

## **Attachment 4**

### **Complete Summary Laboratory Analytical Data**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:					1C-BOTTOM (3' BSG)	1D-BOTTOM (3' BSG)	1E-BOTTOM (3' BSG)	1F-BOTTOM (4' BSG)	1G-BOTTOM (3' BSG)	1H-BOTTOM (3.5' BSG)	1I-BOTTOM (3'BSG)	2C-BOTTOM (5' BSG)	2E-BOTTOM (3' BSG)	2E-BOTTOM (3.5'BSG)	2E-BOTTOM (3'BSG)	2E-BOTTOM (7' BSG)	2G-BOTTOM (4.5' BSG)	2H-BOTTOM (7' BSG)	2I-BOTTOM (4'BSG)	2J-BOTTOM (4'BSG)	2L-BOTTOM (6' BSG)	2N-BOTTOM (5' BSG)	2O-BOTTOM (6.5 BSG)'	2P-BOTTOM (5.5' BSG)
Sample Depth (ft bgs):					4.4-4.9	2.5-3	3.4-3.9	4.3-4.8	3.1-3.6	3.2-3.7	3.3-3.8	4.5-5	3.9-4.4	4.8-5.3	4-4.5	6.8-7.3	4.7-5.2	5.9-6.4	4.4-4.9	4.1-4.6	5.8-6.3	6-6.5	7.3-7.8	3.5-4
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	1-1.5	2.2-2.7	1.9-2.4	1.1-1.6	2.3-2.8	2.3-2.8	2.1-2.6	0.7-1.2	1.4-1.9	1.3-1.8	1.3-1.8	-0.7-(-0.2)	1.2-1.7	0.4-0.9	1.7-2.2	2.1-2.6	1.1-1.6	0.6-1.1	-0.7-(-0.2)	3-3.5
Excavated:													EXCAVATED	EXCAVATED	EXCAVATED									
Lab Sample ID:					JB77658-2R	JB77658-7R	JB77658-12R	JB77660-3R	JB77660-5R	JB77883-1A	JB77884-3A	JB77658-4R	JB77658-10R	JB83154-7R	JB78862-4R	JB83888-4A	JB77660-8R	JB77883-3A	JB77884-4A	JB77884-8A	JB78116-3R	JB78118-4A	JB78376-2R	JB78376-4R
Date Sampled:					9/23/2014	9/23/2014	9/23/2014	9/24/2014	9/24/2014	9/25/2014	9/26/2014	9/23/2014	9/23/2014	12/2/2014	10/9/2014	12/10/2014	9/24/2014	9/25/2014	9/26/2014	9/26/2014	9/30/2014	10/1/2014	10/3/2014	10/3/2014
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																									
Antimony	7440-36-0	mg/kg	450	31	6	2.3 UJ	2.2 UJ	2.2 UJ	2.4 UJ	2.2 UJ	2.5 U	0.35 J	2.4 UJ	0.75 J	2.4 U	3.4	1.4 J	2.3 UJ	0.40 J	2.4 U	2.6 U	0.59 J	2.6 UJ	0.41 J	0.89 J
Chromium	7440-47-3	mg/kg	120,000	-	-	176	17.1	20.9	41.2	161	221	240 J	413	1070	1660	742	152	379	514	370 J	115 J	284	30.7	113	125
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	11.6	8.3	9.9	18.8	10.7	8.8	24.1	29.7	9.3	13.4	9.1	43.5	8.6	54.7	39.8	12.1	30.5	12.4	14.7	15
Thallium	7440-28-0	mg/kg	NS	NS	NS	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.9 U	1.2 U	1.2 U	1.2 U	1.3 U	1.2 U	1.3 U	1.3 U	1.3 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	24	28.8	17.3	19.5	28.7	13.3	41.7	30.8	24.8	26.6	16.3	52	15.7	50.2	41.7	15.6	48.1	13.3	19.4	20.5

General Chemistry																									
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	4.5 J / 1.1 J	0.45 J / 0.48 J	0.40 J / 0.28 J	0.99 R / 0.45 J	4.1 R / 2.5 J	14.1	3.4	5 J / 5.7 J	28.7 / 42.1	23.5 J / 42.6 J	9.3 R / 74.8 J	0.76 U	10.5 R / 18.9 J	0.75	3.6	5.7	0.49 UJ / 1.4 R	0.32 J	0.27 J / 1.3 J	2.3 J / 3.8 J
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	-	-	-	-	0.83 <sup>b</sup>	-	0.4 <sup>b</sup>	-	-	-	-	-	-	-	-	-	-	-
pH	-	su	NS	NS	NS	9.58	10.06	9.85	9.42	9.61	9.6	7.78	9.78	8.41	9.13	9	8.27	10.52	7.42	8.22	7.6	7.6	7.46	7.73	8.31
Redox Potential Vs H2	-	mV	NS	NS	NS	173	161	160	208	218	228	116	161	207	183	222	83.9	161	156	187	354	204	310	259	275
Solids, Percent	-	%	NS	NS	NS	84.8	90	88.4	83.6	91.1	79.8	81.5	81.7	82.8	80.7	89.6	52.3	87.5	80.9	81.3	78.4	82.2	77.1	75.3	77
Sulfide Screen	-	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	-	-	-	-	-	5620	-	689	-	-	-	-	-	-	-	-	-	-

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

- < - The analyte was not detected at the stated reporting limit.
- N - The matrix spike sample recovery in the associated QC sample is not within QC limits.
- R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.
- J - The result is estimated and may be biased low.
- J - The positive result reported for this analyte is a quantitative estimate.
- U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

- <sup>a</sup> Elevated detection limit due to dilution required for high interfering element.
- <sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>d</sup> Multiple injections indicate possible sample non-homogeneity.
- <sup>e</sup> Sample received outside the holding time.
- <sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.
- <sup>g</sup> Analysis done out of holding time.
- <sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)
- NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.
- ft = Feet North American Vertical Datum of 1988
- ft bgs = feet below ground surface
- BSG = below surface grade
- FBG = feet below grade
- mg/kg = milligram per kilogram
- su = standard unit
- mV = millivolts
- = Not Analyzed
- \*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.
- + = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

**Result or Detection limit exceeded criteria**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:					2Q-BOTTOM (5.5' BSG)	2R-BOTTOM (4'BSG)	2R-BOTTOM (6'BSG)	2X-BOTTOM (5'- 6 BSG)	3F-BOTTOM (3.5' BSG)	3G-BOTTOM (3.5' BSG)	3H-BOTTOM (3' BSG)	3H-BOTTOM (5'BSG)	3H-BOTTOM (5'BSG)	3I-BOTTOM (4'BSG)	3J-BOTTOM (4'BSG)	3K-BOTTOM (6' BSG)	3L-BOTTOM (5' BSG)	3M-BOTTOM (4' BSG)	3N-BOTTOM (5' BSG)	3O-BOTTOM (5.5' BSG)	3P-BOTTOM (5' BSG)	3Q-BOTTOM (5'BSG)	3R-BOTTOM (4'BSG)	3S-BOTTOM (4'BSG)	3T-BOTTOM (6'BSG)
Sample Depth (ft bgs):					5.9-6.4	5-5.5	5.7-6.2	5.4-5.9	2.1-2.6	3.3-3.8	2.7-3.2	4.3-4.8	3.8-4.3	3.7-4.2	3.7-4.2	5.1-5.6	4.8-5.3	5-5.5	4.8-5.3	6.1-6.6	5.4-5.9	5.7-6.2	4.8-5.3	4.1-4.6	5-5.5
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	0.7-1.2	1.7-2.2	0.8-1.3	2.1-2.6	3.9-4.4	3.5-4	4.6-5.1	3.0-3.5	3.5-4.0	3.1-3.6	3.1-3.6	1.9-2.4	2.1-2.6	1.8-2.3	1.7-2.2	0.9-1.4	1.1-1.6	1-1.5	1.5-2	1.9-2.4	0.8-1.3
Excavated:						EXCAVATED						EXCAVATED													
Lab Sample ID:					JB78376-6R	JB78607-1R	JB78862-3R	JB85408-1R	JB77660-2R	JB77660-9R	JB77883-4A	JB78862-5R	JB84206-1R	JB77884-5A	JB77884-9A	JB78117-2R	JB78116-2R	JB78118-1A	JB78118-2A	JB78374-2R	JB78374-3R	JB78376-7R	JB78607-3R	JB78607-4R	JB82417-1R
Date Sampled:					10/3/2014	10/6/2014	10/9/2014	12/31/2014	9/24/2014	9/24/2014	9/25/2014	10/9/2014	12/15/2014	9/26/2014	9/26/2014	9/29/2014	9/30/2014	10/1/2014	10/1/2014	10/2/2014	10/2/2014	10/3/2014	10/6/2014	10/6/2014	11/20/2014
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																										
Antimony	7440-36-0	mg/kg	450	31	6	1.7 J	7.8	0.60 J	0.72 J	0.30 J	1.7 J	2.4 U	0.42 J	2.7 U	2.4 U	0.31 J	0.79 J	2.5 U	2.7 UJ	0.36 J	0.43 J	0.61 J	2.6 U	0.42 J	2.4 U	2.5 U
Chromium	7440-47-3	mg/kg	120,000	-	-	919	1810	444	877	89.9	472	192	180	44.1	179 J	461 J	703	304	152	99.6	10.8	299	187	82.5	216	301 J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	13.9	73.9	17.7	25.8	28.3	42.3	28.5	26.1	17.4	18.8	47.1	48.9	9.8	8.9	12.4	5.6	13.5	6.7	10.8	18.9	35.9
Thallium	7440-28-0	mg/kg	NS	NS	NS	1.5 U	1.6 U	1.3 U	1.5 U	1.1 U	1.2 U	1.2 U	1.3 U	1.2 U	1.1 U	1.2 U	1.2 U	1.3 U	1.2 U	1.3 U	1.3 U	1.3 U	1.3 U	1.2 U	1.3 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	22.7	150	30.9	53	40.3	61.7	34	31.4	19.2	20.7	52.7	48.2	9.3	9.5	12.7	8.4	20.3	11.7	17.2	23.2	44.3

General Chemistry																										
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.61 UJ / 1.8 J	0.66 U / 0.66 U	5.3 R / 3.4 J	6.6 J / 3.3 J	0.38 R / 1 J	2.4 R / 2.2 J	1.5	0.25 R / 0.48 R	0.53 R / 0.7 J	2.1	2.4	4.9 J / 5.5 R	4.9 J / 3.7 R	4.2 J	2.9 J	0.44 J / 1.5 R	6.8 J / 5.5 R	2.2 J / 9.1 J	0.83 J / 1.4 R	3 J / 2.8 R	0.41 R / 1.5
Chromium, Trivalent	-	mg/kg				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	-	-	-	-	-	-	1.2 <sup>b</sup>	-	-	-	-	-	-	-	-	-	-	1.1 <sup>b</sup>	-
pH	-	su	NS	NS	NS	7.79	11.02	7.44	7.18	8.33	8.08	7.53	8.24	8.6	7.99	7.54	8.22	7.68	7.66	7.67	8.1	8.8	8.31	7.76	7.84	7.89
Redox Potential Vs H2	-	mV	NS	NS	NS	135	82.6	290	256	288	222	248	191	307	274	330	276	270	246	248	300	277	251	251	223	176
Solids, Percent	-	%	NS	NS	NS	66.1	60.8	81.4	65	91.5	83.3	82.4	84.2	75.4	80.7	83.5	82.5	78	77.9	81.5	76.7	77.6	75.6	75.9	82.9	78.3
Sulfide Screen	-	-	NS	NS	NS	-	-	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-	-	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	-	-	-	-	-	-	6480 <sup>d</sup>	-	-	-	-	-	-	-	-	-	-	14700 <sup>d</sup>	-

*Includes Excavated Samples*

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- N - The matrix spike sample recovery in the associated QC sample is not within QC limits.
- R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.
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- <sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>d</sup> Multiple injections indicate possible sample non-homogeneity.
- <sup>e</sup> Sample received outside the holding time.
- <sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.
- <sup>g</sup> Analysis done out of holding time.
- <sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)
- NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.
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- ft bgs = feet below ground surface
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- = Not Analyzed
- \*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.
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**Result or Detection limit exceeded criteria**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:						3X-BOTTOM (6' BSG)	4O-BOTTOM (5.5' BSG)	4O-BOTTOM (9' BSG)	4P-BOTTOM (5.5' BSG)	4Q-BOTTOM (4.5' BSG)	4Q-BOTTOM DUP (4.5' BSG)	4S-BOTTOM (4'BSG)	4T-BOTTOM (5' BSG)	4T-BOTTOM (6' BSG)	4U (12/3)- BOTTOM (5.5' BSG)	4U-BOTTOM (4.5'BSG)	4V-BOTTOM (6' BSG)	4V-BOTTOM DUP (6' BSG)	5O BOTTOM (6' BELOW BLACKTOP)	5P BOTTOM (6' BELOW BLACKTOP)	5Q BOTTOM (5' BELOW BLACKTOP)	5R BOTTOM (5' BELOW BLACKTOP)	5S-BOTTOM (5' BSG)	5T-BOTTOM (5' BGS)	5U-BOTTOM (4.5' BSG)	5U-BOTTOM DUP (4.5' BSG)		
Sample Depth (ft bgs):						5.9-6.4	5.7-6.2	8.3-8.8	5.4-5.9	5.6-6.1	5.6-6.1	4.9-5.4	5.5-6	5.6-6.1	6.6-7.1	5.3-5.8	6.4-6.9	6.4-6.9	5.5-6	5.1-5.6	4.9-5.4	5.1-5.6	5.3-5.8	5.5-6	5.1-5.6	5.1-5.6	5.1-5.6	
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	2.5-3	1.2-1.7	-1.3-(-0.8)	1.2-1.7	0.7-1.2	0.7-1.2	1-1.5	1-1.5	0.3-0.8	(-0.1)-0.4	1.2-1.7	0.1-0.6	0.1-0.6	1.5-2	1.5-2	1.6-2.1	1.1-1.6	0.6-1.1	1-1.5	1.4-1.9	1.4-1.9	1.4-1.9	
Excavated:							EXCAVATED																					
Lab Sample ID:						JB85288-2R	JB78374-1R	JB79897-1R	JB78374-4R	JB78860-1R	JB78860-2R	JB78607-6R	JB82964-1R	JB82579-1A	JB83886-1T	JB83440-2R	JB84364-2R	JB84364-3R	JB72493-2R	JB72493-1R	JB73545-1R	JB73545-2R	JB78861-1R	JB82964-2R	JB83601-1R	JB83601-2R		
Date Sampled:						12/30/2014	10/2/2014	10/22/2014	10/2/2014	10/7/2014	10/7/2014	10/6/2014	12/1/2014	11/21/2014	12/3/2014	12/4/2014	12/16/2014	12/16/2014	7/23/2014	7/23/2014	8/6/2014	8/6/2014	10/8/2014	12/1/2014	12/5/2014	12/5/2014		
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	

Metals Analysis																										
Antimony	7440-36-0	mg/kg	450	31	6	2.1 U	2.5 U	2.4 UJ	0.68 J	2.5 UJ	0.30 J	2.5 U	0.69 J	2.4 U	2.0 U	2.4 U	2.3 U	2.3 U	2.2 U	2.3 U	2.5 UJ	2.6 UJ	2.4 UJ	0.37 J	2.6 U	1.2 J
Chromium	7440-47-3	mg/kg	120,000	-	-	329	1190	17.9	137	249 J	352 J	345	74.6	138	30.6	76.8	36.7	52	64	84.6	180	176	247 J	168	143	124
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	259	13.1	6.9	8.9	10.2	9	7.1	6.5	7.5	9.9	8.9	8.9	10.2	5.8	7.8	10.1	9.6	11.6	16.8	15.6	11.6
Thallium	7440-28-0	mg/kg	NS	NS	NS	1.1 U	1.3 U	1.2 U	1.3 U	1.3 U	1.1 U	1.3 U	1.2 U	1.2 U	0.99 U	1.2 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.3 U	1.2 U	1.2 U	1.3 U	1.2 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	15.5	41.9	9.1	15.4	36.6	14	13.3	7.7	18.5	11.1	11.4	9.6	10.7	11.5	39	32.4	30.1	37.6	9.3	19.1	15.1

General Chemistry																										
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	8.2 J / 10.2 J	16.8 J / 45.3 R	1 J / 0.26 R	6.4 J / 7.2 R	7.4 R / 16.9 J	6.2 R / 7.3 J	2.1 J / 6.7 R	4.7 J / 3.5	4.1	0.51 UJ	7.4 J / 6.5 J	2.3 / 2.9 J	3.6 / 1.1 J	2.1 R / 2.3 J	5.4 R / 2.8 J	8.5 J / 13.4 J	11.9 J / 10.5 J	10.8 J / 13.1 R	6 J / 6.9	5.2 J / 5.4 J	4.4 J / 6.1 J
Chromium, Trivalent	-	mg/kg				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	-	-	0.78 <sup>b</sup>	-	-	0.52 <sup>b</sup>	-	-	-	0.71 <sup>b</sup>	-	-	0.61	0.83 <sup>b</sup>	-	-	-	0.7 <sup>b</sup>	-
pH	-	su	NS	NS	NS	8.32	8.76	8.41	8.44	8.75	8.62	8.12	8.22	8.25	7.7	8.19	8.15	7.93	8.88	8.25	8.31	8.27	8.57	8.45	8.04	8.04
Redox Potential Vs H2	-	mV	NS	NS	NS	347	296	199	287	226	231	128	253	292	355 <sup>g</sup>	265	291	298	257	296	186	197	231	246	258	206
Solids, Percent	-	%	NS	NS	NS	92.4	77.4	79.4	78.6	77.1	90.7	80.6	82	80.9	78.6	79.6	85.7	82	82.7	82.1	80.4	81	83.3	81.5	76.8	81.8
Sulfide Screen	-	-	NS	NS	NS	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	NEGATIVE <sup>c</sup>	-	-	-	NEGATIVE <sup>c</sup>	-	-	NEGATIVE	NEGATIVE <sup>c</sup>	-	-	-	NEGATIVE <sup>c</sup>	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	-	-	689	-	-	482	-	-	-	595	-	-	599 <sup>d</sup>	1260	-	-	-	2610	-

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

J - The result is estimated and may be biased low.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Sample received outside the holding time.

<sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.

<sup>g</sup> Analysis done out of holding time.

<sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

BSG = below surface grade

FBG = feet below grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Analyzed

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

**Result or Detection limit exceeded criteria**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:						5V-BOTTOM (6' BSG)	5V-BOTTOM (6'BSG)	5W-BOTTOM (7.5' BSG)	6L BOTTOM (5' BELOW BLACKTOP)	6L BOTTOM (2) (6.5' BELOW BLACKTOP)	6M BOTTOM (5' BELOW BLACKTOP)	6M BOTTOM (2) (6.5' BELOW BLACKTOP)	6N BOTTOM (6' BELOW BLACKTOP)	6O BOTTOM (6' BELOW BLACKTOP)	6P BOTTOM (6' BELOW BLACKTOP)	6S-BOTTOM (4.5' BSG)	6T-BOTTOM (6' BSG)	6U-BOTTOM (6' BSG)	6V-BOTTOM (6' BSG)	7L BOTTOM (6' BELOW BLACKTOP)	7L BOTTOM (2) (6.5' BELOW BLACKTOP)	7M BOTTOM (6' BELOW BLACKTOP)	7M BOTTOM (2) (6.5' BELOW BLACKTOP)	7N BOTTOM (6' BELOW BLACKTOP)	7O BOTTOM (5' BELOW BLACKTOP)
Sample Depth (ft bgs):						6.8-7.3	5.8-6.3	6.9-7.4	5.2-5.7	6.9-7.4	5.4-5.9	6-6.5	6.1-6.6	6.2-6.7	4.8-5.3	4.4-4.9	5.6-6.1	5.7-6.2	4.6-5.1	6.1-6.6	7.3-7.8	6.2-6.7	6.5-7	5.5-6	5.5-6
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	0.5-1	2.3-2.8	1.4-1.9	3-3.5	1.3-1.8	2.5-3.0	1.8-2.3	1.4-1.9	1.1-1.6	2-2.5	1.6-2.1	1.5-2	2-2.5	4.0-4.5	2.3-2.8	1.1-1.6	1.9-2.4	1.4-1.9	2.1-2.6	1.8-2.3
Excavated:									EXCAVATED		EXCAVATED									EXCAVATED		EXCAVATED			
Lab Sample ID:						JB83600-1R	JB84074-2R	JB84846-4R	JB72494-1R	JB72918-3A	JB72493-7R	JB72918-2A	JB72493-4R	JB72493-3R	JB72240-2A	JB82704-3A	JB83888-1A	JB83888-2A	JB83888-3A	JB72494-2R	JB72918-4A	JB72494-3R	JB72918-1A	JB72493-5R	JB72240-1A
Date Sampled:						12/8/2014	12/12/2014	12/19/2014	7/24/2014	7/29/2014	7/23/2014	7/29/2014	7/23/2014	7/23/2014	7/22/2014	11/24/2014	12/10/2014	12/10/2014	12/10/2014	12/10/2014	7/24/2014	7/29/2014	7/24/2014	7/29/2014	7/22/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																									
Antimony	7440-36-0	mg/kg	450	31	6	2.3 U	2.5 U	2.2 UJ	0.71 J	2.1 U	2.0 U	2.4 U	2.2 U	2.1 U	2.3 U	2.3 U	2.5 U	2.4 U	2.6 U	2.3 UJ	2.1 U	2.2 UJ	2.2 U	2.3 U	1.9 U
Chromium	7440-47-3	mg/kg	120,000	-	-	237	19.5	126	317	101	310	122	7.3	234	485 J	195	50	54.9	41.2	329 <sup>a</sup> J	135	163 J	75	51.2	202 J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	14.7	7.7	5.9	9.2	10.6	10.7	11.8	6.7	6.5	6.7	8.7	10.3	7.7	12	9.8	15.7	6.1	11.4	6	5.8
Thallium	7440-28-0	mg/kg	NS	NS	NS	1.2 U	1.2 U	1.1 U	1.3 U	1.1 U	0.98 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.3 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.96 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NA	16.1	10	9	10.7	14.9	13.9	15.1	8.9	15.8	36.2	15.9	18.2	8.7	10.9	9.9	18.9	7.8	16.4	8.3	30.7

General Chemistry																									
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	10.2 J / 8.8 J	0.49 R / 0.63 J	8.1 J / 4.9 J	38.3 / 15	2.1	23.7 R / 8.8	2.8	0.43 R / 0.30 J	6.8 R / 7.6 J	13.9 J	6.2	3.7 J	1.7 J	2.2 J	27.6 R / 7.5 J	4.9	20.5 R / 6.3 J	3.1	2.6 R / 3.9 J	8.7 J
Chromium, Trivalent	-	mg/kg				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	0.22 <sup>b</sup>	-	-	0.68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	-	su	NS	NS	NS	7.76	7.9	8.39	7.47	8.02	8.07	8.1	8.1	8.52	8.42	8.51	8.36	8.16	7.84	7.87	8.32	7.87	8.34	8.22	8.53
Redox Potential Vs H2	-	mV	NS	NS	NS	252	224	274	291	277	280	274	303	274	289	276	283	291	298	295	278	299	256	313	291
Solids, Percent	-	%	NS	NS	NS	84.2	82.1	88.9	79	81.9	92.4	78.8	82.6	80.3	78.9	84.4	78.6	80.1	77.9	82.3	84	81.2	86	81	90.2
Sulfide Screen	-	-	NS	NS	NS	NEGATIVE <sup>c</sup>	-	-	NEGATIVE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	586	-	-	14700 <sup>d</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

J - The result is estimated and may be biased low.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Sample received outside the holding time.

<sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.

<sup>g</sup> Analysis done out of holding time.

<sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

BSG = below surface grade

FBG = feet below grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Analyzed

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

**Result or Detection limit exceeded criteria**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:						7Q BOTTOM (5' BELOW BLACKTOP)	7Q BOTTOM DUP (5' BELOW BLACKTOP)	7R BOTTOM (4 FBG)	7S BOTTOM (4.5' BELOW SURFACE)	7T BOTTOM (5' BELOW SURFACE)	7U BOTTOM (6' BELOW SURFACE)	7U BOTTOM DUP (6' BELOW SURFACE)	7V-BOTTOM (6'BSG)	8L BOTTOM (6' BELOW BLACKTOP)	8M BOTTOM (6' BELOW BLACKTOP)	8N BOTTOM (5' BELOW BLACKTOP)	8O BOTTOM	8O BOTTOM DUP	8O BOTTOM (2) (6' BELOW BLACKTOP)	8R BOTTOM (3 FBG)	8S BOTTOM (4.5' BELOW SURFACE)	8T BOTTOM (5' BELOW SURFACE)	8U BOTTOM (5' BELOW SURFACE)	9L BOTTOM (5' BELOW BLACKTOP)	9M BOTTOM (5' BELOW BLACKTOP)	9N BOTTOM (5' BELOW BLACKTOP)
Sample Depth (ft bgs):			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	5.9-6.4	5.9-6.4	4-4.5	3.7-4.2	4.4-4.9	6.4-6.9	6.4-6.9	6-6.5	6.7-7.2	6.1-6.6	4.6-5.1	4.6-5.1	4.6-5.1	5.3-5.8	4.1-4.6	4.2-4.7	4.7-5.2	4.8-5.3	5.5-6	5.5-6	4.5-5
Sample Elevation (ft):	CAS#	Units				1-1.5	1-1.5	2.8-3.3	3.3-3.8	3.1-3.6	1.8-2.3	1.8-2.3	2.4-2.9	1.8-2.3	2.1-2.6	3.1-3.6	2.9-3.4	2.9-3.4	2.3-2.8	2.8-3.3	3.4-3.9	3.3-3.8	3.5-4	2.9-3.4	2.6-3.1	3.3-3.8
Excavated:																	EXCAVATED	EXCAVATED								
Lab Sample ID:						JB73136-1A	JB73136-2A	JB71600-1R	JB73546-2A	JB73868-2A	JB73867-1A	JB73867-2A	JB84075-3A	JB72494-4R	JB72494-5R	JB72493-6R	JB72239-1R	JB72239-2R	JB72919-1R	JB71600-2R	JB73546-1A	JB73868-1A	JB73868-3A	JB72918-5A	JB72918-6A	JB72918-7A
Date Sampled:						7/31/2014	7/31/2014	7/11/2014	8/7/2014	8/8/2014	8/11/2014	8/11/2014	12/11/2014	7/24/2014	7/24/2014	7/23/2014	7/21/2014	7/21/2014	7/30/2014	7/11/2014	8/7/2014	8/8/2014	8/8/2014	7/29/2014	7/29/2014	7/29/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																										
Antimony	7440-36-0	mg/kg	450	31	6	2.0 U	2.1 U	2.1 U	2.4 UJ	0.78 J	0.79 J	0.39 J	2.4 U	2.1 UJ	2.3 UJ	2.7 U	2.4 U	2.3 U	1.8 U	2.1 U	2.3 UJ	0.58 J	0.47 J	0.56 J	2.9 U	2.4 U
Chromium	7440-47-3	mg/kg	120,000	-	-	71.9 J	41 J	39.9	38.5	43	21.2	18.2	74.8	132 J	130 J	48.6	255 J	243 J	36.6	20.3	33.8	18.5	12.8	375	112	65.8
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	6.3	5.2	11.8	9.7	11.5	8.4	7.3	12.8	6.4	6.3	11.7	9.8	8.7	6	7.5	16.8	9.2	8.6	11.2	9	5.9
Thallium	7440-28-0	mg/kg	NS	NS	NS	1.0 U	1.1 U	1.0 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.0 U	1.2 U	1.3 U	1.2 U	1.2 U	0.92 U	1.1 U	1.2 U	1.1 U	1.1 U	1.6 U	1.4 U	1.2 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	13.7	8.4	19.9	15.4	18	14.9	12.3	16.5	8.7	6.7	15.5	44	73.1	8.4 J	13.3	26.2	15.7	11.8	14.1	11.7	8

General Chemistry																										
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	5.7	4.1	1.5 J / 1 J	1.2	1.8 J	1	0.89	2.4	8.1 R / 7.6 J	6.5 R / 8.2 J	1.2 R / 1.9 J	37.4 J / 17.9 J	19 J / 17.6 J	4.9 J / 2.3 J	2 J / 2.6 J	1.9	2.2 J	0.67 J	11.2	6.1	1
Chromium, Trivalent	-	mg/kg				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	0.65 <sup>b</sup>	-	-	-	-	-	-	-	-	0.57 <sup>b</sup>	-	-	-	-	-	-	-	-	-
pH	-	su	NS	NS	NS	8.05	8.13	8.85	8.53	8.53	7.85	8.13	8.52	7.92	8	7.01	8.44	8.25	8.28	8.91	8.85	8.75	8.85	7.76	8.05	8.48
Redox Potential Vs H2	-	mV	NS	NS	NS	313	310	265	252	244	243	244	248	302	305	300	285	295	319	267	227	230	238	297	265	264
Solids, Percent	-	%	NS	NS	NS	84.4	84.4	91.2	85	80.5	85.2	84.2	86.7	81.2	77.3	71.5	78.3	80.2	93.9	89.5	85.3	91.3	90.2	61.3	68.6	83.1
Sulfide Screen	-	-	NS	NS	NS	-	-	NEGATIVE <sup>c</sup>	-	-	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	495	-	-	-	-	-	-	-	-	2330	-	-	-	-	-	-	-	-	-

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

J - The result is estimated and may be biased low.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Sample received outside the holding time.

<sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.

<sup>g</sup> Analysis done out of holding time.

<sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

BSG = below surface grade

FBG = feet below grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Analyzed

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

**Result or Detection limit exceeded criteria**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:						9O BOTTOM	9P BOTTOM	9S-BOTTOM	9T-BOTTOM	9U-BOTTOM	10L BOTTOM (5' BELOW BLACKTOP)	10M BOTTOM (5' BELOW BLACKTOP)	10N BOTTOM (5' BELOW BLACKTOP)	10O BOTTOM	10P BOTTOM	10Q-BOTTOM	11O BOTTOM	11P BOTTOM	11S-BOTTOM	11T-BOTTOM	12O BOTTOM	12P BOTTOM	12Q BOTTOM LOW (6.5' BELOW BLACKTOP)	12Q BOTTOM HIGH (4' BELOW BLACKTOP)
Sample Depth (ft bgs):						3.9-4.4	3.6-4.1	4-4.5	4.2-4.7	4.3-4.8	5.3-5.8	5-5.5	4.6-5.1	3.1-3.6	3.6-4.1	3.2-3.7	3-3.5	3.6-4.1	3.3-3.8	3.5-4	2.8-3.3	3.4-3.9	5.2-5.7	7.5-8
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	3.7-4.2	3.9-4.4	3.6-4.1	3.8-4.3	4.1-4.6	3-3.5	3.1-3.6	3.2-3.7	4.6-5.1	3.9-4.4	4.2-4.7	4.7-5.2	3.9-4.4	4.6-5.1	4.7-5.2	4.9-5.4	4.2-4.7	2.6-3.1	0-0.5
Excavated:																								
Lab Sample ID:						JB71107-1A	JB71107-5A	JB70989-1	JB70650-1	JB70650-2	JB73136-7A	JB73136-5A	JB73136-3A	JB71107-2A	JB71107-6A	JB70989-2	JB71107-3A	JB71336-1A	JB70649-3	JB70649-4	JB71107-4A	JB71336-2A	JB72919-10R	JB72919-11R
Date Sampled:						7/8/2014	7/8/2014	7/2/2014	6/30/2014	6/30/2014	7/31/2014	7/31/2014	7/31/2014	7/8/2014	7/8/2014	7/2/2014	7/8/2014	7/9/2014	7/1/2014	7/1/2014	7/8/2014	7/9/2014	7/30/2014	7/30/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																								
Antimony	7440-36-0	mg/kg	450	31	6	2.2 U	2.1 U	2.2 U	2.1 U	1.9 U	2.2 U	2.1 U	2.1 U	2.0 U	2.1 U	1.9 U	1.9 U	2.0 U	2.2 U	2.0 U	2.0 U	2.2 U	0.59 J	0.25 J
Chromium	7440-47-3	mg/kg	120,000	-	-	22.1	14.3	11.7 J	15.7	8.6	56.8	60.6	28.3	12.6	13.9	41.7 J	16.1	33.3	248	14.6	28.1	74.4	84.5	98.7
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	7.8	6.2	4.8 J	7.4	5.6	6.6	7.6	11.5	5.9	6.4	19.3 J	7.5	7.7	65.4	6.3	9.2	15.7	7	9.9
Thallium	7440-28-0	mg/kg	NS	NS	NS	0.59 J	1.0 U	1.1 U	1.1 U	0.97 U	1.1 U	1.0 U	1.0 U	0.60 J	0.44 J	0.96 U	0.97 U	1.0 U	0.51 J	0.98 U	0.57 J	1.1 U	1.0 U	0.87 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	11.8	9.7	6.7 J	7.3	7.7	10.7	9.1	13.5	8.2	15.1	16.9 J	9	11.8	74.8	9.7	11.8	22.1	8.4 J	21.8 J

General Chemistry																								
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2.4	1.2	0.85	1.1	0.48	2.1	2.3	0.43 J	0.77	0.48 U	0.95	0.44	3.1	2.8	0.69	1.2	4.2	6.1 J / 2.4 J	4.6 J / 1.4 J
Chromium, Trivalent	-	mg/kg				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	-	su	NS	NS	NS	8.13	8.47	8.57	8.67	8.69	7.85	8.43	8.29	8.71	8.4	8.52	8.85	8.43	8.62	9.01	8.31	8.68	8.14	8.2
Redox Potential Vs H2	-	mV	NS	NS	NS	355	339	314	381	386	310	277	319	339	347	342	333	291	390	372	394	288	292	282
Solids, Percent	-	%	NS	NS	NS	85.8	84	82.8	88.6	87.1	82.6	81.2	82.9	94.2	83.8	92.8	91.9	84.3	92	93.1	91.6	84.4	87.2	97.7
Sulfide Screen	-	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

- < - The analyte was not detected at the stated reporting limit.
- N - The matrix spike sample recovery in the associated QC sample is not within QC limits.
- R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.
- J - The result is estimated and may be biased low.
- J - The positive result reported for this analyte is a quantitative estimate.
- U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

- <sup>a</sup> Elevated detection limit due to dilution required for high interfering element.
  - <sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
  - <sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
  - <sup>d</sup> Multiple injections indicate possible sample non-homogeneity.
  - <sup>e</sup> Sample received outside the holding time.
  - <sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.
  - <sup>g</sup> Analysis done out of holding time.
  - <sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)
- NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.
- ft = Feet North American Vertical Datum of 1988
- ft bgs = feet below ground surface
- BSG = below surface grade
- FBG = feet below grade
- mg/kg = milligram per kilogram
- su = standard unit
- mV = millivolts
- = Not Analyzed
- \*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.
- + = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

**Result or Detection limit exceeded criteria**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:						12R BOTTOM HIGH (4' BELOW BLACKTOP)	12R BOTTOM LOW (6.5' BELOW BLACKTOP)	12S-BOTTOM	12S-BOTTOM DUP	13O BOTTOM	13P BOTTOM	13Q BOTTOM HIGH (5' BELOW BLACKTOP)	13Q BOTTOM LOW (6.5' BELOW BLACKTOP)	13R BOTTOM (6.5' BELOW BLACKTOP)	13R BOTTOM (2) (6.5' BELOW BLACKTOP)	14P BOTTOM (5' BELOW BLACKTOP)	14Q BOTTOM (5' BELOW BLACKTOP)	14S BOTTOM (2.5' BELOW BLACKTOP)	14S BOTTOM DUP (2.5' BELOW BLACKTOP)	15P BOTTOM (6' BELOW BLACKTOP)	15Q BOTTOM (4.5' BELOW BLACKTOP)	16O-BOTTOM (5' BSG)
Sample Depth (ft bgs):						4.8-5.3	7.5-8	3.6-4.1	3.6-4.1	3.5-4	3.6-4.1	5-5.5	6.9-7.4	6.3-6.8	6.8-7.3	4.4-4.9	5-5.5	3.6-4.1	3.6-4.1	5.5-6	4.3-4.8	4.4-4.9
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	3.2-3.7	0.4-0.9	4.6-5.1	4.6-5.1	4.2-4.7	4.2-4.7	2.7-3.2	0.8-1.3	1.7-2.2	1.2-1.7	3.4-3.9	2.8-3.3	4.7-5.2	4.7-5.2	2.1-2.6	3.6-4.1	3.3-3.8
Excavated:														EXCAVATED								
Lab Sample ID:						JB72919-8R	JB72919-9R	JB70989-3	JB70989-4	JB71336-4A	JB71336-3A	JB73139-1A	JB72919-13R	JB72919-12R	JB73307-1R	JB73307-3R	JB73307-2R	JB72918-8A	JB72918-9A	JB73867-4A	JB73867-5A	JB79898-1R
Date Sampled:						7/30/2014	7/30/2014	7/2/2014	7/2/2014	7/9/2014	7/9/2014	8/1/2014	7/30/2014	7/30/2014	8/5/2014	8/5/2014	8/5/2014	7/29/2014	7/29/2014	8/11/2014	8/11/2014	10/14/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																						
Antimony	7440-36-0	mg/kg	450	31	6	1.9 U	0.36 J	1.9 U	1.9 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U	2.4 U	2.4 U	2.6 U	0.29 J	2.2 U	1.3 J	0.53 J	1.0 J
Chromium	7440-47-3	mg/kg	120,000	-	-	19.9	239	16.7 J	16.1 J	197	234	130	171	464	329	155	40.1	26.4	24.4	203	34.1	45.4
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	13.5	9.2	8.6 J	8 J	43.8	28.7	8.8	9.3	9.4	10	10.3	9.3	10.8	11	12.9	8.1	9.8
Thallium	7440-28-0	mg/kg	NS	NS	NS	0.97 U	1.1 U	0.94 U	0.95 U	0.71 J	0.59 J	1.0 U	1.1 U	1.0 U	1.2 U	1.2 U	1.3 U	1.1 U	1.1 U	1.2 U	1.2 U	1.3 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	20.7 J	9.8 J	9.7 J	9.3 J	33.4	35.4	8.9	12.2 J	12.3	12.4	13.3	14.7	14.4	12.3	16.6	10.4	11.7

General Chemistry																						
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	1.8 J / 0.94 J	12.7 J / 6.1 J	1.3	0.83	2.2	4	3.9	2.6 J / 4.6 J	24.1 / 6.6	12.4 J / 5.3 J	9.7 J / 8.4 J	2.7 J / 2.6 J	0.71	0.7	8.4	2.1	1.9 J / 1.6 R
Chromium, Trivalent	-	mg/kg				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	-	-	-	-	-	-	-	1.4 <sup>b</sup>	-	-	-	-	-	-	0.75 <sup>e</sup>
pH	-	su	NS	NS	NS	9.14	8.45	8.84	8.68	8.96	8.92	8.19	8.37	8.32	8.64	8.58	8.72	8.63	8.6	8.44	8.66	8.71
Redox Potential Vs H2	-	mV	NS	NS	NS	294	313	330	350	276	275	290	284	284	223	256	250	292	312	238	232	200
Solids, Percent	-	%	NS	NS	NS	88.9	82	94.8	95.5	80.3	87.1	82.7	79.6	83.4	82.5	80.8	80.9	82.1	86.4	84	81.6	79.5
Sulfide Screen	-	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	NEGATIVE	-	-	-	-	-	-	NEGATIVE <sup>g</sup>
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	-	-	-	-	-	-	-	330	-	-	-	-	-	-	1690 <sup>d</sup>

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

J - The result is estimated and may be biased low.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Sample received outside the holding time.

<sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.

<sup>g</sup> Analysis done out of holding time.

<sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

BSG = below surface grade

FBG = feet below grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Analyzed

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

**Result or Detection limit exceeded criteria**



**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:						16P-BOTTOM (3.5 BSG)	16Q-BOTTOM (3.5 BSG)	16Q BOTTOM	16S BOTTOM	17N-BOTTOM (5'BSG)	17P-BOTTOM (3.5 BSG)	17S BOTTOM	17T BOTTOM (1' BELOW SURFACE)	18/19M-OH DOOR COMPOSITE (3'BSG)	18M-BOTTOM (4'BSG)	18M- BOTTOMBLDG (5' BSG)	18N-BOTTOM (4'BSG)	18O-BOTTOM (4'BSG)	18P-BOTTOM (4.5' BSG)	18R BOTTOM (2.5' BELOW SURFACE)	18S BOTTOM (2.5' BELOW SURFACE)	18T BOTTOM (2.5' BELOW SURFACE)	18U BOTTOM (1.5' BELOW SURFACE)	19M-BOTTOM (4'BSG)	19M- BOTTOMBLDG (5'BSG)
Sample Depth (ft bgs):						4-4.5	3.8-4.3	3.9-4.4	2.8-3.3	4.2-4.7	3.4-3.9	3-3.5	2.8-3.3	2.9-3.4	6.6-7.1	5.5-6	6.2-6.7	5.2-5.7	4.4-4.9	2.6-3.1	2.6-3.1	3.1-3.6	1.5-2	6.2-6.7	4.5-5
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	3.9-4.4	4.3-4.8	4.1-4.6	5.9-6.4	3.3-3.8	4.8-5.3	5.9-6.4	6.3-6.8	6-6.5	2.1-2.6	3.5-4	2.2-2.7	2.8-3.3	3.6-4.1	5.8-6.3	6.1-6.6	5.8-6.3	7.6-8.1	2.4-2.9	3.8-4.3
Excavated:																									
Lab Sample ID:						JB76205-2R	JB76205-3R	JB74359-6A	JB74359-3A	JB76593-1A	JB76205-1R	JB74359-5A	JB74360-4A	JB80631-6A	JB76016-16A	JB80537-7R	JB76016-14A	JB76016-12A	JB76015-1R	JB74089-1A	JB74089-2A	JB74360-1A	JB74360-2A	JB76016-17A	JB80631-4A
Date Sampled:						9/9/2014	9/9/2014	8/18/2014	8/18/2014	9/11/2014	9/9/2014	8/18/2014	8/15/2014	10/30/2014	9/5/2014	10/29/2014	9/5/2014	9/5/2014	9/8/2014	8/14/2014	8/14/2014	8/15/2014	8/15/2014	9/5/2014	10/30/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																									
Antimony	7440-36-0	mg/kg	450	31	6	2.3 UJ	2.2 UJ	2.6 U	2.2 U	2.4 UJ	2.1 UJ	2.2 U	2.1 U	2.4 U	2.5 UJ	2.4 U	2.5 UJ	2.6 UJ	2.6 UJ	2.2 U	2.2 U	2.2 U	2.1 U	2.5 UJ	2.5 U
Chromium	7440-47-3	mg/kg	120,000	-	-	92	298	55.9	24.7	138	90	23.2	22.9	296 J	200	156	245	160	35.1 J	18.7	17.9	51.1	47.6	110	199 J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	11.3	10.6	12.2	9.2	14.5	10.7	9.9	9.8	35.8	8.6	8	8.4	11.9	8.3	9.5	9.7	9.7	10.4	6.6	9.8
Thallium	7440-28-0	mg/kg	NS	NS	NS	1.2 U	1.1 U	1.3 U	1.1 U	1.2 U	1.0 U	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U	1.1 U	1.1 U	1.1 U	1.0 U	1.2 U	1.2 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	12.1	16.7	17.4	12.5	21.8	16.6	18.1	12.5	60.8	9	12.1	11.8	16.6	9.6	14.9	12.3	24.8	14.5	7.7	12.6

General Chemistry																									
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	3.2 J / 2.1	5.7 J / 4.6	2.3	1.2	7.4	5 J / 0.63	0.89	2.6 J	9.4	4.2	10.3 R / 6.8	4.3	7.3	1.9 / 2	0.99	1.6	1.8 J	4.1 J	0.83	16.8
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	-	-	-	0.66	-	-	-	-	0.74 <sup>b</sup>	-	-	0.86 <sup>b</sup>	-	-	-	-	-	-
pH	-	su	NS	NS	NS	8.72	8.74	8.67	8.55	9.88	8.93	8.51	8.77	7.98	8.75	10.55	8.47	8.66	8.01	9.12	9.84	9.29	8.93	9.39	10.27
Redox Potential Vs H2	-	mV	NS	NS	NS	292	299	374	343	234	285	361	381	262	317	84.3	326	326	300	272	281	347	357	332	94.2
Solids, Percent	-	%	NS	NS	NS	85.5	91.4	78.4	95.1	81	93.8	93.8	95.3	85.2	78.4	80.2	80.8	79.1	77.5	93.4	95	93.9	97.2	79.7	82.6
Sulfide Screen	-	-	NS	NS	NS	-	-	-	-	-	NEGATIVE	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	NEGATIVE	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	-	-	-	566 <sup>d</sup>	-	-	-	-	10100	-	-	1520 <sup>d</sup>	-	-	-	-	-	-

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

- < - The analyte was not detected at the stated reporting limit.
- N - The matrix spike sample recovery in the associated QC sample is not within QC limits.
- R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.
- J- - The result is estimated and may be biased low.
- J - The positive result reported for this analyte is a quantitative estimate.
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**Notes:**

- <sup>a</sup> Elevated detection limit due to dilution required for high interfering element.
- <sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>d</sup> Multiple injections indicate possible sample non-homogeneity.
- <sup>e</sup> Sample received outside the holding time.
- <sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.
- <sup>g</sup> Analysis done out of holding time.
- <sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)
- NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.
- ft = Feet North American Vertical Datum of 1988
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- mg/kg = milligram per kilogram
- su = standard unit
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- = Not Analyzed
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**Result or Detection limit exceeded criteria**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:						19M-BOTTOMBLDG DUP (5'BSG)	19N-BOTTOM (4'BSG)	19O-BOTTOM (4'BSG)	19P-BOTTOM (3'BSG)	19Q-BOTTOM (3'BSG)	19S BOTTOM HIGH (2' BELOW SURFACE)	19S BOTTOM LOW (5' BELOW SURFACE)	19T-BOTTOM (3' BELOW SURFACE)	20M-BOTTOM	20M-CMU WALL-BOTTOM (1.5'BSG)	20M-CMU WALL-BOTTOM DUP (1.5'BSG)	20M-PIPE-BOTTOM (1.5'BSG)	20M-PIPE-BOTTOM 2 (1' BSG)	20N-BOTTOM (3'BSG)	20N-BOTTOM DUP (3'BSG)	20N-BOTTOM (PPG016_B20-N)	20O-BOTTOM (PPG016_B20-0)	20P-BOTTOM (2'BSG)	20PO(20P)-BOTTOM
Sample Depth (ft bgs):						4.5-5	6-6.5	5-5.5	4.2-4.7	3.1-3.6	2.6-3.1	4.9-5.4	2.9-3.4	6-6.5	1.1-1.6	1.1-1.6	1-1.5	1-1.5	0.6-1.1	0.6-1.1	4.8-5.3	6.5-7	3.1-3.6	4.8-5.3
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	3.8-4.3	2.3-2.8	2.5-3	3.4-3.9	4.7-5.2	5.7-6.2	3.3-3.8	5.7-6.2	2.9-3.4	5-5.5	5-5.5	4.4-4.9	4.4-4.9	5.0-5.5	5.0-5.5	3.7-4.2	2-2.5	4.1-4.6	3.7-4.2
Excavated:																	EXCAVATED	EXCAVATED						
Lab Sample ID:						JB80631-5A	JB76016-15A	JB76016-13A	JB76016-11R	JB76016-8R	JB74091-1A	JB74091-2A	JB74090-8A	JB96558-1A	JB82417-5R	JB82417-6R	JB82417-4R	JB82703-5R	JB76592-1R	JB76592-2R	JB95354-2RT	JB95248-1R	JB76016-9R	JB95670-35A
Date Sampled:						10/30/2014	9/5/2014	9/5/2014	9/5/2014	9/5/2014	8/12/2014	8/12/2014	8/13/2014	6/9/2015	11/20/2014	11/20/2014	11/20/2014	11/25/2014	9/11/2014	9/11/2014	5/22/2015	5/21/2015	9/5/2014	5/27/2015
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																								
Antimony	7440-36-0	mg/kg	450	31	6	2.4 U	2.5 UJ	2.4 UJ	2.4 UJ	2.2 UJ	2.5 U	2.5 U	2.1 U	<2.5	2.6 U	2.6 U	2.7 U	2.3 U	0.82 J	2.5 UJ	<2.4	<2.6	2.2 UJ	<2.4
Chromium	7440-47-3	mg/kg	120,000	-	-	155 J	13	65.8	68.6	259	51.4	33.2	18.7	302	652 J	293 J	713 J	372	8	8.6	47.8	114	36.2	17.3
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	7	7.8	6.7	9.5	8.9	11.2	8.4	7	8.6	54.7	29.5	42.9	26.5	8.9	8.5	8.9	7	11.1	7
Thallium	7440-28-0	mg/kg	NS	NS	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U	1.3 U	1.0 U	<1.3	1.3 U	1.3 U	1.3 U	0.60 J	0.64 J	1.3 U	<1.2	<1.3	1.1 U	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	11.3	8.4	7.2	11.3	22.3	25.2	17.2	9.8	9.2	62.3	35.7	60.3	42.7	10	10	9.2	8.4	14.6	7.1

General Chemistry																								
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	5.4	0.21 J	4.3	4.1 J / 4.7	7 J / 4.2	2.5 J	3.8 J	0.41 J	13 J	12 R / 8.5	10.9 R / 13.2	20.4 R / 15.9	13.2 R / 14.5 J	0.39 R / 0.28 J	0.51 R / 0.45 J	2 / 2.7 <sup>†</sup> J	3.8 J / 8	1.3 J / 0.73	0.73
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	-	-	-	-	-	-	-	1.4 <sup>b</sup>	-	-	-	0.7 <sup>b</sup>	-	0.28 <sup>b</sup>	-	-	-
pH	-	su	NS	NS	NS	9.84	8.09	8.08	8.47	8.66	8.69	8.49	8.71	10.2	11.25	11.27	10.7	10.59	9.46	9.38	8.17	7.22	8.84	8.61
Redox Potential Vs H2	-	mV	NS	NS	NS	163	324	330	325	321	355	360	340	397	81.6	85.7	137	151	224	225	394	324	315	328
Solids, Percent	-	%	NS	NS	NS	81.7	77.9	79.4	84.8	88.1	81.2	82.3	96.3	77.9	75.4	77.5	76.8	82.8	76.7	78.6	81.3	78.8	89.6	79.8
Sulfide Screen	-	-	NS	NS	NS	-	-	-	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-	NEGATIVE <sup>c</sup>	-	NEGATIVE <sup>c</sup>	-	-	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	-	-	-	-	-	-	-	6420	-	-	-	315	-	818	-	-	-

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

J - The result is estimated and may be biased low.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Sample received outside the holding time.

<sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.

<sup>g</sup> Analysis done out of holding time.

<sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

BSG = below surface grade

FBG = feet below grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Analyzed

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

**Result or Detection limit exceeded criteria**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:						20Q-BOTTOM (3'BSG)	20R-BOTTOM (3' BSG)	20T BOTTOM (3' BELOW SURFACE)	21M-BOTTOM	21N-BOTTOM (PPG016_B21-N)	21N-BOTTOM1 (PPG016_21N_ BOTTOM1)	21O-BOTTOM (PPG016_21-O BOTTOM)	21P-BOTTOM (2'BSG)	21P-BOTTOM	21P-BOTTOM (PPG016_21P_ BOTTOM1)	21Q-BOTTOM (3'BSG)	21Q-BOTTOM (3' BSG)	22M-BOTTOM	22N-BOTTOM1	22N BOTTOM	22O-BOTTOM (PPG016_B22-0)	22O-BOTTOM1 (PPG016_22O_ BOTTOM1)	22P BOTTOM
Sample Depth (ft bgs):						3.5-4	2.7-3.2	3.1-3.6	6.4-6.9	2.5-3	6.5-7	4.7-5.2	3.3-3.8	5.2-5.7	4.8-5.3	3.4-3.9	3.4-3.9	6.3-6.8	5.5-5.6	3.4-3.9	1.9-2.4	5-5.5	3.7-4.2
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	4.2-4.7	5.3-5.8	5.8-6.3	2.7-3.2	6-6.5	2-2.5	3.8-4.3	5.2-5.7	3.3-3.8	3.7-4.2	5.1-5.6	5.1-5.6	3-3.5	3.3-3.8	6.1-6.6	6.6-7.1	3.5-4	4.8-5.3
Excavated:																							
Lab Sample ID:						JB76016-1R	JB75660-1A	JB74090-1A	JB96698-2A	JB95354-1R	JB97625-1RT	JB95453-1	JB76016-10R	JB95834-1RT	JB97625-2R	JB76016-1A	JB76204-1A	JB97054-1A	JB96451-1A	JB95670-4A	JB95248-2R	JB97625-3R	JB95670-3A
Date Sampled:						9/5/2014	9/4/2014	8/13/2014	6/10/2015	5/22/2015	6/23/2015	5/26/2015	9/5/2014	5/29/2015	6/23/2015	9/5/2014	9/10/2014	6/15/2015	6/8/2015	5/27/2015	5/21/2015	6/23/2015	5/27/2015
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																							
Antimony	7440-36-0	mg/kg	450	31	6	-	2.1 U	2.2 U	<2.5	<2.2	<2.6 UJ	<2.5	2.2 UJ	<2.5	<2.3 UJ	2.4 UJ	2.2 UJ	<2.5	<2.6	<2.1	<2.5	<2.4 UJ	<2.4
Chromium	7440-47-3	mg/kg	120,000	-	-	-	50.8	7.7	427	160	244	163	24.5	37	12.4	398	21.6	50.4	126	14.1	8.8	51	16
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	-	12.9	9.1	7.2	9.8	7.4	9.1	9.8	8.5	8.3	9.1	8.9	11	7.1	7.1	6.7	7.2	15.3
Thallium	7440-28-0	mg/kg	NS	NS	NS	-	0.43 J	1.1 U	<1.3	<1.1	<1.3	<1.3	1.1 U	<1.3	<1.2	1.2 U	1.1 U	<1.3	<1.3	<1.0	<1.3	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	-	20.8	8.8	10.4	10.6	11.9	18.9	11.2	10.1	11.1	14.7	22	12.3	8.4	6.7	9.6	10.2	10.5

General Chemistry																							
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	8.4 J / 7.2	2.4	0.37 J	16.6 J	7.1 J / 7.1 <sup>†</sup> J	<0.51 UJ / 10.1 J	7.6 J	0.17 J / 0.84	2.4 J / 2.5 J	<0.48 UJ / 0.97 J	-	0.6 J	2.5	9.6 J	0.79 J	<0.51 UJ / <0.51	<0.49 UJ / <0.49 UJ	<0.51
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	-	-	-	0.54	-	-	0.36 <sup>b</sup>	-	-	-	-	-	-	-	-	-
pH	-	su	NS	NS	NS	8.29	9.14	10.64	8.52	8.15	8.11	7.94	9.11	8.86	8.59	-	8.52	10.19	8.48	9.05	7.63	8.2	9.12
Redox Potential Vs H2	-	mV	NS	NS	NS	309	226	233	358	405	391	347	302	398	387	-	265	194	356	364	320	392	347
Solids, Percent	-	%	NS	NS	NS	83.8	95.6	92.9	77.8	88.7	78.3	78.2	94.1	84.1	83.4	-	91.3	76.6	76.6	92.6	78.2	81	78
Sulfide Screen	-	-	NS	NS	NS	-	-	-	-	-	NEGATIVE	-	-	NEGATIVE <sup>c</sup>	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	-	-	-	947	-	-	2380	-	-	-	-	-	-	-	-	-

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

- < - The analyte was not detected at the stated reporting limit.
- N - The matrix spike sample recovery in the associated QC sample is not within QC limits.
- R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.
- J - The result is estimated and may be biased low.
- J - The positive result reported for this analyte is a quantitative estimate.
- U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

- <sup>a</sup> Elevated detection limit due to dilution required for high interfering element.
- <sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>d</sup> Multiple injections indicate possible sample non-homogeneity.
- <sup>e</sup> Sample received outside the holding time.
- <sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.
- <sup>g</sup> Analysis done out of holding time.
- <sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)
- NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.
- ft = Feet North American Vertical Datum of 1988
- ft bgs = feet below ground surface
- BSG = below surface grade
- FBG = feet below grade
- mg/kg = milligram per kilogram
- su = standard unit
- mV = millivolts
- = Not Analyzed
- \*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.
- + = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

**Result or Detection limit exceeded criteria**

**Table 4A**  
**Complete Base Post-Excavation Soil Samples (2014-2015)**  
**HCC Site 16**  
**45 Linden Avenue East**  
**Jersey City, NJ**  
**NJDEP Program Interest ID G000008644**

Client Sample ID:						23M-BOTTOM	23N-BOTTOM	24M-BOTTOM	SEWERLINE BOTTOM 1	PPG016_SEWER LINE BOTTOM 1R	PPG016_DUP01	SEWERLINE BOTTOM 2	SEWER LINE BOTTOM 3	PPG016-2B-BOTTOM-4.5-5.0	PPG016-2B-BOTTOM-4.5-5.0 (DUP 01)	PPG016-3B-BOTTOM-4.8-5.3	PPG016_4W-BOTTOM-6-6.5	PPG016-8P-BOTTOM-3.5-4.0	PPG016_016-L005-19.5-20	KD008
Sample Depth (ft bgs):						5.8-6.3	11.3-11.8	4.8-5.3	6.5-7	8.1-8.6	8.1-8.6	6.8-7.3	6.2-6.7	3.3-3.8	3.3-3.8	3.0-3.5	6.0-6.5	3.5-4.0	19.5-20.0	6-6.5
Sample Elevation (ft):	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	3.3-3.8	-2.2-(-2.7)	5.7-6.2	2-2.5	0.4-0.9	0.4-0.9	1.6-2.1	2.3-2.8	2.0-2.5	2.0-2.5	2.0-2.5	2.2-2.7	3.2-3.7	(-12.6) - (-13.1)	1.7-1.2
Excavated:									EXCAVATED											
Lab Sample ID:						JB97238-1R	JB96773-1A	JB97356-1A	JB96698-4A	JB97489-1RT	JB97489-2R	JB96698-5A	JB96773-3A	JC56998-2	JC56998-3	JC56998-4	JC56865-2	JC56998-6	JC56865-4	JC86279-1
Date Sampled:						6/17/2015	6/11/2015	6/18/2015	6/10/2015	6/19/2015	6/19/2015	6/10/2015	6/11/2015	12/8/2017	12/8/2017	12/8/2017	12/7/2017	12/8/2017	12/7/2017	4/12/2019
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil

Metals Analysis																				
Antimony	7440-36-0	mg/kg	450	31	6	<2.4 UJ	<2.5	<2.2 UJ	<2.8	<2.5 UJ	<2.7 UJ	<2.6	<2.5	<2.4 NJ-	<3.0 NJ-	<2.6 NJ-	<2.2 NJ-	<2.2 NJ-	<2.0 NJ-	<2.4
Chromium	7440-47-3	mg/kg	120,000	-	-	64.2	175	14.6	718	8.7	8.7	131	444	29.7	28.9	42.2	48.9	34.8	11.8	121
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	6.9	8.1	8.7	7.9	7.5	9	6.8	7.9	20.8	20.2	27.1	7.8	9.2	10.5	10.2
Thallium	7440-28-0	mg/kg	NS	NS	NS	<1.2	<1.2	<1.1	<1.4	<1.2	<1.3	<1.3	<1.3	<1.2	<1.5	<1.3	<1.1	<1.1	<1.0	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	NA	13.2	25	9.2	9.1	9.6	9.3	7.7	9.5	31.2	29.4	38.4	12.6	13.9	30.9	15.1

General Chemistry																				
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	3.8 J / 4.6	6.7	0.66	<b>21.5 J</b>	<0.49 R / <0.49 UJ	<0.53 R / <0.53 UJ	7.6 J	17.1	<0.48 NJ- / <0.48 NJ-	<0.63 NJ- / <0.63 NJ-	<0.54 NJ- / <0.54 NJ-	0.56	5.4 NJ- / 2 NJ-	<1.5	5.3 NJ-
Chromium, Trivalent	-	mg/kg				-	-	-	-	-	-	-	-	29.7 <sup>h</sup>	28.9 <sup>h</sup>	42.2 <sup>h</sup>	48.3 <sup>h</sup>	29.4 <sup>h</sup>	11.8 <sup>h</sup>	-
Iron, Ferrous	-	%	NS	NS	NS	-	-	-	-	0.61 <sup>b</sup>	-	-	-	-	-	2.0 <sup>b</sup>	-	-	-	-
pH	-	su	NS	NS	NS	8.8	8.1	8.64	8.34	7.65	7.97	8.44	9.43	8.47	8.32	7.46	8.17	9.05	7.64	7.35
Redox Potential Vs H2	-	mV	NS	NS	NS	445	360	508	349	397	418	356	325	217	38.6	128	628	265	582	569
Solids, Percent	-	%	NS	NS	NS	80.7	77	94.4	74.1	82.2	75.9	77.2	80.3	83.4	63.3	74.6	89.9	89.6	26.9	80.3
Sulfide Screen	-	-	NS	NS	NS	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-	-
Total Organic Carbon	-	mg/kg	NS	NS	NS	-	-	-	-	2140 <sup>d</sup>	-	-	-	-	-	13200 <sup>g</sup> J	-	-	-	7.35

*Includes Excavated Samples*

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

J- - The result is estimated and may be biased low.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Sample received outside the holding time.

<sup>f</sup> Total chromium for this sample is < 20 mg/kg, so no relog necessary due to client program specifications.

<sup>g</sup> Analysis done out of holding time.

<sup>h</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

NS = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

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mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Analyzed

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

**Result or Detection limit exceeded criteria**

Table 4B  
 Sidewall Post-Excavation Soil Samples (2014-2015)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2014-2015 Sampled by WCD and CB&I

Client Sample ID:						1B-SW-NORTH (2.5' BSG)	1B-SW-WEST (2' BSG)	1B-SW-WEST (3' BSG)	1C-SW-NORTH (3' BSG)	1D-SW-NORTH (2.5' BSG)	1D-SW-NORTH (2' BSG)	1D-SW-NORTH (2' BSG)	1E-SW-NORTH (2' BSG)	1F-SW-NORTH (2' BSG)	1G-SW-NORTH (3' BSG)	1H-SW-NORTH (2' BSG)	1I-SW-NORTH (2' BSG)	2B-SW-WEST (2' BSG)	2D-SW-SOUTH (1' BSG)	2D-SW-SOUTH (2' BSG)	2E-SW-SOUTH (1' BSG)	2E-SW-SOUTH (5' BSG)	2J-SW-NORTH (2' BSG)	2K-SW-NORTH (2' BSG)	
Sample Depth (ft bgs):			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	2.1-2.6	2.1-2.6	2.1-2.6	2.8-3.3	1.8-2.3	4.3-4.8	1.8-2.3	1.9-2.4	1-1.5	1.3-1.8	1.7-2.2	1.2-1.7	1.7-2.2	1-1.5	2.5-3	1-1.5	5.1-5.6	1.4-1.9	1.7-2.2	
Sample Elevations (ft):						3.6-4.1	3.6-4.1	3.6-4.1	2.6-3.1	4.7-5.2	2.2-2.7	4.7-5.2	3.4-3.9	4.4-4.9	4.1-4.6	3.9-4.4	4.2-4.7	3.8-4.3	4.4-4.9	2.9-3.4	4.5-5	0.8-1.3	4.4-4.9	4.1-4.6	
Excavated:							EXCAVATED			EXCAVATED	EXCAVATED								EXCAVATED		EXCAVATED				
Lab Sample ID:	CAS#	Units				JB77324-4R	JB77324-3R	JB78861-2R	JB77658-3R	JB77658-6R	JB78862-1R	JB84205-1R	JB77658-9R	JB77660-1R	JB77660-6R	JB77883-2A	JB77884-2A	JB77324-2R	JB77658-8R	JB78862-2R	JB77658-11R	JB83888-5A	JB77884-11A	JB78117-1R	
Date Sampled:						9/22/2014	9/22/2014	10/8/2014	9/23/2014	9/23/2014	10/9/2014	12/13/2014	9/23/2014	9/24/2014	9/24/2014	9/25/2014	9/26/2014	9/22/2014	9/23/2014	10/9/2014	9/23/2014	12/10/2014	9/26/2014	9/29/2014	
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
<b>Metals Analysis</b>																									
Antimony	7440-36-0	mg/kg	450	31	6	1.3 J	0.63 J	0.35 J	2.3 UJ	1.4 J	9.6	0.55 J	0.47 J	1.9 J	1.9 J	0.36 J	0.48 J	2.0 UJ	1.4 J	2.2 U	0.62 J	3.2 U	0.68 J	0.80 J	
Chromium	7440-47-3	mg/kg	120,000	-	-	88.4	1140	309 J	26.6	431	1820	159	31.1	96.5	91.1	69.3	46.3 J	500	1120	19.2	720	108	168 J	192	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	41.3	119	13.5	20.9	63.9	12.5	39.7	21.7	52.5	39	11	18.7	15.8	114	13.9	33.8	37.1	31.1	27.6	
Thallium	7440-28-0	mg/kg	NR	NR	NR	1.0 U	0.89 J	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U	1.0 U	0.86 J	1.1 U	1.3 U	1.6 U	1.2 U	1.1 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	37.7	137	49.4	29.2	99.1	33.9	62.9	41.5	60.6	73.2	30	32.7	23.1	136	23.7	64.3	61.5	44.4	46.1	
<b>General Chemistry</b>																									
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2.3 J / 2.3 R	3 / 8.6	3.7 J / 12.2 R	0.75 / 0.76 J	1.5 / 1.1	0.59 R / 0.49 R	0.33 J / 3 J	0.9 J / 0.85 J	1.2 R / 0.56 J	0.99 R / 1.5 J	4	2.4	5.6 R / 5.4 R	7.3 / 11.8	8.3 R / 5 J	0.50 UJ / 0.66 J	0.67 U	5.6	2.3 J / 0.46 R	
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Iron, Ferrous	-	%	-	-	-	-	-	0.64 <sup>b</sup>	-	-	-	0.84 <sup>b</sup>	-	0.68 <sup>b</sup>	-	-	-	-	-	0.14 <sup>b</sup> J	-	-	-	1.5 <sup>b</sup>	
pH	-	su	-	-	-	8.11	8.82	8.66	8.05	7.92	8	8.06	7.97	7.81	8.03	7.43	7.45	7.47	8.55	8.24	7.93	7.87	7.25	7.65	
Redox Potential Vs H2	-	mV	-	-	-	289	264	241	203	269	252	311	210	314	218	296	370	276	208	237	215	66.6	513	338	
Solids, Percent	-	%	-	-	-	95.2	86.8	83.5	87.1	84.6	81.9	83	85	91.5	89.4	84	89.4	93.9	85.6	85.6	80.7	59.8	83.3	87	
Sulfide Screen	-	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-	NEGATIVE <sup>c</sup>	-	NEGATIVE <sup>c</sup>	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-	NEGATIVE <sup>c</sup>	
Total Organic Carbon	-	mg/kg	-	-	-	-	-	2780	-	-	-	22000	-	20900	-	-	-	-	-	3590 <sup>d</sup>	-	-	-	17700	

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

J- - The result is estimated and may be biased low.

**Notes:**

NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Analysis done out of holding time.

<sup>h</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.

<sup>i</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

ft = North American Vertical Datum of 1988

ft bgs = feet below ground surface

BFB= below foundation bottom

BSG= below surface grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Available

**Result or Detection limit exceeded criteria**

Table 4B  
Sidewall Post-Excavation Soil Samples (2014-2015)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2014-2015 Sampled by WCD and CB&I

Client Sample ID:						2L-SW-NORTH (2.5' BSG)	2M-SW-NORTH (2' BSG)	2N-SW-NORTH (2' BSG)	2O-SW-NORTH (4' BSG)	2P-SW-NORTH (2.5' BSG)	2Q-SW-NORTH (3' BSG)	2R-SW-NORTH (2' BSG)	2R-SW-NORTH (3' BSG)	2V-SW-WEST (3' BSG)	2V-SW-NORTHWEST (3' BSG)	2V-SW-NW (3' BSG)	2X-SW-WEST (2.5' BSG)	2X-SW-NORTH (5' BSG)	3B-SW-WEST (2' BSG)	3B-SW-SOUTH (3' BSG)	3C-SW-SOUTH (1' BSG)	3F-SW-SOUTH (1' BSG)	3G-SW-SOUTH (2' BSG)	3H-SW-EAST (1' BSG)	
Sample Depth (ft bgs):			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	3-3.5	2.1-2.6	2.3-2.8	4.4-4.9	3.6-4.1	4.1-4.6	2.7-3.2	2.3-2.8	1.5-2	1.2-1.7	2.1-2.6	4.4-4.9	4.5-5	1.4-1.9	1.3-1.8	1.9-2.4	0.9-1.4	2.8-3.3	1.3-1.8	
Sample Elevations (ft):						3.9-4.4	4.4-4.9	4.3-4.8	2.1-2.6	2.9-3.4	2.4-2.9	3.9-4.4	3.9-4.4	5-5.5	5.5-6	4.6-5.1	3.3-3.8	3-3.5	3.5-4	4-4.5	3.8-4.3	5.1-5.6	4.4-4.9	5.9-6.4	
Excavated:												EXCAVATED	EXCAVATED		EXCAVATED										
Lab Sample ID:	CAS#	Units				JB78116-4R	JB78116-5R	JB78118-5A	JB78376-1R	JB78376-3R	JB78376-5R	JB78607-2R	JB79897-2R	JB85408-3R	JB85408-4R	JB85972-1R	JB85138-1R	JB85408-2R	JB77324-1R	JB77658-1R	JB77658-5R	JB77660-4R	JB77660-7R	JB77883-5A	
Date Sampled:						9/30/2014	9/30/2014	10/1/2014	10/3/2014	10/3/2014	10/3/2014	10/6/2014	10/22/2014	12/31/2014	12/31/2014	1/8/2015	12/24/2014	12/31/2014	9/22/2014	9/23/2014	9/23/2014	9/24/2014	9/24/2014	9/25/2014	
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
<b>Metals Analysis</b>																									
Antimony	7440-36-0	mg/kg	450	31	6	1.8 J	0.87 J	0.55 J	1.0 J	0.76 J	0.44 J	2.5 U	2.4 UJ	0.69 J	1.1 J	0.94 J	2.6 U	2.5 U	0.66 J	0.46 J	0.55 J	0.41 J	0.42 J	0.59 J	
Chromium	7440-47-3	mg/kg	120,000	-	-	63.8	82.6	31.7	387	103	311	792	26.7	41.6	54.3	64.7	314	65.3	127	217	161	248	268	828	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	27.6	28.4	15.1	15.1	14.3	14.4	73.3	10.9	20.4	46.8	32	27.1	12.8	20.3	35.8	30	35.6	30.5	113	
Thallium	7440-28-0	mg/kg	NR	NR	NR	1.2 U	1.1 U	1.0 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	0.74 J	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U	1.1 U	1.1 U	1.2 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	48.3	43.1	17.7	20.7	25.4	36.3	93.2	12.8	49.2	84	48.6	33.2	20.5	39.1	45.2	40.7	39.5	41.9	56.8	
<b>General Chemistry</b>																									
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	1.8 J / 2.5 R	1.3 J / 0.30 R	0.67 J	1.8 J / 8.1 J	3.9 J / 8.4 J	1.9 J / 12.2 J	4.5 J / 4.1 R	0.96 J / 1.4 R	0.96 J / 0.79 J	1.1 J / 3.6 J	0.49 R / 1.2 J	1.4 J / 0.53 R	3.6 J / 1.5 J	0.52 R / 0.52 R	3 J / 0.57 J	0.29 J / 0.32 J	2.2 R / 1.5 J	3.5 R / 3 J	13.5	
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Iron, Ferrous	-	%	-	-	-	-	2.4 <sup>b</sup>	-	-	0.83 <sup>b</sup>	-	-	0.77 <sup>b</sup>	1.5 <sup>b</sup>	-	1.3 <sup>b</sup>	0.95 <sup>b</sup>	-	1.4 <sup>b</sup>	-	-	-	-	-	
pH	-	su	-	-	-	7.9	7.82	7.54	7.53	7.1	7.4	7.22	7.83	7.88	7.78	7.85	7.8	7	5.75	7.99	8.58	8.28	8.37	7.63	
Redox Potential Vs H2	-	mV	-	-	-	331	338	387	209	317	328	268	221	199	226	331	255	194	282	235	138	275	316	282	
Solids, Percent	-	%	-	-	-	87.7	90.5	91.6	75.4	82	82.6	83	82.1	84.8	85.5	87	75.6	79.8	76.6	82.2	77.4	90.2	90.1	85.3	
Sulfide Screen	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	NEGATIVE <sup>c</sup>	-	-	NEGATIVE <sup>c</sup>	NEGATIVE <sup>c</sup>	-	NEGATIVE <sup>c</sup>	NEGATIVE <sup>c</sup>	-	NEGATIVE <sup>c</sup>	-	-	-	-	-	
Total Organic Carbon	-	mg/kg	-	-	-	-	14400	-	-	9110	-	-	12500	11900	-	16000	15600	-	8560	-	-	-	-	-	

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

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**Notes:**

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<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Analysis done out of holding time.

<sup>h</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.

<sup>†</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

ft = North American Vertical Datum of 1988

ft bgs = feet below ground surface

BFB= below foundation bottom

BSG= below surface grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Available

**Result or Detection limit exceeded criteria**

Table 4B  
Sidewall Post-Excavation Soil Samples (2014-2015)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2014-2015 Sampled by WCD and CB&I

Client Sample ID:						3I-SW-SOUTH (2.5'BSG)	3I-SW-SOUTH DUP (2.5' BSG)	3L-SW-SOUTH (3' BSG)	3M-SW-SOUTH (5' BSG)	3N-SW-SOUTH (2' BSG)	3S-SW-NORTH (2.5' BSG)	3T-SW-NORTH (3' BSG) <sup>h</sup>	3T-SW-EAST (3' BSG)	3T-SW-EAST (3' BSG)	3T-SW-EAST (3' BSG)	3T-SW-EAST (3' BSG)	3U (12/3)-SW- NORTH (4.5' BSG)	3U-SW-NORTH (4' BSG)	3X-SW-EAST (3.5' BSG)	4O-SW-SOUTH (2' BSG)	4T-SW-EAST (3' BSG)	4V-SW-NORTH (5.5' BSG)	4W-SW-NORTH (6.5' BSG)
Sample Depth (ft bgs):			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	3.5-4	3.5-4	1.6-2.1	2.4-2.9	2.4-2.9	2-2.5	2.5-3	1.8-2.3	4-4.5	4-4.5	2.2-2.7	5.1-5.6	4.8-5.3	0.4-0.9	2.5-3	3.5-4	4.2-4.7	6.1-6.6
Sample Elevations (ft):						3.3-3.8	3.3-3.8	5.6-6.1	4.6-5.1	4.2-4.7	4-4.5	3.4-3.9	4.1-4.6	2.5-3	2.5-3	4.3-4.8	1.4-1.9	1.7-2.2	8.3-8.8	4.5-5	2.4-2.9	2.3-2.8	2.5-3
Excavated:													EXCAVATED	EXCAVATED	EXCAVATED		EXCAVATED	EXCAVATED			EXCAVATED	EXCAVATED	
Lab Sample ID:	CAS#	Units				JB77884-6A	JB77884-7A	JB78116-1R	JB82703-4R	JB78118-3A	JB78607-5R	JB82417-2R	JB82417-3R	JB86140-1R	JB86450-1R	JB87128-1R	JB83886-2T	JB83440-1R	JB85288-1R	JB78374-5R	JB82579-2A	JB84364-1R	JB84846-5R
Date Sampled:						9/26/2014	9/26/2014	9/30/2014	11/25/2014	10/1/2014	10/6/2014	11/20/2014	11/20/2014	1/12/2015	1/14/2015	1/26/2015	12/3/2014	12/4/2014	12/30/2014	10/2/2014	11/21/2014	12/16/2014	12/19/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																							
Antimony	7440-36-0	mg/kg	450	31	6	2.2 U	2.3 U	0.94 J	2.7 U	2.0 UJ	0.34 J	6.5	0.72 J	2.4 U	2.7 U	0.91 J	0.41 J	0.92 J	2.2 U	0.29 J	2.3 U	2.4 U	2.3 UJ
Chromium	7440-47-3	mg/kg	120,000	-	-	63 J	335 J	202	460	12.8	572	396 J	656 J	893	620	195	526	463	26.2	17.3	260	438	82
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	6.8	28.8	39.8	25.6	8.7	49.1	113	69.2	97.3	85.4	39.3	63.6	21.6	20.7	10	32.5	35.5	18.4
Thallium	7440-28-0	mg/kg	NR	NR	NR	1.1 U	1.2 U	1.1 U	1.3 U	1.0 U	1.2 U	1.3 U	1.2 U	1.2 U	1.4 U	1.2 U	0.97 U	1.5 U	1.1 U	1.0 U	1.2 U	1.2 U	1.1 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	9.4	33.7	55.9	46.6	10.2	60.2	59.4	98.9	130	93	43.6	63	27.8	31.7	11.6	39.5	57.6	22.8
<b>General Chemistry</b>																							
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2.7	5.8	3 J / 1.9 R	0.56 R / 10.7 J	0.34 J	14.2 J / 9.8 R	0.26 R / 0.29 J	10.9 R / 13.5	0.48 R / 3.1 J	8.7 / 2.6	0.50 R / 0.50 UJ	0.46 J	0.98 J / 3.4 J	0.36 J / 0.79 J	0.65 J / 0.43 R	5.4	1.9 / 7.4	5.3 J / 3.4 J
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	-	-	-	-	-	-	-	-	-	-	-	2.2 <sup>b</sup>	0.98 <sup>b</sup>	0.99	-	1.5 <sup>b</sup>	0.79 <sup>b</sup>	0.64 <sup>b</sup>	-	-	-
pH	-	su	-	-	-	8.02	7.95	7.73	7.62	8.26	8.16	7.92	8.08	7.82	7.72	7.61	7.13	7.68	7.73	8.21	8.47	8.1	8.26
Redox Potential Vs H2	-	mV	-	-	-	315	338	291	143	331	288	186	198	343	388	322	354 <sup>g</sup>	195	363	296	288	272	291
Solids, Percent	-	%	-	-	-	90.3	86	89.6	71.5	94.5	83	73.6	84.1	82.8	73.5	80.8	79.2	68.2	89.3	93.7	85.7	85.8	85.7
Sulfide Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	NEGATIVE <sup>c</sup>	NEGATIVE	-	NEGATIVE <sup>c</sup>	NEGATIVE <sup>c</sup>	NEGATIVE <sup>c</sup>	-	-	-
Total Organic Carbon	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	20100	43900	21500	-	12000	11900	4280	-	-	-

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

J- - The result is estimated and may be biased low.

**Notes:**

NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Analysis done out of holding time.

<sup>h</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.

<sup>†</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

ft = North American Vertical Datum of 1988

ft bgs = feet below ground surface

BFB= below foundation bottom

BSG= below surface grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Available

**Result or Detection limit exceeded criteria**

Table 4B  
 Sidewall Post-Excavation Soil Samples (2014-2015)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2014-2015 Sampled by WCD and CB&I

Client Sample ID:						5N-SW-WEST (4.5' BELOW SURFACE)	5O-SW-NORTH (4.5' BELOW SURFACE)	5O-SW-NORTH DUP (4.5' BELOW SURFACE)	5O-SW-WEST (4.5' BELOW SURFACE)	5V-SW-EAST (5.5' BSG)	5V-SW-EAST (5' BSG)	5W-SW-SOUTH (6.5' BSG)	5W-SW-EAST (7' BSG)	6L-SW-NORTH1 (3.5' BSG)	6L-SW-NORTH2 (4.5' BSG)	6L-SW-NORTH2 DUP (4.5' BSG)	6L-SW-NORTH3 (5.5' BSG)	6V-SW-EAST (5' BSG)	7U-SW-EAST (4.5' BELOW SURFACE)	7V-SW-EAST (5' BSG)	7V-SW-SOUTH (5' BSG)	8U SW-EAST (4' BELOW SURFACE)
Sample Depth (ft bgs):			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	4.1-4.6	3.7-4.2	3.7-4.2	3.4-3.9	4.7-5.2	3.5-4	5.8-6.3	6.8-7.3	3.5-4.0	4.5-5.0	4.5-5.0	5.5-6.0	4.9-5.4	3.8-4.3	4.9-5.4	4.8-5.3	3.1-3.6
Sample Elevations (ft):						3-3.5	3.5-4	3.5-4	3.9-4.4	3.4-3.9	4.6-5.1	3.6-4.1	2.9-3.4	4.9-5.4	3.9-4.4	3.9-4.4	2.9-3.4	3.6-4.1	4.7-5.2	4-4.5	3.5-4	5.5-6.0
Excavated:										EXCAVATED												
Lab Sample ID:	CAS#	Units				JB74556-4R	JB74556-1R	JB74556-2R	JB74556-3R	JB84074-1R	JB84846-1R	JB84846-2R	JB84846-3R	JB82923-1A	JB82923-2A	JB82923-3A	JB82923-4A	JB84075-1A	JB73867-3A	JB84075-2A	JB84075-4A	JB73868-4A
Date Sampled:						8/20/2014	8/20/2014	8/20/2014	8/20/2014	12/12/2014	12/19/2014	12/19/2014	12/19/2014	11/26/2014	11/26/2014	11/26/2014	11/26/2014	12/11/2014	8/11/2014	12/11/2014	12/11/2014	8/8/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																						
Antimony	7440-36-0	mg/kg	450	31	6	2.1 UJ	2.5 UJ	2.6 UJ	2.3 UJ	1.6 J	1.2 J	0.42 J	0.33 J	4.3 <sup>a</sup> UJ	0.72 J	0.58 J	0.54 J	1.0 J	2.0 J	3.1	0.47 J	1.7 J
Chromium	7440-47-3	mg/kg	120,000	-	-	10.5	29.6	25.2	12.6	392	76.7	187	56.8	34.3	23.8	19.7	95.9	20.5	116	57.3	125	55.9
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	8.5	10.2	9.7	9.5	52.6	23.1	31.1	17.8	9.3	18.2	16.6	27.8	19.1	30.8	28.5	43.9	30.8
Thallium	7440-28-0	mg/kg	NR	NR	NR	1.0 U	1.2 U	1.3 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	2.2 <sup>a</sup> U	0.72 J	0.56 J	1.3 U	1.1 U	1.1 U	1.1 U	1.1 U	0.50 J
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	11.5	12.1	11.6	9.7	80.7	35.6	39.3	23.4	19.1	26	23.2	44	25.9	43.5	37.6	42	34.8
<b>General Chemistry</b>																						
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.44 UJ / 0.71 J	2.2 J / 1.6 J	2 J / 1 J	0.28 J / 0.43 J	0.47 U / 0.30 J	0.74 J / 1 J	0.20 J / 1.9 J	0.26 J / 1.1 J	0.37 J	0.82	0.95	4.2	0.47 U	2.8	2	1.4	0.40 J
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	-	-	-	-	0.38 <sup>b</sup>	-	-	1.1 <sup>b</sup>	-	1.1 <sup>b</sup>	-	-	-	-	-	-	-	-	-	-
pH	-	su	-	-	-	8.44	7.9	8.31	8.15	10.69	7.75	8.29	8.19	11.59	12.06	12.07	10.01	7.93	7.96	8.29	8.41	8.33
Redox Potential Vs H2	-	mV	-	-	-	288	281	284	277	97.9	310	278	277	91.6	78.8	71.6	150	267	244	251	257 / 0	261
Solids, Percent	-	%	-	-	-	91.9	78.9	78.9	82.7	85.9	88.9	89.8	86.7	91.1	87.8	89.3	77.8	86	89.2	88.3	86.4	93.5
Sulfide Screen	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	NEGATIVE <sup>c</sup>	-	NEGATIVE <sup>c</sup>	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	-	-	-	-	3360 <sup>d</sup>	-	-	12200	-	6600	-	-	-	-	-	-	-	-	-	-

**Analytical Data Qualifiers:**

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R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

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**Notes:**

NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Analysis done out of holding time.

<sup>h</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.

<sup>i</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

ft = North American Vertical Datum of 1988

ft bgs = feet below ground surface

BFB= below foundation bottom

BSG= below surface grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Available

**Result or Detection limit exceeded criteria**



Table 4B  
 Sidewall Post-Excavation Soil Samples (2014-2015)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2014-2015 Sampled by WCD and CB&I

Client Sample ID:						9U-SW EAST	10L-SW-WEST (3' BSG)	10L SW-SOUTH (3' BELOW BLACKTOP)	10M SW-SOUTH (3' BELOW BLACKTOP)	10N SW-SOUTH (2' BELOW BLACKTOP)	10N SW WEST (1' BELOW BLACKTOP)	10T-SW EAST	11N SW WEST (1' BELOW BLACKTOP)	11T-SW EAST	12N SW WEST (1' BELOW BLACKTOP)	12S-SIDE WALL EAST	13S SIDEWALL (2' 3' FBG)	13N SW WEST (1' BELOW BLACKTOP)	14S SW-EAST (1.5' BELOW BLACKTOP)	14N SW WEST (1' BELOW BLACKTOP)	14O SW SOUTH (1' BELOW BLACKTOP)	14P SW (4' BELOW BLACKTOP)	15S-SW-EAST <sup>h</sup>
Sample Depth (ft bgs):			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	4.1-4.6	2.1-2.6	3.7-4.2	3.4-3.9	2.4-2.9	2.4-2.9	3.2-3.7	1.7-2.2	3.6-4.1	1.9-2.4	3.8-4.3	2.2-2.7	1.6-2.1	1.5-2	1.4-1.9	1.2-1.6	3.3-3.8	1.3-1.8
Sample Elevations (ft):						4.3-4.8	6.6-7.1	4.6-5.1	4.6-5.1	5.4-5.9	5.3-5.8	5.1-5.6	6-6.5	4.7-5.2	5.7-6.2	4.3-4.8	6.2-6.7	6-6.5	6.9-7.4	6.2-6.7	6.5-7.0	4.5-5	7.2-7.7
Excavated:	CAS#	Units																					
Lab Sample ID:						JB70650-3RT	JB81089-1R	JB73136-8A	JB73136-6A	JB73136-4A	JB72919-2R	JB70649-1	JB72919-3R	JB70649-2	JB72919-4R	JB70989-5	JB71335-1A	JB72919-5R	JB72918-10A	JB72919-6R	JB72919-7R	JB73307-4R	JB74359-1A
Date Sampled:						6/30/2014	10/31/2014	7/31/2014	7/31/2014	7/31/2014	7/30/2014	7/1/2014	7/30/2014	7/1/2014	7/30/2014	7/2/2014	7/10/2014	7/30/2014	7/29/2014	7/30/2014	7/30/2014	8/5/2014	8/18/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																							
Antimony	7440-36-0	mg/kg	450	31	6	1.9 U	0.34 J	0.57 J	0.41 J	0.61 J	1.8 U	1.5 J	0.39 J	2.1	1.8 U	2	1.8 J	1.2 J	1.4 J	2.0 U	3.4 U	2.1 U	6.1
Chromium	7440-47-3	mg/kg	120,000	-	-	10.5	23.6	180	338	43.6	51.1	21.1	74.4	37.1	48.8	54 J	46.2	572	36.5	52.7	48.2	78.4	32.6
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	8.9	15.5	67.1	48.3	35.6	29.9	21.6	33.4	36.6	27.4	29.3 J	28.2	113	31.5	49.6	62.9	9.6	35.2
Thallium	7440-28-0	mg/kg	NR	NR	NR	0.94 U	1.1 U	1.0 U	0.98 U	0.93 U	0.74 J	0.98 J	1.1 U	0.87 J	0.92 U	1.0 U	0.83 J	0.91 U	0.88 U	0.99 U	1.7 U	1.1 U	1.1 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	10.5	24.8	51	62.2	40	34.1 J	25.9	39.9 J	36.3	35 J	38.1 J	33.7	85.6 J	37	58.6 J	61.1 J	14.5	39
<b>General Chemistry</b>																							
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.40 J / 0.27 J	1.2 J / 0.88	1.7	3.9	0.52	1.5 J / 1.2 J	0.51	1.8 J / 1.8 J	0.56	0.88 J / 0.59 J	0.92	1.7	13.6 J / 12.8 J	0.53	1.6 J / 1.1 J	0.44 J / 0.60 J	5 J / 4.7 J	0.29 J
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	-	-	-	0.65 <sup>b</sup>	0.18 <sup>b</sup> J	-	-	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-
pH	-	su	-	-	-	8.19	8.65	8.28	8.63	9.09	8.76	8.31	8.14	8.3	8.72	7.84	8.48	9.23	8.15	8.7	8.27	8.91	7.95
Redox Potential Vs H2	-	mV	-	-	-	309	251	318	297	272	322	408	340	397	325	380	300	292	292	320	336	246	321
Solids, Percent	-	%	-	-	-	94.4	86.8	90.7	93.2	94.8	95.5	88.7	90.1	88.4	99.2	86.9	93	97.7	96.6	98.8	57.8	91.7	91.8
Sulfide Screen	-	-	-	-	-	NEGATIVE <sup>c</sup>	NEGATIVE <sup>c</sup>	-	-	-	NEGATIVE	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	-	-	-	30500 <sup>g</sup>	9710 <sup>d</sup>	-	-	-	2080	-	-	-	-	-	-	-	-	-	-	-	-

**Analytical Data Qualifiers:**

- < - The analyte was not detected at the stated reporting limit.
- R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.
- N - The matrix spike sample recovery in the associated QC sample is not within QC limits.
- J - The positive result reported for this analyte is a quantitative estimate.
- U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
- J- - The result is estimated and may be biased low.

**Notes:**

- NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.
- <sup>a</sup> Elevated detection limit due to dilution required for high interfering element.
- <sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>d</sup> Multiple injections indicate possible sample non-homogeneity.
- <sup>e</sup> Analysis done out of holding time.
- <sup>h</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.
- <sup>†</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

- + = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.
  - \*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.
  - ft = North American Vertical Datum of 1988
  - ft bgs = feet below ground surface
  - BFB= below foundation bottom
  - BSG= below surface grade
  - mg/kg = milligram per kilogram
  - su = standard unit
  - mV = millivolts
  - = Not Available
- Result or Detection limit exceeded criteria**

Table 4B  
 Sidewall Post-Excavation Soil Samples (2014-2015)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2014-2015 Sampled by WCD and CB&I

Client Sample ID:						16P-SW-WEST (2' BSG)	16S-SW-EAST	17N-SW-SOUTH	17N-SW-NORTH	17O-SW-NORTH	17P-SW-WEST (2' BSG)	17S-SW-EAST	17T-SW-EAST (0.5' BELOW SURFACE)	18P-SW-WEST (3' BSG)	18U-SW-EAST (1' BELOW SURFACE)	19O-SW- SOUTH (2' BSG)	19O-SW- SOUTH DUP (2' BSG)	19U-SW- EAST (1' BELOW SURFACE)	19U-SW- EAST-CONC (1' BSG)	20N-SW-SOUTH (1' BSG)	20O-SW-WEST (1' BSG)	20R-SW-SOUTH (2' BSG)	20S-SW-SOUTH (1.5' BELOW SURFACE)
Sample Depth (ft bgs):			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	0.7-1.3	0.3-0.8	4.3-4.8	3.7-4.2	4.4-4.9	1.3-1.8	1-1.5	1.5-2	1.9-2.4	0.6-1.1	0.9-1.4	0.9-1.4	1.4-1.9	0.5-1	1-1.5	1.2-1.7	2.1-2.6	1.2-1.7
Sample Elevations (ft):						7.1-7.7	8.3-8.8	4.2-4.7	4.8-5.3	4.1-4.6	6.6-7.1	7.8-8.3	7.4-7.9	6.1-6.6	8.5-9	5.4-5.9	5.4-5.9	7.7-8.2	8.6-9.1	4.6-5.1	5.5-6	6.7-7.2	7.6-8.1
Excavated:																EXCAVATED	EXCAVATED			EXCAVATED	EXCAVATED		EXCAVATED
Lab Sample ID:	CAS#	Units				JB76205-5R	JB74359-2A	JB96773-2A	JB96773-4A	JB96773-5A	JB76205-4R	JB74359-4A	JB74360-5A	JB76015-2R	JB74360-3A	JB76016-20A	JB76016-21A	JB74090-7A	JB74090-6A	JB76592-3R	JB76016-19A	JB75660-2A	JB74091-3A
Date Sampled:						9/9/2014	8/18/2014	6/11/2015	6/11/2015	6/11/2015	9/9/2014	8/18/2014	8/15/2014	9/8/2014	8/15/2014	9/5/2014	9/5/2014	8/13/2014	8/13/2014	9/11/2014	9/5/2014	9/4/2014	8/12/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																							
Antimony	7440-36-0	mg/kg	450	31	6	0.55 J	2.3 U	<2.1	<2.2	<2.2	2.1 UJ	2.7 U	0.44 J	0.49 J	2.2 U	2.1 UJ	2.1 UJ	2.1 U	0.39 J	2.2 UJ	2.3 UJ	2.1 U	56.7
Chromium	7440-47-3	mg/kg	120,000	-	-	30.2	37.1	17.8	177	59.9	39.6	101	32	35.8 J	31.9	18.6	16.7 J	15.7	31.3	119	16.3	38.8	36.7
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	30.9	21.8	8.5	11.7	9.8	32.3	25.1	33	35.2	18.8	8.5	7.2	9.6	6.6	8.6	9.8	12.3	61.6
Thallium	7440-28-0	mg/kg	NR	NR	NR	1.0 U	1.2 U	<1.0	<1.1	<1.1	1.0 U	1.4 U	1.1 U	0.66 J	1.1 U	1.0 U	1.1 U	1.0 U	1.1 U	1.1 U	1.1 U	1.0 U	1.1 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	34.4	25.2	9.7	17.8	11.6	46.1	30.2	37.7	43.6	22.3	9.6	7.7	10.8	8	9.2	15.8	12.4	26.1
<b>General Chemistry</b>																							
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.43 J / 0.54	0.7	0.99	4.3	2.1	0.43 J / 0.31 J	1.5	1.1 J	0.26 J / 0.42 U	0.42 U	0.81	1.1	0.61	5	0.8 R / 2.2	0.38 J	1.5	1.4 J
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	-	su	-	-	-	10.29	8.16	8.66	8.47	8.75	10.56	8.54	8.4	8.84	8.19	9.02	8.87	8.89	11.5	8.82	8.61	8.24	9.16
Redox Potential Vs H2	-	mV	-	-	-	229	347	360	334	328	211	353	386	285	400	282	285	325	201	259	306	255	330
Solids, Percent	-	%	-	-	-	93.5	90.1	93.8	89.5	89	94.6	75.1	92.9	95.2	94.9	91.7	92.5	95.2	90.3	93.4	91.5	96	88.5
Sulfide Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Analytical Data Qualifiers:**

- < - The analyte was not detected at the stated reporting limit.
- R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.
- N - The matrix spike sample recovery in the associated QC sample is not within QC limits.
- J - The positive result reported for this analyte is a quantitative estimate.
- U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
- J- - The result is estimated and may be biased low.

**Notes:**

- NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.
- <sup>a</sup> Elevated detection limit due to dilution required for high interfering element.
- <sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.
- <sup>d</sup> Multiple injections indicate possible sample non-homogeneity.
- <sup>e</sup> Analysis done out of holding time.
- <sup>h</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.
- <sup>i</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)
- + = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.
- \*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

ft = North American Vertical Datum of 1988

ft bgs = feet below ground surface

BFB= below foundation bottom

BSG= below surface grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Available

**Result or Detection limit exceeded criteria**

Table 4B  
 Sidewall Post-Excavation Soil Samples (2014-2015)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2014-2015 Sampled by WCD and CB&I

Client Sample ID:						20S-SW-SOUTH TOP (0.5' BSG)	20S-SW-SOUTH BOTTOM (3' BSG)	20T-SW-SOUTH (1.5' BSG)	20T-SW-SOUTH- CONC (2' BSG)	20U-SW-SOUTH (2' BELOW SURFACE)	20U-SW-EAST- CONC (1.5' BSG)	21P-SW-EAST	21P-SW-WEST (1'BSG)	21P-SW-TOP (1' BSG)	21P-SW-MIDDLE (2' BSG)	21P-SW-BOTTOM (3' BSG)	21Q-SW-TOP (1' BSG)	21Q-SW-MIDDLE (2.5' BSG)	21Q-SW- BOTTOM (3' BSG)	21Q-SW-TOP (1' BSG)	21Q-SW-SOUTH (2.0' BSG)	21R-SW-SOUTH (1.5' BSG)
Sample Depth (ft bgs):			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	0.9-1.3	2.5-3	1.3-1.8	2.4-2.9	1.6-2.1	2.1-2.6	3.7-4.2	2.8-3.3	1.6-2.1	1.9-2.4	2.6-3.1	0.8-1.3	1.9-2.4	2.7-3.2	3-3.5	1.8-2.3	0.9-1.4
Sample Elevations (ft):						7.9-8.4	6.2-6.7	7.8-8.3	6.6-7.1	7.8-8.3	7.2-7.7	4.8-5.3	5.7-6.2	6.9-7.4	6.6-7.1	5.9-6.4	7.7-8.2	6.6-7.1	5.8-6.3	5.5-6	6.9-7.4	8-8.5
Excavated:												EXCAVATED	EXCAVATED									
Lab Sample ID:	CAS#	Units				JB75661-1A	JB75661-3A	JB74090-3A	JB74090-2A	JB74090-5A	JB74090-4A	JB95834-2R	JB76016-18A	JB76016-5R	JB76016-6R	JB76016-7R	JB76016-2R	JB76016-3R	JB76016-4R	JB76204-2A	JB79149-2A	JB79149-1A
Date Sampled:						9/3/2014	9/3/2014	8/13/2014	8/13/2014	8/13/2014	8/13/2014	5/29/2015	9/5/2014	9/5/2014	9/5/2014	9/5/2014	9/5/2014	9/5/2014	9/5/2014	9/10/2014	10/14/2014	10/14/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																						
Antimony	7440-36-0	mg/kg	450	31	6	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.2 U	<2.4	2.1 UJ	0.46 J	0.41 J	2.0 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.1 UJ	2.1 U	2.3 U
Chromium	7440-47-3	mg/kg	120,000	-	-	28.8	8	12.9	4.8	41.1 <sup>a</sup>	6.2	48.5	15.7	175	47.7	19	18	440	28.2	11.4	35.4	32.5
Nickel	7440-02-0	mg/kg	23,000	1,600	654 <sup>**</sup>	10	7.9	12.5	2.3 J	41	3.2 J	10.4	9.3	27.6	13.4	8.3	12.2	33.8	14.4	7.7	12.3	12.8
Thallium	7440-28-0	mg/kg	NR	NR	NR	0.47 J	1.1 U	1.1 U	1.0 U	2.1 <sup>a</sup> U	1.1 U	<1.2	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	15.8	8.6	14.8	4.6 J	31.4	5.6	10	12.3	31	18.3	11.9	19.4	39.5	22.2	9.7	14.4	17.9
<b>General Chemistry</b>																						
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.75	0.42 U	0.34 J	0.31 J	0.9	0.46	2.3 J / 3 J	0.43	2.2 J / 5.1	0.62 J / 4.7	0.42 UJ / 0.69	0.33 J / 0.44	1.3 J / 1.8	1.3 J / 0.73	0.47 J	1.1	1.3
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron, Ferrous	-	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.8 <sup>b</sup>	-	-	-	-	-
pH	-	su	-	-	-	9.38	9.43	9.18	11.99	9.24	11.92	7.85	8.54	8.87	8.82	9.58	8.37	7.73	8.37	8.4	8.64	9.57
Redox Potential Vs H2	-	mV	-	-	-	204	224	281	149	242	175	416	308	319	326	300	310	317	327	295	324	308
Solids, Percent	-	%	-	-	-	92.5	94.4	90.5	97.9	95.1	88.4	81.2	94.5	93.3	92.5	95	94.2	90.3	94.9	95	90.2	91
Sulfide Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-	-	-
Total Organic Carbon	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1740	-	-	-	-	-

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

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**Notes:**

NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Analysis done out of holding time.

<sup>h</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.

<sup>†</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

ft = North American Vertical Datum of 1988

ft bgs = feet below ground surface

BFB= below foundation bottom

BSG= below surface grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Available

**Result or Detection limit exceeded criteria**

Table 4B  
 Sidewall Post-Excavation Soil Samples (2014-2015)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2014-2015 Sampled by WCD and CB&I

Client Sample ID:						22M-SW-NORTH (2' BSG)	22M-SW-EAST (2' BSG)	22M-SW-WEST (2.5' BSG)	22M-SW-WEST	22N-SW-NORTH	22P-SW-SOUTH	UP-1C-BOTTOM (3' BFB)	UP-1E-BOTTOM (6' BSG)	UP-2A-BOTTOM (3' BFB)	UP-4F-BOTTOM (4' BFB)	PPG016_2U-SW- NORTH-1-1.5	PPG016-150-SW- WEST-1-1.5	PPG016-17/18U-SW- EAST-1.0-1.5
Sample Depth (ft bgs):			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	0.7-1.2	1.1-1.6	1.1-1.6	4.9-5.4	4.6-5.1	2.2-2.7	2.7-3.2	2.7-3.2	2.7-3.2	2.7-3.2	1.0-1.5	1.0-1.5	1.0-1.5
Sample Elevations (ft):						4.8-5.3	4.2-4.7	4.5-5	4.3-4.8	4.3-4.8	7.3-7.8	5.7-6.2	5.7-6.2	5.7-6.2	5.7-6.2	5.0-5.5	6.7-7.2	8.0-8.5
Excavated:	CAS#	Units																
Lab Sample ID:						JB82421-2A	JB82421-3A	JB82421-4A	JB96698-3A	JB96451-2A	JB95670-2A	JB82421-1A	JB82704-1A	JB81369-1A	JB81844-1R	JC56865-3	JC56998-5	JC56998-1
Date Sampled:						11/18/2014	11/18/2014	11/18/2014	6/10/2015	6/8/2015	5/27/2015	11/18/2014	11/24/2014	11/6/2014	11/11/2014	12/7/2017	12/8/2017	12/8/2017
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																		
Antimony	7440-36-0	mg/kg	450	31	6	2.4 U	2.4 U	2.6 U	<2.2	<2.6	<2.4	2.7 U	2.5 U	2.4 U	2.6 U	<2.3 NJ-	<2.1 NJ-	<2.2 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	28	32.4	967	287	143	101	180	93.5	46.3	317	51.1	29	41.4
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	7.8	7.2	72.2	25.2	11.5	67.4	16.1	11.3	16	21.9	32.8	40.6	39.7
Thallium	7440-28-0	mg/kg	NR	NR	NR	1.2 U	1.2 U	0.60 J	<1.1	<1.3	<1.2	1.3 U	1.2 U	1.2 U	1.3 U	<1.1	<3.1 <sup>a</sup>	<2.2 <sup>a</sup>
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	6.8	6.3	68	26.3	11.3	30.3	24.6	18.8	44.3	34.1	38.3	48.3	52.8
<b>General Chemistry</b>																		
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2.7	3.4	7.6	6.2 J	2.8 J	1.9 J	5.4	2.3	1.2 J	4.5 J / 5.6 R	1.5	<0.44 NJ- / <0.44 NJ-	0.64 NJ- / <0.45 NJ-
Chromium, Trivalent	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	49.6 <sup>i</sup>	29.0 <sup>i</sup>	40.8 <sup>i</sup>
Iron, Ferrous	-	%	-	-	-	-	-	-	-	-	-	-	-	-	0.58 <sup>b</sup>	-	-	-
pH	-	su	-	-	-	9.14	9.21	9.66	10.82	9.26	9.01	9.34	8.42	8.69	8.41	7.74	8.9	8.05
Redox Potential Vs H2	-	mV	-	-	-	253	249	231	252	363	340	146	262	243	154	591	274	302
Solids, Percent	-	%	-	-	-	81	83.2	75.6	85.7	81.5	87.5	76.6	78.2	82.9	76.8	87.4	91.9	89.1
Sulfide Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-
Total Organic Carbon	-	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	3,120	-	-	-

**Analytical Data Qualifiers:**

< - The analyte was not detected at the stated reporting limit.

R - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

N - The matrix spike sample recovery in the associated QC sample is not within QC limits.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

J- - The result is estimated and may be biased low.

**Notes:**

NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>e</sup> Analysis done out of holding time.

<sup>h</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.

<sup>i</sup> Calculated as: (Chromium) - (Chromium, Hexavalent)

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

ft = North American Vertical Datum of 1988

ft bgs = feet below ground surface

BFB= below foundation bottom

BSG= below surface grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not Available

**Result or Detection limit exceeded criteria**

Table 4C  
 Generator Area Samples (2014)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2014 Sampled by WCD and CB&I

Client Sample ID:						GA-PL-SVL1A (14" BELOW ROAD SURFACE)	GA-PL-SVL1B (21" BELOW ROAD SURFACE)	GA-PL-SVL1C (47" BELOW ROAD SURFACE)	GA-PL-SVL2A (17" BELOW ROAD SURFACE)	GA-PL-SVL2B (25" BELOW ROAD SURFACE)	GA-PL-SVL2C (48" BELOW ROAD SURFACE)	GA-CURB-SVL1 (0.5'BSG)	GA-CURB-SVL2 (1.5'BSG)	GA-CURB-SVL3 (2.0'BSG)	GA-CURB-SVL4 (0.5'BSG)	GA-CURB-SVL5 (2.0'BSG)	GA-CURB-SVL6 (2.5'BSG)	GA-RW-EAST
Sample Depth (ft bgs):						0.7-1.2	1.2-1.7	3.8-4.3	1-1.5	1.3-1.8	2.8-3.3	1.3-1.8	2.1-2.6	3.2-3.7	1.1-1.6	2.2-2.7	3.1-3.6	0.0-4.0
Sample Elevations (ft):						8-8.5	7.5-8	5.1-5.6	8-8.5	7.6-8.1	6.2-6.7	8.8-9.3	8-8.5	6.7-7.2	8.6-9.1	7.5-8	6.6-7.1	5.0-9.0
Excavated:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	EXCAVATED	EXCAVATED	EXCAVATED	EXCAVATED	EXCAVATED	EXCAVATED							EXCAVATED
Lab Sample ID:						JB71334-1R	JB71334-2R	JB71334-3R	JB71334-4R	JB71334-5R	JB71334-6R	JB79147-1A	JB79147-2A	JB79147-3A	JB79147-4A	JB79147-5A	JB79147-6A	JB70991-1
Date Sampled:						7/10/2014	7/10/2014	7/10/2014	7/10/2014	7/10/2014	7/10/2014	10/13/2014	10/13/2014	10/13/2014	10/13/2014	10/13/2014	10/13/2014	7/2/2014
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Solid
<b>Metals Analysis</b>																		
Antimony	7440-36-0	mg/kg	450	31	6	2.9	0.59 J	1.9 U	3.1	3.9 <sup>a</sup> J	1.9 U	0.47 J	4.6	2.0 U	2.0 U	1.2 J	0.40 J	0.32 J
Chromium	7440-47-3	mg/kg	120,000	-	-	134	958	16.3	402	1580 <sup>a</sup>	67.2	45.9	545	17.3	14.3	589	46.7	22.6 <sup>a</sup> J
Nickel	7440-02-0	mg/kg	23,000	1600	654**	66.3	116	12.5	62.4	183 <sup>a</sup>	14.9	17.9	99.3	8.8	9.2	59.2	11.6	9.8 <sup>k</sup> J
Thallium	7440-28-0	mg/kg	NR	NR	NR	0.88 U	1.1 U	0.94 U	0.91 U	2.8 <sup>a</sup> U	0.97 U	1.1 U	1.1 U	1.0 U	1.0 U	1.1 U	1.1 U	4.9 <sup>a</sup> U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	32.7	126	19.6	65.1	182	19	13.1	81.7	12.4	10.3	70.9	12.9	14.9 J
<b>General Chemistry</b>																		
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	7.8 J / 0.51 R	19.7 J / 8.8 R	0.89 J / 0.64 R	12.1 J / 7.1 R	35.2 J / 9.1 R	3 J / 1 R	0.95 J	13.8 J	1.2 J	0.41 U	14.6 J	1.4 J	0.17 UJ
Iron, Ferrous	-	%	-	-	-	0.61 <sup>b</sup>	-	-	-	-	-	-	-	-	-	-	-	0.5 <sup>b</sup>
Redox Potential Vs H2	-	mV	-	-	-	336	332	352	349	376	356	296	296	286	295	310	325	111
Solids, Percent	-	%	-	-	-	97.5	90.5	87.6	93.5	90.9	90.7	91.4	90.8	96.1	98	92.3	96.5	96.3
Sulfide Screen	-	-	-	-	-	NEGATIVE <sup>c</sup>	-	-	-	-	-	-	-	-	-	-	-	NEGATIVE <sup>c</sup>
Total Organic Carbon	-	mg/kg	-	-	-	18000	-	-	-	-	-	-	-	-	-	-	-	1380 <sup>d</sup>
pH	-	su	-	-	-	8.37	8.6	8.6	8.41	8.3	8.62	9.47	9.51	9.7	9.6	8.91	9.34	-

**Analytical Data Qualifiers:**

**J** - The positive result reported for this analyte is a quantitative estimate.

**U** - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

**R** - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

**Notes:**

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>k</sup> Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).

NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

ft = North American Vertical Datum of 1988

ft bgs= feet below ground surface

bsg = below surface grade

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

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Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

**Result or detection limit exceeded criteria**

Table 4C  
Generator Area Samples (2014)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2014 Sampled by WCD and CB&I

Client Sample ID:						GA-RW-WEST	GA-SOIL-BOTTOM	GA-FW-WEST	GA-STAIRS-NORTH	GA-STAIRS-EAST	GA-STAIRS-SOUTH	GA-BOTTOM-CONC
Sample Depth (ft bgs):						0.0-4.0	3.5-4.0	3.5-4.0	1.7-2.2	2.4-2.9	2-2.5	3.5-4.0
Sample Elevations (ft):						5.5-9.5	5.4-5.9	6.5-7.0	7.1-7.6	6.4-6.9	6.8-7.3	5.7-6.2
Excavated:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	EXCAVATED						
Lab Sample ID:						JB70991-2	JB70991-3	JB71234-1	JB71234-2	JB71234-3	JB71234-4	JB71234-5
Date Sampled:						7/2/2014	7/2/2014	7/9/2014	7/9/2014	7/9/2014	7/9/2014	7/9/2014
Matrix:						Solid	Soil	Solid	Solid	Solid	Solid	Solid
<b>Metals Analysis</b>												
Antimony	7440-36-0	mg/kg	450	31	6	0.32 J	0.28 U	2.0 U	0.33 J	2.0 U	2.0 U	2.0 U
Chromium	7440-47-3	mg/kg	120,000	-	-	28.0 <sup>a</sup> J	15.7 J	12.1	9.2	20.2	18.4	20.8
Nickel	7440-02-0	mg/kg	23,000	1600	654**	10.3 <sup>k</sup> J	9.7 J	7.4	3.2 J	4.5	3.3 J	8.3
Thallium	7440-28-0	mg/kg	NR	NR	NR	4.4 <sup>a</sup> U	1.0 U	1.5 <sup>a</sup> J	2.0 <sup>a</sup> J	2.0 <sup>a</sup> J	2.0 <sup>a</sup> J	1.5 <sup>a</sup> J
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	14.3 J	12.8 J	33.7	10.8	11.6	9.4	40.2
<b>General Chemistry</b>												
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.65 J	0.23 J	0.64	0.31 J	2.2	0.77	0.40 J
Iron, Ferrous	-	%	-	-	-	-	-	-	-	-	-	-
Redox Potential Vs H2	-	mV	-	-	-	-	-	94.8	92.2	119	68.7	102
Solids, Percent	-	%	-	-	-	-	-	96.4	92.6	93.9	91.4	94.5
Sulfide Screen	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	-	mg/kg	-	-	-	-	-	-	-	-	-	-
pH	-	su	-	-	-	-	-	12.16	11.81	12.04	11.53	12.15

**Analytical Data Qualifiers:**

**J** - The positive result reported for this analyte is a quantitative estimate.

**U** - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

**R** - The result for this compound/analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

**Notes:**

<sup>a</sup> Elevated detection limit due to dilution required for high interfering element.

<sup>b</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>d</sup> Multiple injections indicate possible sample non-homogeneity.

<sup>k</sup> Elevated detection limit due to dilution required for matrix interference (indicated by failing internal standard on original analysis).

NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

ft = North American Vertical Datum of 1988

ft bgs= feet below ground surface

bsg = below surface grade

mg/kg = milligram per kilogram

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Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

**Result or detection limit exceeded criteria**

Table 4D  
 Historical Site Investigation Borings (1992-1993)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 1992-1993 Sampled by ICF Kaiser Engineers, Inc.

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevations (ft):	Excavated:	Lab Sample ID/Number:	Date Sampled:	Matrix:	PPG4-B56						PPG4-B58		
							0-2	4-6	8-9	12-14	16-18	18-19	19-20	0-0.5	0.5-1
	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)										
			6.19-8.19	2.19-4.19	-0.81- 0.19	-5.81- (-3.81)	-9.81- (-7.81)	-10.81- (-9.81)	-11.81- (-10.81)	7.55-8.05	7.05-7.55	3.05-4.05			
			Excavated	Excavated						Excavated	Excavated				
			0160B56001	0160B56004	0160B56006	0160B56008	0160B56010	0160B56011	0160B56012	0160B58001	0160B58002	0160B58004			
			8/21/1992	8/21/1992	8/21/1992	8/21/1992	8/21/1992	8/21/1992	8/21/1992	8/21/1992	8/21/1992	8/21/1992			
			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
<b>Metals Analysis</b>															
Antimony	7440-36-0	mg/kg	450	31	6	---	---	---	---	---	---	---	---	---	---
Chromium	7440-47-3	mg/kg	120,000	-	-	291 J	32.1 J	25.9 J	25.3 J	21.6 J	22.5 J	22.3 J	1100 J	383 J	405 J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	---	---	---	---	---	---	---	---	---	---
Thallium	7440-28-0	mg/kg	NS	NS	NS	---	---	---	---	---	---	---	---	---	---
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NS	---	---	---	---	---	---	---	---	---	---
<b>General Chemistry</b>															
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	7	6.2 U	6.2 U	8.0 U	7.5 U	8.4 U	13.7 U	11	5.6 U	6.0 U
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---
pH	-	su	-	-	-	---	---	---	---	---	---	---	---	---	---
Redox Potential Vs H2	-	mV	-	-	-	---	---	---	---	---	---	---	---	---	---
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	---

**Analytical Data Qualifiers:**

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

R - Rejected.

**Notes:**

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Designations skipped due to borings being performed within the interior of building or original analytical reports may not be validated. Reference the RAR text for more information.

**Result or Detection limit exceeded criteria**

Table 4D  
 Historical Site Investigation Borings (1992-1993)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 1992-1993 Sampled by ICF Kaiser Engineers, Inc.

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevations (ft):	Excavated:	Lab Sample ID/Number:	Date Sampled:	Matrix:	PPG4-B59			PPG4-B60				PPG4-B61			
							0-1	4-6	4-6	0.2-0.8	.8-1.2	1.2-1.6	4-4.5	0.6-1.1	4-4.7	4.7-5.4	5.4-5.8
	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)												
							7.17-8.17	2.17-4.17	2.17-4.17	6.65-7.25	6.25-6.65	5.85-6.25	2.95-3.45	6.07-6.57	2.47-3.17	1.77-2.47	1.37-1.77
			Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated
			0160B59001	0160B59005	0160B59005	0160B60001	0160B60002	0160B60003	0160B60006	0160B61001	0160B61004	0160B61006	0160B61007				
			8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/20/1992
			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																	
Antimony	7440-36-0	mg/kg	450	31	6	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	7440-47-3	mg/kg	120,000	-	-	332	442	160	1,320	1,820	120	317	22.5	139	13.1	94.1	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	---	---	---	---	---	---	---	---	---	---	---	---
Thallium	7440-28-0	mg/kg	NS	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NS	---	---	---	---	---	---	---	---	---	---	---	---
<b>General Chemistry</b>																	
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	14.2 J	6.5 UJ	6.3 UJ	31.8 J	26.1 J	6.30 J	5.8 UJ	5.6 UJ	7.2 UJ	6.4 UJ	8.4 UJ	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---
pH	-	su	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---
Redox Potential Vs H2	-	mV	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---

**Analytical Data Qualifiers:**

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

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**Notes:**

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Designations skipped due to borings being performed within the interior of building or original analytical reports may not be validated. Reference the RAR text for more information.

**Result or Detection limit exceeded criteria**



Table 4D  
 Historical Site Investigation Borings (1992-1993)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 1992-1993 Sampled by ICF Kaiser Engineers, Inc.

Client Sample ID:	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	PPG4-B62				PPG4-B63				PPG4-B74		
						0.0-1	1.4-1.8	4-4.5	4.5-5	0-0.5	2-4	6-8	8-9	2-4	2-4	6-8
Sample Depth (ft bgs):						5.8-6.8	5.4-6	2.3-2.8	1.8-2.3	7.04-7.54	3.54-5.54	-0.46-1.54	-1.46-(-0.46)	5.24-7.24	5.24-7.24	1.24-3.24
Sample Elevations (ft):						Excavated	Excavated	Excavated		Excavated	Excavated					
Excavated:																
Lab Sample ID/Number:						0160B62001	0160B62002	0160B62004	0160B62005	0160B63001	0160B63002	0160B63003	0160B63004	0160B74001	0160B74003	0160B74101
Date Sampled:						8/20/1992	8/20/1992	8/20/1992	8/20/1992	8/19/1992	8/19/1992	8/19/1992	8/19/1992	8/19/1992	8/19/1992	8/19/1992
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																
Antimony	7440-36-0	mg/kg	450	31	6	---	---	---	---	---	---	---	---	---	---	---
Chromium	7440-47-3	mg/kg	120,000	-	-	1,680	250	654	85.3	2,820 J	13.5 J	31.2 J	11.5 J	18.2 J	18.7 J	6.03 J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	---	---	---	---	---	---	---	---	---	---	---
Thallium	7440-28-0	mg/kg	NS	NS	NS	---	---	---	---	---	---	---	---	---	---	---
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NS	---	---	---	---	---	---	---	---	---	---	---
<b>General Chemistry</b>																
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	90.0 J	6.4 J	61.2 J	6.60 UJ	35.2	5.50 U	6.40 U	6.40 U	5.5 U	5.5 U	6.2 U
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---
pH	-	su	-	-	-	---	---	---	---	---	---	---	---	---	---	---
Redox Potential Vs H2	-	mV	-	-	-	---	---	---	---	---	---	---	---	---	---	---
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---	---
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	---	---

**Analytical Data Qualifiers:**

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

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**Result or Detection limit exceeded criteria**

Table 4D  
 Historical Site Investigation Borings (1992-1993)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 1992-1993 Sampled by ICF Kaiser Engineers, Inc.

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevations (ft):	Excavated:	Lab Sample ID/Number:	Date Sampled:	Matrix:	PPG4-B77			PPG4-B78				PPG4-B79			PPG4-B80
							0.5-2	2-4	4-6	0-.1	2-3	3-3.30	4-5	0-.30	2.50-3	4-5.20	4-5
	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)												
			7.37-8.87	5.37-7.37	3.37-5.37	9.12-9.13	6.13-7.13	6.13-5.83	4.13-5.13	9.25-9.55	6.55-7.05	4.35-5.55	3.91-4.91				
			Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	
			0160B77001	0160B77002	0160B77003	0160B78001	0160B78002	0160B78003	0160B78004	0160B79001	0160B79002	0160B79003	0160B80004				
			8/19/1992	8/19/1992	8/19/1992	8/25/1992	8/25/1992	8/25/1992	8/25/1992	8/25/1992	8/25/1992	8/25/1992	8/25/1992	8/25/1992	8/25/1992	8/25/1992	
			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
<b>Metals Analysis</b>																	
Antimony	7440-36-0	mg/kg	450	31	6	---	---	---	---	---	---	---	---	---	---	---	
Chromium	7440-47-3	mg/kg	120,000	-	-	49.8 J	29.7 J	10.4 J	525 J	2090 J	57.3 J	132 J	100 J / 84.9 J	2740 J	139 J	128 J	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	---	---	---	---	---	---	---	---	---	---	---	
Thallium	7440-28-0	mg/kg	NS	NS	NS	---	---	---	---	---	---	---	---	---	---	---	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NS	---	---	---	---	---	---	---	---	---	---	---	
<b>General Chemistry</b>																	
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	5.40 U	5.30 U	5.90 U	6.5	6.20 U	5.70 U	12.5 U	5.40 U / 13.3	16.4	5.70 U	5.7 U	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	
pH	-	su	-	-	-	---	---	---	---	---	---	---	---	---	---	---	
Redox Potential Vs H2	-	mV	-	-	-	---	---	---	---	---	---	---	---	---	---	---	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	---	---	

**Analytical Data Qualifiers:**

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**Result or Detection limit exceeded criteria**

Table 4D  
 Historical Site Investigation Borings (1992-1993)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 1992-1993 Sampled by ICF Kaiser Engineers, Inc.

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevations (ft):	Excavated:	Lab Sample ID/Number:	Date Sampled:	Matrix:	PPG4-B81					PPG4-B82			PPG4-B85		PPG4-B86		
							8-9	12-13.1	13.1-13.6	16-16.8	20-21	0-1.10	1.1-1.6	4-6	1.4-1.7	4-5	0.1-0.6	0.6-1.6	4-5.1
CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	0160B81005	0160B81007	0160B81008	0160B81010	0160B81012	0160B82001	0160B82002	0160B82004	0160B85002	0160B85005	0160B86002	0160B86003	0160B86005		
					8/26/1992	8/26/1992	8/26/1992	8/26/1992	8/26/1992	8/26/1992	8/26/1992	8/26/1992	8/27/1992	8/27/1992	8/27/1992	8/27/1992	8/27/1992		
					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
<b>Metals Analysis</b>																			
Antimony	7440-36-0	mg/kg	450	31	6	---	---	---	---	---	---	---	---	---	---	---	---		
Chromium	7440-47-3	mg/kg	120,000	-	-	38.7	18.4	5.67	23.4	20.3	309	2,810	29.9	5,250	156	4,770	154		
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	---	---	---	---	---	---	---	---	---	---	---	---		
Thallium	7440-28-0	mg/kg	NS	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---		
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NS	---	---	---	---	---	---	---	---	---	---	---	---		
<b>General Chemistry</b>																			
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	5.9 UJ	7.2 UJ	6.3 UJ	7.5 UJ	8.1 UJ	26.7 J	23.5 J	5.9 UJ	52.2 J	11.2 J	63.7 J	18.5 J		
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---		
pH	-	su	-	-	-	8.23	8.08	8.16	8	7.61	9.11	7.9	---	7.98	---	9.67	---		
Redox Potential Vs H2	-	mV	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---		
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---		
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---		
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	15,700	---	12,000	---	---	---	---	---		

**Analytical Data Qualifiers:**

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U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

R - Rejected.

**Notes:**

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ft bgs = feet below ground surface

mg/kg = milligram per kilogram

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mV = millivolts

- = Not Available

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Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

Designations skipped due to borings being performed within the interior of building or original analytical reports may not be validated. Reference the RAR text for more information.

**Result or Detection limit exceeded criteria**

Table 4D  
 Historical Site Investigation Borings (1992-1993)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 1992-1993 Sampled by ICF Kaiser Engineers, Inc.

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevations (ft):	Excavated:	Lab Sample ID/Number:	Date Sampled:	Matrix:	PPG4-B87				PPG4-B89		PPG4-B90				PPG4-B99	PPG4-BD2
							0-0.9	0-0.9	0.9-1.2	4-5	0.5-1.5	4-5	0-2	4-5	12-12.4	12.4-13.5	4.1-4.3	0.4-1.1
							9.1-10	9.1-10	8.8-9.1	5-6	8-9	4.5-5.5	5.35-7.35	2.35-3.35	-5.05- (-4.65)	-6.15- (-5.05)	5.76-5.96	5.1-5.8
	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)		Excavated	Excavated	Excavated	Excavated	Excavated		Excavated				Excavated	
							0160B87001	0160B87101	0160B87002	0160B87005	0160B89002	0160B89004	0160B90001	0160B90003	0160B90006	0160B90007	0160B99004	0160BD2001
							9/10/1992	9/10/1992	9/10/1992	9/10/1992	9/10/1992	9/10/1992	9/8/1992	9/8/1992	9/8/1992	9/8/1992	8/25/1992	4/19/1993
							Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																		
Antimony	7440-36-0	mg/kg	450	31	6	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	7440-47-3	mg/kg	120,000	-	-	420 J	541 J	5,430 J	210 J	2,730 J	140 J	174	199	14.6	37.8	5,960 J	280	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	---	---	---	---	---	---	---	---	---	---	---	---	
Thallium	7440-28-0	mg/kg	NS	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NS	---	---	---	---	---	---	---	---	---	---	---	---	
<b>General Chemistry</b>																		
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	22.2 J	26.5 J	242 J	17.5 J	119 J	8.2 J	12.3	10.1	6.8 U	8.4 U	32.5	5.7 U	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	
pH	-	su	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	
Redox Potential Vs H2	-	mV	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	

**Analytical Data Qualifiers:**

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

R - Rejected.

**Notes:**

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ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

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mV = millivolts

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Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

Designations skipped due to borings being performed within the interior of building or original analytical reports may not be validated. Reference the RAR text for more information.

**Result or Detection limit exceeded criteria**

Table 4D  
 Historical Site Investigation Borings (1992-1993)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 1992-1993 Sampled by ICF Kaiser Engineers, Inc.

Client Sample ID:						PPG4-BD3	PPG4-BD4			PPG4-BD6		
Sample Depth (ft bgs):						4.3-5.3	4.2-5.2	6.2-7.2	8.2-9.2	3-3.7	4.5-5.6	6.5-7.5
Sample Elevations (ft):						3.12- 4.12	5.04-6.04	3.04-4.04	1.04-2.04	6.82-7.52	4.92-6.02	3.02-4.02
Excavated:	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	Excavated	Excavated	Excavated		Excavated	Excavated	Excavated
Lab Sample ID/Number:						0160BD3005	0160BD4005	0160BD4007	0160BD4009	0160BD6004	0160BD6006	0160BD6007
Date Sampled:						4/20/1993	4/20/1993	4/20/1993	4/20/1993	4/20/1993	4/20/1993	4/20/1993
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>												
Antimony	7440-36-0	mg/kg	450	31	6	---	---	---	---	---	---	---
Chromium	7440-47-3	mg/kg	120,000	-	-	315	501	146	42.8	4,830	379	305
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	---	---	---	---	---	---	---
Thallium	7440-28-0	mg/kg	NS	NS	NS	---	---	---	---	---	---	---
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NS	---	---	---	---	---	---	---
<b>General Chemistry</b>												
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	20.8 J	32.2 J	23.6 J	6.10 U	67.9 J	31.1 J	36.9 J
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---
pH	-	su	-	-	-	---	---	---	---	---	---	---
Redox Potential Vs H2	-	mV	-	-	-	---	---	---	---	---	---	---
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---

**Analytical Data Qualifiers:**

J - The positive result reported for this analyte is a quantitative estimate.

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Approved by NJDEP on May 29, 2020.

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**Result or Detection limit exceeded criteria**

Table 4D  
 Historical Site Investigation Borings (1992-1993)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 1992-1993 Sampled by ICF Kaiser Engineers, Inc.

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevations (ft):	Excavated:	Lab Sample ID/Number:	Date Sampled:	Matrix:	PPG4-BD8		PPG4-BD9			PPG4-MW2						
							3.5-4.5	5.5-6.7	0.9-1.20	1.2-3.2	5.2-6.2	0-2	2-4	4-6	6-8	10-12	14-16	
	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)			Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated		
			(NJAC 7:26D 6/12)	(NJAC 7:26D 6/12)	(NJAC 7:26D 11/13)			0160BD8004	0160BD8006	0160BD9002	0160BD9003	0160BD9006	0160W02001	0160W02002	0160W02003	0160W02004	0160W02006	0160W02008
								4/21/1993	4/21/1993	4/20/1993	4/20/1993	4/20/1993	1/14/1992	1/14/1992	1/14/1992	1/14/1992	1/14/1992	1/14/1992
								Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																		
Antimony	7440-36-0	mg/kg	450	31	6	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	7440-47-3	mg/kg	120,000	-	-	624	227	10,300	428	102	294 J	--- R	224 J	15.3 J	8.19 J	21.3 J		
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	---	---	---	---	---	---	---	---	---	---	---	---	---
Thallium	7440-28-0	mg/kg	NS	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NS	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>General Chemistry</b>																		
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	26.6	10.7	62.6 J	29.2 J	7.1 J	---	---	---	---	---	---	---	---
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	---
pH	-	su	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	---
Redox Potential Vs H2	-	mV	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	---
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	---
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	---	---	2130	---

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mV = millivolts

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Approved by NJDEP on May 29, 2020.

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**Result or Detection limit exceeded criteria**

Table 4D  
 Historical Site Investigation Borings (1992-1993)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 1992-1993 Sampled by ICF Kaiser Engineers, Inc.

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevations (ft):	Excavated:	Lab Sample ID/Number:	Date Sampled:	Matrix:	PPG4-MW13					PPG-MW14				
							0.6-1.6	1.6-1.8	1.8-2	4-5	8-9	0-0.4	0.4-1.30	1.3-1.7	4-5	6.4-7.4
	CAS#	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)											
			7.98-8.98	7.78-7.98	7.58-7.78	4.58-5.58	0.58-1.58	6.48-6.88	6.48-5.58	5.58-5.18	1.88-2.88	-0.52-0.48				
			Excavated	Excavated	Excavated	Excavated		Excavated	Excavated	Excavated						
			0160B88001	0160B88002	0160B88003	0160B88007	0160B88009	0160B57001	0160B57002	0160B57003	0160B57004	0160B57005				
			8/27/1992	8/27/1992	8/27/1992	8/27/1992	8/27/1992	8/28/1992	8/28/1992	8/28/1992	8/29/1992	8/30/1992				
			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
<b>Metals Analysis</b>																
Antimony	7440-36-0	mg/kg	450	31	6	---	---	---	---	---	---	---	---	---	---	
Chromium	7440-47-3	mg/kg	120,000	-	-	1910	345	5,620	575	8.39	1,190	3,200 J	1,570	90 J	18	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	---	---	---	---	---	---	---	---	---	---	
Thallium	7440-28-0	mg/kg	NS	NS	NS	---	---	---	---	---	---	---	---	---	---	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	NS	---	---	---	---	---	---	---	---	---	---	
<b>General Chemistry</b>																
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	13.0 J	9.2 J	59.0 J	28.8 J	5.7 UJ	22 J	46.7	56.2 J	7.1 U	6.3 UJ	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	
pH	-	su	-	-	-	---	---	10.4	7.52	6.89	8.98	10.7	8.87	---	---	
Redox Potential Vs H2	-	mV	-	-	-	---	---	---	---	---	---	---	---	---	---	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	6,900	---	---	---	---	---	---	

**Analytical Data Qualifiers:**

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UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

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Approved by NJDEP on May 29, 2020.

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**Result or Detection limit exceeded criteria**

Table 4E  
Remedial Investigation Borings (2011)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Ave East, Jersey City, NJ  
2011 Sampled by Tetra Tech

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Lab Sample ID:	Date Sampled:	Matrix:	016_D005 <sup>h</sup>									
							0.0-0.5	1.2-1.7	1.7-2.2	2.5-3	3-3.5	7-7.5	10-10.5	14-14.5	17.8-18.3	25-25.5
CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	
							460-28584-23	460-28584-24	460-28584-25	460-28584-26	460-28584-27	460-28584-28	460-28584-29	460-28584-30	460-28584-31	460-28584-32
							7/8/2011	7/8/2011	7/9/2011	7/10/2011	7/11/2011	7/12/2011	7/13/2011	7/14/2011	7/15/2011	7/16/2011
							Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																
Antimony	7440-36-0	mg/kg	450	31	6	16.4 UJ	17.5 UJ	15.6 UJ	16.9 UJ	15.7 UJ	19.5 UJ	23.6 UJ	26.1 UJ	50.4 UJ	15.6 UJ	
Chromium	7440-47-3	mg/kg	120,000	-	-	275	770	738	847	509	9.8	79.6	41	12.7	9.2	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	41.6	119	107	131	47.5	9.4	26	37.4	12.6 J	9.3	
Thallium	7440-28-0	mg/kg	NS	NS	NS	6.6 U	7 U	6.2 U	6.7 U	6.3 U	7.8 U	9.4 U	10.4 U	20.2 U	6.2 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	56.1	141	143	135	67.4	9.1	31.8	31.1	20.9	12.7	
<b>General Chemistry</b>																
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.9 J	3.6	3.2	3.5	3	2.4 U	3 U	3.3 U	6.7 U	2.1 U	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	
pH	-	su	-	-	-	8.83	10	10.7	10.7	10.3	8.43	8.08	7.92	7.16	9.29	
Redox Potential Vs H2	-	mV	-	-	-	363	307	266	281	290	369	360	356	374	328	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	---	

**Analytical Data Qualifiers:**

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

<sup>†</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.

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mg/kg = milligram per kilogram

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mV = millivolts

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\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

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<sup>#</sup> Location resampled during supplemental investigation.

**Result or Detection limit exceeded criteria**



Table 4E  
Remedial Investigation Borings (2011)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Ave East, Jersey City, NJ  
2011 Sampled by Tetra Tech

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Lab Sample ID:	Date Sampled:	Matrix:	016_F005								
							0.0-0.5	1-1.5	1.5-2	2.1-2.6	5-5.5	10-10.5	14-14.5	20-20.5	23-23.5
	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)										
							Excavated	Excavated	Excavated	Excavated					
							460-28584-14	460-28584-17	460-28584-15	460-28584-16	460-28584-18	460-28584-19	460-28584-20	460-28584-21	460-28584-22
							7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011
							Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>															
Antimony	7440-36-0	mg/kg	450	31	6	15.3 UJ	18.2 UJ	19.5 UJ	19.3 UJ	15.1 UJ	21.7 UJ	22.7 UJ	20.2 UJ	16.7 UJ	
Chromium	7440-47-3	mg/kg	120,000	-	-	522	2860	1820	1500	497	36.4	22	21.9	12.7	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	80.8	403	526	406	8.6	23.1	20.9	17.6	13.2	
Thallium	7440-28-0	mg/kg	NS	NS	NS	6.1 U	7.3 U	7.8 U	7.7 U	6 U	8.7 U	9.1 U	8.1 U	6.7 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	93.9	463	651	428	19.6	28	23.6	30.6	17	
<b>General Chemistry</b>															
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2.1 U	18.7	32.3	45.5	2.3	2.8 U	3.2 U	2.6 U	2.2 U	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	
pH	-	su	-	-	-	8.74	11.5	11.6	11.5	9.38	9.27	7.83	7.44	8.89	
Redox Potential Vs H2	-	mV	-	-	-	307	265	302	268	286	298	388	389	363	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	

**Analytical Data Qualifiers:**

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U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

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**Notes:**

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mg/kg = milligram per kilogram

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# Location resampled during supplemental investigation.

**Result or Detection limit exceeded criteria**

Table 4E  
Remedial Investigation Borings (2011)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Ave East, Jersey City, NJ  
2011 Sampled by Tetra Tech

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Lab Sample ID:	Date Sampled:	Matrix:	016_J005 <sup>h</sup>							
							0-0.5	2.2-2.7	2.7-3.2	5-5.5	5.9-6.4	10-10.5	15-15.5	20-20.5
							7.2-7.7	5-5.5	4.5-5	2.2-2.7	1.3-1.8	-2.8-(-2.3)	-7.8-(-7.3)	-12.8-(-12.3)
							Excavated	Excavated	Excavated	Excavated	Excavated			
CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	460-28584-7	460-28584-9	460-28584-8	460-28584-11	460-28584-10	460-28584-11	460-28584-12	460-28584-13		
					7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011		
					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		

Metals Analysis													
Antimony	7440-36-0	mg/kg	450	31	6	15.1 UJ	16.1 UJ	21.3 UJ	18.3 UJ	17.9 UJ	17.5 UJ	20.4 UJ	<b>33.6 UJ</b>
Chromium	7440-47-3	mg/kg	120,000	-	-	41	63.1	2160	4410	964	7.2	22.3	30.1
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	39.4	14.6	178	438	44	4.9 J	19.1	16.2
Thallium	7440-28-0	mg/kg	NS	NS	NS	6 U	6.5 U	8.5 U	7.3 U	7.1 U	7 U	8.2 U	13.4 U
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	39.9 J	17.9 J	272 J	<b>561</b>	82.1	8.9	23	27.1

General Chemistry													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2 U	2.2 U	2.6 U	8.7	1 J	2.4 U	0.73 J	4.2 U
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---
pH	-	su	-	-	-	7.95	8.36	8.16	10.8	10.5	8.39	8.07	7.27
Redox Potential Vs H2	-	mV	-	-	-	385	294	296	279	288	356	318	343
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---

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<sup>#</sup> Location resampled during supplemental investigation.

**Result or Detection limit exceeded criteria**

Table 4E  
Remedial Investigation Borings (2011)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Ave East, Jersey City, NJ  
2011 Sampled by Tetra Tech

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Lab Sample ID:	Date Sampled:	Matrix:	016_J014				
							0.7-1.2	5-5.5	15-15.5	20-20.5	23.3-23.8
	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	Excavated					
							460-29778-7	460-29778-8	460-29778-9	460-29778-10	460-29778-11
							8/9/2011	8/9/2011	8/9/2011	8/9/2011	8/9/2011
							Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>											
Antimony	7440-36-0	mg/kg	450	31	6	2 UJ	2.4 UJ	3.7 UJ	3.5 UJ	2.2 UJ	
Chromium	7440-47-3	mg/kg	120,000	-	-	39.1 J	233 J	53.1 J	9.8 J	8.3 J	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	39.4	7.8 J	39.4	5.8 J	11.8	
Thallium	7440-28-0	mg/kg	NS	NS	NS	3.7 U	2.4 U	3.7 U	3.5 U	2.2 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	32.6	10.5 J	32.6	9.4 J	12.2	
<b>General Chemistry</b>											
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2.1 UJ	2.3 UJ	4 UJ	3.4 UJ	2.3 UJ	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	
pH	-	su	-	-	-	8.75	8.29	8.43	7.6	4.47	
Redox Potential Vs H2	-	mV	-	-	-	387	403	134	422	478	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	

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# Location resampled during supplemental investigation.

**Result or Detection limit exceeded criteria**

Table 4E  
Remedial Investigation Borings (2011)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Ave East, Jersey City, NJ  
2011 Sampled by Tetra Tech

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Lab Sample ID:	Date Sampled:	Matrix:	016_K007									
							0.5-1	2.3-2.8	2.8-3.3	3.3-3.8	3.8-4.3	5-5.5	11.4-11.9	15-15.5	20-20.5	25-25.5
CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated		
							460-29552-17	460-29552-19	460-29552-18	460-29552-20	460-29552-21	460-29552-22	460-29552-23	460-29552-24	460-29552-25	460-29552-26
							8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011
							Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>																
Antimony	7440-36-0	mg/kg	450	31	6	1.5 J	1.1 J	2.3 J	2.5 J	5.1 J	1.1 J	2.2 UJ	2.7 UJ	3.4 UJ	2.3 UJ	
Chromium	7440-47-3	mg/kg	120,000	-	-	34.1	131	572	190	3700	546	6.8	19.3	32.9	10	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	35.6	25.8	105	23.6	314	10	8.6 J	17.6	28.1	13.7	
Thallium	7440-28-0	mg/kg	NS	NS	NS	2.1 U	2.1 U	2.2 U	2 U	2.3 U	2.2 U	2.2 U	2.7 U	3.4 U	2.3 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	47.6	47.3	99.6	28.3	232	53.6	8.5 J	20.1	37.2	11.7	
<b>General Chemistry</b>																
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2.1 U	1.2 J	3	2.4	1.5 J	9.9	2.4 U	2.8 U	3.7 U	2.4 U	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	
pH	-	su	-	-	-	8.8	9.38	9.22	12.3	9.8	8.65	8.33	8.09	7.49	8.2	
Redox Potential Vs H2	-	mV	-	-	-	369	337	342	169	290	368	361	332	356	401	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	---	

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# Location resampled during supplemental investigation.

**Result or Detection limit exceeded criteria**

Table 4E  
Remedial Investigation Borings (2011)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Ave East, Jersey City, NJ  
2011 Sampled by Tetra Tech

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Lab Sample ID:	Date Sampled:	Matrix:	016_K009								
							0-0.5	1.4-1.9	1.9-2.4	2.4-2.9	7-7.5	10.7-11.2	16-16.5	20-20.5	25-25.5
	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)										
							Excavated	Excavated	Excavated						
							460-28592-6	460-28592-5	460-28592-9	460-28592-8	460-28592-7	460-28592-3	460-28592-4	460-28592-2	460-28592-1
							7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011
							Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>															
Antimony	7440-36-0	mg/kg	450	31	6	2.1 UJ	2 UJ	2.2 UJ	2.2 UJ	2.3 UJ	2.4 UJ	3.2 UJ	3.2 UJ	2.3 UJ	
Chromium	7440-47-3	mg/kg	120,000	-	-	64.4	23	250	11.1	12.5	8.8	43.3	28.9	11.3	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	97.4	17.5	63.4	6.2 J	7 J	9.9	38.3	25.6	14.7	
Thallium	7440-28-0	mg/kg	NS	NS	NS	2.1 U	2 U	2.2 U	2.2 U	2.3 U	2.4 U	3.2 U	3.2 U	2.3 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	35.9	25.3	63.5	10.5 J	7 J	11 J	34.2	32.9	13.2	
<b>General Chemistry</b>															
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2.1 U	2.1 U	0.74 J	2.2 U	2.3 U	2.4 U	3.2 U	4.6	2.3 U	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	
pH	-	su	-	-	-	8.34	11	9.57	8.76	8.43	349	8.15	7.56	8.28	
Redox Potential Vs H2	-	mV	-	-	-	346	213	327	355	349	8.32	275	334	382	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	

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**Result or Detection limit exceeded criteria**

Table 4E  
Remedial Investigation Borings (2011)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Ave East, Jersey City, NJ  
2011 Sampled by Tetra Tech

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Lab Sample ID:	Date Sampled:	Matrix:	016_K013					
							1.2-1.7	2.1-2.6	6-6.5	11.3-11.8	20-20.5	25-25.5
CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated		
							6.9-7.4	6-6.5	2.1-2.5	-3.2-(-2.7)	-11.9-(-11.4)	-16.9-(-16.4)
							460-29552-1	460-29552-2	460-29552-3	460-29552-4	460-29552-5	460-29552-6
							8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011
							Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>												
Antimony	7440-36-0	mg/kg	450	31	6	<b>9.6 J</b>	0.97 J	2.4 UJ	2.2 UJ	3.3 UJ	2.4 UJ	
Chromium	7440-47-3	mg/kg	120,000	-	-	4570	147	101	8.4	35	19.3	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	393	12.9	8.1 J	9.4	21.7	25.5	
Thallium	7440-28-0	mg/kg	NS	NS	NS	2.3 U	2 U	2.4 U	2.2 U	3.3 U	2.4 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>†</sup>	-	<b>589</b>	21.6	8.1 J	10.5 J	26.9	23.9	
<b>General Chemistry</b>												
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<b>208 J</b>	12.2 J	2.4 UJ	2.4 UJ	3.3 UJ	2.5 UJ	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	
pH	-	su	-	-	-	10.4	9.45	8.53	8.43	8.05	7.84	
Redox Potential Vs H2	-	mV	-	-	-	317	372	384	365	336	347	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	

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\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

# Location resampled during supplemental investigation.

**Result or Detection limit exceeded criteria**

Table 4E  
Remedial Investigation Borings (2011)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Ave East, Jersey City, NJ  
2011 Sampled by Tetra Tech

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Lab Sample ID:	Date Sampled:	Matrix:	016_L005					
							0-0.5	5-5.5	10.7-11.2	15-15.5	20-20.5 <sup>#</sup>	25-25.5
	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	
						460-28584-1	460-28584-2	460-28584-3	460-28584-4	460-28584-5	460-28584-6	
						7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	
						Soil	Soil	Soil	Soil	Soil	Soil	
<b>Metals Analysis</b>												
Antimony	7440-36-0	mg/kg	450	31	6	16.2 UJ	16.5 UJ	16.9 UJ	22.5 UJ	48.3 UJ	19.1 UJ	
Chromium	7440-47-3	mg/kg	120,000	-	-	125	48.1	7.7	32.8	28.8	11.7	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	34	10.2	10.6	27	14.8 J	15.2	
Thallium	7440-28-0	mg/kg	NS	NS	NS	6.5 U	6.6 U	6.8 U	9 U	19.3 U	7.6 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	45.8 J	10.8 J	11.7 J	24 J	29.1 J	14.7 J	
<b>General Chemistry</b>												
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2 UJ	2.4 UJ	2.4 U	3 U	69.3 U	2.3 U	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	
pH	-	su	-	-	-	8.5	11.2	8.68	8.43	7.57	7.14	
Redox Potential Vs H2	-	mV	-	-	-	382	274	324	218	287	316	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	

**Analytical Data Qualifiers:**

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

<sup>1</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.

NS = No Standard as per N.J.A.C. 7:26D Implementation of Updated Soil Remediation Standards, September 18, 2017.

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not available

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\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

<sup>#</sup> Location resampled during supplemental investigation.

**Result or Detection limit exceeded criteria**

Table 4E  
Remedial Investigation Borings (2011)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Ave East, Jersey City, NJ  
2011 Sampled by Tetra Tech

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Lab Sample ID:	Date Sampled:	Matrix:	016_L010								
							0-0.5	1.6-2.1	2.1-2.6	2.6-3.1	5-5.5	10-10.5	16-16.5	20-20.5	25-25.5
CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Residential Direct Contact Soil (NJAC 7:26D 9/17)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	
							460-29552-7	460-29552-8	460-29552-9	460-29552-10	460-29552-11	460-29552-13	460-29552-14	460-29552-15	460-29552-16
							8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011
							Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>															
Antimony	7440-36-0	mg/kg	450	31	6	0.9 J	2.7 J	<b>10.4 J</b>	2.1 UJ	1.4 J	2.4 UJ	2.2 UJ	3.1 UJ	2.5 UJ	
Chromium	7440-47-3	mg/kg	120,000	-	-	41.1	530	4650	66.5	453	8.1	11.7	24.9	15.7	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	30.3	56.4	503	15.3	57.1	7.3 J	10.2	21.4	20.8	
Thallium	7440-28-0	mg/kg	NS	NS	NS	2 U	2.1 U	2.3 U	2.1 U	2.1 U	2.4 U	2.2 U	3.1 U	2.5 U	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	46	70.1	<b>870</b>	22.2	84.6	7 J	9.7 J	26.5	20.6	
<b>General Chemistry</b>															
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	2.1 UJ	12.1 J	<b>169 J</b>	11.2 J	9.1 J	0.86 J	2.5 U	3.1 U	2.6 U	
Iron, Ferrous	-	%	-	-	-	---	---	---	---	---	---	---	---	---	
pH	-	su	-	-	-	9.18	10.7	9.66	10.1	10.4	8.65	8.59	7.95	7.96	
Redox Potential Vs H2	-	mV	-	-	-	316	248	305	343	305	362	337	343	343	
Solids, Percent	-	%	-	-	-	---	---	---	---	---	---	---	---	---	
Sulfide Screen	-	-	-	-	-	---	---	---	---	---	---	---	---	---	
Total Organic Carbon	-	mg/kg	-	-	-	---	---	---	---	---	---	---	---	---	

**Analytical Data Qualifiers:**

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Notes:**

<sup>1</sup> Analytical results in this location were not considered an exceedance because analyte of concern was compliance averaged below soil remediation standard.

NS = No Standard as per N.J.A.C. 7:26D Implementation of Updated Soil Remediation Standards, September 18, 2017.

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

- = Not available

--- = Not analyzed

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

# Location resampled during supplemental investigation.

**Result or Detection limit exceeded criteria**



Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	CD001				DUP 14	DD001				DUP 15
						3.5-4	4-4.5	4.5-5	5-5.5	5-5.5	4.5-5	5-5.5	5.5-6	6-6.5	6-6.5
Sample Depth (ft bgs):						2.6-3.1	2.1-2.6	1.6-2.1	1.1-1.6	1.1-1.6	1-1.5	0.5-1	0-0.5	(-0.5-0)	(-0.5-0)
Sample Elevation (ft):						Excavated									
Excavated:															
Client Sample ID:						CD001 3.5-4	CD001 4-4.5	CD001 4.5-5	CD001 5-5.5	DUP 14	DD001 4.5-5	DD001 5-5.5	DD001 5.5-6	* DD001 6-6.5	DUP 15
Lab Sample ID:						JB46565-10	JB46565-11	JB46565-12	JB46565-13	JB46565-14	JB46565-15	JB46565-16	JB46565-17	JB46565-18	JB46565-23
Date Sampled:						9/4/2013	9/4/2013	9/4/2013	9/4/2013	9/4/2013	9/4/2013	9/4/2013	9/4/2013	9/4/2013	9/4/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>															
Antimony	7440-36-0	mg/kg	450	31	6	<2.2 NJ-	<2.2 NJ-	<2.2 NJ-	<2.3 NJ-	<2.4 NJ-	<2.0 NJ-	<2.0 NJ-	<2.4 NJ-	<2.0 NJ-	<2.3 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	35.3 NJ+	81.2 NJ+	130 NJ+	302 NJ+	530 NJ+	304 NJ+	107 NJ+	127 NJ+	85.1 NJ+	18.5 J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	10.6	6.9	7.2	9.9	9.7	31.9	33.8 J	44.6	21.4	9.7 J
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.1	<1.1	<1.2	<1.0	<1.0	<1.2	<1.0	<1.1
Vanadium	7440-62-2	mg/kg	1,100	390*	-	14.4	11.5	9.8	10.6	12	62.3	41.3 J	51	32.8	13.3 J
<b>General Chemistry</b>															
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	3.8	2	4.4	7.9	11.8	0.82	0.9	0.87	1.4 NJ- / 0.96 NJ-***	0.91 NJ- / 1.6 NJ-
Redox Potential Vs H2	-	mV	-	-	-	285	313	319	324	315	179	167	149	245	238
pH	-	su	-	-	-	9.79	8.85	8.57	8.44	8.7	7.8	7.92	7.88	7.96	8.94

**Analytical Data Qualifiers:**

< The analyte was not detected at the stated reporting limit.

J The reported result is an estimated value.

EJ The reported value is estimated because of the presence of interference; indeterminate bias direction.

N The matrix spike sample recovery in the associated QC sample is not within QC limits.

J+ The result is estimated and may be biased high.

J- The result is estimated and may be biased low.

E Exceeds calibration range.

\*J -The duplicate analysis result is outside QC limits and the reported sample value is estimated with an indeterminate bias direction.

**Notes:**

+ = Alternative remediation standard applied based on NJDEP correspondence issued July 2016. Approved by NJDEP on May 29, 2020.

\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

\*\*\* Sample did not pass 2nd QA & QC. See Table 2F-A for additional information.

NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

---- = Not Analyzed

- Not Available

**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	DD002				ED001				DUP 16
						3-3.5	3.5-4	4-4.5	4.5-5	3.5-4	4-4.5	4.5-5	5-5.5	5-5.5
Sample Depth (ft bgs):						3.1-3.6	2.6-3.1	2.1-2.6	1.6-2.1	2.7-3.2	2.2-2.7	1.7-2.2	1.2-1.7	1.2-1.7
Sample Elevation (ft):						Excavated	Excavated	Excavated		Excavated	Excavated	Excavated		
Excavated:						Excavated	Excavated	Excavated		Excavated	Excavated	Excavated		
Client Sample ID:						DD002 3-3.5	DD002 3.5-4	DD002 4-4.5	DD002 4.5-5	ED001 3.5-4	ED001 4-4.5	ED001 4.5-5	ED001 5-5.5	DUP 16
Lab Sample ID:						JB46565-19	JB46565-20	JB46565-21	JB46565-22	JB46565-24	JB46565-25	JB46565-26	JB46565-27	JB46565-28
Date Sampled:						9/4/2013	9/4/2013	9/4/2013	9/4/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>														
Antimony	7440-36-0	mg/kg	450	31	6	<2.3 NJ-	<2.2 NJ-	<2.1 NJ-	<2.1 NJ-	<2.2 NJ-	<2.1 NJ-	<2.2 NJ-	<2.0 NJ-	<2.0 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	1010 NJ+	989 NJ+	305	14	432	465	449	101 J	40.2 J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	12.2	10	9.6	9	9.8	8.3	9.4	37.8 J	18 J
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.1	<1.0	<1.1	<1.1	<1.1	<1.0	<1.0
Vanadium	7440-62-2	mg/kg	1,100	390*	-	23.4	22.4	18.3	11.4	19.8	27.2	17.9	42.7 J	14.7 J
<b>General Chemistry</b>														
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	24.7 NJ- / 42.5 NJ-	16.9 NJ- / 42.3 NJ-	4.9 NJ- / 12.4 NJ-	<0.43 NJ- / 0.9 NJ-	12.1 NJ- / 10.1 NJ-	8.8 NJ- / 20.1 NJ-	17.3 NJ- / 30.7 NJ-	<0.69 NJ- / <0.69 NJ-	<0.65 NJ- / <0.65 NJ-
Redox Potential Vs H2	-	mV	-	-	-	142	202	196	228	178	177	184	149	154
pH	-	su	-	-	-	10.7	10.2	9.82	9.34	10.58	10.19	9.87	8.29	8.44

**Analytical Data Qualifiers:**

< The analyte was not detected at the stated reporting limit.

J The reported result is an estimated value.

EJ The reported value is estimated because of the presence of interference; indeterminate bias direction.

N The matrix spike sample recovery in the associated QC sample is not within QC limits.

J+ The result is estimated and may be biased high.

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E Exceeds calibration range.

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\*\* = Site specific calculation using NJDEP synthetic precipitation leaching procedures (SPLP) guidance (November 2013). Approved by NJDEP on May 29, 2020.

\*\*\* Sample did not pass 2nd QA & QC. See Table 2F-A for additional information.

NR = Not Regulated as per N.J.A.C. 7:26D Implementation of updated Soil Remediation Standards, September 18, 2017.

mg/kg = milligram per kilogram

su = standard unit

mV = millivolts

ft = Feet North American Vertical Datum of 1988

ft bgs = feet below ground surface

---- = Not Analyzed

- Not Available

**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	ED002				FD001			DUP 17
						4.5-5 1.9-2.4 Excavated	5-5.5 1.4-1.9 Excavated	5.5-6 0.9-1.4	6-6.5 0.4-0.9	3-3.5 4.5-5 Excavated	3.5-4 4-4.5 Excavated	4-4.5 3.5-4	4.5-5 3.5-4
Client Sample ID:						ED002 4.5-5	ED002 5-5.5	ED002 5.5-6	ED002 6-6.5	FD001 3-3.5	FD001 3.5-4	FD001 4-4.5	DUP 17
Lab Sample ID:						JB46565-29	JB46565-30	JB46565-31	JB46565-32	JB46565-33	JB46565-34	JB46565-35	JB46565-51
Date Sampled:						9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.1 NJ-	<2.3 NJ-	<2.3 NJ-	<2.2 NJ-	<2.1 NJ-	<2.1 NJ-	<2.4 NJ-	<2.1 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	472	535	215	146	78.5	24	47.9	26.6
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	8.4	9	9.4	9.4	22.8	19.2	21	33.2
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.0
Vanadium	7440-62-2	mg/kg	1,100	390*	-	15.4	21.3	52.8	71.1	39.4	33.5	32.3	27
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	9.2 NJ- / <b>29.2 NJ-</b>	12.6 NJ- / <b>26 NJ-</b>	7.2 NJ- / 4.7 NJ-	2.8 NJ- / 6 NJ-	2 NJ- / 1.1 NJ-	0.51 NJ- / 0.49 NJ-	<0.49 / <0.42	<0.42
Redox Potential Vs H2	-	mV	-	-	-	187	145	140	122	203	203	217	211
pH	-	su	-	-	-	10.24	10.81	10.35	10	7.98	8.28	7.83	9.03

**Analytical Data Qualifiers:**

< The analyte was not detected at the stated reporting limit.

J The reported result is an estimated value.

EJ The reported value is estimated because of the presence of interference; indeterminate bias direction.

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**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	FD002				GD001				DUP 18
						4.5-5	5-5.5	5.5-6	6-6.5	3.5-4	4-4.5	4.5-5	5-5.5	5-5.5
Sample Depth (ft bgs):						2-2.5	1.5-2	1-1.5	0.5-1	3-3.5	2.5-3	2-2.5	1.5-2	1.5-2
Sample Elevation (ft):						Excavated				Excavated	Excavated	Excavated		
Excavated:														
Client Sample ID:						FD002 4.5-5	FD002 5-5.5	FD002 5.5-6	FD002 6-6.5	GD001 3.5-4	GD001 4-4.5	GD001 4.5-5	GD001 5-5.5	DUP 18
Lab Sample ID:						JB46565-37	JB46565-38	JB46565-39	JB46565-40	JB46565-41	JB46565-42	JB46565-43	JB46565-44	JB46565-45
Date Sampled:						9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013	9/5/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>														
Antimony	7440-36-0	mg/kg	450	31	6	<2.2 NJ-	<2.2 NJ-	<2.3 NJ-	<2.3 NJ-	<2.0 NJ-	<2.3 NJ-	<2.0 NJ-	<2.0 NJ-	<2.0 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	175	212	196	1040	1670	273	1830	28.7	35
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	8.9	15.6	8.8	10.4	27.2	14.6	193	16.6	22.3
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.2	<1.2	<1.0	<1.2	<1.0	<1.0	<1.0
Vanadium	7440-62-2	mg/kg	1,100	390*	-	10.8	19.5	12.5	27.3	47.5	17.2	297	16.1	18.9
<b>General Chemistry</b>														
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	11	5.4	<0.45	13.4	1.2	2.8	<0.51	<0.55	<0.52
Redox Potential Vs H2	-	mV	-	-	-	173	179	265	280	268	256	183	207	202
pH	-	su	-	-	-	10.58	10.39	8.56	8.29	8.14	8.25	7.99	7.86	7.85

**Analytical Data Qualifiers:**

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J+ The result is estimated and may be biased high.

J- The result is estimated and may be biased low.

E Exceeds calibration range.

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**Notes:**

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mg/kg = milligram per kilogram

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ft = Feet North American Vertical Datum of 1988

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**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Client Sample ID:	Lab Sample ID:	Date Sampled:	Matrix:	GD002					HD001				
								CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	Excavated	Excavated	Excavated	Excavated	Excavated
								3.5-4	4-4.5	4.5-5	5-5.5	5.5-6	6-6.5	6.5-7	6.5-7	7-7.5	
								3-3.5	2.5-3	2-2.5	1.5-2	1-1.5	0.5-1	0-0.5	0-0.5	(-0.5-0)	
								Excavated				Excavated					
								GD002 3.5-4	GD002 4-4.5	GD002 4.5-5	GD002 5-5.5	HD001 5.5-6	HD001 6-6.5	HD001 6.5-7	DUP 9	HD001 7-7.5	
								JB45810-32	JB45810-33	JB45810-18	JB45810-19	JB45810-1	JB45810-2	JB45810-3	JB45810-13	JB45810-4	
								8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	
								Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	
<b>Metals Analysis</b>																	
Antimony	7440-36-0	mg/kg	450	31	6	<2.3	<2.4	<2.3	<2.2	<1.9 NJ-	<2.3	<2.3	<2.1 NJ-	<2.3 NJ-			
Chromium	7440-47-3	mg/kg	120,000	-	-	48.5 *J	10.9 *J	57.6 *J	60.2 *J	34.7	7.1	8.4	15.1 J	6.6			
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	10 NJ-	10.4 NJ-	12.3 NJ-	8.1 NJ-	18.9	5.7	7	14.5	7			
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.2	<1.1	<1.1	<0.97	<1.2	<1.2	<1.0	<1.1			
Vanadium	7440-62-2	mg/kg	1,100	390*	-	16.9 NJ-	10.1 NJ-	27.9 NJ-	17.9 NJ-	16.2	9.1	13.8	18.7	7.6			
<b>General Chemistry</b>																	
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	1.2 NJ- / 1.8 NJ-	<0.47 NJ- / <0.47 NJ-	1.1 *J	0.91 *J	<0.52	<0.47	<0.50	<0.51	<0.48			
Redox Potential Vs H2	-	mV	-	-	-	194	233	113	204	163	215	343	265	249			
pH	-	su	-	-	-	9.41	8.32	9.25	8.87	8.22	8.24	8.32	8.16	8.32			

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**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	HD002				ID001				DUP 8
						4-4.5	4.5-5	5-5.5	5.5-6	4.5-5	5-5.5	5.5-6	6-6.5	6-6.5
Sample Depth (ft bgs):														
Sample Elevation (ft):						2.5-3	2-2.5	1.5-2	1-1.5	2-2.5	1.5-2	1-1.5	0.5-1	0.5-1
Excavated:						Excavated	Excavated	Excavated		Excavated				
Client Sample ID:						HD002 4-4.5	HD002 4.5-5	HD002 5-5.5	HD002 5.5-6	ID001 4.5-5	ID001 5-5.5	ID001 5.5-6	ID001 6-6.5	DUP 8
Lab Sample ID:						JB46565-46	JB46565-47	JB46565-48	JB46565-49	JB45810-28	JB45810-29	JB45810-30	JB45810-31	JB45810-17
Date Sampled:						9/5/2013	9/5/2013	9/5/2013	9/5/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013
Matrix:						Soil	Soil	Soil	Soil	Solid	Solid	Solid	Solid	Solid
<b>Metals Analysis</b>														
Antimony	7440-36-0	mg/kg	450	31	6	<2.0 NJ-	<2.4 NJ-	<2.5 NJ-	<2.4 NJ-	<2.0	<2.0	<2.0	<2.4	<2.5
Chromium	7440-47-3	mg/kg	120,000	-	-	40.4	183	333	433	523 *J	21.7 *J	32.2 *J	7.4 *J	9 *J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	27.6	15.8	34	38.2	54.2 NJ-	12.8 NJ-	20.7 NJ-	6.1 NJ-	7.1 NJ-
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.0	<1.2	<1.3	<1.2	<0.99	<1.0	<0.99	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	36.8	17.6	47.1	46.9	76.9 NJ-	12.3 NJ-	22.3 NJ-	8.2 NJ-	9.1 NJ-
<b>General Chemistry</b>														
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	12.9	3.8	0.65	<0.48	<0.60 NJ- / 1.1 NJ***	<0.53 NJ- / <0.53 NJ-	<0.58 NJ- / 0.79 NJ-	<0.49 NJ- / <0.49 NJ-	<0.50 *J
Redox Potential Vs H2	-	mV	-	-	-	167	186	219	214	79.7	93.5	140	240	308
pH	-	su	-	-	-	8.43	8.38	8.2	8.17	8.97	8.18	7.79	8.27	8.2

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**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	ID002				DUP 7
						3.5-4 Excavated	4-4.5 Excavated	4.5-5 Excavated	5-5.5 Excavated	5-5.5 Excavated
Client Sample ID:						ID002 3.5-4	ID002 4-4.5	ID002 4.5-5	ID002 5-5.5	DUP 7
Lab Sample ID:						JB45740-7	JB45740-8	JB45740-9	JB45740-10	JB45740-37
Date Sampled:						8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013
Matrix:						Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>										
Antimony	7440-36-0	mg/kg	450	31	6	<2.2 NJ-	<2.2 NJ-	2.4 NJ-	<2.3 NJ-	<2.5 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	12.2	20.3	1020	410 J	80.2 J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	8.9	10.1	8.3	9	11.1
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.2	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	10.8	11.3	13.2	15.8 J	9.1 J
<b>General Chemistry</b>										
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<0.44 NJ- / <0.44 NJ-	1 NJ- / 1.1 NJ-	1.1 NJ- / 1.3 NJ-	<0.48 NJ- / 5.2 NJ-	<0.48 NJ- / 1.7 NJ-
Redox Potential Vs H2	-	mV	-	-	-	271	276	269	300	292
pH	-	su	-	-	-	8.56	8.39	7.94	8.01	8.11

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PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
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Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	JD001				DUP 6
						5-5.5 Excavated	5.5-6 Excavated	6-6.5 Excavated	6.5-7 Excavated	6.5-7 Excavated
Client Sample ID:						1.5-2	1-1.5	0.5-1	0-0.5	0-0.5
Lab Sample ID:						JD001 5-5.5	JD001 5.5-6	JD001 6-6.5	JD001 6.5-7	DUP 6
Date Sampled:						8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013
Matrix:						Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>										
Antimony	7440-36-0	mg/kg	450	31	6	6 NJ-	<1.5 NJ-	<2.5 NJ-	<2.4 NJ-	<2.3 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	1930	113	15.5	11	11.2
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	61.7	13	9.3	7.7	9.4
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.6	<0.75	<1.3	<1.2	<1.1
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	135	19.3	10.6	9.9	10.9
<b>General Chemistry</b>										
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<0.63 NJ- / <0.63 NJ-	<0.47 NJ- / 1.9 NJ-	<0.49 NJ- / <0.49 NJ-	<0.48 NJ- / <0.48 NJ-	<0.47 NJ- / <0.47 NJ-
Redox Potential Vs H2	-	mV	-	-	-	154	223	208	239	286
pH	-	su	-	-	-	7.65	8.1	8.37	8.58	8.57

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PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:						JD002					DUP 5
Sample Depth (ft bgs):						5-5.5	5-5.5	5.5-6	6-6.5	6.5-7	6.5-7
Sample Elevation (ft):						1.5-2	1.5-2	1-1.5	0.5-1	0-0.5	0-0.5
Excavated:			NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	Excavated	Excavated	Excavated			
Client Sample ID:	CAS #	Units				JD002 5-5.5	JD002 5-5.5	JD002 5.5-6	JD002 6-6.5	JD002 6.5-7	DUP 5
Lab Sample ID:						JB45740-17	JB45740-17T	JB45740-18	JB45740-19	JB45740-20	JB45740-35
Date Sampled:						8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>											
Antimony	7440-36-0	mg/kg	450	31	6	<2.4 NJ-	----	<2.0 NJ-	<2.4 NJ-	<2.4 NJ-	<2.5 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	23.5	----	9.3	24.3	11.6	10.4
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	10.6	----	7.6	10.7	9	8.5
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.2	----	<1.0	<1.2	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	12.9	----	9.2	13.4	11.2	10.1
<b>General Chemistry</b>											
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<0.47 NJ- / <0.47 NJ-	<0.47 NJ- / <0.51 NJ-	<0.51 NJ- / <0.51 NJ-	0.63 NJ- / <0.49 NJ-	<0.48 NJ- / <0.48 NJ-***	<0.48 NJ- / <0.48 NJ-
Redox Potential Vs H2	-	mV	-	-	-	138	----	176	215	279	291
pH	-	su	-	-	-	8.08	----	8.12	8.07	8.38	8.5

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						5-5.5	5.5-6	6-6.5	6.5-7	6.5-7
Client Sample ID: Lab Sample ID: Date Sampled: Matrix:						Excavated	Excavated	Excavated	Excavated	Excavated
						JD003 5-5.5	JD003 5.5-6	JD003 6-6.5	JD003 6.5-7	DUP 3
						JB45740-29	JB45740-30	JB45740-11	JB45740-12	JB45740-33
						8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013
						Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>										
Antimony	7440-36-0	mg/kg	450	31	6	<2.2 NJ-	<2.3 NJ-	<2.5 NJ-	<2.4 NJ-	<2.3 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	1210	556	137	58.7	584 J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	5.9	5.9	21.2	12	8.7
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.2	<1.2	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	18.6	11.5	24	15.7	15.9
<b>General Chemistry</b>										
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	9.9 NJ- / 9.3 NJ-	13.7 NJ- / <b>26.3 NJ-</b>	14.4 NJ- / 9.5 NJ-	10.1 NJ- / 11.8 NJ-***	13 NJ- / <b>20.8 NJ-</b>
Redox Potential Vs H2	-	mV	-	-	-	175	203	230	269	272
pH	-	su	-	-	-	10.55	10.44	10.11	9.05	9.01

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						2.5-3	3-3.5	3.5-4	4-4.5	4-4.5	4.5-5	5-5.5	5.5-6	6-6.5
Sample Depth (ft bgs):						2.5-3	3-3.5	3.5-4	4-4.5	4-4.5	4.5-5	5-5.5	5.5-6	6-6.5
Sample Elevation (ft):						4.2-4.7	3.7-4.2	3.2-3.7	2.7-3.2	2.7-3.2	2.2-2.7	1.7-2.2	1.2-1.7	0.7-1.2
Excavated:						Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated		
Client Sample ID:						JD004 2.5-3	JD004 3-3.5	JD004 3.5-4	JD004 4-4.5	DUP 4	JD005 4.5-5	JD005 5-5.5	JD005 5.5-6	JD005 6-6.5
Lab Sample ID:						JB45740-13	JB45740-14	JB45740-15	JB45740-16	JB45740-34	JB45364-21	JB45364-22	JB45364-23	JB45364-24
Date Sampled:						8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>														
Antimony	7440-36-0	mg/kg	450	31	6	2.3 NJ-	<2.2 NJ-	<2.5 NJ-	<2.3 NJ-	<2.2 NJ-	<2.4	<2.3	<2.2	<2.3
Chromium	7440-47-3	mg/kg	120,000	-	-	886	259	19.6	47.2 J	189 J	961	18.7	47.3	8.6
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	66.5	11.9	14.4	16.9 J	9.7 J	11.2	6.5	7.2	7.9
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.2	<1.2	<1.1	<1.2	<1.2	<1.1	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	93.3	24.7	10.5	18.3	18.6	16.3	7.5	9.7	9.1
<b>General Chemistry</b>														
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	1 NJ- / 1.8 NJ-	1.5 NJ- / 2.1 NJ-	<0.47 NJ- / <0.47 NJ-	1.7 NJ- / 7.7 NJ-	7.6 NJ- / 13.7 NJ-	19 *NJ- / 33.9 NJ+***	<0.46 *NJ- / 1.1 NJ+	0.66 *NJ- / 2 NJ+	<0.48 *NJ- / <0.48 N
Redox Potential Vs H2	-	mV	-	-	-	316	263	233	220	283	334	324	292	297
pH	-	su	-	-	-	8.19	8.04	8.11	8.85	8.59	8.16	8.77	8.68	8.68

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---- = Not Analyzed

- Not Available

**Result or Detection limit exceeded criteria**

Table 4F  
 Design Borings (2013)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	JD006			
						3-3.5	3.5-4	4-4.5	4.5-5
Client Sample ID:						Excavated	Excavated	Excavated	Excavated
Lab Sample ID:						JD006 3-3.5	JD006 3.5-4	JD006 4-4.5	JD006 4.5-5
Date Sampled:						8/21/2013	8/21/2013	8/21/2013	8/21/2013
Matrix:						Soil	Soil	Soil	Soil
<b>Metals Analysis</b>									
Antimony	7440-36-0	mg/kg	450	31	6	<3.1 NJ-	<2.4 NJ-	<2.4 NJ-	<2.3 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	3860	77.1	106	606
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	324	9.9	8.7	12.5
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.5	<1.2	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	297	22.9	17.6	24
<b>General Chemistry</b>									
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<0.59 *J	1.6 *J	2.2 *J	18.9 *J
Redox Potential Vs H2	-	mV	-	-	-	260	243	255	229
pH	-	su	-	-	-	7.52	8.67	8.69	8.45

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**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	JD007				DUP 2	KD001			
						2.5-3	3-3.5	3.5-4	4-4.5	4-4.5	5-5.5	5.5-6	6-6.5	6.5-7
Sample Depth (ft bgs):						5.8-6.3	5.3-5.8	4.8-5.3	4.3-4.8	4.3-4.8	1.5-2	1-1.5	0.5-1	0-0.5
Sample Elevation (ft):						Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated
Excavated:						Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated
Client Sample ID:						JD007 2.5-3	JD007 3-3.5	JD007 3.5-4	JD007 4-4.5	DUP 2	KD001 5-5.5	KD001 5.5-6	KD001 6-6.5	KD001 6.5-7
Lab Sample ID:						JB45740-21	JB45740-22	JB45740-23	JB45740-24	JB45740-32	JB45631-29	JB45631-30	JB45631-31	JB45631-32
Date Sampled:						8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>														
Antimony	7440-36-0	mg/kg	450	31	6	<2.1 NJ-	<2.2 NJ-	<2.4 NJ-	<2.2 NJ-	<2.2 NJ-	<2.4	<2.4	<2.4	<2.4
Chromium	7440-47-3	mg/kg	120,000	-	-	24.1	20.7	30.9	46.8	47.2	388	296	274	133
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	5.6	7.7	12.1	8.3	10	6.2	8.9	9.1	8.1
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.0	<1.1	<1.2	<1.1	<1.1	<1.2	<1.2	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390*	-	7.5	8.7	16.7	12.8	14.4	10.4	11.7	19.7	12.4
<b>General Chemistry</b>														
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	3.6 NJ- / 4.2 NJ-	1.9 NJ- / 2.5 NJ-	1.5 NJ- / 2 NJ-	2 NJ- / 4.4 NJ-	1.3 NJ- / 2.9 NJ-	9.9 NJ- / 13.3 NJ-	4.6 NJ- / 6.9 NJ-	5 NJ- / 2.9 NJ-	1.2 NJ- / 3.1 NJ-
Redox Potential Vs H2	-	mV	-	-	-	303	332	347	342	304	261	268	279	265
pH	-	su	-	-	-	9.21	8.97	8.85	8.64	8.7	8.4	8.24	8.41	8.38

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**Result or Detection limit exceeded criteria**

Table 4F  
 Design Borings (2013)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2013 Sampled by CB&I

Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	KD002				KD003			
						4.5-5	5-5.5	5.5-6	6-6.5	4.5-5	5-5.5	5.5-6	6-6.5
Sample Depth (ft bgs):						2-2.5	1.5-2	1-1.5	0.5-1	2-2.5	1.5-2	1-1.5	0.5-1
Sample Elevation (ft):						Excavated	Excavated			Excavated			
Excavated:													
Client Sample ID:						KD002 4.5-5	KD002 5-5.5	KD002 5.5-6	KD002 6-6.5	KD003 4.5-5	KD003 5-5.5	KD003 5.5-6	KD003 6-6.5
Lab Sample ID:						JB45364-9	JB45364-10	JB45364-11	JB45364-12	JB45364-17	JB45364-18	JB45364-19	JB45364-20
Date Sampled:						8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.3	<2.3	<2.3	<2.4	<2.3	<2.4	<2.0	<2.5
Chromium	7440-47-3	mg/kg	120,000	-	-	261	241	39.8	11.3	93.3	112	166	10.3
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	9.4	6.5	6.4	9.3	9.5	6.3	9.8	9.5
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.2	<1.2	<1.1	<1.2	<0.98	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390*	-	11.2	7.6	9.8	10.1	27.3	40.2	46.9	11.5
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	7.6 *J	4.7 *J	<0.48 *J	<0.48 *J	3.8 *J	3.8 *J	<0.51 *NJ- / 2.1 NJ+	<0.49 *NJ- / <0.49 N
Redox Potential Vs H2	-	mV	-	-	-	254	344	335	340	319	212	255	335
pH	-	su	-	-	-	8.73	8.49	8.44	8.46	8.35	8.74	8.53	8.63

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Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated: Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	KD004				KD005			
						4-4.5 Excavated	4.5-5 Excavated	5-5.5	5.5-6	4.5-5 Excavated	5-5.5	5.5-6	6-6.5
						2.5-3	2-2.5	1.5-2	1-1.5	2.1-2.6	1.6-2.1	1.1-1.6	0.6-1.1
						KD004 4-4.5	KD004 4.5-5	KD004 5-5.5	KD004 5.5-6	KD005 4.5-5	KD005 5-5.5	KD005 5.5-6	KD005 6-6.5
						JB45364-13	JB45364-14	JB45364-15	JB45364-16	JB45364-41	JB45364-42	JB45364-43	JB45364-44
						8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013
						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.3	<2.3	<2.4	<2.3	<2.3 NJ-	<2.4 NJ-	<2.0 NJ-	<1.9 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	237	760	102	17.4	727 ENJ-	324 ENJ-	512 ENJ-	41.2 ENJ-
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	11.8	8.7	7	9.3	11.9	6.2	14.4	8.9
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.2	<1.1	<1.2	<1.2	<1.0	<0.97
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	30.5	11.4	10.8	12.7	68.4 EJ	23.5 EJ	29.2 EJ	20 EJ
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	5.2 *J	9.2 *J	3.3 *J	2 *J	7.6 *NJ- / 20.1 NJ+	10.1 *NJ- / 11.4 NJ+	16.5 *NJ- / 18.7 NJ+	0.59 *NJ- / <0.52 N
Redox Potential Vs H2	-	mV	-	-	-	338	319	327	325	224	282	282	279
pH	-	su	-	-	-	8.6	8.56	8.78	8.75	8.48	8.47	8.97	8.46

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PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated: Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	KD006				KD007			
						5-5.5 1.6-2.1 Excavated KD006 5-5.5 JB45364-45 8/20/2013 Soil	5.5-6 1.1-1.6 KD006 5.5-6 JB45364-46 8/20/2013 Soil	6-6.5 0.6-1.1 KD006 6-6.5 JB45364-47 8/20/2013 Soil	6.5-7 0.1-0.6 KD006 6.5-7 JB45364-48 8/20/2013 Soil	4.5-5 2.6-3.1 KD007 4.5-5 JB45364-1 8/21/2013 Soil	5-5.5 2.1-2.6 KD007 5-5.5 JB45364-2 8/21/2013 Soil	5.5-6 1.6-2.1 KD007 5.5-6 JB45364-3 8/21/2013 Soil	6-6.5 1.1-1.6 KD007 6-6.5 JB45364-4 8/21/2013 Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.2 NJ-	<2.1 NJ-	<2.1 NJ-	<2.2 NJ-	<2.2 NJ-	<2.3 NJ-	<2.3 NJ-	<2.5 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	95.2 ENJ-	148 ENJ-	215 ENJ-	145 ENJ-	458	121	188	146
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	7.2	6.9	8.2	8.1	5.9	6.8	7	9.2
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.0	<1.1	<1.1	<1.2	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390*	-	13.8 EJ	14.5 EJ	10.1 EJ	11.5 EJ	27.2	15	12.4	10.9
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	6.2 *NJ- / 5.6 NJ+	7.4 *NJ- / 6 NJ+	4.8 *NJ- / 7.1 NJ+	3.2 *NJ- / 6.5 NJ+	7 *J	3.3 *J	3.1 *J	3.6 *J
Redox Potential Vs H2	-	mV	-	-	-	288	29.5	299	295	336	275	285	288
pH	-	su	-	-	-	8.81	8.63	8.55	8.65	8.84	8.46	8.59	8.57

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 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2013 Sampled by CB&I

Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	KD008				KD009			
						4.5-5	5-5.5	5.5-6	6-6.5	4-4.5	4.5-5	5-5.5	5.5-6
Sample Depth (ft bgs):						2.7-3.2	2.2-2.7	1.7-2.2	1.2-1.7	3.5-4	3-3.5	2.5-3	2-2.5
Sample Elevation (ft):						Excavated	Excavated	Excavated	Excavated				
Excavated:						Excavated	Excavated	Excavated	Excavated				
Client Sample ID:						KD008 4.5-5	KD008 5-5.5	KD008 5.5-6	KD008 6-6.5	KD009 4-4.5	KD009 4.5-5	KD009 5-5.5	KD009 5.5-6
Lab Sample ID:						JB45631-25	JB45631-26	JB45631-27	JB45631-28	JB45631-5	JB45631-6	JB45631-7	JB45631-8
Date Sampled:						8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.1	<2.0	<2.4	<2.2	<2.1 NJ-	<2.3 NJ-	<2.3 NJ-	<2.3 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	16.3	324	447	385	11.3	35.5	303	178
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	8.8	9.2	12.4	7.8	8.2	7.4	10.4	7.8
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.0	<1.2	<1.1	<1.1	<1.2	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	12.4	22.9	25.9	14.1	9.8	11.3	15.2	16.3
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	1.9 NJ- / 0.61 NJ-	27 NJ- / 36.5 NJ-	20.4 NJ- / 21.5 NJ-	21.7 NJ- / 23.1 NJ-	0.63 NJ- / 0.69	2.4 NJ- / 3.4	4.1 / 10.5***	2.3 NJ- / 2.9
Redox Potential Vs H2	-	mV	-	-	-	277	320	318	311	342	348	338	329
pH	-	su	-	-	-	8.84	8.29	8.39	8.63	8.99	8.57	8.68	8.7

**Analytical Data Qualifiers:**

- < The analyte was not detected at the stated reporting limit.
- J The reported result is an estimated value.
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- N The matrix spike sample recovery in the associated QC sample is not within QC limits.
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**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated: Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	KD010				KD011			
						4-4.5	4.5-5	5-5.5	5.5-6	3.5-4	4-4.5	4.5-5	5-5.5
						3.5-4	3-3.5	2.5-3	2-2.5	4.1-4.6	3.6-4.1	3.1-3.6	2.6-3.1
						KD010 4-4.5	KD010 4.5-5	KD010 5-5.5	KD010 5.5-6	KD011 3.5-4	KD011 4-4.5	KD011 4.5-5	KD011 5-5.5
						JB45631-9	JB45631-10	JB45631-11	JB45631-12	JB45224-29	JB45224-30	JB45224-31	JB45224-32
						8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013
						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.1 NJ-	<2.2 NJ-	<2.3 NJ-	<2.3 NJ-	<2.1 NJ-	<2.4 NJ-	<2.3 NJ-	<2.4 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	9.7	15.7	154	171	11.7 EJ	14.8 EJ	21.6 EJ	105 EJ
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	7.1	6.7	9.9	8	17.1	7.9	9.1	8.8
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.0	<1.1	<1.2	<1.2	<1.1	<1.2	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390*	-	10.8	12.3	16.3	13	9.4	9.3	12.8	13.2
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.72 NJ- / 0.52	0.7 NJ- / 0.67	2 NJ- / 5.6	3.5 NJ- / 5.6	<0.43	0.52	0.74	5.7
Redox Potential Vs H2	-	mV	-	-	-	337	331	337	328	251	315	324	324
pH	-	su	-	-	-	8.84	8.7	8.48	8.58	8.85	8.75	8.83	8.42

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Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	KD012				KD013			
						3.5-4 4.2-4.7 Excavated	4-4.5 3.7-4.2	4.5-5 3.2-3.7	5-5.5 2.7-3.2	2-2.5 7.4-7.9 Excavated	2.5-3 6.9-7.4 Excavated	3-3.5 6.4-6.9 Excavated	3.5-4 5.9-6.4 Excavated
Client Sample ID:						KD012 3.5-4	KD012 4-4.5	KD012 4.5-5	KD012 5-5.5	KD013 2-2.5	KD013 2.5-3	KD013 3-3.5	KD013 3.5-4
Lab Sample ID:						JB45224-13	JB45224-14	JB45224-15	JB45224-16	JB45447-1	JB45447-2	JB45447-3	JB45447-4
Date Sampled:						8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.2	<2.1	<2.3	<2.3	<2.1 NJ-	<2.1 NJ-	<2.3 NJ-	<2.3 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	13.9	13.6	12.8	112	10.5	13.8	23.4	23.2
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	8.3	7	6.2	9.9	7.1	7.4	10.6	9.1
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.2	<1.2	<1.0	<1.1	<1.1	<1.1
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	13.7	11.1	10.1	24	14.9	14.9	15.1	17.1
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<0.44	0.67	0.78	2.7	1.3 NJ-	0.56 NJ-	0.98 NJ-	0.46 NJ-
Redox Potential Vs H2	-	mV	-	-	-	338	352	355	351	412	408	423	428
pH	-	su	-	-	-	8.96	8.83	8.87	8.42	9.12	9	8.5	8.42

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Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Client Sample ID:	Lab Sample ID:	Date Sampled:	Matrix:	KD014				KD015				DUP 10
								2-2.5	2.5-3	3-3.5	3.5-4	2-2.5	2.5-3	3-3.5	3.5-4	3.5-4
								6.5-7	6-6.5	5.5-6	5-5.5	6.5-7	6-6.5	5.5-6	5-5.5	5-5.5
								Excavated	Excavated	Excavated		Excavated	Excavated	Excavated	Excavated	Excavated
	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)			KD014 2-2.5	KD014 2.5-3	KD014 3-3.5	KD014 3.5-4	KD015 2-2.5	KD015 2.5-3	KD015 3-3.5	KD015 3.5-4	DUP 10
								JB45631-13	JB45631-14	JB45631-15	JB45631-16	JB45810-5	JB45810-6	JB45810-7	JB45810-8	JB45810-14
								8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013
								Soil	Soil	Soil	Soil	Solid	Solid	Solid	Solid	Solid
<b>Metals Analysis</b>																
Antimony	7440-36-0	mg/kg	450	31	6	<2.1 NJ-	<2.0 NJ-	<2.1 NJ-	<2.2 NJ-	<2.1 NJ-	<2.1 NJ-	<2.2 NJ-	<2.3 NJ-	<2.3 NJ-	<2.3 NJ-	<2.3 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	168	16.8	16.1	19.5	24.3	23.7	32.9	50.4	48.1	48.1	48.1
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	23.9	8.4	8.9	9.1	6.7	7.6	7.5	9.2	8.5	8.5	8.5
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.0	<1.0	<1.0	<1.1	<1.0	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	32	14.6	10.6	10.6	12.8	9	8.8	10	9.3	9.3	9.3
<b>General Chemistry</b>																
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	6 NJ- / 3.6	0.6 NJ- / 0.77	0.51 NJ- / 0.48	1.3 NJ- / 0.58	2.1	3.6	4.2	6.5	5.8	5.8	5.8
Redox Potential Vs H2	-	mV	-	-	-	366	388	373	372	311	314	328	343	301	301	301
pH	-	su	-	-	-	8.3	8.56	8.54	8.66	8.95	9.09	8.99	8.84	8.84	8.84	8.84

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**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	KD016				DUP 11	KD017			
						2.5-3	3-3.5	3.5-4	4-4.5	4-4.5	3-3.5	3.5-4	4-4.5	4.5-5
Sample Depth (ft bgs):														
Sample Elevation (ft):						6.5-7	6-6.5	5.5-6	5-5.5	5-5.5	6.4-6.9	5.9-6.4	5.4-5.9	4.9-5.4
Excavated:						Excavated					Excavated	Excavated		
Client Sample ID:						KD016 2.5-3	KD016 3-3.5	KD016 3.5-4	KD016 4-4.5	DUP 11	KD017 3-3.5	KD017 3.5-4	KD017 4-4.5	KD017 4.5-5
Lab Sample ID:						JB45810-9	JB45810-10	JB45810-11	JB45810-12	JB45810-15	JB45810-20	JB45810-21	JB45810-22	JB45810-23
Date Sampled:						8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013
Matrix:						Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid
<b>Metals Analysis</b>														
Antimony	7440-36-0	mg/kg	450	31	6	<2.2 NJ-	<2.2 NJ-	<2.3 NJ-	<2.3 NJ-	<2.2 NJ-	<2.1	<2.3 NJ-	<2.2	<2.4
Chromium	7440-47-3	mg/kg	120,000	-	-	18.5	19.3	25.3	89.5 J	5.9 J	19.2 *J	19.7 *J	30 *J	204 *J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	8.8	9.3	8.5	7.5	<4.5	8.7 NJ-	9.7 NJ-	7.9 NJ-	7.6 NJ-
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.1	<1.1	<1.1	<1.0	<1.2	<1.1	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390*	-	8.5	9.4	9.5	9.7	15.3	10.8 NJ-	12.9 NJ-	17.5 NJ-	22 NJ-
<b>General Chemistry</b>														
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.77	0.85	1.2	3.7	3.6 *J	2 *J	2.2 *J	1.3 *J	6.7 *J
Redox Potential Vs H2	-	mV	-	-	-	354	273	292	309	322	269	270	295	312
pH	-	su	-	-	-	8.71	8.66	8.67	8.53	8.31	8.62	9.35	9.12	9.04

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PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
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Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	KD018				DUP 13	KD019			
						3.5-4	4-4.5	4.5-5	5-5.5	5-5.5	3-3.5	3.5-4	4-4.5	4.5-5
Sample Depth (ft bgs):						3.5-4	4-4.5	4.5-5	5-5.5	5-5.5	3-3.5	3.5-4	4-4.5	4.5-5
Sample Elevation (ft):						5-5.5	4.5-5	4-4.5	3.5-4	3.5-4	5.5-6	5-5.5	4.5-5	4-4.5
Excavated:						Excavated	Excavated				Excavated			
Client Sample ID:						KD018 3.5-4	KD018 4-4.5	KD018 4.5-5	KD018 5-5.5	DUP13	KD019 3-3.5	KD019 3.5-4	KD019 4-4.5	KD019 4.5-5
Lab Sample ID:						JB46565-1	JB46565-2	JB46565-3	JB46565-4	JB46565-5	JB45810-34	JB45810-35	JB45810-36	JB45810-37
Date Sampled:						9/4/2013	9/4/2013	9/4/2013	9/4/2013	9/4/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Solid	Solid	Solid	Solid
<b>Metals Analysis</b>														
Antimony	7440-36-0	mg/kg	450	31	6	<2.1 NJ-	<2.3 NJ-	<2.2 NJ-	<2.4 NJ-	<2.3 NJ-	<2.3	<2.2	<2.3	<2.5
Chromium	7440-47-3	mg/kg	120,000	-	-	44.6 NJ+	38.2 NJ+	75.2 NJ+	187 NJ+	175 NJ+	53.8 *J	90.9 *J	82.5 *J	259 *J
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	14.4	8.9	7.7	8	7.9	7.7 NJ-	9.3 NJ-	8.7 NJ-	7.1 NJ-
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.2	<1.1	<1.2	<1.2	<1.1	<1.1	<1.1	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	19.9	17.8	10.7	8.9	9.4	19 NJ-	11.4 NJ-	24.6 NJ-	17.9 NJ-
<b>General Chemistry</b>														
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	1.2	1.4	2.7	6.1	5.6	2.5 NJ- / 2.9 NJ-	5 NJ- / 5.9 NJ-	3.7 NJ- / 7 NJ-	9 NJ- / 16.8 NJ-
Redox Potential Vs H2	-	mV	-	-	-	304	189	212	236	252	265	281	293	357
pH	-	su	-	-	-	9.34	9.27	9.22	8.56	8.58	9.37	9.59	9.15	8.37

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2013 Sampled by CB&I

Client Sample ID:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	KD020				LD001			
						3-3.5	3.5-4	4-4.5	4.5-5	5-5.5	5.5-6	6-6.5	6.5-7
Sample Depth (ft bgs):						3-3.5	3.5-4	4-4.5	4.5-5	5-5.5	5.5-6	6-6.5	6.5-7
Sample Elevation (ft):						5.5-6	5-5.5	4.5-5	4-4.5	2.3-2.8	1.8-2.3	1.3-1.8	0.8-1.3
Excavated:						Excavated				Excavated			
Client Sample ID:						KD020 3-3.5	KD020 3.5-4	KD020 4-4.5	KD020 4.5-5	LD001 5-5.5	LD001 5.5-6	LD001 6-6.5	LD001 6.5-7
Lab Sample ID:						JB46565-6	JB46565-7	JB46565-8	JB46565-9	JB45631-34	JB45631-35	JB45631-36	JB45631-37
Date Sampled:						9/4/2013	9/4/2013	9/4/2013	9/4/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.2 NJ-	<2.4 NJ-	<2.4 NJ-	<2.2 NJ-	<2.4	<2.0	<2.3	<2.5
Chromium	7440-47-3	mg/kg	120,000	-	-	436 NJ+	446 NJ+	150 NJ+	145 NJ+	7.3	41.2	71	10.1
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	9.7	12.2	8.7	5.9	6.4	32.3	10.3	9.4
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.2	<1.2	<1.1	<1.2	<0.98	<1.1	<1.3
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	13.4	18.1	11.6	6.4	6.5	43.2	17.1	10.5
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	9.5	9.4	2.5	6.2	<0.48 NJ- / <0.48 NJ-	<0.61 NJ- / <0.61 NJ-	<0.47 NJ- / <0.47 NJ-***	<0.49 NJ- / <0.49 NJ-
Redox Potential Vs H2	-	mV	-	-	-	216	230	234	242	304	253	264	260
pH	-	su	-	-	-	9.35	9.14	8.99	8.87	8.41	8.59	8.54	8.45

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**Result or Detection limit exceeded criteria**

Table 4F  
 Design Borings (2013)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	LD002				LD003			
						4-4.5 Excavated	4.5-5	5-5.5	5.5-6	4.5-5 Excavated	5-5.5	5.5-6	6-6.5
Client Sample ID:						2.5-3	2-2.5	1.5-2	1-1.5	2-2.5	1.5-2	1-1.5	0.5-1
Lab Sample ID:						LD002 4-4.5	LD002 4.5-5	LD002 5-5.5	LD002 5.5-6	LD003 4.5-5	LD003 5-5.5	LD003 5.5-6	LD003 6-6.5
Date Sampled:						JB45631-17	JB45631-18	JB45631-19	JB45631-20	JB45631-21	JB45631-22	JB45631-23	JB45631-24
Matrix:						8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013
						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.3 NJ-	<2.2 NJ-	<2.5 NJ-	<2.3 NJ-	<2.4	<2.5	<2.0	<2.4
Chromium	7440-47-3	mg/kg	120,000	-	-	470	1680	10.9	78.5	335	73.6	44.5	10.9
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	10.1	11.2	8.5	7.2	15.9	7.4	27.1	10.3
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.3	<1.2	<1.2	<1.2	<1.0	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	32.3	33.1	10.4	10.8	28.9	48	43.9	14.1
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	18.1 NJ- / 19.8	17.2 NJ- / 14.5	<0.48 NJ- / <0.48	5.4 NJ- / 3.4 NJ-	13 NJ- / 3.4 NJ-	3.8 NJ- / 1.6 NJ-	0.59 NJ- / <0.52 NJ-	<0.48 NJ- / <0.48 NJ-
Redox Potential Vs H2	-	mV	-	-	-	271	217	217	228	262	283	182	263
pH	-	su	-	-	-	10.23	9.96	8.8	9.07	8.95	8.73	8.79	8.8

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 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated: Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	LD004				LD005			
						4.5-5 3.3-3.8	5-5.5 2.8-3.3	5.5-6 2.3-2.8	6-6.5 1.8-2.3	4-4.5 3.5-4	4.5-5 3-3.5	5-5.5 2.5-3	5.5-6 2-2.5
						LD004 4.5-5	LD004 5-5.5	LD004 5.5-6	LD004 6-6.5	LD005 4-4.5	LD005 4.5-5	LD005 5-5.5	LD005 5.5-6
						JB45224-9	JB45224-10	JB45224-11	JB45224-12	JB45224-25	JB45224-26	JB45224-27	JB45224-28
						8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013
						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.3	<2.4	<2.4	<2.5	<2.2	<2.2	<2.3 NJ-	<2.5 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	20.8	64.9	226	265	16.4	27.4	177 EJ	297 EJ
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	7.7	9.4	10.7	8.7	7.7	8.8	7.2	9.5
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.2	<1.2	<1.3	<1.1	<1.1	<1.1	<1.3
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	9.6	10.7	15.3	12.9	12.8	12.3	12.4	11.7
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.84	1.7	4	5.5	<0.45	2	9.4	8.2
Redox Potential Vs H2	-	mV	-	-	-	369	329	336	323	344	345	332	331
pH	-	su	-	-	-	8.64	8.05	8.47	8.34	8.72	8.47	8.68	8.41

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PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated: Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	LD006				LD007			
						3.5-4 4.9-5.4	4-4.5 4.4-4.9	4.5-5 3.9-4.4	5-5.5 3.4-3.9	3.5-4 4.6-5.1	4-4.5 4.1-4.6	4.5-5 3.6-4.1	5-5.5 3.1-3.6
						LD006 3.5-4	LD006 4-4.5	LD006 4.5-5	LD006 5-5.5	LD007 3.5-4	LD007 4-4.5	LD007 4.5-5	LD007 5-5.5
						JB45224-1	JB45224-2	JB45224-3	JB45224-4	JB45224-5	JB45224-6	JB45224-7	JB45224-8
						8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013
						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.0 NJ-	<2.3 NJ-	<2.4 NJ-	<2.3 NJ-	<2.0 NJ-	<2.3 NJ-	<2.3	<2.5
Chromium	7440-47-3	mg/kg	120,000	-	-	15.8	15.1	15	27.3	13.6	13.2	10.6	62
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	7	6.8	6.5	10.4	7.3	8.6	5.8	10.9
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.0	<1.1	<1.2	<1.2	<0.98	<1.2	<1.1	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	13.3	12.9	10.9	13.6	9.7	11	7.5	20.4
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	0.66	0.66	0.7	1.5	0.76	<0.45	<0.45	2.7
Redox Potential Vs H2	-	mV	-	-	-	330	298	308	331	353	342	353	354
pH	-	su	-	-	-	8.89	8.76	8.63	8.66	9.08	8.84	8.95	8.7

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PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated: Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	LD008				LD009			
						4-4.5 3.9-4.4	4.5-5 3.4-3.9	5-5.5 2.9-3.4	5.5-6 2.4-2.9	4-4.5 4.2-4.7	4.5-5 3.7-4.2	5-5.5 3.2-3.7	5.5-6 2.7-3.2
						LD008 4-4.5	LD008 4.5-5	LD008 5-5.5	LD008 5.5-6	LD009 4-4.5	LD009 4.5-5	LD009 5-5.5	LD009 5.5-6
						JB45224-33	JB45224-34	JB45224-35	JB45224-36	JB45224-17	JB45224-18	JB45224-19	JB45224-20
						8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013
						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>													
Antimony	7440-36-0	mg/kg	450	31	6	<2.3 NJ-	<2.2 NJ-	<2.4 NJ-	<2.5 NJ-	<2.1	<2.1	<2.5	<2.3
Chromium	7440-47-3	mg/kg	120,000	-	-	9.5 EJ	40 EJ	69.6 EJ	43.2 EJ	10.3	9.9	18.1	57.5
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	8.5	13.8	9.1	17.3	7.3	7	8.2	8
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.2	<1.2	<1.0	<1.1	<1.2	<1.2
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	10.6	12.6	19.2	29.2	11	11.9	15.4	14.6
<b>General Chemistry</b>													
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<0.44	1.9	3.5	2.5	<0.43	1.1	0.74	3.9
Redox Potential Vs H2	-	mV	-	-	-	334	363	356	353	343	259	296	322
pH	-	su	-	-	-	8.88	8.7	8.67	8.93	9.18	8.96	8.77	8.59

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PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Client Sample ID:	Lab Sample ID:	Date Sampled:	Matrix:	LD010				LD011			
								4-4.5	4.5-5	5-5.5	5.5-6	3.5-4	4-4.5	4.5-5	5-5.5
								4.1-4.6	3.6-4.1	3.1-3.6	2.6-3.1	5.3-5.8	4.8-5.3	4.3-4.8	3.8-4.3
								Excavated	Excavated	Excavated	Excavated				
	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)			LD010 4-4.5	LD010 4.5-5	LD010 5-5.5	LD010 5.5-6	LD011 3.5-4	LD011 4-4.5	LD011 4.5-5	LD011 5-5.5
								JB45224-21	JB45224-22	JB45224-23	JB45224-24	JB45364-37	JB45364-38	JB45364-39	JB45364-40
								8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013
								Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>															
Antimony	7440-36-0	mg/kg	450	31	6	<2.1	2.6	<2.3	<2.3	<2.0	<2.1	<2.1	<2.1	<2.2	
Chromium	7440-47-3	mg/kg	120,000	-	-	17.2	14.2	91.4	203	11	9.8	12	20.2		
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	10.7	9.5	8.5	9.6	6.7	6.7	6.8	9.9		
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.0	<1.0	<1.2	<1.1	<1.0	<1.1	<1.1	<1.1		
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	14	10.5	19.5	18.9	9.5	9.1	8.3	10.6		
<b>General Chemistry</b>															
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<0.43	0.79	3.9	10.3	<0.42 *NJ- / <0.42 N	<0.43 *NJ- / <0.43 N	0.69 *NJ- / 0.68 NJ+	0.72 *NJ- / 0.52 NJ+		
Redox Potential Vs H2	-	mV	-	-	-	322	346	352	350	302	311	324	338		
pH	-	su	-	-	-	8.61	8.38	8.56	8.46	9.18	9.12	8.91	8.65		

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Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated: Client Sample ID: Lab Sample ID: Date Sampled: Matrix:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	LD012				DUP 1	LD013				
						5-5.5	5.5-6	6-6.5	6.5-7	6.5-7	3-3.5	3.5-4	4-4.5	4.5-5	
						3.5-4	3-3.5	2.5-3	2-2.5	2-2.5	Excavated	5.5-6	5-5.5	4.5-5	4-4.5
						LD012 5-5.5	LD012 5.5-6	LD012 6-6.5	LD012 6.5-7	DUP 1	LD013 3-3.5	LD013 3.5-4	LD013 4-4.5	LD013 4.5-5	
						JB45740-25	JB45740-26	JB45740-27	JB45740-28	JB45740-31	JB45447-5	JB45447-6	JB45447-7	JB45447-8	
						8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/26/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	
						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
<b>Metals Analysis</b>															
Antimony	7440-36-0	mg/kg	450	31	6	<2.3 NJ-	<2.4 NJ-	<2.3 NJ-	<2.3 NJ-	<2.3 NJ-	<2.0 NJ-	<2.2 NJ-	<2.3 NJ-	<2.3 NJ-	
Chromium	7440-47-3	mg/kg	120,000	-	-	132	923	382	172	221	18	11.4	14.2	20.6	
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	16.6	52.4	8.1	7.9	6.4	8.3	8.2	9	9.4	
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.2	<1.2	<1.2	<1.2	<1.2	<0.98	<1.1	<1.1	<1.2	
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	19.9	56.1	14.8	8.1	12.3	9.9	9.7	12.4	13.1	
<b>General Chemistry</b>															
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<0.46 NJ- / 2.5 NJ-	3.3 NJ- / 4.5 NJ-	5.7 NJ- / 10.9 NJ-	1.7 NJ- / 7.2 NJ-	5.1 NJ-	0.52 NJ-	<0.43 NJ-	0.48 NJ-	0.89 NJ-	
Redox Potential Vs H2	-	mV	-	-	-	337	321	3340	326	295	398	401	415	423	
pH	-	su	-	-	-	8.34	8.3	8.48	8.8	8.6	9.02	9.09	8.87	8.57	

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- J+ The result is estimated and may be biased high.
- J- The result is estimated and may be biased low.
- E Exceeds calibration range.
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**Notes:**

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- \*\*\* Sample did not pass 2nd QA & QC. See Table 2F-A for additional information.
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- mg/kg = milligram per kilogram
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- ft = Feet North American Vertical Datum of 1988
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**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Client Sample ID:	Lab Sample ID:	Date Sampled:	Matrix:	LD014				LD015				DUP 12
								3.5-4	4-4.5	4.5-5	5-5.5	3.5-4	4-4.5	4.5-5	5-5.5	5-5.5
								5.7-6.2	5.2-5.7	4.7-5.2	4.2-4.7	9.7-10.2	9.2-9.7	8.7-9.2	8.2-8.7	8.2-8.7
	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)			LD014 3.5-4	LD014 4-4.5	LD014 4.5-5	LD014 5-5.5	LD015 3.5-4	LD015 4-4.5	LD015 4.5-5	LD015 5-5.5	DUP 12
								JB45631-1	JB45631-2	JB45631-3	JB45631-4	JB45810-24	JB45810-25	JB45810-26	JB45810-27	JB45810-16
								8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013	8/27/2013
								Soil	Soil	Soil	Soil	Solid	Solid	Solid	Solid	Solid
<b>Metals Analysis</b>																
Antimony	7440-36-0	mg/kg	450	31	6	<2.1 NJ-	<2.3 NJ-	<2.2 NJ-	<2.2 NJ-	<2.0 NJ-	<2.2	2.7	<2.4	<2.6 NJ-		
Chromium	7440-47-3	mg/kg	120,000	-	-	32.8	34.2	39	90.8	18.7 *J	14.6 *J	12.2 *J	248 *J	307		
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	9.2	8.2	7.9	88.2	9 NJ-	8.7 NJ-	8.7 NJ-	7.4 NJ-	6.7		
Thallium	7440-28-0	mg/kg	NR	NR	NR	<1.1	<1.1	<1.1	<1.1	<0.99	<1.1	<1.1	<1.2	<1.3		
Vanadium	7440-62-2	mg/kg	1,100	390*	-	15.9	9.3	11.3	13.3	13.3 NJ-	15.3 NJ-	13.1 NJ-	14.9 NJ-	15.1		
<b>General Chemistry</b>																
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	1.4 NJ- / 1.6	1.6 NJ- / 2	2 NJ- / 3.9	4.5 NJ- / 4.6	2.4 *J	0.95 *J	0.59 *J	7 *J	8 *J		
Redox Potential Vs H2	-	mV	-	-	-	334	331	358	374	299	314	326	300	318		
pH	-	su	-	-	-	8.48	8.45	8.28	8.23	9.49	9.29	9.32	8.83	8.85		

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mV = millivolts

ft = Feet North American Vertical Datum of 1988

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**Result or Detection limit exceeded criteria**

Table 4F  
Design Borings (2013)  
Complete Summary Laboratory Analytical Data Including Excavated Samples  
PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
2013 Sampled by CB&I

Client Sample ID:	Sample Depth (ft bgs):	Sample Elevation (ft):	Excavated:	Client Sample ID:	Lab Sample ID:	Date Sampled:	Matrix:	LD016				LD017			
								1-1.5	1.5-2	2-2.5	2.5-3	1-1.5	1.5-2	2-2.5	2.5-3
								8.5-9	8-8.5	7.5-8	7-7.5	8.5-9	8-8.5	7.5-8	7-7.5
				NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)		Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated	Excavated
	CAS #	Units						LD016 1-1.5	LD016 1.5-2	LD016 2-2.5	LD016 2.5-3	LD017 1-1.5	LD017 1.5-2	LD017 2-2.5	LD017 2.5-3
								JB50367-1	JB50367-2	JB50367-3	JB50367-4	JB50367-9	JB50367-10	JB50367-11	JB50367-12
								10/16/2013	10/16/2013	10/16/2013	10/16/2013	10/16/2013	10/16/2013	10/16/2013	10/16/2013
								Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
<b>Metals Analysis</b>															
Antimony	7440-36-0	mg/kg	450	31	6	<0.98 NJ-	<0.97 NJ-	<0.92 NJ-	<0.93 NJ-	<0.94 NJ-	<0.86 NJ-	<0.82 NJ-	<0.92 NJ-		
Chromium	7440-47-3	mg/kg	120,000	-	-	57 EJ	22.5 EJ	21.6 EJ	19.3 EJ	12.1 EJ	11.4 EJ	10.6 EJ	10.3 EJ		
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	12.4 EJ	7.8 EJ	8 EJ	8.3 EJ	8 EJ	7.4 EJ	7 EJ	7.5 EJ		
Thallium	7440-28-0	mg/kg	NR	NR	NR	<0.49	<0.48	<0.46	<0.46	<0.47	<0.43	<0.41	<0.46		
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	17.2	10.4	12.2	13.5	10.1	8.5	8.2	7.7		
<b>General Chemistry</b>															
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	3.6	3.3	1.9	1.1	1	0.48	0.48	<0.42		
Redox Potential Vs H2	-	mV	-	-	-	258	274	265	274	318	281	296	300		
pH	-	su	-	-	-	9.35	9.27	9.24	9.11	7.97	8.47	8.5	8.25		

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**Result or Detection limit exceeded criteria**

Table 4F  
 Design Borings (2013)  
 Complete Summary Laboratory Analytical Data Including Excavated Samples  
 PPG Site 16, 45 Linden Avenue East, Jersey City, NJ  
 2013 Sampled by CB&I

Client Sample ID: Sample Depth (ft bgs): Sample Elevation (ft): Excavated:	CAS #	Units	NJ Non-Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Residential Direct Contact Soil (NJAC 7:26D 6/12)	NJ Default Impact to Groundwater Soil Screening (NJAC 7:26D 11/13)	LD018			
						2-2.5 6.9-7.4 Excavated	2.5-3 6.4-6.9 Excavated	3-3.5 5.9-6.4	3.5-4 5.4-5.9
Client Sample ID:						LD018 2-2.5	LD018 2.5-3	LD018 3-3.5	LD018 3.5-4
Lab Sample ID:						JB50367-5	JB50367-6	JB50367-7	JB50367-8
Date Sampled:						10/16/2013	10/16/2013	10/16/2013	10/16/2013
Matrix:						Soil	Soil	Soil	Soil
<b>Metals Analysis</b>									
Antimony	7440-36-0	mg/kg	450	31	6	<1.0 NJ-	<1.0 NJ-	<1.1 NJ-	<1.2 NJ-
Chromium	7440-47-3	mg/kg	120,000	-	-	95 EJ	40.3 EJ	105 EJ	21.9 EJ
Nickel	7440-02-0	mg/kg	23,000	1,600	654**	6.9 EJ	8.1 EJ	10.3 EJ	7.3 EJ
Thallium	7440-28-0	mg/kg	NR	NR	NR	<0.50	<0.50	<0.54	<0.62
Vanadium	7440-62-2	mg/kg	1,100	390 <sup>+</sup>	-	11.5	9	11.8	10.6
<b>General Chemistry</b>									
Chromium, Hexavalent	18540-29-9	mg/kg	20	-	-	<b>52.1</b>	11.7	7.8	6.1
Redox Potential Vs H2	-	mV	-	-	-	272	280	277	305
pH	-	su	-	-	-	8.46	8.3	8.37	8.73

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**Result or Detection limit exceeded criteria**



**Table 4F-A**  
**Pre-Post Excavation**  
**Design Borings (2013)**  
**Soil Analytical**  
**Summary Table for Chromium Rerun Samples**  
**PPG Site 16,**  
**45 Linden Avenue East, Jersey City, NJ**

<b>Sample Location:</b>	<b>DD001</b>	<b>ID001</b>	<b>JD002</b>	<b>JD003</b>	<b>JD005</b>	<b>KD009</b>	<b>LD001</b>
<b>Sample Depth ft bgs:</b>	<b>6-6.5</b>	<b>4.5-5</b>	<b>6.5-7</b>	<b>6.5-7</b>	<b>4.5-5</b>	<b>5-5.5</b>	<b>6-6.5</b>
<b>Client Sample ID:</b>	<b>DD001 6-6.5</b>	<b>ID001 4.5-5</b>	<b>JD002 6.5-7</b>	<b>JD003 6.5-7</b>	<b>JD005 4.5-5</b>	<b>KD009 5-5.5</b>	<b>LD001 6-6.5</b>
<b>Lab Sample ID:</b>	<b>JB46565-18RT</b>	<b>JB45810-28RT</b>	<b>JB45740-20RT</b>	<b>JB45740-12TR</b>	<b>JB45364-21RT</b>	<b>JB45631-7RT</b>	<b>JB45631-36TU</b>
<b>Date Sampled:</b>	<b>9/4/2013</b>	<b>8/26/2013</b>	<b>8/26/2013</b>	<b>8/26/2013</b>	<b>8/21/2013</b>	<b>8/23/2013</b>	<b>8/23/2013</b>
<b>Matrix:</b>	<b>Soil</b>	<b>Solid</b>	<b>Soil</b>	<b>Soil</b>	<b>Soil</b>	<b>Soil</b>	<b>Soil</b>
Iron, Ferrous (%)	1.2 <sup>a</sup>	1.1 <sup>a</sup>	0.75 <sup>a</sup>	0.57 <sup>a</sup>	0.71 <sup>a</sup>	0.59 <sup>a</sup>	0.63 <sup>a</sup>
Sulfide Screen	NEGATIVE <sup>b</sup>	NEGATIVE <sup>b</sup>	NEGATIVE <sup>b</sup>	NEGATIVE <sup>b</sup>	NEGATIVE <sup>b</sup>	NEGATIVE <sup>b</sup>	NEGATIVE <sup>b</sup>
Total Organic Carbon (mg/Kg)	49800	17100 <sup>c</sup>	2560 <sup>c</sup>	2270	2220	393 <sup>c</sup>	30400

**Footnotes:**

<sup>a</sup> The ferrous iron test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>b</sup> The sulfide screen test was analyzed after completion of Cr6 testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on Cr6 recoveries.

<sup>c</sup> Analysis done out of holding time.

**Notes:**

ft bgs = feet below ground surface

mg/Kg = milligram per kilogram