Appendix F

Email Correspondence

Email Subject: FOR-030: Forrest St Properties Cr GW Data Submittal

Surman, Steven

From: Ruiter, Aimee
Sent: Thursday, December 21, 2017 10:54 AM
To: Paulsen, Sandy
Subject: FW: FOR-030: Forrest St Properties Cr GW Data Submittal
Attachments: 2017-12-19 FOR-030 FSP Cr GW Data Package_F.pdf

From: Ruiter, Aimee
Sent: Tuesday, December 19, 2017 3:55 PM
To: David Spader; 'BDoshi@jcnj.org'; Joe Cunha; 'David Doyle (David.Doyle@dep.nj.gov)'; Tom Cozzi (Tom.Cozzi@dep.nj.gov); 'Amend-Babcock, Laura (Laura.Amend-Babcock@WestonSolutions.com)'; 'Amin, Prabal'; Costa, Ralph
Cc: Dorothy. Laguzza@leclairryan. com (Dorothy.Laguzza@leclairryan.com); Joe Lagrotteria (Joseph.Lagrotteria@leclairryan.com); Jody Overmyer (overmyer@ppg.com); Mark Terril; 'Feinberg, Richard [C] (feinberg@ppg.com)'; James D. Ray; Nancy Colson (ncolson@mdmc-law.com); Ronald Riccio (rriccio@mdmc-law.com)
Subject: FOR-030: Forrest St Properties Cr GW Data Submittal

Team –
For your information, please see attached a compilation of recently collected hexavalent and total chromium groundwater data from Forrest Street Properties to support the Forrest RAWP. This package includes:

- Sampling results from the new shallow well in the interior of the 98 Forrest Street building (114-MW44A),
- Sampling results from the Forrest Street Property wells and Boiler Room Basement sumps sampled in September 2017, and
- Historic data from these same wells and sumps, to illustrate concentration trends over time.

The attached compiled PDF includes a figure, tables, graphs, and boring logs. Laboratory reports and data validation packages will be provided via SendFiles in a separate email from Sandy Paulsen.

The results indicate:

- For the new shallow well in the interior of the 98 Forrest Street Building (114-MW44A), hex chrome and total chrome were non-detect (and therefore below the GWQS).
- In shallow groundwater, results for wells previously below the GWQS remained below the GWQS.
- In shallow groundwater, results for the one well with groundwater above the GWQS (114-MW25A, located at the south end of the FSP alleyways adjacent to FS), continue to exhibit a decreasing trend.
- In the intermediate zone, the results were below the GWQS.
- In the Boiler Room Basement sumps, results were above the GWQS, sometimes higher than the previous sampling events in 2015 and 2016.

This information is being provided in response to NJDEP's request to provide data associated with the 98 Forrest well (114-MW44A), in order to support their recommendation on the remedial approach for the 98 Forrest Street building interior. AECOM/PPG request a technical call be scheduled with Weston in January 2018 to discuss. Please advise on availability for such a call.

Thank you,
Aimee

Figure

File: \\USPSW2PFPSW001\Data\Data_USPSW2VFP001\Environment\Piscataway\Project\PPG-NJCProgram\7-Deliverables\7.1B-GAGroup\Forrest\FOR-030 GW Data Submittal\1.0 Figure\CAD\2017-11-30 FOR-030 FSP GW Dat

P Q R S T U V W X Y Z AA BB CC DD EE FF GG HH II JJ

3B 4B 5B 6B 7B 8B 9B 10B 11B 12B 13B 14B 15B 16B 17B 18B

SITE 114

SITE 199

FORREST STREET

HALLADAY STREET

SKYWAYS
BLOCK 21501/LOT 15
(CARAGLIANO)

BLOCK 21501/LOT 14
(CARAGLIANO)

BLOCK 21501/LOT 11&12
(CARAGLIANO)

(Block 21501/Lot 10)
(CARAGLIANO)

(Block 21501/Lot 5-9)

(Block 21501/Lot 4)

100 FORREST ST
1 STORY STUCCO
BUILDING

98 FORREST ST
3 STORY STUCCO
BUILDING

86-90 FORREST ST
3 STORY STUCCO
BUILDING

84 FORREST ST
1 STORY
LOADING DOCK

78 FORREST ST
1 STORY STUCCO
BUILDING

114-MW44A
114-MW25A
114-MW25B
114-MW36B
114-MW27B
114-MW27A
114-MW36A
Forrest-Sump-W
Forrest-Sump-S
Forrest-Sump-E
114-MW37A
114-MW37B

LEGEND

- MONITORING WELL OR SUMP LOCATION
- CURB
- CHAIN LINK FENCE
- NEW JERSEY TRANSIT – LIGHT RAIL
- EXISTING SHEETPILE
- EXISTING BUILDING
- PROPERTY LINE

NORTH
NEW JERSEY STATE PLANE COORDINATE SYSTEM NAD 83

AECOM

25 0 50
GRAPHIC SCALE IN FEET

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY

DATE: 11/30/2017 | DRWN: SAP

MONITORING WELL AND SUMP LOCATIONS
FORREST STREET PROPERTIES
GROUNDWATER DATA SUBMITTAL

FIGURE 1

Tables

Table 1
Validated Cr^{+6} Sample Results Summary - Groundwater
Forrest Street Properties
PPG, Jersey City, New Jersey

					Analyte	CHROMIUM (HEXAVALENT)	
					CAS RN	18540-29-9	
					Fraction	T	
					GWQS	70	
					Units	ug/L	
Location ID	**Sample ID**	**Sample Type**	**Lab SDG**	**Lab Sample ID**	**Sample Date**	**Result**	**Qualifier**
SHALLOW							
114-MW25A	114-MW25A	N	460354271	460-35427-1	1/5/2012	**485000**	
114-MW25A	114-MW25A 022212	N	JA99948	JA99948-3	2/22/2012	**463000**	
114-MW25A	114-MW25A-09242013	N	JB48263	JB48263-3	9/24/2013	**1300**	
114-MW25A	114-MW25A-20150720	N	JB99503	JB99503-1	7/20/2015	**110**	
114-MW25A	114-MW25A-20160926	N	JC28410	JC28410-3	9/26/2016	**98**	
114-MW25A	114-MW25A-20170926	N	JC51802	JC51802-5	9/26/2017	< 8.1	U
114-MW27A	114-MW27A	N	460354271	460-35427-2	1/5/2012	< 2.7	U
114-MW27A	114-MW27A 022212	N	JA99948	JA99948-2	2/22/2012	< 1.3	U
114-MW27A	114-MW27A-09242013	N	JB48263	JB48263-2	9/24/2013	< 2.4	U
114-MW27A	114-MW27A-20150720	N	JB99503	JB99503-4	7/20/2015	< 3.1	U
114-MW27A	114-MW27A-20170926	N	JC51802	JC51802-4	9/26/2017	56	
114-MW36A	114-MW36A-20150721	N	JB99605	JB99605-4	7/21/2015	< 3.1	U
114-MW36A	114-MW36A-20160926-8.5	N	JC28410	JC28410-5	9/26/2016	< 3.9	U
114-MW36A	114-MW36A-20160926-13.5	N	JC28410	JC28410-6	9/26/2016	< 3.9	U
114-MW36A	114-MW36A-20170927	N	JC51874	JC51874-2	9/27/2017	< 8.1	U
114-MW36A	114-MW36A-20170927-X	FD	JC51874	JC51874-3	9/27/2017	< 8.1	U
114-MW37A	114-MW37A-20150722	N	JB99718	JB99718-4	7/22/2015	< 3.1	U
114-MW37A	114-MW37A-20170926	N	JC51802	JC51802-2	9/26/2017	16	J
114-MW44A	114-MW44A	N	JC55349	JC55349-2	11/13/2017	< 8.1	U
INTERMEDIATE							
114-MW25B	114-MW25B	N	JB65499	JB65499-1	4/24/2014	**22600**	J
114-MW25B	114-MW25B-20150720	N	JB99503	JB99503-2	7/20/2015	**2500**	
114-MW25B	114-MW25B-20170928	N	JC52007	JC52007-2	9/28/2017	< 8.1	U
114-MW27B	114-MW27B	N	JB65499	JB65499-2	4/24/2014	< 1.5	UJ
114-MW27B	114-MW27B-20150720	N	JB99503	JB99503-5	7/20/2015	< 3.1	U
114-MW27B	114-MW27B-20170928	N	JC52007	JC52007-3	9/28/2017	< 8.1	U
114-MW36B	114-MW36B-20150721	N	JB99605	JB99605-5	7/21/2015	44	
114-MW36B	114-MW36B-20170927	N	JC51874	JC51874-4	9/27/2017	< 8.1	U
114-MW37B	114-MW37B-20150722	N	JB99718	JB99718-5	7/22/2015	3.2	J
114-MW37B	114-MW37B-20150722X	FD	JB99718	JB99718-6	7/22/2015	3.2	J
114-MW37B	114-MW37B-20170926	N	JC51802	JC51802-3	9/26/2017	< 8.1	U
SUMPS							
Forrest-Sump-E	90FORR-ESW-001	N	JA88214	JA88214-2	10/5/2011	**12600**	
Forrest-Sump-E	FORREST-SUMP-E	N	460353341	460-35334-1	1/3/2012	**15600**	
Forrest-Sump-E	FORREST-SUMP-E-09232013	N	JB48159	JB48159-1	9/23/2013	**1500**	
Forrest-Sump-E	FORREST-SUMP-E-04242014	N	JB65499	JB65499-3	4/24/2014	**1500**	J
Forrest-Sump-E	FORREST-SUMP-E-20150723	N	JB99807	JB99807-4	7/23/2015	**310**	
Forrest-Sump-E	FORREST-SUMP-E-20160926	N	JC28410	JC28410-1	9/26/2016	**160**	
Forrest-Sump-E	FORREST-SUMP-E-20160926X	FD	JC28410	JC28410-2	9/26/2016	**170**	
Forrest-Sump-E	FORREST-SUMP-E-20170928	N	JC52007	JC52007-6	9/28/2017	**550**	
Forrest-Sump-S	FORREST-SUMP-S-09232013	N	JB48159	JB48159-3	9/23/2013	**10000**	
Forrest-Sump-S	FORREST-SUMP-S-20150723	N	JB99807	JB99807-5	7/23/2015	**7900**	
Forrest-Sump-S	FORREST-SUMP-S-20160926	N	JC28410	JC28410-7	9/26/2016	**2900**	
Forrest-Sump-S	FORREST-SUMP-S-20170925	N	JC51716	JC51716-2	9/25/2017	**8500**	
Forrest-Sump-S	FORREST-SUMP-S-20170928	N	JC52007	JC52007-4	9/28/2017	**7700**	
Forrest-Sump-W	90FORR-WSW-001	N	JA88214	JA88214-1	10/5/2011	**35700**	
Forrest-Sump-W	FORREST-SUMP-W	N	460353341	460-35334-2	1/3/2012	**22200**	
Forrest-Sump-W	FORREST-SUMP-W-09232013	N	JB48159	JB48159-2	9/23/2013	**680**	
Forrest-Sump-W	FORREST-SUMP-W-04242014	N	JB65499	JB65499-4	4/24/2014	**1300**	J
Forrest-Sump-W	FORREST-SUMP-W-20150723	N	JB99807	JB99807-6	7/23/2015	**290**	
Forrest-Sump-W	FORREST-SUMP-W-20160926	N	JC28410	JC28410-4	9/26/2016	< 3.9	U
Forrest-Sump-W	FORREST-SUMP-W-20170925	N	JC51716	JC51716-3	9/25/2017	23	
Forrest-Sump-W	FORREST-SUMP-W-20170928	N	JC52007	JC52007-5	9/28/2017	**380**	

Notes:
1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the reporting limit (RL). Outputs from the project database default to reporting non-detects as less than the method detection limit (MDL).

2. Analytical results were compared to the NJDEP GWQS for total chromium

3. **Bold** - Indicates exceedance of NJDEP GWQS (for total chromium)

4. Sump locations Forrest-Sump-S and Forrest-Sump-W were sampled on 9/25/2017, the sumps were allowed to purge, and then were re-sampled on 9/28/2017. Forrest-Sump-E could not be sampled on 9/25/2017 due to insufficient water volume.

CAS RN - Chemical Abstract Service Registry Number
Cr^{+6} - Hexavalent chromium
Fraction: T - total/unfiltered
GWQS - Groundwater Quality Standard
NJDEP - New Jersey Department of Environmental Protection
Sample Type: N - Normal; FD - field duplicate
SDG - Sample Delivery Group
ug/L - micrograms per liter

Qualifier Definitions:
J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.
U - Indicates that the analyte was not detected at the reported Method Detection Limit.
UJ - Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.

Table 2
Validated Total Cr Sample Results Summary - Groundwater
Forrest Street Properties
PPG, Jersey City, New Jersey

					Analyte	CHROMIUM	
					CAS RN	18540-29-9	
					Fraction	T	
					GWQS	70	
					Units	ug/L	
Location ID	**Sample ID**	**Sample Type**	**Lab SDG**	**Lab Sample ID**	**Sample Date**	**Result**	**Qualifier**
SHALLOW							
114-MW25A	114-MW25A	N	460354271	460-35427-1	1/5/2012	**408000**	
114-MW25A	114-MW25A 022212	N	JA99948	JA99948-3	2/22/2012	**444000**	
114-MW25A	114-MW25A-09242013	N	JB48263	JB48263-3	9/24/2013	**1920**	
114-MW25A	114-MW25A-20150720	N	JB99503A	JB99503-1A	7/20/2015	**202**	
114-MW25A	114-MW25A-20160926	N	JC28410	JC28410-3	9/26/2016	**165**	
114-MW25A	114-MW25A-20170926	N	JC51802	JC51802-5	9/26/2017	**102**	
114-MW27A	114-MW27A	N	460354271	460-35427-2	1/5/2012	26.6	
114-MW27A	114-MW27A 022212	N	JA99948	JA99948-2	2/22/2012	11	
114-MW27A	114-MW27A-09242013	N	JB48263	JB48263-2	9/24/2013	4	J
114-MW27A	114-MW27A-20150720	N	JB99503A	JB99503-4A	7/20/2015	< 0.77	U
114-MW27A	114-MW27A-20170926	N	JC51802	JC51802-4	9/26/2017	66.6	
114-MW36A	114-MW36A-20150721	N	JB99605A	JB99605-4A	7/21/2015	50.1	
114-MW36A	114-MW36A-20160926-8.5	N	JC28410	JC28410-5	9/26/2016	< 0.81	UB
114-MW36A	114-MW36A-20160926-13.5	N	JC28410	JC28410-6	9/26/2016	< 0.81	UB
114-MW36A	114-MW36A-20170927	N	JC51874	JC51874-2	9/27/2017	1.5	J
114-MW36A	114-MW36A-20170927-X	FD	JC51874	JC51874-3	9/27/2017	1.1	J
114-MW37A	114-MW37A-20150722	N	JB99718A	JB99718-4A	7/22/2015	1.4	J
114-MW37A	114-MW37A-20170926	N	JC51802	JC51802-2	9/26/2017	1.5	J
114-MW44A	114-MW44A	N	JC55349A	JC55349-2A	11/13/2017	< 0.85	U
INTERMEDIATE							
114-MW25B	114-MW25B	N	JB65499A	JB65499-1A	4/24/2014	**25100**	
114-MW25B	114-MW25B-20150720	N	JB99503A	JB99503-2A	7/20/2015	**2940**	
114-MW25B	114-MW25B-20170928	N	JC52007A	JC52007-2A	9/28/2017	6.2	J
114-MW27B	114-MW27B	N	JB65499A	JB65499-2A	4/24/2014	6.8	J
114-MW27B	114-MW27B-20150720	N	JB99503A	JB99503-5A	7/20/2015	1.2	J
114-MW27B	114-MW27B-20170928	N	JC52007A	JC52007-3A	9/28/2017	5.1	J
114-MW36B	114-MW36B-20150721	N	JB99605A	JB99605-5A	7/21/2015	**105**	
114-MW36B	114-MW36B-20170927	N	JC51874	JC51874-4	9/27/2017	42.2	
114-MW37B	114-MW37B-20150722	N	JB99718A	JB99718-5A	7/22/2015	1.9	J
114-MW37B	114-MW37B-20150722X	FD	JB99718A	JB99718-6A	7/22/2015	1.4	J
114-MW37B	114-MW37B-20170926	N	JC51802	JC51802-3	9/26/2017	1.8	J
SUMPS							
Forrest-Sump-E	90FORR-ESW-001	N	JA88214	JA88214-2	10/5/2011	**13000**	
Forrest-Sump-E	FORREST-SUMP-E	N	460353341	460-35334-1	1/3/2012	**15100**	
Forrest-Sump-E	FORREST-SUMP-E-09232013	N	JB48159	JB48159-1	9/23/2013	**28600**	
Forrest-Sump-E	FORREST-SUMP-E-04242014	N	JB65499A	JB65499-3A	4/24/2014	**2210**	
Forrest-Sump-E	FORREST-SUMP-E-20150723	N	JB99807A	JB99807-4A	7/23/2015	**429**	
Forrest-Sump-E	FORREST-SUMP-E-20160926	N	JC28410	JC28410-1	9/26/2016	**346**	J
Forrest-Sump-E	FORREST-SUMP-E-20160926X	FD	JC28410	JC28410-2	9/26/2016	**273**	J
Forrest-Sump-E	FORREST-SUMP-E-20170928	N	JC52007A	JC52007-6A	9/28/2017	**647**	
Forrest-Sump-S	FORREST-SUMP-S-09232013	N	JB48159	JB48159-3	9/23/2013	**52300**	
Forrest-Sump-S	FORREST-SUMP-S-20150723	N	JB99807A	JB99807-5A	7/23/2015	**32700**	
Forrest-Sump-S	FORREST-SUMP-S-20160926	N	JC28410	JC28410-7	9/26/2016	**12900**	
Forrest-Sump-S	FORREST-SUMP-S-20170925	N	JC51716	JC51716-2	9/25/2017	**47700**	
Forrest-Sump-S	FORREST-SUMP-S-20170928	N	JC52007A	JC52007-4A	9/28/2017	**67700**	
Forrest-Sump-W	90FORR-WSW-001	N	JA88214	JA88214-1	10/5/2011	**51000**	
Forrest-Sump-W	FORREST-SUMP-W	N	460353341	460-35334-2	1/3/2012	**23600**	
Forrest-Sump-W	FORREST-SUMP-W-09232013	N	JB48159	JB48159-2	9/23/2013	**41700**	
Forrest-Sump-W	FORREST-SUMP-W-04242014	N	JB65499A	JB65499-4A	4/24/2014	**1690**	
Forrest-Sump-W	FORREST-SUMP-W-20150723	N	JB99807A	JB99807-6A	7/23/2015	**336**	
Forrest-Sump-W	FORREST-SUMP-W-20160926	N	JC28410	JC28410-4	9/26/2016	**100**	
Forrest-Sump-W	FORREST-SUMP-W-20170925	N	JC51716	JC51716-3	9/25/2017	46.3	
Forrest-Sump-W	FORREST-SUMP-W-20170928	N	JC52007A	JC52007-5A	9/28/2017	**446**	

Notes:
1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the reporting limit (RL). Outputs from the project database default to reporting non-detects as less than the method detection limit (MDL).

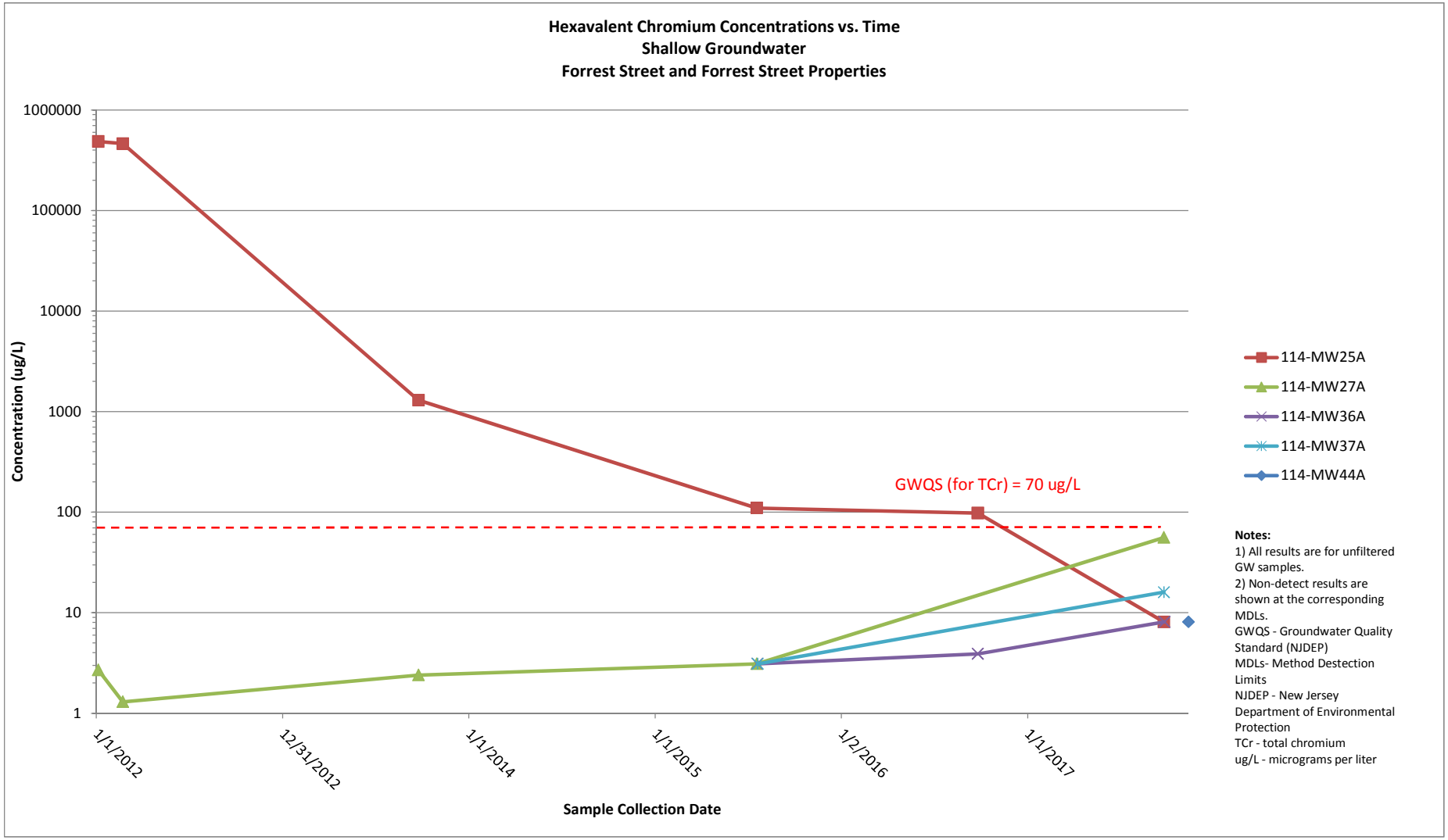
2. **Bold** - Indicates exceedance of NJDEP GWQS

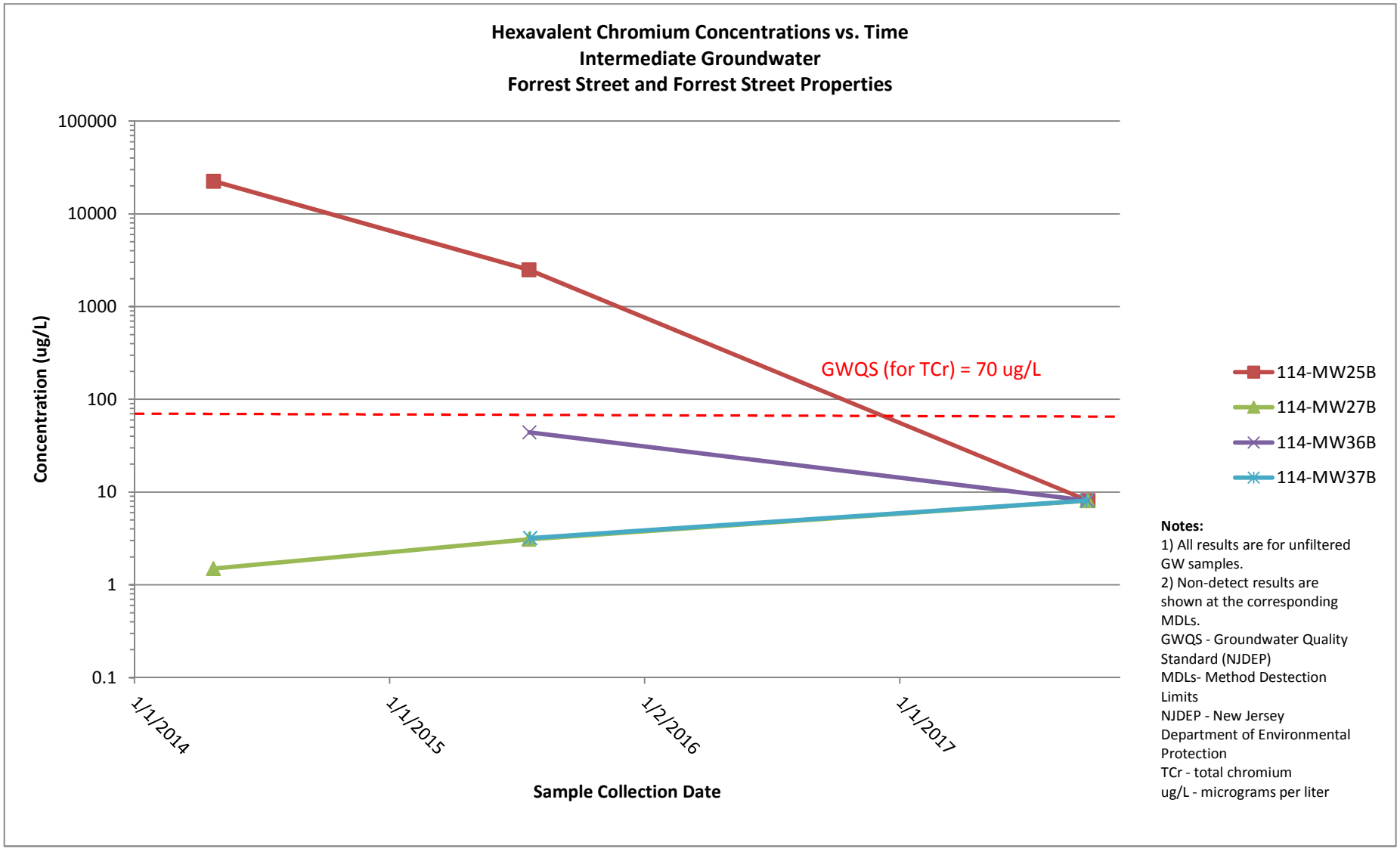
3. Sump locations Forrest-Sump-S and Forrest-Sump-W were sampled on 9/25/2017, the sumps were allowed to purge, and then were re-sampled on 9/28/2017. Forrest-Sump-E could not be sampled on 9/25/2017 due to insufficient water volume.

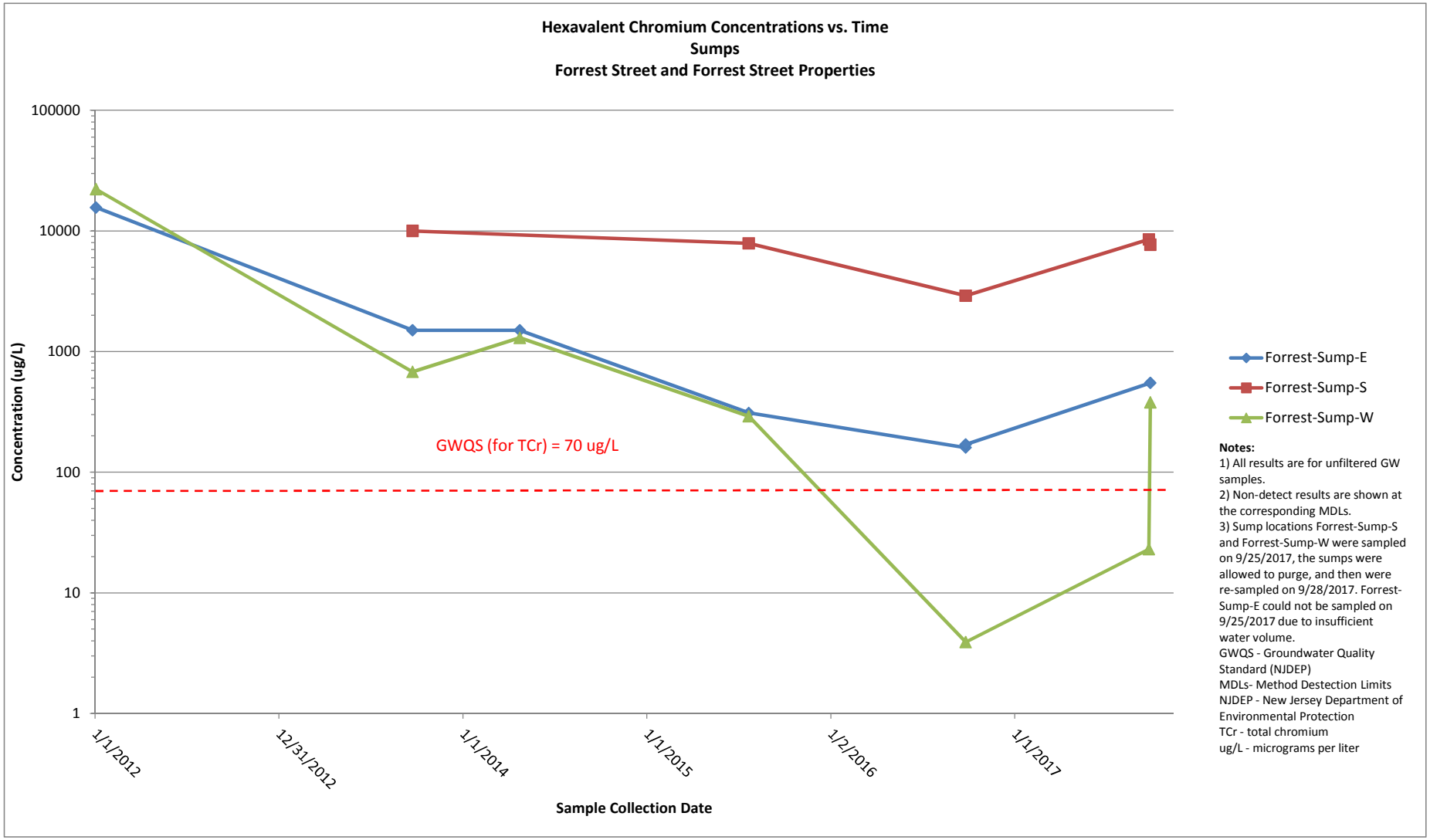
CAS RN - Chemical Abstract Service Registry Number
Cr - Chromium
Fraction: T - total/unfiltered
GWQS - Groundwater Quality Standard
NJDEP - New Jersey Department of Environmental Protection
Sample Type: N - Normal; FD - field duplicate
SDG - Sample Delivery Group
ug/L - micrograms per liter

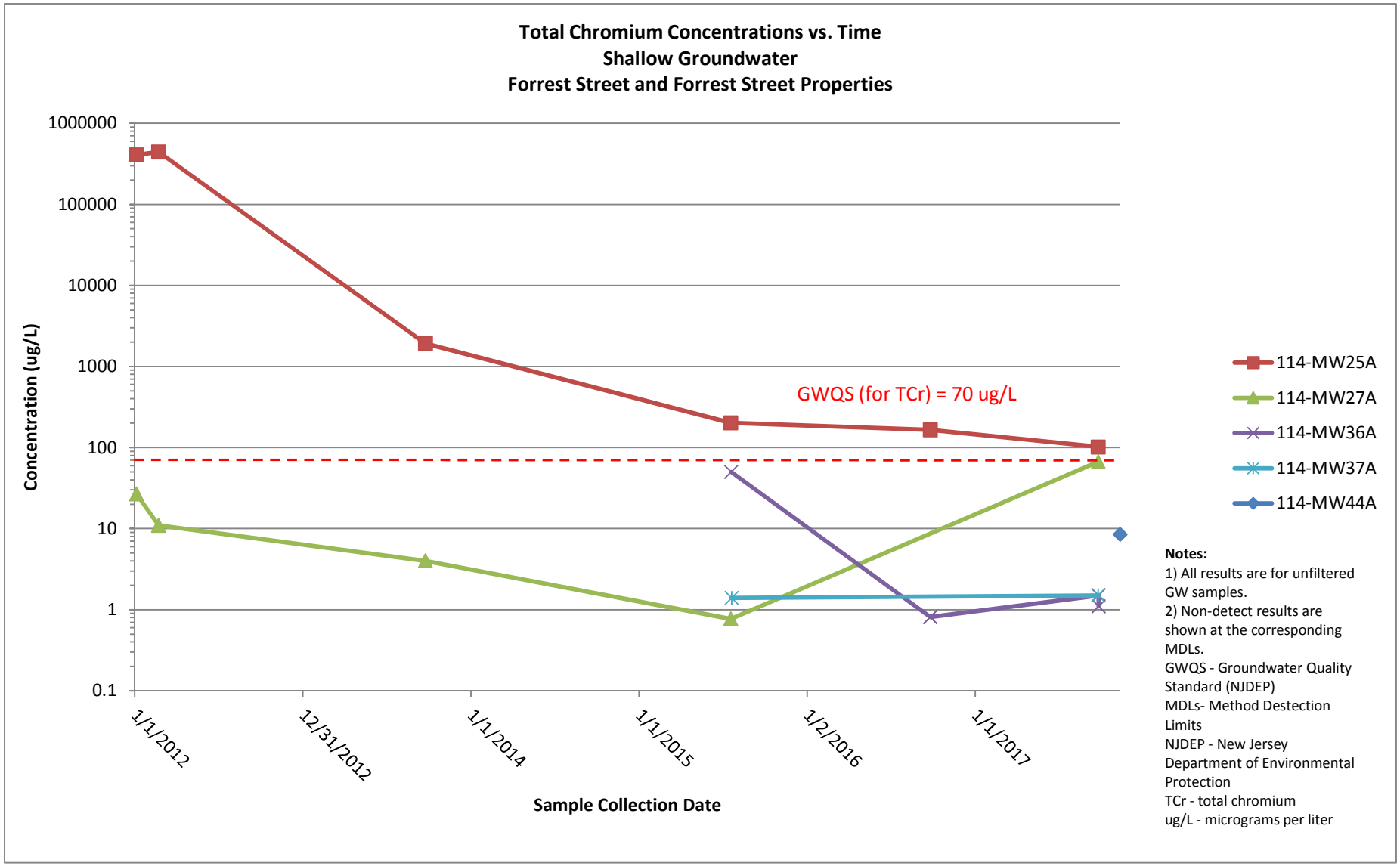
Qualifier Definitions:
J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.
U - Indicates that the analyte was not detected at the reported Method Detection Limit.
UB - Indicates that the analyte is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination..

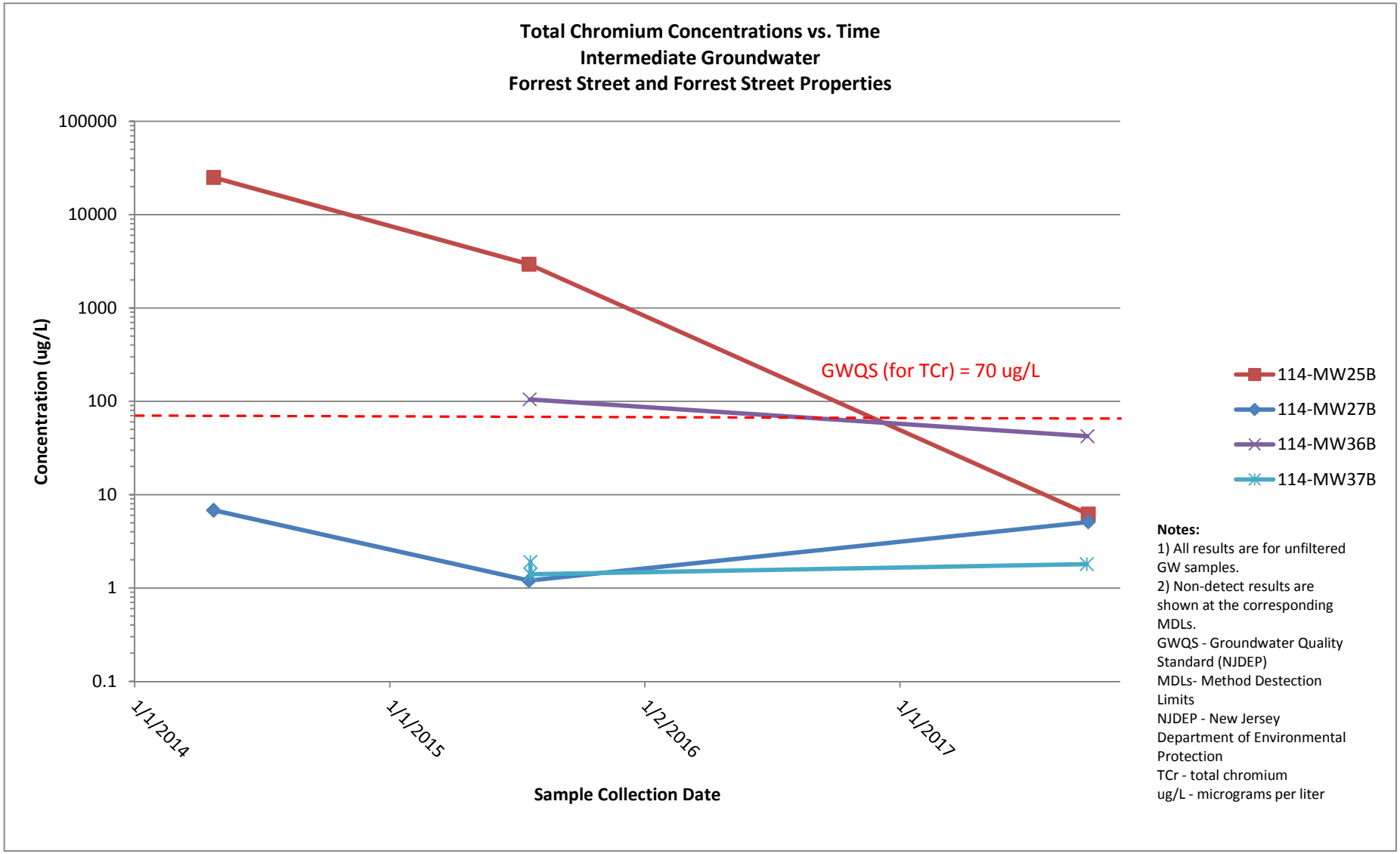
Graphs

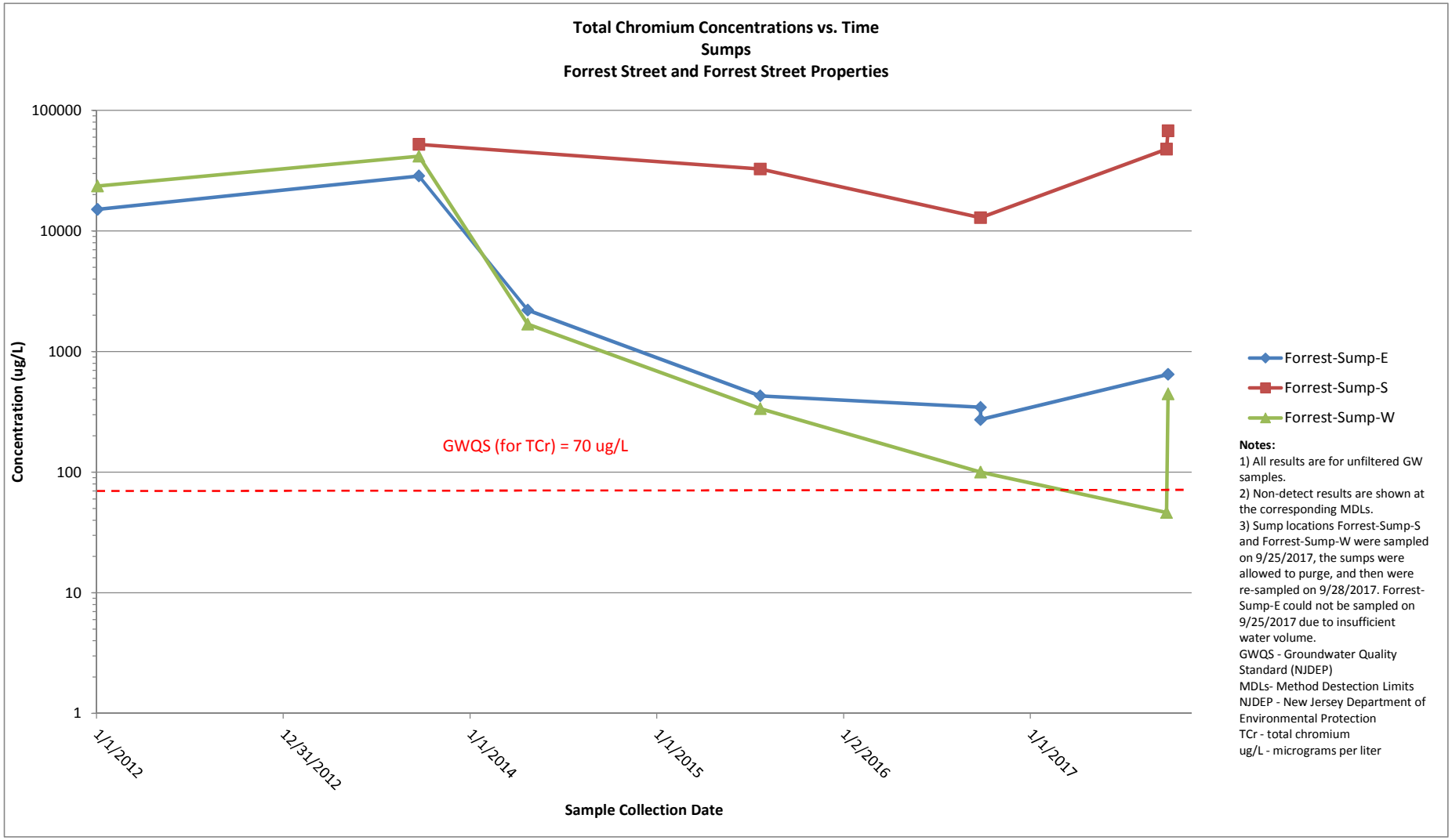

Hexavalent Chromium Concentrations vs. Time
Shallow Groundwater
Forrest Street and Forrest Street Properties
Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
GWQS (for TCr) = 70 ug/L
1/1/2012
12/31/2012
1/1/2014
1/1/2015
1/2/2016
1/1/2017
Sample Collection Date
114-MW25A
114-MW27A
114-MW36A
114-MW37A
114-MW44A
Notes:
1) All results are for unfiltered GW samples.
2) Non-detect results are shown at the corresponding MDLs.
GWQS - Groundwater Quality Standard (NJDEP)
MDLs- Method Destection Limits
NJDEP - New Jersey Department of Environmental Protection
TCr - total chromium
ug/L - micrograms per liter


Hexavalent Chromium Concentrations vs. Time
Intermediate Groundwater
Forrest Street and Forrest Street Properties
Concentration (ug/L)
100000
10000
1000
100
10
1
0.1
GWQS (for TCr) = 70 ug/L
1/1/2014
1/1/2015
1/2/2016
1/1/2017
Sample Collection Date
114-MW25B
114-MW27B
114-MW36B
114-MW37B
Notes:
1) All results are for unfiltered GW samples.
2) Non-detect results are shown at the corresponding MDLs.
GWQS - Groundwater Quality Standard (NJDEP)
MDLs- Method Destection Limits
NJDEP - New Jersey Department of Environmental Protection
TCr - total chromium
ug/L - micrograms per liter


Hexavalent Chromium Concentrations vs. Time
Sumps
Forrest Street and Forrest Street Properties
Concentration (ug/L)
100000
10000
1000
100
10
1
GWQS (for TCr) = 70 ug/L
1/1/2012
12/31/2012
1/1/2014
1/1/2015
1/2/2016
1/1/2017
Sample Collection Date
Forrest-Sump-E
Forrest-Sump-S
Forrest-Sump-W
Notes:
1) All results are for unfiltered GW samples.
2) Non-detect results are shown at the corresponding MDLs.
3) Sump locations Forrest-Sump-S and Forrest-Sump-W were sampled on 9/25/2017, the sumps were allowed to purge, and then were re-sampled on 9/28/2017. Forrest-Sump-E could not be sampled on 9/25/2017 due to insufficient water volume.
GWQS - Groundwater Quality Standard (NJDEP)
MDLs- Method Destection Limits
NJDEP - New Jersey Department of Environmental Protection
TCr - total chromium
ug/L - micrograms per liter


Total Chromium Concentrations vs. Time
Shallow Groundwater
Forrest Street and Forrest Street Properties
Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
0.1
GWQS (for TCr) = 70 ug/L
1/1/2012
12/31/2012
1/1/2014
1/1/2015
1/2/2016
1/1/2017
Sample Collection Date
114-MW25A
114-MW27A
114-MW36A
114-MW37A
114-MW44A
Notes:
1) All results are for unfiltered GW samples.
2) Non-detect results are shown at the corresponding MDLs.
GWQS - Groundwater Quality Standard (NJDEP)
MDLs- Method Destection Limits
NJDEP - New Jersey Department of Environmental Protection
TCr - total chromium
ug/L - micrograms per liter


Total Chromium Concentrations vs. Time
Intermediate Groundwater
Forrest Street and Forrest Street Properties
Concentration (ug/L)
100000
10000
1000
100
10
1
0.1
GWQS (for TCr) = 70 ug/L
1/1/2014
1/1/2015
1/2/2016
1/1/2017
Sample Collection Date
114-MW25B
114-MW27B
114-MW36B
114-MW37B
Notes:
1) All results are for unfiltered GW samples.
2) Non-detect results are shown at the corresponding MDLs.
GWQS - Groundwater Quality Standard (NJDEP)
MDLs- Method Destection Limits
NJDEP - New Jersey Department of Environmental Protection
TCr - total chromium
ug/L - micrograms per liter


Total Chromium Concentrations vs. Time
Sumps
Forrest Street and Forrest Street Properties
Concentration (ug/L)
100000
10000
1000
100
10
1
GWQS (for TCr) = 70 ug/L
1/1/2012
12/31/2012
1/1/2014
1/1/2015
1/2/2016
1/1/2017
Sample Collection Date
Forrest-Sump-E
Forrest-Sump-S
Forrest-Sump-W
Notes:
1) All results are for unfiltered GW samples.
2) Non-detect results are shown at the corresponding MDLs.
3) Sump locations Forrest-Sump-S and Forrest-Sump-W were sampled on 9/25/2017, the sumps were allowed to purge, and then were re-sampled on 9/28/2017. Forrest-Sump-E could not be sampled on 9/25/2017 due to insufficient water volume.
GWQS - Groundwater Quality Standard (NJDEP)
MDLs- Method Destection Limits
NJDEP - New Jersey Department of Environmental Protection
TCr - total chromium
ug/L - micrograms per liter

Boring Logs

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: 114-MW25A

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Hurricane	**Coordinates (NJSPNAD83) x:** 611787.9
Date Started Drilling: 12/1/2011	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683588.8
Date Finished Drilling: 12/2/2011	**Core Size:** 12 in	**Boring Total Depth:** 15 ft
Logged By: D. Chamberland	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest St		**Surface Elevation:** 10.2 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
			dry	ASPHALT		Black ASPHALT and White Concrete, dense.	
1			moist	FILL		Very Dark Gray (10YR 3/1) fine to coarse SAND, little fine to medium angular Gravel, trace Silt, loose.	MW25A-1.0
2			moist	FILL		Brown (7.5YR 4/2) fine to coarse SAND, little Silt and fine to coarse angular Gravel, loose.	
3							MW25A-3.0
4			moist	FILL		Black (7.5YR 2.5/1) SILT and fine Sand, trace Fill Material (debris), soft.	
5							MW25A-4.5
6			moist	FILL		Yellowish Brown (10YR 5/4) fine SAND, uniform, loose.	
			wet	FILL		Dark Yellowish Brown (10YR 4/4) very fine SAND, some Silt, trace medium Sand, medium dense. Yellow water.	MW25A-6.0
7			wet	FILL		Interbedded Very Pale Brown (10YR 7/4) to Reddish Yellow (7.5YR 6/6) fine SAND, trace Silt, dense.	
8							MW25A-8.0
9			wet	VOID		No Recovery.	
10			moist	FILL		Brown (7.5YR 5/4) fine to medium SAND, medium dense.	MW25A-10.0
11			wet	FILL		Yellowish Brown (10YR 5/6) medium SAND, some fine Sand, loose. Saturated with yellow water.	
12							MW25A-12.0
13			dry	FILL		Light Yellowish Brown (10YR 6/4) fine SAND, little fine to medium Rock fragments, trace Silt, dense.	
14			moist	SP		Yellowish Red (5YR 5/6) medium to coarse SAND, some fine rounded Gravel, dense.	MW25A-14.0
15						End of boring at 15 ft. Well set at 14.5 ft.	

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments:

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: 114-MW25B

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Mud Rotary	**Coordinates (NJSPNAD83) x:** 611795.8
Date Started Drilling: 1/20/2014 9:00:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683596
Date Finished Drilling: 1/24/2014 1:30:00 PM	**Core Size:** 2 in	**Boring Total Depth:** 35 ft
Logged By: EW	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest Street - 114-MW25B		**Surface Elevation:** 10.3 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
1–2	3	0.0	dry to moist	FILL		fine to medium SAND, some COPR, (5YR 2.5/2) dark reddish brown, non plastic, loose, dry to moist, no odor, no staining.	
3–4	0	0.0		CONCRETE		CONCRETE	
4–5	0			NR		NO RECOVERY	
6–7	0			NR		NO RECOVERY	
8–9	1.5	0.0	moist	FILL		fine SAND, with silt, (5YR 4/4) reddish brown, non plastic, soft, moist, no odor, no staining.	
10–11	1	0.0	moist	FILL		fine SAND, with silt, (5YR 4/4) reddish brown, non plastic, soft, moist, no odor, no staining.	
12–13	1	0.0	wet	FILL		fine to medium SAND, with fine to medium gravel, (5YR 4/3) reddish brown, non plastic, soft to loose, wet, no odor, no staining.	
14–15	1.2	0.0	wet	FILL		fine to medium SAND, with fine to medium gravel, (5YR 4/4) reddish brown, non plastic, loose, wet, no odor, no staining.	
15–16		0.0	wet	SM		fine to medium SAND, with fine to coarse gravel, (5YR 4/3) reddish brown, non plastic, loose, wet, no odor, no staining, angular, red fine sand layer. Soils consistent with UNDno.	
16–17	1.2	0.0	wet	SM		fine to medium SAND, with fine to coarse gravel, (5YR 4/3) reddish brown, non plastic, loose, wet, no odor, no staining, angular, red fine sand layer. Soils consistent with UNDno.	
18–19	0.6	0.0	moist	SM		fine to medium SAND, with fine to medium gravel, (5YR 4/4) reddish brown, non plastic, hard, moist, no odor, no staining. Soils consistent with UNDno.	
20–21	3	0.0		SM		Drill advanced 3.0 feet. Soils consistent with UNDno.	

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments:

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: 114-MW25B

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Mud Rotary	**Coordinates (NJSPNAD83) x:** 611795.8
Date Started Drilling: 1/20/2014 9:00:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683596
Date Finished Drilling: 1/24/2014 1:30:00 PM	**Core Size:** 2 in	**Boring Total Depth:** 35 ft
Logged By: EW	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest Street - 114-MW25B		**Surface Elevation:** 10.3 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
23	1	0.0	moist	SM		fine to medium SAND, with fine to medium gravel, (5YR 4/4) reddish brown, non plastic, hard, moist, no odor, no staining. Soils consistent with UNDno.	
24	3	0.0		SM		Drill advanced 3.0 feet. Soils consistent with UNDno.	
25							
26							
27	0.8	0.0	moist	SM		fine to medium SAND, with fine to medium gravel, (5YR 4/4) reddish brown, non plastic, hard, moist, no odor, no staining. Soils consistent with UNDno.	
28				NR		NO RECOVERY	
29							
30	3	0.0	moist	SM		fine to medium SAND, with fine to medium gravel, (5YR 4/4) reddish brown, non plastic, hard, moist, no odor, no staining. Drill advanced 3.0 feet. Soils consistent with UNDno.	
31							
32							
33	0.8	0.0	moist	SM		fine to medium SAND, with fine to medium gravel, (5YR 4/4) reddish brown, non plastic, hard, moist, no odor, no staining. Soils consistent with UNDno.	
34			moist	NR		NO RECOVERY	
35							

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments:

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: 114-MW27A

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Hurricane	**Coordinates (NJSPNAD83) x:** 611841.6
Date Started Drilling: 12/1/2011	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683638.6
Date Finished Drilling: 12/2/2011	**Core Size:** 12 in	**Boring Total Depth:** 20 ft
Logged By: D. Chamberland, M. Merdinger	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest St		**Surface Elevation:** 10.6 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
				ASPHALT		black ASPHALT.	
1			moist	FILL		black (5YR 2.5/1) fine to coarse SAND, trace silt and medium angular gravel, loose, moist.	MW27A-0.5
2			moist	FILL		very dark gray (7.5YR 3/1) fine to medium SAND, little fine to medium angular gravel, trace silt and fill material, loose, moist.	
3							MW27A-3.0
4				NR		NO RECOVERY. Soft dig refusal at 3.5 ft due to dense gravel mix.	
5			moist	FILL		brown (7.5YR 5/4) SILT, and fine angular Gravel, little fine sand, loose, moist.	MW27A-5.0
6			wet	FILL		olive brown (2.5Y 4/3) SILT, stiff, wet. Slight sulfur odor.	MW27A-6.0
7							
8			dry	ML		strong brown (7.5YR 5/6) SILT, little clay, stiff, dry.	MW27A-8.0
9			dry	NR		NO RECOVERY	
10			moist	SP-SM		red (2.5YR 5/6) mottled fine SAND, and silt, little fine sub-angular gravel, medium dense, moist.	
11							
12							
13			wet	SW-SM		reddish brown (2.5YR 4/4) fine to coarse SAND, and silt, little fine sub-rounded gravel, loose, wet.	
14							
15			wet	NR		NO RECOVERY	
16			wet	SM		reddish brown (2.5YR 4/4) fine SAND, little silt, loose, wet.	
17							
18							
19	0		moist	GP		reddish brown (2.5YR 4/4) very fine SAND, and fine to medium sub-rounded gravel, dense, moist.	
20							

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments:

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: 114-MW27B

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Mud Rotary	**Coordinates (NJSPNAD83) x:** 611835.7
Date Started Drilling: 1/28/2014 9:00:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683631.9
Date Finished Drilling: 1/29/2014 1:30:00 PM	**Core Size:** 2.0 in	**Boring Total Depth:** 35 ft
Logged By: FM	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest Street - 114-MW27B		**Surface Elevation:** 10.6 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	3	0.0		ASPHALT		gravelly ASPHALT, with mixed fill.	
		0.0		CONCRETE		coarse gravelly CONCRETE, with mixed brick and black silt, no odor.	
3	0			NR		NO RECOVERY	
5	2	0.0	moist	FILL		fine to medium sandy SILT, dark gray, moist, no odor.	
7	2	0.0	moist	FILL		fine to medium clayey SILT, light brown, pliable, trace fine gravel, moist, no odor.	
9	2	0.0	moist	FILL		fine to medium clayey SILT, some reddish brown, 5YR 4/3, moist, no odor, some cinders.	
		0.0		FILL		fine silty SAND, some slag and cinders, trace clay in thin bands, no odor.	
11	2	0.0		FILL		fine to medium silty SAND, reddish-brown, 5YR 4/3, trace slag, cinders and fine gravel, loose, no odor.	
		0.0		FILL		fine to medium silty SAND, increasing fine gravel, slag and cinders, 20%, dark gray.	
13	2	0.0	very wet	FILL		fine to coarse sandy GRAVEL, with mixed cinders, very wet, no odor.	
		0.0	wet	FILL		fine to medium silty SAND, light brown, wet, no odor.	
15	2	0.0	damp to moist	SM		fine to medium silty SAND, reddish-brown, 5YR 4/3, damp to moist, tight sand, fine gravel, no odor. Soils consistent with UNDno.	
17	2	0.0	wet	SM		fine to medium silty SAND, reddish-brown, 5YR 4/3, trace fine gravel, loose, thin bands of gray silt, wet, no odor. Soils consistent with UNDno.	
		0.0	wet	SP		fine to medium SAND, and medium gravel, (5YR 4/3) reddish brown, non plastic, loose, wet, no odor, no staining. Soils consistent with UNDno.	
19	0			NR		NO RECOVERY	
20	3	0.0		SP		Drill advanced 3.0 feet. Soils consistent with UNDno.	

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments: No COPR/GGM identified.

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: 114-MW27B

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Mud Rotary	**Coordinates (NJSPNAD83) x:** 611835.7
Date Started Drilling: 1/28/2014 9:00:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683631.9
Date Finished Drilling: 1/29/2014 1:30:00 PM	**Core Size:** 2.0 in	**Boring Total Depth:** 35 ft
Logged By: FM	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest Street - 114-MW27B		**Surface Elevation:** 10.6 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
23							
24	1.2	0.0	moist	SP		fine to medium SAND, and fine to coarse gravel, (5YR 4/3) reddish brown, non plastic, hard, moist, no odor, no staining. Soils consistent with UNDno.	
				NR		NO RECOVERY	
25		0.0		SP		Drill advanced 3.0 feet. Soils consistent with UNDno.	
26	3						
27							
28		0.0	moist	SM		fine to medium SAND, with fine to coarse gravel, (5YR 4/3) reddish brown, non plastic, hard, moist, no odor, no staining. Soils consistent with UNDno.	
29	1.5						
				NR		NO RECOVERY	
30		0.0		SM		Drill advanced 3.0 feet. Soils consistent with UNDno.	
31	3						
32							
33		0.0	moist	SM		fine to medium SAND, with fine to coarse gravel, (5YR 4/3) reddish brown, non plastic, hard, moist, no odor, no staining. Soils consistent with UNDno.	
34	1.5						
				NR		NO RECOVERY	
35							

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments: No COPR/GGM identified.

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: EF-110A/114-MW36A

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Geoprobe	**Coordinates (NJSPNAD83) x:** 611817.1
Date Started Drilling: 6/20/2015 8:20:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683551.8
Date Finished Drilling: 6/19/2015 3:00:00 PM	**Core Size:** 2 in	**Boring Total Depth:** 40 ft
Logged By: EW	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location:		**Surface Elevation:** 11.1 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	3.5	0.0		CONCRETE		CONCRETE, no staining	
		0.0	dry	FILL		GRAVEL, dry, no odor, no staining	
1		0.0	dry	FILL		medium to coarse SAND, with fine gravel, (7.5YR 3/2) dark brown, dry, no odor, no staining	EF110A-0.8-1.3
		0.0	dry	FILL			
2		0.0	slightly moist	FILL		medium SAND, with coal, (7.5YR 2.5/1) black, dry, no odor, no staining	EF110A-2.0-2.5
						fine to medium SAND, trace fine gravel trace silt, (10YR 5/4) yellowish brown, slightly moist, no odor, no staining	
3							EF110A-3.0-3.5
4				NR		NO RECOVERY	
5	4	0.0	wet	FILL		fine SAND, and silt, (10YR 5/2) grayish brown, wet, no odor, no staining	EF110A-5.0-5.5
6							
7		0.0	moist	FILL		medium SAND, and gravel, (10YR 5/1) gray, moist, no odor, no staining	EF110A-7.0-7.5
		0.0	moist	SM		medium SAND, trace fine gravel, (5YR 4/3) reddish brown, moist, no odor, no staining, UNDno. Soils consistent with UNDno.	
8							EF110A-8.0-8.5
9				NR		NO RECOVERY	
10	5	0.0	moist	SM		medium SAND, trace fine gravel, (5YR 4/3) reddish brown, moist, no odor, no staining, UNDno. Soils consistent with UNDno.	EF110A-10.0-10.5
11							
12		0.0	wet	SM		medium SAND, with fine to medium gravel, (5YR 4/3) reddish brown, wet, no odor, no staining, UNDno. Soils consistent with UNDno.	EF110A-12.0-12.5
13							
14							EF110A-14.0-14.5
15	4.2	0.0	wet	SM		medium SAND, (5YR 4/3) reddish brown, wet, no odor, no staining, UNDno. Soils consistent with UNDno.	
16							EF110A-16.0-16.5
17							
18							EF110A-18.0-18.5
19							
				NR		NO RECOVERY	
20		0.0	wet	SM		medium SAND, (5YR 4/3) reddish brown, wet, no odor, no staining, UNDno. Soils consistent with UNDno.	EF110A-20.0-20.5
21							

Notes:
bgs - below surface grade | COPR - chromite ore processing residue | UNDno - non-organic undisturbed native deposits | MGP - manufactured gas plant
MM - meadow mat | GGM - green grey mud | UNDorg - organic undisturbed native deposits | CCPW - chromate chemical production waste

Comments: 1) No COPR or GGM present in any interval of this boring. 2) UNDno= 'Undisturbed native deposits, Non-Organic'.

PPG - 2012-09 RA PPG_LOGS_A.GDT - 12/6/16 08:17

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: EF-110A/114-MW36A

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Geoprobe	**Coordinates (NJSPNAD83) x:** 611817.1
Date Started Drilling: 6/20/2015 8:20:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683551.8
Date Finished Drilling: 6/19/2015 3:00:00 PM	**Core Size:** 2 in	**Boring Total Depth:** 40 ft
Logged By: EW	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location:		**Surface Elevation:** 11.1 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
23	5						EF110A-22.0-22.5
24							EF110A-24.0-24.5
25		0.0	wet	SM		medium SAND, (5YR 4/3) reddish brown, wet, no odor, no staining, UNDno. Soils consistent with UNDno.	
26							EF110A-26.0-26.5
27	5						
28							EF110A-28.0-28.5
29							
30		0.0	wet	SM		medium SAND, (5YR 4/3) reddish brown, wet, no odor, no staining, UNDno. Soils consistent with UNDno.	EF110A-30.0-30.5
31							
32	5						EF110A-32.0-32.5
33							
34							EF110A-34.0-34.5
35		0.0	wet	SM		medium SAND, (5YR 4/3) reddish brown, wet, no odor, no staining, UNDno. Soils consistent with UNDno.	
36							EF110A-36.0-36.5
37	5						
38							EF110A-38.0-38.5
39							
40							EF110A-39.5-40.0

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments: 1) No COPR or GGM present in any interval of this boring. 2) UNDno= 'Undisturbed native deposits, Non-Organic'.

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: EF-111A/114-MW36B

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Geoprobe	**Coordinates (NJSPNAD83) x:** 611795.9
Date Started Drilling: 6/27/2015 8:30:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683573.2
Date Finished Drilling: 6/27/2015 2:45:00 PM	**Core Size:** 2 in	**Boring Total Depth:** 40 ft
Logged By: EW	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest Street -EF-111A		**Surface Elevation:** 10.4 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0		0.0		FILL		CONCRETE.	
		0.0	dry	FILL		medium to coarse SAND,trace fine gravel,trace ceramics,(5YR 3/1)very dark gray,dry,no odor,no staining.	EF-111A-0.4-0.9
1		0.0	dry	FILL		fine to medium SAND,with ash and cinders,trace coal,(5YR 4/1) dark gray,dry,no odor,no staining.	
2	3.5	0.0	dry	FILL		fine SAND,trace silt little medium gravel, (7.5YR 3/2) dark brown,slightly moist,no odor,no staining.	EF-111A-2.0-2.5
3							EF-111A-3.0-3.5
4				NR		NO RECOVERY.	
5		0.0	wet	FILL		fine SAND,trace silt,little medium gravel,(7.5YR 3/2) dark brown,wet,no odor,no staining.	EF-111A-5.0-5.5
6							
7	5						EF-111A-7.0-7.5
8		0.0	wet	SM		UNDno fine to medium SAND,trace fine gravel,(5YR 4/3) reddish brown,wet,no odor,no staining.Soils consistent with UNDno.	EF-111A-8.0-8.5
9							
10		0.0	wet	SM		UNDno fine to medium SAND,trace fine gravel,(5YR 4/3) reddish brown,wet,no odor,no staining. Soils consistent with UNDno.	EF-111A-10.0-10.5
11		0.0	wet	SM		UNDno medium SAND,with fine gravel,(5YR 4/3) reddish brown,wet,no odor,no staining. Soils consistent with UNDno.	
12	3.5	0.0	wet	SM		UNDno medium SAND,trace fine gravel,(5YR 4/3) reddish brown,wet,no odor,no staining. Soils consistent with UNDno.	EF-111A-12.0-12.5
13							EF-111A-13.0-13.5
14				NR		NO RECOVERY.	
15		0.0	wet	SM		UNDno medium SAND,with fine to medium gravel,(5YR 4/3) reddish brown,wet,no odor,no staining. Soils consistent with UNDno.	EF-111A-15.0-15.5
16							
17	3.5						EF-111A-17.0-17.5
18							EF-111A-18.0-18.5
19				NR		NO RECOVERY.	
20		0.0	wet	SM		UNDno medium SAND, (5YR 4/3) reddish brown,wet,no odor,no staining.Soils consistent with UNDno.	EF-111A-20.0-20.5
21							

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments:

PPG - 2012-09 RA PPG_LOGS_A.GDT - 12/6/16 08:20

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: EF-111A/114-MW36B

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Geoprobe	**Coordinates (NJSPNAD83) x:** 611795.9
Date Started Drilling: 6/27/2015 8:30:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683573.2
Date Finished Drilling: 6/27/2015 2:45:00 PM	**Core Size:** 2 in	**Boring Total Depth:** 40 ft
Logged By: EW	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest Street -EF-111A		**Surface Elevation:** 10.4 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
23	3.5						EF-111A-22.0-22.5
							EF-111A-23.0-23.5
24				NR		NO RECOVERY.	
25		0.0	wet	SM		UNDno medium SAND,(5YR 4/3) reddish brown,wet,no odor,no staining.Soils consistent with UNDno.	EF-111A-25.0-25.5
26				NR		NO RECOVERY.	
27	0.8						
28							
29							
30		0.0	wet	SM		UNDno medium SAND,(5YR 4/3) reddish brown,wet,no odor,no staining.Soils consistent with UNDno.	EF-111A-30.0-30.5
31							
32	3.5						EF-111A-32.0-32.5
33							EF-111A-33.0-33.5
34				NR		NO RECOVERY.	
35		0.0	wet	SM		UNDno medium SAND,(5YR 4/3) reddish brown,wet,no odor,no staining. Soils consistent with UNDno.	EF-111A-35.0-35.5
36							
37	5						EF-111A-37.0-37.5
38							
39							EF-111A-39.0-39.5
40							EF-111A-39.5-40.0

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments:

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: 114-MW37A

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Geoprobe	**Coordinates (NJSPNAD83) x:** 611912.7
Date Started Drilling: 7/22/2015 9:25:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683693.1
Date Finished Drilling: 7/22/2015 9:25:00 AM	**Core Size:** 2 in	**Boring Total Depth:** 15 ft
Logged By: EW	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest Street - 114-MW37A		**Surface Elevation:** 11.3 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	3	0.0		FILL		GRAVEL, fill material.	
		0.0	dry	FILL		fine to medium SAND,trace fine gravel fill material,(7.5YR 3/2) dark brown,dry,no odor,no staining.	
1		0.0	dry	FILL		fine SAND,with ash and cinders,trace slag and concrete,(7.5YR 3/2) dark brown,dry,no odor,no staining.	
2							
3				NR		NO RECOVERY.	
4	3	0.0	dry	FILL		fine SAND,with ash and cinders,trace slag and concrete,(7.5YR 3/2) dark brown,dry,no odor,no staining.	
		0.0	moist	FILL		medium SAND,with brick, (7.5YR 4/2) brown,moist,no odor,no staining.	
5		0.0	wet	FILL		medium SAND,trace tar-like material,(7.5YR 3/2) dark brown,wet,no odor,no staining.	
		0.0	moist	FILL		fine SAND,some silt,(7.5YR 4/1) dark gray,moist,no odor,no staining.	
6							
7				NR		NO RECOVERY.	
8	3.5	0.0	moist	FILL		fine SAND,some silt,(7.5YR 4/1) dark gray,moist,no odor,no staining.	
		0.0	moist	SM		UNDno fine to medium SAND,trace fine gravel,(5YR 4/3) reddish brown,moist,no odor,no staining.Soils consistent with UNDno.	
9							
10							
11							
12				NR		NO RECOVERY.	
13	3	0.0	wet	SM		UNDno medium SAND,with fine gravel,(5YR 2.5/2) dark reddish brown,wet,no odor,no staining. Soils consistent with UNDno.	
14							
15							

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments:

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: 114-MW37B

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Geoprobe	**Coordinates (NJSPNAD83) x:** 611917.3
Date Started Drilling: 6/23/2015 9:30:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683689.1
Date Finished Drilling: 6/23/2015 2:45:00 PM	**Core Size:** 2 in	**Boring Total Depth:** 35 ft
Logged By: EW	**Project Manager:** Scott Mikaelian	**Depth to Water:** NA
Physical Location: Forrest Street - 114-MW37B		**Surface Elevation:** 11.2 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	3	0.0		FILL		GRAVEL,fill material.	
1		0.0	dry	FILL		coarse SAND,with fine gravel,(7.5YR 2.5/1) black,dry,no odor,no staining.	
2		0.0	dry	FILL		fine to medium SAND,with silt fill material,(7.5YR 4/2) brown,slightly moist,no odor,no staining.	
3		0.0	dry	FILL		fine SAND, with ash and cinders, (7.5YR 4/1) dark gray,dry,no odor,no staining,trace coal.	
4				NR			
5	3	0.0	dry	FILL		fine SAND,with coal and ash,(7.5YR 2.5/1) black,dry,no staining,little cinder,tar-like odor.	
6		0.0	slightly moist	FILL		NO RECOVERY.	
7				NR		fine SAND,with coal and ash,(7.5YR 2.5/1) black,dry,no staining,little cinder,tar-like odor.	
8						fine SAND,and silt, (10YR 4/2) dark grayish brown,slightly moist,slight tar-like odor,no staining.	
9	3.5	0.0	moist	FILL		NO RECOVERY.	
10		0.0	wet	SP		fine SAND,some silt,(10YR 5/1) gray,moist,no odor,no staining.	
11						UNDno fine to medium SAND, with medium gravel, (5YR 4/3) reddish brown, wet, no odor, no staining. Soils consistent with UNDno.	
12				NR		NO RECOVERY.	
13	2	0.0	wet	SP		UNDno medium to coarse SAND,with medium to coarse gravel,(5YR 2.5/2)dark reddish brown,wet,no odor,no staining. Soils consistent with UNDno.	
14				NR		NO RECOVERY.	
15							
16	3	0.0	wet	SP		UNDno medium to coarse SAND,with medium to coarse gravel,(5YR 2.5/2) dark reddish brown,wet,no odor,no staining. Soils consistent with UNDno.	
17							
18		0.0	moist	SP		UNDno fine to medium SAND,trace silt,(5YR 4/3) reddish brown,moist,no odor,no staining. Soils consistent with UNDno.	
19				NR		NO RECOVERY.	
20	4	0.0	moist	SP		UNDno fine to medium SAND,trace silt,(5YR 4/3) reddish brown,moist,no odor,no staining. Soils consistent with UNDno.	
21							
22							
23							
24	4	0.0	moist	SP		UNDno fine to medium SAND,trace silt,(5YR 4/3) reddish brown,moist,no odor,no staining. Soils consistent with UNDno.	
25							
26							
27							
28	4	0.0	moist	SP		UNDno fine to medium SAND,trace silt and fine gravel,(5YR 4/3) reddish brown,moist,no odor,no staining. Soils consistent with UNDno.	
29							
30							
31							
32	3	0.0	moist	SP		UNDno fine to medium SAND,trace silt little medium gravel,(5YR 4/3) reddish brown,moist,no odor,no staining. Soils consistent with UNDno.	
33							
34							
35							

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments: 1) No CCPW (COPR or GGM) present in any interval of this boring 2) MM/UND confirmed to be 1 ft thick.

PPG - 2012-09 RA PPG_LOGS_A.GDT - 3/3/17 08:48

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: 114-MW44A

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60240739	**Drilling Method:** Auger	**Coordinates (NJSPNAD83) x:** 611768.23
Date Started Drilling: 10/30/2017 8:30:00 AM	**Rig Type:**	**Coordinates (NJSPNAD83) y:** 683634.36
Date Finished Drilling: 10/30/2017 3:30:00 PM	**Core Size:**	**Boring Total Depth:** 12 ft
Logged By: KW	**Project Manager:** Scott Mikaelian	**Depth to Water:**
Physical Location:		**Surface Elevation:** 9.6 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	5	0.0		CONCRETE		Concrete floor slab	
1–4			moist	FILL		ASH, some cinders, little fill debris, (5YR 2.5/1) black, loose, moist no odor no staining	
4–5			moist	FILL		SILT, little fine sand, trace fill debris, (5YR 4/1) dark gray, firm, moist to wet no odor no staining, water at 6.0 feet	
5–8	5	0.0					
8–10			wet	ML		SILT, trace fine sand, (5Y 7/1) light gray, firm, wet no odor no staining. Soils consistentwith UNDno.	
10–12	2	0.0					

Notes:
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

Comments: 1) No CCPW (COPR/GGM) observed in any interval of this boring 2) MM/UND confirmed to be 1 ft thick

PPG - 2012-09 RA PPG_LOGS_A.GDT - 12/1/17 12:33

Email Subject: Field Inspection Summary and Recommendations – Forrest Street Building Water Accumulation Issue

From:	Ruiter, Aimee
To:	"Amin, Prabal"; Wayne Howitz; David Doyle; Ronald Riccio (rriccio@mdmc-law.com); James D. Ray; Nancy Colson (ncolson@mdmc-law.com); Holzer, Nadia; Deal (Porto), Diann; Amend-Babcock, Laura; Costa, Ralph
Cc:	Overmyer, Jody; Feinberg, Richard [C]; Terril, Mark; Lagrotteria, Joe; Laguzza, Dorothy M.; Surman, Steven; Spronz, Bill; Kinsey, Laura; Dixon, Cameron; Carlson, Andrew
Subject:	RE: Field Inspection Summary and Recommendations - Forrest Street Building Water Accumulation Issue
Date:	Tuesday, September 04, 2018 11:43:00 AM
Attachments:	JC72339_2018_08_27 DVReport-F.PDF image001.png image002.gif image003.jpg image004.gif image005.gif

The requested re-sampling of the Music Studio Basement was completed on 8/22/18. The validation report is attached, and the results are as follows:

- Unfiltered Sample
  - 10.9 ug/l Total Chromium
  - Non-Detect Hexavalent Chromium
- Filtered Sample
  - 6.8 J ug/l Total Chromium
  - Non-Detect Hexavalent Chromium

Thank you,
Aimee

From: Amin, Prabal [mailto:Prabal.Amin@WestonSolutions.com]
Sent: Thursday, August 16, 2018 10:33 AM
To: Ruiter, Aimee; Wayne Howitz; David Doyle; Ronald Riccio (rriccio@mdmc-law.com); James D. Ray; Nancy Colson (ncolson@mdmc-law.com); Holzer, Nadia; Deal (Porto), Diann; Amend-Babcock, Laura; Costa, Ralph
Cc: Overmyer, Jody; Feinberg, Richard [C]; Terril, Mark; Lagrotteria, Joe; Laguzza, Dorothy M.; Surman, Steven; Spronz, Bill; Kinsey, Laura; Dixon, Cameron; Carlson, Andrew
Subject: RE: Field Inspection Summary and Recommendations - Forrest Street Building Water Accumulation Issue

Aimee,

We have discussed this matter with the Department and your response below is acknowledged. PPG should proceed with collecting another basement water sample from the music studio basement if sufficient standing water exists. However, to clarify, PPG should collect both a filtered AND unfiltered sample of the standing water.

Thank you.

Prabal N. Amin, P.E., LSRP
Weston Solutions, Inc.
205 Campus Drive
Edison, NJ 08837

prabal.amin@westonsolutions.com
Office: 732-417-5857
Cell: 609-240-5289
Fax: 732-417-5801

From: Ruiter, Aimee [mailto:aimee.ruiter@aecom.com]
Sent: Monday, August 13, 2018 9:46 AM
To: Amin, Prabal <Prabal.Amin@WestonSolutions.com>; Wayne Howitz <Wayne.Howitz@dep.nj.gov>; David Doyle <David.Doyle@dep.nj.gov>; Ronald Riccio (rriccio@mdmc-law.com) <rriccio@mdmc-law.com>; James D. Ray <Jray@mdmc-law.com>; Nancy Colson (ncolson@mdmc-law.com) <ncolson@mdmc-law.com>; Holzer, Nadia <Nadia.Holzer@WestonSolutions.com>; Deal (Porto), Diann <Diann.Deal@WestonSolutions.com>; Amend-Babcock, Laura <Laura.Amend-Babcock@WestonSolutions.com>; Costa, Ralph <Ralph.Costa@WestonSolutions.com>
Cc: Overmyer, Jody <overmyer@ppg.com>; Feinberg, Richard [C] <feinberg@ppg.com>; Terril, Mark <terril@ppg.com>; Lagrotteria, Joe <Joseph.Lagrotteria@leclairryan.com>; Laguzza, Dorothy M. <Dorothy.Laguzza@leclairryan.com>; Surman, Steven <Steven.Surman@aecom.com>; Spronz, Bill <Bill.Spronz@aecom.com>; Kinsey, Laura <Laura.Kinsey@aecom.com>; Dixon, Cameron <Cameron.Dixon@aecom.com>; Carlson, Andrew <Andrew.Carlson@aecom.com>
Subject: RE: Field Inspection Summary and Recommendations - Forrest Street Building Water Accumulation Issue

Prabal,
Although previous sampling conducted by PPG of the accumulated water in the Music Studio Basement area was confirmed by laboratory analysis to be impacted by total chromium in excess of the Department's Groundwater Quality Standard (GWQS) for total chromium, PPG/AECOM do not believe that this water sample result represents a risk, on the following basis:

- There were no visual signs of chromium contamination in the Music Studio Basement. As noted in your email, no discoloration or chrome blooming was observed.
- In order to expedite sample collection, the sample was collected as a grab sample from the sump pump discharge line. The sump pump may have been a source of cross-contamination. The sample was not collected via standard sampling procedures using sterilized equipment, as they were not readily available at the time of the ponding.
- The unfiltered total chromium result in the Music Studio Basement was 166 ug/l, which is greater than the GWQS of 70 ug/L. However, GWQSs are risk based standards based on consumption of the water by an adult. Water from the Music Studio Basement is not used for drinking water. There is no groundwater standard for dermal contact. Additionally, due to the turbid nature of the water sampled (i.e., from a basement sump pump), the total chromium results were likely biased high.
- The sample was subsequently lab-filtered (out of hold time). The filtered total chromium result was 58.6 ug/L. The data validation report for this sample is attached.

Although we do not believe it is necessary, nor scientifically based, at the Owner's request, PPG/AECOM can collect another basement water sample from the Music Studio Basement, if

sufficient standing water exists. This follow-up sample would be collected with sterilized sampling equipment, filtered, and analyzed within hold time.

Thank you,
Aimee

Aimee Ruiter, PE
Civil Engineer, Environment
M +1-978-580-7616
aimee.ruiter@aecom.com

AECOM
86 Guinea Ridge Road
Gilmanton, NH 03237
aecom.com

Built to deliver a better world

From: James D. Ray [mailto:Jray@mdmc-law.com]
Sent: Monday, July 23, 2018 9:59 AM
To: Terril, Mark; 'Lagrotteria, Joseph F.'
Cc: David Doyle (David.Doyle@dep.nj.gov); James D. Ray; Nancy Colson; Holzer, Nadia; Deal (Porto), Diann; Amend-Babcock, Laura; Costa, Ralph; Ronald Riccio; Wayne Howitz (Wayne.Howitz@dep.nj.gov); N. Prabal P. E. Amin (Prabal.Amin@westonsolutions.com)
Subject: <EXT>FW: Field Inspection Summary and Recommendations - Forrest Street Building Water Accumulation Issue

Mark/Joe: For discussion on the Principals call.

James D. Ray
Partner
McElroy, Deutsch, Mulvaney & Carpenter, LLP

www.mdmc-law.com
One Hovchild Plaza
4000 Route 66
Tinton Falls, New Jersey 07753

jray@mdmc-law.com
Download vCard
973-425-8707
732-922-2702

New Jersey | New York | Colorado | Pennsylvania | Connecticut | Massachusetts | Delaware | Florida | Rhode Island

---

From: Amin, Prabal [mailto:Prabal.Amin@WestonSolutions.com]
Sent: Friday, July 20, 2018 11:21 AM
To: Ronald Riccio; Wayne Howitz (Wayne.Howitz@dep.nj.gov)

Cc: David Doyle (David.Doyle@dep.nj.gov); James D. Ray; Nancy Colson; Holzer, Nadia; Deal (Porto), Diann; Amend-Babcock, Laura; Costa, Ralph
Subject: Field Inspection Summary and Recommendations - Forrest Street Building Water Accumulation Issue

Ron/Wayne,

Please find herein a summary of the field inspection conducted by Weston and AECOM at the Forrest Street properties in response to recently reported water accumulation issues in the music studio basement. Please have your staff forward this summary and associated recommendations to the other stakeholders (e.g., PPG, property owner) as you deem appropriate. Weston and AECOM were given access to conduct the inspection of the studio basement on July 16, 2018 to assess the area for any potential CCPW impacts as a result of the noted water accumulation. As you may already know, previous sampling conducted by PPG of the accumulated water in the basement area was confirmed by laboratory analysis to be impacted by total chromium in excess of the Department's groundwater quality standard for total chromium.

As can be seen in the first attached photo, a sump pump is located on the eastern side of the basement and sits directly on the concrete slab to manage the water issues in this area. A discharge hose from the sump pump drains to a 2-inch hole in the concrete slab as seen in the second attached photo. This 2-inch hole is located near the base of the basement steps and reportedly drains to the elevator shaft pit, although this has not been confirmed. No standing water was observed near the sump pump; however, the concrete slab was observed to be wet. Some miscellaneous items such as an industrial fan, saw horses, maintenance/repair products and equipment are stored in this area.

Weston/AECOM also inspected the western end of the music studio basement where a dehumidifier is present (see third attached photo). The dehumidifier drains excess water via a garden hose into the adjacent elevator shaft pit area. No standing water was observed near the dehumidifier; however, the concrete slab was observed to be wet. Miscellaneous items are also stored in the vicinity.

Within the physically or visually accessible areas of the music studio basement, specifically in the vicinity of the wet portions of the concrete slab on the western and eastern ends of the basement, no discoloration or chrome blooming was observed.

Based on our inspection, and as a precautionary measure, Weston offers the following recommendations at this time to limit any potential exposure to chromium-impacted water or surfaces in the music studio basement:

1. Remove all items currently stored in and around areas of the concrete slab subject to chronic water accumulation or moisture. Any of these items that are non-porous should be cleaned with a detergent (e.g., Liquinox) and water. Porous items should be removed and disposed.
2. Maintain a reasonable buffer distance from the edge of the wet concrete areas to any stored items. If items must be stored in the wet areas, elevated platforms made of non-porous materials (e.g., plastic) should be utilized.

3. Conduct monthly inspections of the basement area to ensure no blooming or discoloration develops in and around the vicinity of the wet concrete slab. The music studio basement should be added to the on-going IRM inspection program and should also be added to the monitoring program associated with the future remedy for the building.
4. Consider access limitations on this space, similar to those implemented for the boiler room in this building.
5. Evaluate the seemingly recurring water accumulation issue in the basement and attempt to resolve the issue through measures to control and improve drainage.
6. Repair or replace the corrugated discharge pipe connected to the sump pump which was observed to be leaking.
7. Add a detailed floor map of the music studio basement area to future IRM reports and monitoring program reports to facilitate stakeholder understanding of the status of this area.

If you have any questions regarding the above, please do not hesitate to contact me.

Thank you.
Prabal

Prabal N. Amin, P.E., LSRP
Weston Solutions, Inc.
205 Campus Drive
Edison, NJ 08837

prabal.amin@westonsolutions.com
Office: 732-417-5857
Cell: 609-240-5289
Fax: 732-417-5801

CONFIDENTIALITY: This email and attachments may contain information which is confidential and proprietary. Disclosure or use of any such confidential or proprietary information without the written permission of Weston Solutions, Inc. is strictly prohibited. If you received this email in error, please notify the sender by return e-mail and delete this email from your system. Thank you.

Email Subject: Forrest Street Properties Upcoming Work

Surman, Steven

From:	Ruiter, Aimee
Sent:	Friday, October 27, 2017 1:32 PM
To:	Cozzi, Tom (Tom.Cozzi@dep.nj.gov); David Doyle (David.Doyle@dep.nj.gov); Amin, Prabal (Prabal.Amin@WestonSolutions.com); 'Amend-Babcock, Laura (Laura.Amend-Babcock@WestonSolutions.com)'
Cc:	'Feinberg, Richard [C] (feinberg@ppg.com)'; Jody Overmyer (overmyer@ppg.com); Mark Terril; Jeff Worden; Mikaelian, Scott; Surman, Steven
Subject:	Forrest Street Properties Upcoming Work
Attachments:	2017-08-29 FS Restoration Memo-ID.PDF; 2017-10-27 GG15B-F.pdf; 2017-10-27 EE16B-F.pdf

Tom,
On behalf of PPG, AECOM is providing the following requests and notifications regarding upcoming work at the Forrest Street Properties.

Skyways Restoration
PPG is seeking NJDEP's approval to proceed with completing the proposed restoration for Skyways (including installation of the engineering control and building drainage mitigation adjacent to 100 Forrest Street), as described in the attached PRELIMINARY DRAFT Summary of Proposed Forrest Street Restoration Activities – Skyways and Roadway, dated August 29, 2017. NJDEP provided verbal concurrence with this approach during a conference call with PPG on August 31, 2017. This work can commence within two weeks of NJDEP's formal approval. (Note that PPG is still working with the City to resolve the design of the proposed restoration for the Forrest Street roadway.)

Remediation in Grid GG15B
During remediation at the Halladay Street residential properties, which is planned to commence next week, PPG will also remediate the small surface soil exceedance immediately west, located in Grid GG15B. This work will involve removal of soil via the vac truck in a 3 foot by 3 foot area centered on the location of NFS-PDI-GG15B to a depth of 2.2 feet below ground surface (El. 9.9 ft NAVD88), as shown on the attached figure. No sidewall samples will be collected.

Remediation in Grid EE16B
Following remediation at the Halladay Street residential properties, PPG will remediate the small surface soil exceedance located in the northwest corner of 90 Forrest Street, located in Grid EE16B. This work will involve removal of soil via the vac truck in the area depicted on the attached figure to a depth of 0.5 feet below ground surface (El. 10.4 ft NAVD88). No sidewall samples will be collected.

Monitoring Well in 98 Forrest Street
PPG is moving forward with installation of the requested monitoring well within the 98 Forrest Street building. Well installation is scheduled to commence Monday, October 30, 2017.

We look forward to your response. Please let us know if you have any questions or concerns.

Thank you,
Aimee

Aimee Ruiter, PE
Civil Engineer, Environment
M +1-978-580-7616
aimee.ruiter@aecom.com

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Memorandum

To	*Ronald Riccio, Site Administrator**
	*James Ray, Site Administrator Project Manager**
	*Nancy Colson, Site Administrator Assistant**
	Tom Cozzi, NJDEP
	David Doyle, NJDEP
	Prabal Amin, Weston
	Laura Amend-Babcock, Weston
	David Spader, ERFS
	Joe Cunha, City of Jersey City Engineering
	Bhavini Doshi, City of Jersey City
	*Sal Caragliano Sr., Owner**
	*Sal Caragliano Jr., Owner**
	**Not included on preliminary draft distribution*
CC	Mark Terril, PPG
	Rich Feinberg, PPG
	Jody Overmyer, PPG
	Scott Mikaelian, AECOM
Subject	PRELIMINARY DRAFT Summary of Proposed Forrest Street Restoration Activities – Skyways and Roadway
From	Steven Surman
	Aimee Ruiter
Date	August 29, 2017

This memorandum provides stakeholders with a summary of the proposed Forrest Street restoration activities for the Skyways area and the roadway. **Figure 1** provides a plan view of these areas. PPG is seeking concurrence from stakeholders (New Jersey Department of Environmental Protection [NJDEP], City of Jersey City, and the property owner) within two weeks of receipt of this memorandum, in order to advance restoration in these areas. The restoration activities can be started within two weeks of stakeholders' concurrence and completed in approximately two months.

Design Basis

The design basis for restoration at Forrest Street has been previously documented in the following submittals:

- The *Capillary Break Design Report (Revision 1)*, issued by AECOM/PPG on June 26, 2017;

- The *Garfield Avenue Group Restoration Technical Execution Plan (Revision 1)*, issued by AECOM/PPG on August 9, 2017; and
- The *Remedial Action Work Plan; Forrest Street and Forrest Street Properties (Forrest RAWP); Phase 1 – 100 Forrest Street and 84 Forrest Street Loading Dock and Phase 2 – Forrest Street Utility Offset and 90 Forrest Street Alleyway (Paved and Unpaved Areas)*, issued by AECOM/PPG on July 26, 2017. On behalf of NJDEP, Weston provided comments on the *Forrest RAWP; Phase 1* and 2 on August 11, 2017 via email. This memorandum addresses NJDEP/Weston's August 11, 2017 comments specific to the two areas mentioned above.

Proposed Restoration for Skyways

The proposed restoration for the Skyways area is depicted on **Figures 1** and **2**. The finished restoration will be similar to pre-remediation conditions. Where impacted soils remain in place, this restoration is protective of human health and the environment and will prevent contact with the remaining impacted soils. A Deed Notice and Remedial Action Permit will be required to address the remaining impacted soils. This restoration also mitigates the surface water runoff leaking through the west wall of the 100 Forrest Street building.

The restoration activities will be implemented in the following sequence:

- Mobilize vibration monitoring settlement instrumentation and evaluate vibration settlement monitoring data during field activities.
- Prepare, grade, and compact the subgrade to meet the proposed subgrade elevations. The excess soil generated during the grading phase will be disposed off-site at a permitted solid waste facility.
- Place high-density polyethylene (HDPE) liner on the prepared subgrade (where required) and over the existing concrete apron. Seal HDPE liner to concrete apron.
- Place, grade, and compact the dense-graded aggregate (DGA) layer above the HDPE liner and up to the concrete apron.
- Place geosynthetic drainage composite on top of the section of HDPE liner installed on the concrete apron.
- Place the geosynthetic cementitious composite mat over the DGA layer and on top of the geosynthetic drainage composite fabric. Anchor the cementitious composite mat to the concrete apron.
- If necessary, install flashing at the interface of the cementitious concrete mat and exterior wall of the building.
- Place and compact the asphalt subbase and wearing layer over the DGA layer to meet the proposed final grades.
- Install pre-cast concrete parking stop at interface of asphalt and cementitious concrete mat.

Refer to Details 1 and 3 on **Figure 2** for typical cross-sectional details.

Where the existing concrete apron ends and the concrete block retaining wall starts, the HDPE liner and cementitious concrete mat will be installed in an anchor trench with open stone next to the concrete block wall. Refer to Detail 2 on **Figure 2** for a typical cross-sectional detail.

Proposed Restoration for the Roadway

The proposed restoration for the Forrest Street roadway is depicted on **Figures 1** and **2**. The finished restoration will be similar to pre-remediation conditions. Where impacted soils and groundwater remain in place, this restoration is protective of human health and the environment and will prevent contact with the remaining impacts. PPG will retain the responsibility for the removal and restoration of the HDPE liner and management of impacted soils and groundwater beneath the HDPE liner should its disturbance be required to service subsurface utilities or make repairs or modifications to the roadway as part of a Notice in Lieu of Deed Notice and Remedial Action Permit.

The restoration activities will be implemented in the following sequence:

- Mobilize vibration monitoring settlement instrumentation and evaluate vibration settlement monitoring data during field activities.
- Excavate, grade, and compact the subgrade to meet the proposed subgrade elevations. Soil remaining in place in the excavation's northern sidewall will be demarcated with 10 oz. geotextile and snow fencing.
- Place HDPE liner for both the restoration/capillary break for the Forrest Street excavation and the soils cap for the Forrest Street Utility Offset.
- Place, grade, and compact eight inches of DGA in accordance with the New Jersey Department of Transportation specifications.
- Remove existing sidewalk and/or asphalt up to the buildings and replace with new sidewalk with HDPE liner underneath. New sidewalk will match pre-existing sidewalk construction. In the event the vibration monitoring settlement monitoring data indicates that work close to the buildings is affecting the structural integrity of the buildings, a different less intrusive alternative may need to be implemented.
- Place and compact eight inches of hot mix asphalt base course and two inches of hot asphalt mix surface wearing course in Forrest Street and up to the new sidewalks.

Refer to Detail 4 on **Figure 2** for a typical cross-sectional detail.

S T U V W X Y Z AA BB CC DD EE FF GG HH II

16B 15B 14B 13B 12B 11B 10B 9B 8B

ESTIMATED LOCATION OF CATENARY TOWER

1 FIG. 2

2 FIG. 2

3 FIG. 2 DETAIL ASP□ALT CAP

4 FIG. 2

100 FORREST ST
1 STORY STUCCO BUILDING

RETAINING WALL

98 FORREST ST
3 STORY STUCCO BUILDING

1 STORY STUCCO

86–90 FORREST ST
3 STORY STUCCO BUILDING

84 FORREST ST
1 STORY LOADING DOCK

78 FORREST ST
1 STORY STUCCO BUILDING

FORREST STREET

LEGEND

- LIMIT OF HDPE LINER FOR SELECTED REMEDIAL ACTION
- LIMIT OF HDPE LINER FOR CAPILLARY BREAK
- EDGE OF FORREST STREET EXCAVATION
- GROUND SURFACE ELEVATION CONTOURS 1' INTERVAL 5' INDEX — PRE-CONSTRUCTION TOPOGRAPHY
- GROUND SURFACE ELEVATION CONTOURS 1' INTERVAL 5' INDEX — PROPOSED RESTORATION
- CHANNEL DRAIN – NOT SURVEYED
- PAVEMENT TO BE RESTORED IN SKYWAYS PROPERTY
- CONCRETE SIDEWALK TO BE REPLACED WITH NEW SIDEWALK
- CONCRETE SIDEWALK (PARTIALLY PAVED OVER) TO BE REPLACED WITH NEW SIDEWALK
- PAVEMENT TO BE RESTORED IN FORREST STREET
- GEOSYNTHETIC CEMENTITIOUS COMPOSITE MAT (PROPOSED)
- STONE

- PROPERTY LINE
- FENCE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- EXISTING SHEET PILE – NOT SURVEYED
- CURB
- DEPRESSED CURB
- CONCRETE WALL
- RAILROAD
- EXISTING BUILDING
- JERSEY BARRIER WITH FENCE
- GATE

NOTES:

ST. = STREET
GS = GROUND SURFACE
BGS = BELOW GROUND SURFACE
RAWP = REMEDIAL ACTION WORK PLAN
HDPE = HIGH-DENSITY POLYETHYLENE

NORTH
NEW JERSEY STATE PLANE COORDINATE SYSTEM NAD 83

8 0 16
GRAPHIC SCALE IN FEET

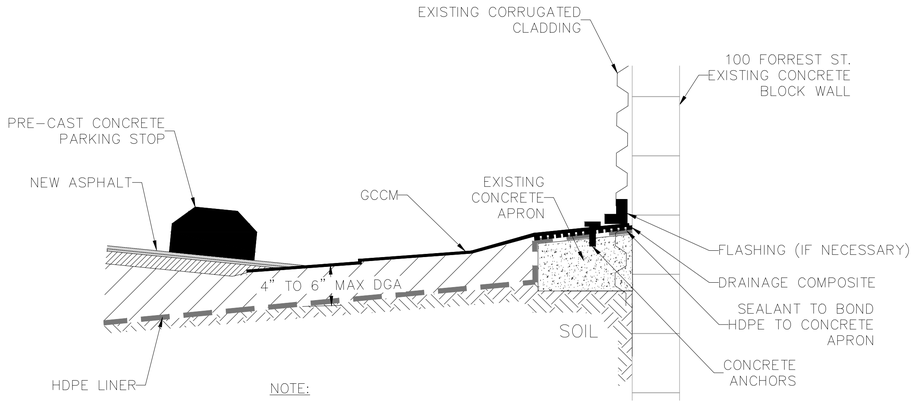
AECOM

PPG
GARFIELD A□ENUE GROUP OF SITES
JERSEY CITY, NEW JERSEY

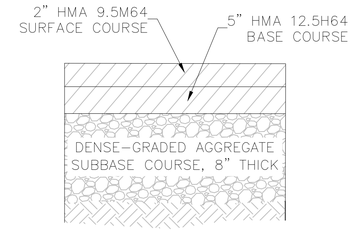
FORREST STREET RESTORATION PLAN □IEW

DATE: 8/29/2017 | DRWN: DCB, ALC | **FIGURE 1**

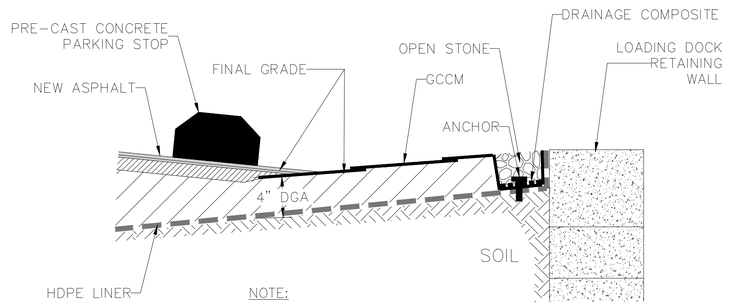
File: \\acad1\fp001\Data\Projects\Jobs\Recm_Eng\Project Files\PPG Industries\Garfield Avenue\2DE Design\CAD\DWGS\PDR-FSN Restoration Memo\Figure 1.dwg Created: 08/31/2017 Plotted: Aug 29, 2017 - 4:20pm Xref's: User: carbonel



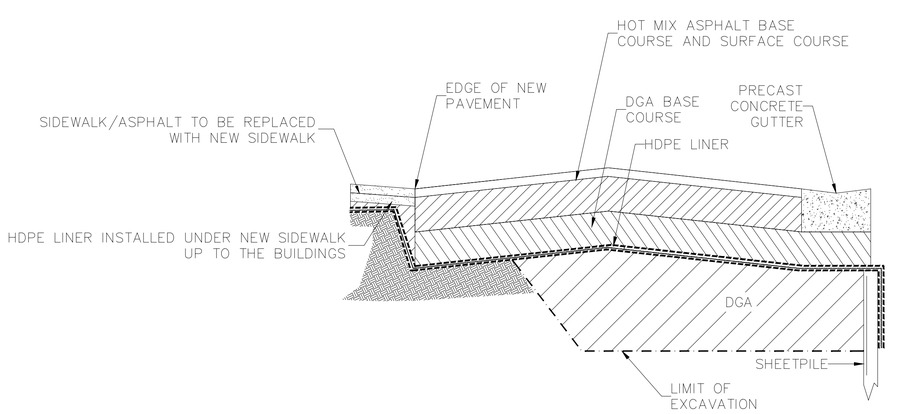
1 FIG.1 DETAIL □IEW ALONG 100 FORREST STEET BUILDING NTS



3 FIG.1 DETAIL ASP□ALT CAP NTS



2 FIG. 1 DETAIL □IEW ALONG 100 FORREST STEET RETAINING WALL NTS



4 FIG. 1 FORREST STREET TYPICAL SECTION NTS

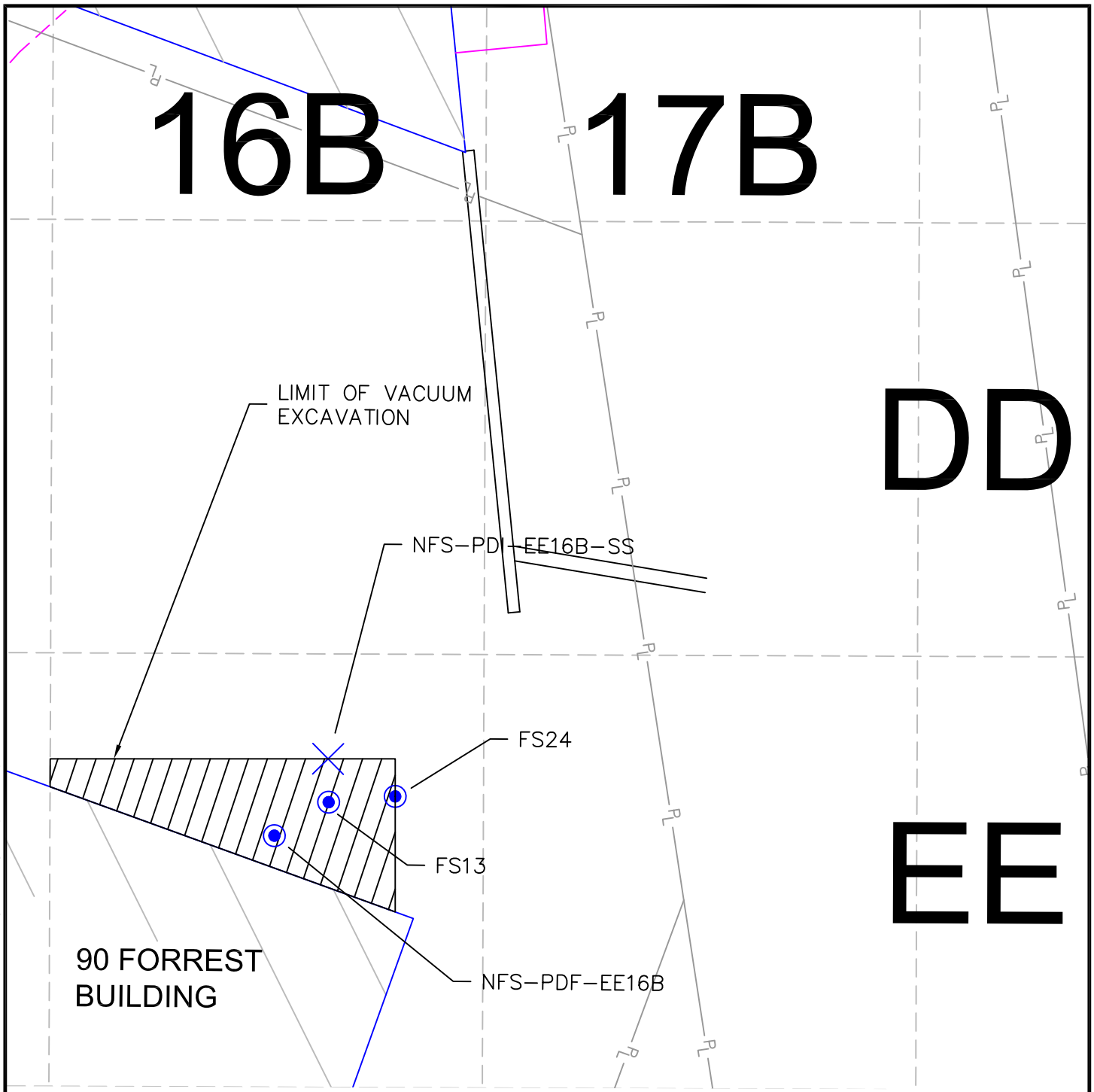
NOTES:

DGA = DENSE-GRADED AGGREGATE
GCCM = GEOSYNTHETIC CEMENTITIOUS COMPOSITE MATS
HDPE = HIGH-DENSITY POLYETHYLENE
HMA = HOT MIX ASPHALT

SEE FIGURE 1 FOR EXTENTS OF HDPE LINER

AECOM

PPG GARFIELD A□ENUE GROUP OF SITES JERSEY CITY, NEW JERSEY			**FORREST STREET RESTORATION DETAILS**
DATE: 8/29/2017	DRWN: DCB, ALC		**FIGURE □**



LEGEND

- AS-BUILT BORING LOCATION
- SURFACE SOIL SAMPLE LOCATION
- BUILDING
- VACUUM EXCAVATION AREA
- PL PROPERTY LINE

NOTES:
LIMIT OF VACUUM EXCAVATION IS DELINEATED:
TO THE SOUTH BY 15B16B GRIDLINE
TO THE NORTH BY CLEAN BORING FS24
TO THE WEST BY SURFACE SAMPLE NFS-PD-EE16B-SS
TO THE EAST BY 90 FORREST BUILDING FOOTPRINT
VERTICALLY BY CLEAN SAMPLE NFS-PDIEE16B-0.5-1.0

NFS-PDI-EE16B-0.5-1.0 TOP OF SAMPLE INTERVAL ELEVATION AND BOTTOM OF VACUUM EXCAVATION IS 10.4 FEET IN THE NORTH AMERICAN VERTICAL DATUM OF 1988.

5 0 10
GRAPHIC SCALE IN FEET

INFORMATION ONLY

AECOM

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY

PROPOSED EE16B EXCVATION

DATE: 10/27/17 | DRWN: ALC | **DWG 1**

File: C:\Users\carlsona1\Desktop\2017-02-10 Forrest St and Forrest Prop TEE Figures.dwg Layout: Layout1 User: carlsona1 Plotted: Oct 27, 2017 - 11:31am Xref's:

BLOCK 21501/LOT 11&12
(CARAGLIANO)

FSI7

PROPOSED SOIL REMOVAL
3 FT BY 3 FT
TO 2.2 FT BGS (EL. 9.9 FT NAVD88)

ICO-23

NFS-PDI-GG15B

NFS-PDI-GG16B

147-HAL-B27

147-HAL-B21

147-HAL-B23

147-HAL-B18

1.7-2.2 ft bgs 21.3 J
2.2-2.7 ft bgs 7.6 J
2.7-3.2 ft bgs 6.9 J
3.2-3.7 ft bgs 6.3 J
3.2-3.7 ft bgs 5.0 J (Field Duplicate)

2.1-2.6 ft bgs 15.9 J
2.6-3.1 ft bgs 9.8 J
3.1-3.6 ft bgs 18.0 J
3.6-4.1 ft bgs 3.5 J

141-149 HALLADAY STREET
(BLOCK 21501/LOT 5-9)

(Block 2150

FF

GG

HH

II

JJ

12B 13B 14B 15B 16B 1

LEGEND

- EXISTING BUILDING
- FORREST STREET PROPERTIES BOUNDARY
- PL — PROPERTY LINE
- X — CHAIN LINK FENCE
- AS-BUILT BORING OR TEST PIT LOCATION
- RESIDENTIAL BORING WITH HEXAVALENT CHROMIUM >20MG/KG
- RESIDENTIAL BORING WITH HEXAVALENT CHROMIUM <20MG/KG

NOTES:

CrSCC – NJDEP INTERIM CHROMIUM SOIL CLEANUP CRITERIA

MG/KG – MILLIGRAMS PER KILOGRAM

NJDEP – NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

THERE ARE NO HEXAVALENT CHROMIUM CONCENTRATIONS GREATER THAN THE CrSCC IN AS-BUILT BORINGS ICO-23, FSI7, NFS-PDI-GG16B, AND 147-HAL-B27.

147-HAL-B27 AND 147-HAL-B18 ARE APPROXIMATE LOCATIONS.

NORTH
NEW JERSEY STATE PLANE COORDINATE SYSTEM NAD 83

AECOM

5 0 10
GRAPHIC SCALE IN FEET

PPG
GARFIELD A□ENUE GROUP
JERSEY CITY, NEW JERSEY

BORING LOCATIONS GG1□B □ GG16B
FORREST STREET PROPERTIES

DATE: 10/19/17 | DRWN: SLA | **FIGURE 1**