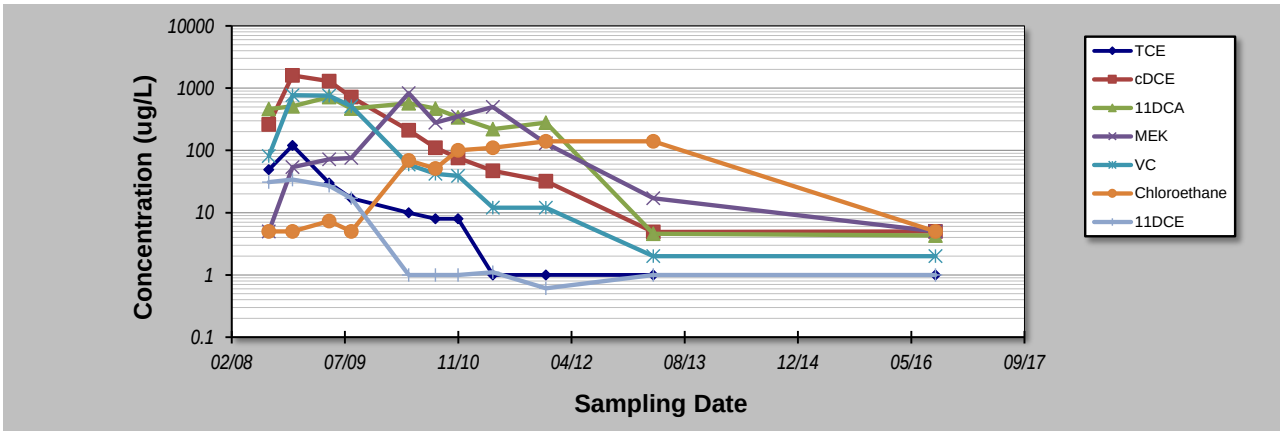
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Mann-Kendall Statistical Analysis of Select Wells - MW-124d
Former Monarch Chemical Facility
61 Gates Ave., Geneva, NY
VCP No. V00119-8

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Aug-16	Job ID:	R013023.000
Facility Name:	Former Monarch Chemical Facility	Constituent:	MW-124d
Conducted By:	Keith Rapp	Concentration Units:	ug/L

Sampling Point ID:	TCE	cDCE	11DCA	MEK	VC	Chloroethane	11DCE
Sampling Event	Sampling Date	MW-124D CONCENTRATION (ug/L)						
1	4-Aug-08	49	260	460	5	81	5	31
2	17-Nov-08	120	1600	510	54	770	5	34
3	27-Apr-09	30	1300	720	72	760	7.3	27
4	3-Aug-09	17	720	470	76	510	5	17
5	14-Apr-10	10	210	570	830	59	69	1
6	10-Aug-10	8	110	470	280	42	51	1
7	17-Nov-10	8	76	340	350	39	100	1
8	20-Apr-11	1	47	220	500	12	110	1.1
9	10-Dec-11	1	32	280	130	12	140	0.61
10	29-Mar-13	1	4.9	4.6	17	2	140	1
11	25-Aug-16	1	5	4.3	5	2	5	1
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		1.59	1.42	0.61	1.24	1.50	0.97	1.32
Mann-Kendall Statistic (S):		-46	-47	-36	6	-47	30	-33
Confidence Factor:		>99.9%	>99.9%	99.8%	64.8%	>99.9%	99.0%	99.5%
Concentration Trend:		Decreasing	Decreasing	Decreasing	No Trend	Decreasing	Increasing	Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

Attachment 8
Monitoring Well MW-119 and MW-120 Abandonment Logs

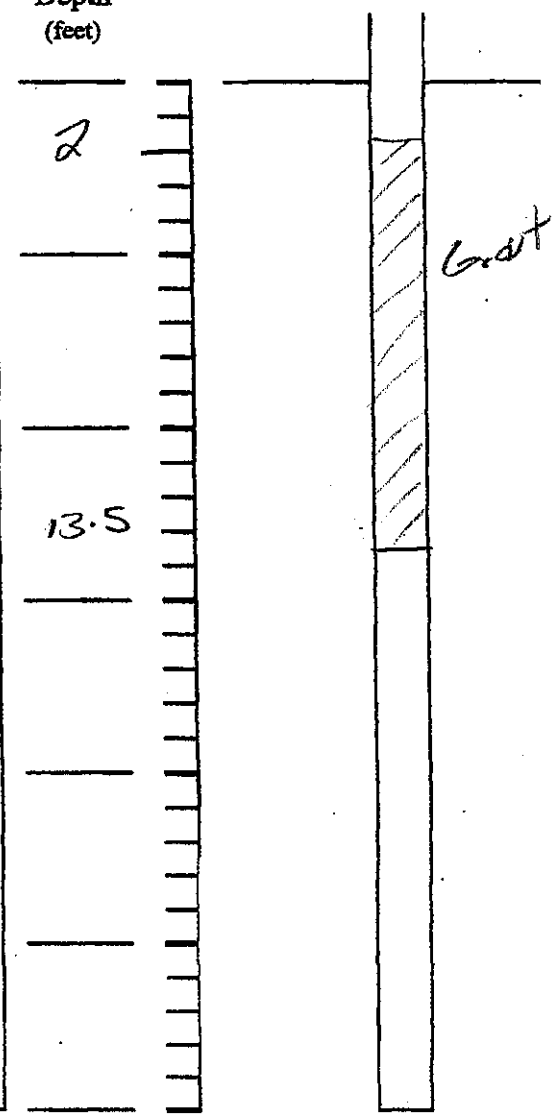
WELL DECOMMISSIONING RECORD

Site Name: H.B. Fuller	Well I.D.: MW-119
Site Location: Gates Ave. Geneva N.Y.	Driller: T. Mangefrida
Drilling Co.: Nothnagle Drilling	Inspector:
	Date: 8-9-16

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	13.5-2
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	7.8
Quantity of cement used (lbs.)	94
Cement type	TYPE I
Quantity of bentonite used (lbs.)	3.9
Quantity of calcium chloride used (lbs.)	—
Volume of grout prepared (gal.)	10
Volume of grout used (gal.)	2

WELL SCHEMATIC*



COMMENTS: Removed Surface Completion and cut PVC 2FT. BGS Tremie grout abandoned in place

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Thomas H. Mangefrida
Drilling Contractor

Department Representative

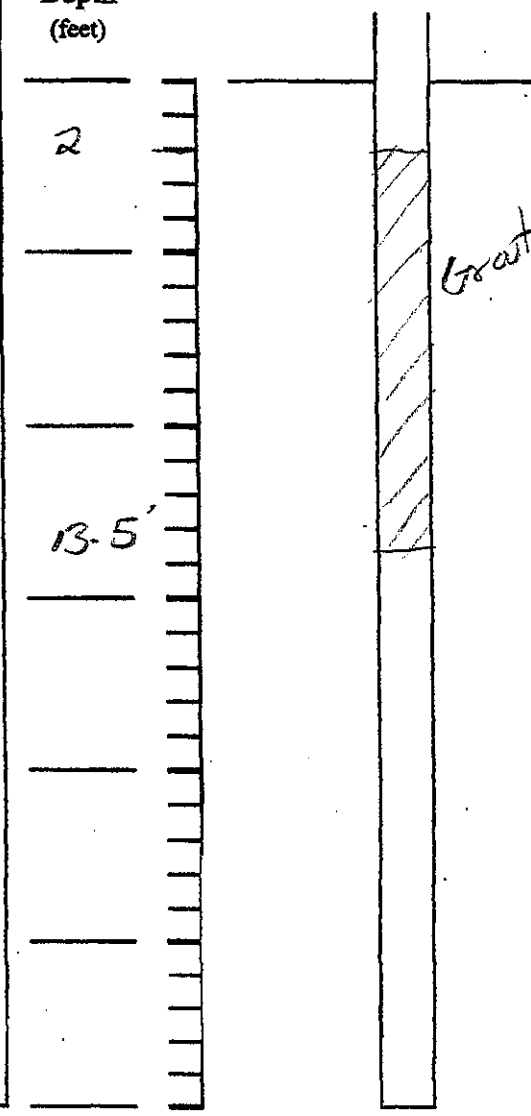
WELL DECOMMISSIONING RECORD

Site Name: H-B- Fuller	Well I.D.: MW-120
Site Location: Gates Ave Geneva N.Y.	Driller: T. Mangefrida
Drilling Co.: Nothnagle Drilling	Inspector:
	Date: 8-9-10

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	13.5 - 2
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	7.8
Quantity of cement used (lbs.)	94
Cement type	Type I
Quantity of bentonite used (lbs.)	3.9
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	10
Volume of grout used (gal.)	9

WELL SCHEMATIC*



COMMENTS: Removed surface completion and cut PVC off 2ft BGS. Tremie grout abandoned in place

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Thomas H. Mangefrida
Drilling Contractor

Department Representative