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Project Progress Report #29

To: Nigel N. Crawford, P.E.
Environmental Engineer 2
Region 2
New York State Department of Environmental Conservation
47-40 21st Street
Long Island City, NY 11101

From: Jenna Raup

Subject: Proposed Addition to Public School 96X – Index # R2-0801-13-01
650 Waring Avenue
Bronx, New York 10467

Date: May 10, 2016

cc: Alexander Lempert, NYCSCA
Lee Guterman, NYCSCA
Srinivas Kanaparthi, NYCSCA
Jane O'Connell, NYSDEC
David Glass, TRC

This Progress Report #29 was prepared to describe work performed in April 2016 at the Public School 96X Addition Site, Index # R2-0801-13-01. Pursuant to the Order on Consent, submittal of written progress reports is required by the 10th day of each month commencing with the month subsequent to the approval of the Phase I Interim Remedial Measures (IRM) Work Plan. The Phase I IRM Work Plan was approved by the New York State Department of Environmental Conservation (NYSDEC) on December 3, 2013.

Work Activities Performed – April 2016

- The Data Usability Summary Report (DUSR) was completed for the February 2016 laboratory package, which contained the results of analysis of samples collected from of monitoring wells PS96X-MW-05, PS96X-TRC-MW-07, -08, -09, -11, -12, -13, -14, -15R, -17, and -18. A tabulated summary of the results of analysis are provided in the attached *Table 1*. Additionally, exceedances of Class GA Values are exhibited on the attached *Figure 1*.

Work Activities Proposed – May 2016

- Disposal of waste soil and groundwater generated during monitoring well installation and sampling.
- Following asphalt-paving of the parking area in the vicinity of proposed off-Site monitoring well PS96X-TRC-MW-19 (planned for May 2016) and in accordance with the NYSDEC-approved IRM Work Plan – Phase II, the following work activities will be conducted:

- Installation and development of off-Site monitoring well PS96X-TRC-MW-19.
- Pre-injection groundwater sampling of monitoring wells PS96X-TRC-MW-10, -17, -18, and -19.
- Injection of sodium lactate into monitoring wells PS96X-TRC-MW-17 and -18.
- Post-injection sampling of monitoring wells PS96X-TRC-MW-10 and -19.
- Survey of the location and elevation of monitoring wells PS96X-TRC-MW-15R, -17, -18, and -19.

Table 1
Results of Analysis of Groundwater Samples Collected in February 2016 for Volatile Organic Compounds
May 2016

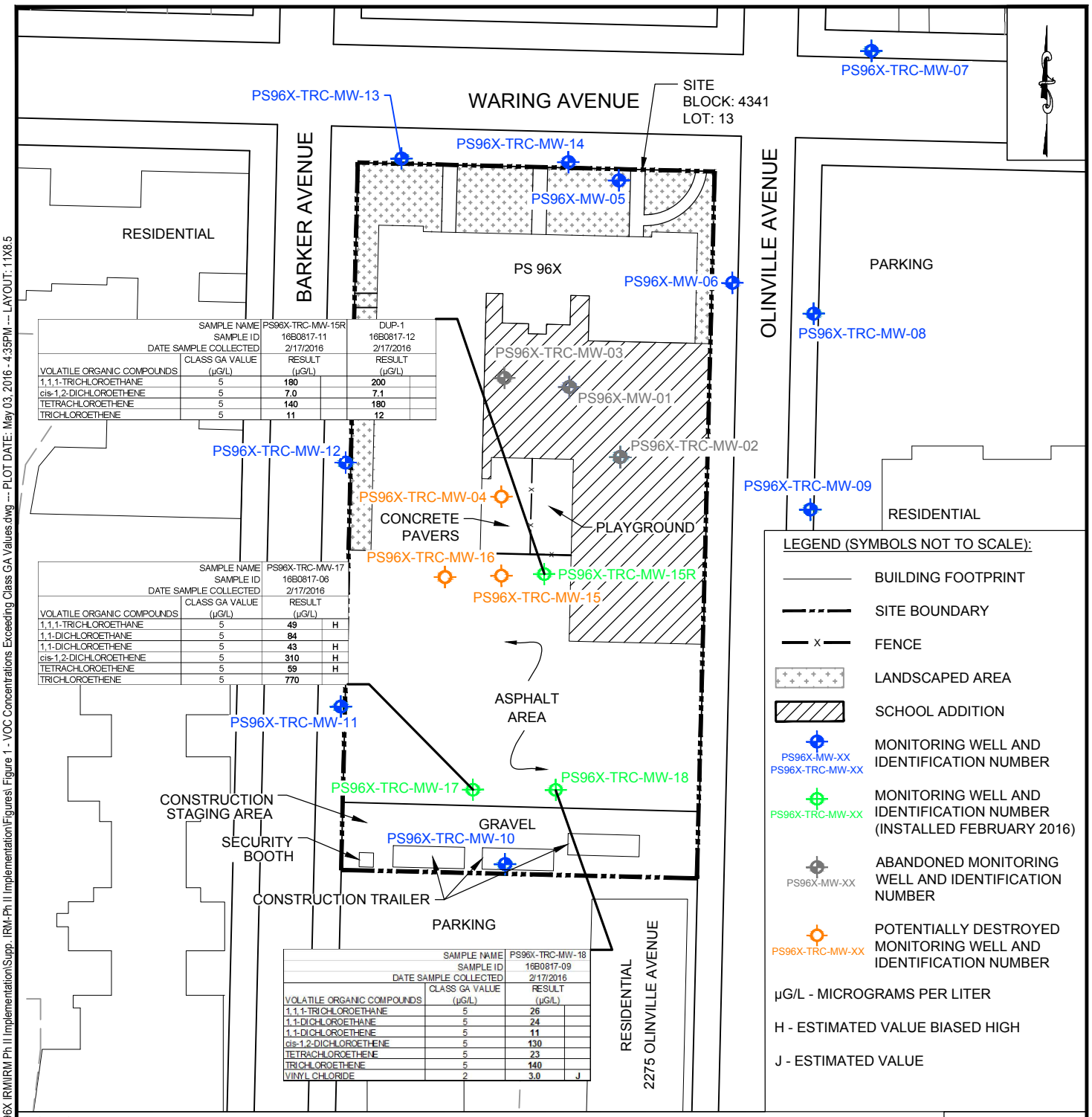
	SAMPLE NAME	PS96X-TRC-MW-05		PS96X-TRC-MW-07		PS96X-TRC-MW-08		PS96X-TRC-MW-09		PS96X-TRC-MW-11		PS96X-TRC-MW-12		PS96X-TRC-MW-13		PS96X-TRC-MW-14	
	LAB SAMPLE ID	16B0817-01		16B0817-07		16B0817-04		16B0817-02		16B0817-08		16B0817-10		16B0817-05		16B0817-03	
	DILUTION FACTOR	1		1		1		1		1		1		1		1	
	DATE SAMPLE COLLECTED	2/16/2016		2/17/2016 9:26 AM		2/16/2016 12:40 PM		2/16/2016 10:50 AM		2/17/2016 11:06 AM		2/17/2016 12:16 PM		2/16/2016 12:56 PM		2/16/2016 11:46 AM	
VOLATILE ORGANIC COMPOUNDS (VOCs)	Class GA Value (µg/L)	Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)	
1,1,1-Trichloroethane	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	5	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2,3-Trichlorobenzene	5	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2,4-Trichlorobenzene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dibromo-3-chloropropane	0.04	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dibromoethane (EDB)	0.0006	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
1,2-Dichlorobenzene	3	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	0.6	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	3	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	3	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Butanone (MEK)	50	20	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U
2-Hexanone (MBK)	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-Pentanone	~	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	50	50	U	50	U	50	U	50	U	50	U	50	U	15	J	50	U
Benzene	1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromochloromethane	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	50	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	50	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	5	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J
Carbon Disulfide	60	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U
Carbon Tetrachloride	5	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chlorobenzene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	5	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J
Chloroform	7	5.0		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chloromethane	5	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,2-Dichloroethene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	0.4	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Cyclohexane	~	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Dibromochloromethane	50	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Dichlorodifluoromethane	5	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J
Ethylbenzene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Isopropylbenzene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
m/p-Xylene	5	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Methyl acetate	~	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J
Methyl tert-butyl ether	10	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylcyclohexane	~	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene chloride	5	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
o-Xylene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Styrene	5	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J	1.0	U,J
Tetrachloroethene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-Dichloroethene	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-Dichloropropene	0.4	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Trichloroethene	5	1.0	U	1.0	U	1.0		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	5	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J	2.0	U,J
Vinyl chloride	2	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Xylenes (Total)	5[1]	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U

Notes:
~ - No criterion
µg/L - Micrograms per liter
H - Estimated value biased high
J - Estimated value
U - Non-detect
Light gray shade with black bold text values exceed Class GA Values.
[1] There is no standard or guidance value for total xylenes. The Standard for o-xylene, m-xylene, and p-xylene is 5 µg/L.
[2] DUP-1 was collected from PS96X-TRC-MW-15R.

Table 1
Results of Analysis of Groundwater Samples Collected in February 2016 for Volatile Organic Compounds
May 2016

	SAMPLE NAME	PS96X-TRC-MW-15R		DUP-1[2]		PS96X-TRC-MW-17		PS96X-TRC-MW-18		Equipment Blank		Trip Blank	
	LAB SAMPLE ID	16B0817-11		16B0817-12		16B0817-06		16B0817-09		16B0817-13		16B0817-14	
	DILUTION FACTOR	2		2		4		2		1		1	
	DATE SAMPLE COLLECTED	2/17/2016 2:00 PM		2/17/2016 3:00 PM		2/17/2016 9:20 AM		2/17/2016 11:25 AM		2/17/2016 8:00 AM		2/17/2016	
VOLATILE ORGANIC COMPOUNDS (VOCs)	Class GA Value (µg/L)	Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)		Result (µg/L)	
1,1,1-Trichloroethane	5	**180**		**200**		**49**	**H**	**26**		1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	5	1.0	U	1.0	U	2.0	U	1.0	U	0.50	U	0.50	U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	1	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
1,1-Dichloroethane	5	3.7		3.5		**84**		**24**		1.0	U	1.0	U
1,1-Dichloroethene	5	2.0	U	1.8	J	**43**	**H**	**11**		1.0	U	1.0	U
1,2,3-Trichlorobenzene	5	10	U	10	U	20	U	10	U	5.0	U	5.0	U
1,2,4-Trichlorobenzene	5	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
1,2-Dibromo-3-chloropropane	0.04	10	U	10	U	20	U	10	U	5.0	U	5.0	U
1,2-Dibromoethane (EDB)	0.0006	1.0	U	1.0	U	2.0	U	1.0	U	0.50	U	0.50	U
1,2-Dichlorobenzene	3	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
1,2-Dichloroethane	0.6	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
1,2-Dichloropropane	1	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	3	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	3	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
2-Butanone (MEK)	50	40	U	40	U	80	U	40	U	20	U	20	U
2-Hexanone (MBK)	50	20	U	20	U	40	U	20	U	10	U	10	U
4-Methyl-2-Pentanone	~	20	U	20	U	40	U	20	U	10	U	10	U
Acetone	50	100	U	100	U	200	U	100	U	50	U	50	U
Benzene	1	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
Bromochloromethane	5	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
Bromodichloromethane	50	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
Bromoform	50	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
Bromomethane	5	4.0	U,J	4.0	U,J	8.0	U,J	4.0	U,J	2.0	U,J	2.0	U,J
Carbon Disulfide	60	8.0	U	8.0	U	16	U	8.0	U	4.0	U	4.0	U
Carbon Tetrachloride	5	10	U	10	U	20	U	10	U	5.0	U	5.0	U
Chlorobenzene	5	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
Chloroethane	5	4.0	U,J	4.0	U,J	8.0	U,J	4.0	U,J	2.0	U,J	2.0	U,J
Chloroform	7	4.0	U	4.0	U	8.0	U	4.0	U	2.0	U	2.0	U
Chloromethane	5	4.0	U	4.0	U	8.0	U	4.0	U	2.0	U	2.0	U
cis-1,2-Dichloroethene	5	**7.0**		**7.1**		**310**	**H**	**130**		1.0	U	1.0	U
cis-1,3-Dichloropropene	0.4	1.0	U	1.0	U	2.0	U	1.0	U	0.50	U	0.50	U
Cyclohexane	~	10	U	10	U	20	U	10	U	5.0	U	5.0	U
Dibromochloromethane	50	1.0	U	1.0	U	2.0	U	1.0	U	0.50	U	0.50	U
Dichlorodifluoromethane	5	4.0	U,J	4.0	U,J	8.0	U,J	4.0	U,J	2.0	U,J	2.0	U,J
Ethylbenzene	5	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
Isopropylbenzene	5	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
m/p-Xylene	5	4.0	U	4.0	U	8.0	U	4.0	U	2.0	U	2.0	U
Methyl acetate	~	2.0	U,J	2.0	U,J	4.0	U,J	2.0	U,J	1.0	U,J	1.0	U,J
Methyl tert-butyl ether	10	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
Methylcyclohexane	~	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
Methylene chloride	5	10	U	10	U	20	U	10	U	5.0	U	5.0	U
o-Xylene	5	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
Styrene	5	2.0	U,J	2.0	U,J	4.0	U,J	2.0	U,J	1.0	U,J	1.0	U,J
Tetrachloroethene	5	**140**		**180**		**59**	**H**	**23**		1.0	U	1.0	U
Toluene	5	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
trans-1,2-Dichloroethene	5	2.0	U	2.0	U	4.0	U	2.0	U	1.0	U	1.0	U
trans-1,3-Dichloropropene	0.4	1.0	U	1.0	U	2.0	U	1.0	U	0.50	U	0.50	U
Trichloroethene	5	**11**		**12**		**770**		**140**		1.0	U	1.0	U
Trichlorofluoromethane	5	4.0	U,J	4.0	U,J	8.0	U,J	4.0	U,J	2.0	U,J	2.0	U,J
Vinyl chloride	2	4.0	U	1.5	J	8.0	U	**3.0**	**J**	2.0	U	2.0	U
Xylenes (Total)	5[1]	6.0	U	6.0	U	12	U	6.0	U	3.0	U	3.0	U

Notes:
~ - No criterion
µg/L - Micrograms per liter
H - Estimated value biased high
J - Estimated value
U - Non-detect
Light gray shade with black bold text values exceed Class GA Values.
[1] There is no standard or guidance value for total xylenes. The Standard for o-xylene, m-xylene, and p-xylene is 5 µg/L.
[2] DUP-1 was collected from PS96X-TRC-MW-15R.



	SAMPLE NAME	PS96X-TRC-MW-15R		DUP-1	
	SAMPLE ID	16B0817-11		16B0817-12	
	DATE SAMPLE COLLECTED	2/17/2016		2/17/2016	
VOLATILE ORGANIC COMPOUNDS	CLASS GA VALUE (µG/L)	RESULT (µG/L)		RESULT (µG/L)	
1,1,1-TRICHLOROETHANE	5	**180**		**200**	
cis-1,2-DICHLOROETHENE	5	**7.0**		**7.1**	
TETRACHLOROETHENE	5	**140**		**180**	
TRICHLOROETHENE	5	**11**		**12**	

	SAMPLE NAME	PS96X-TRC-MW-17	
	SAMPLE ID	16B0817-06	
	DATE SAMPLE COLLECTED	2/17/2016	
VOLATILE ORGANIC COMPOUNDS	CLASS GA VALUE (µG/L)	RESULT (µG/L)	
1,1,1-TRICHLOROETHANE	5	**49**	H
1,1-DICHLOROETHANE	5	**84**	
1,1-DICHLOROETHENE	5	**43**	H
cis-1,2-DICHLOROETHENE	5	**310**	H
TETRACHLOROETHENE	5	**59**	H
TRICHLOROETHENE	5	**770**	

	SAMPLE NAME	PS96X-TRC-MW-18	
	SAMPLE ID	16B0817-09	
	DATE SAMPLE COLLECTED	2/17/2016	
VOLATILE ORGANIC COMPOUNDS	CLASS GA VALUE (µG/L)	RESULT (µG/L)	
1,1,1-TRICHLOROETHANE	5	**26**	
1,1-DICHLOROETHANE	5	**24**	
1,1-DICHLOROETHENE	5	**11**	
cis-1,2-DICHLOROETHENE	5	**130**	
TETRACHLOROETHENE	5	**23**	
TRICHLOROETHENE	5	**140**	
VINYL CHLORIDE	2	**3.0**	J

NOTES:

1. THE FEBRUARY 2016 SAMPLING EVENT INCLUDED COLLECTION OF GROUNDWATER SAMPLES FROM MONITORING WELLS PS96X-MW-05, PS96X-TRC-MW-07, -08, -09, -11, -12, -13, -14, -15R, -17, AND -18.

0 80' 160'

APPROXIMATE SCALE: 1"=80'-0"

GROUNDWATER FLOW

TRC
1430 Broadway
10th Floor
New York, NY 10018
Phone: 212.221.7822

PROJECT:
NEW YORK CITY SCHOOL CONSTRUCTION AUTHORITY
P.S. 96X - 650 WARING AVENUE
BRONX, NEW YORK 10467

TITLE:
VOC CONCENTRATIONS EXCEEDING CLASS GA VALUES

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FIGURE 1

DRAWING NAME: I:\Projects\NYCSCA Contract C000012279\211646 - 96X IRM\IRM Ph II Implementation\Supp. IRM-Ph II Implementation\Figures\ Figure 1 - VOC Concentrations Exceeding Class GA Values.dwg — PLOT DATE: May 03, 2016 - 4:35PM — LAYOUT: 11X8.5