Appendix J

Historical Data Verification Technical Memorandum

To	Rich Feinberg, PPG Jody Overmyer, PPG
CC	Mark Terril, PPG Scott Mikaelian, AECOM Aimee Ruiter, AECOM
Subject	Historical Data Review - Verification Borings Results
From	Bill Spronz
Date	February 20, 2017

Background

AECOM conducted a historical data review for the Garfield Avenue (GA) Group Sites to identify locations with visible Chromate Chemical Production Waste (CCPW) and hexavalent chromium (Cr^{+6}) concentrations in soil exceeding the New Jersey Department of Environmental Protection (NJDEP) Interim Chromium Soil Cleanup Criteria (CrSCC) of 20 milligrams per kilogram (mg/kg) that also met the following criteria:

- Had not been addressed by previous or ongoing remediation within the GA Group Sites as defined in the Master Schedule;
- Were not located in proposed soil remediation limits within the GA Group Sites;
- Were located in areas within the GA Group Sites where terminal excavation elevations (TEEs) had not yet been proposed (i.e., in areas where Pre-Design Investigation [PDI] is not yet complete); or
- Were located in off-site areas adjacent to the GA Group Sites.

Findings from this review were reported in the technical memorandum entitled *Historical Data Review – Findings Summary*, dated June 14, 2016. As part of the historical data review, boring and/or sample locations with data that met the above criteria were considered “outliers,” requiring further consideration. Four of these outliers located in off-site areas that were identified during the historical data review were further investigated as part of the Supplemental Soil Remedial Investigation (SSRI). These four outlier locations are MW7D, MW8D, 114-MW16A, and 114-MW16B (shown on **Figure I-1**).

Scope of Work

An initial verification soil boring was advanced at each outlier location directly adjacent to each soil boring or monitoring well where potential CCPW material was recorded on boring logs reviewed during the historical data review. The soil from the verification boring was visually inspected for evidence of CCPW material and soil samples were collected for laboratory analyses for Cr^{+6}, pH, reduction potential (eH), and CCPW-related metals (i.e., antimony, chromium [total], nickel, thallium, and vanadium) on a 3-day turnaround time.

Four additional verification soil borings wee advanced in a 5-foot step-out radius surrounding each of the initial verification borings and soil samples from these borings were collected for laboratory analyses and placed on hold pending the results from the initial verification boring sample results. Samples from the 5-foot radius step-out borings would only be analyzed if the following conditions were met:

- If CCPW material was visually observed in the initial verification boring or in any of 5-foot radius step-out borings; and/or

- If the analytical results for Cr^{+6} exceeded the CrSCC in any of the samples collected from the initial verification boring.

As a contingency, if CCPW was visually observed when drilling the 5-foot radius step-out borings, four additional step-out borings would be advanced in a 10-foot radius surrounding the initial verification boring and samples would be collected for Cr^{+6}, pH, Eh, and CCPW-related metals analyses. No CCPW was identified in the initial verification boring or the 5-foot radius step-out borings at any of the outlier locations. Therefore, the 10-foot radius step-out borings were not advanced.

Figure I-2 presents the verification soil boring locations in the vicinity of 114-MW16A and 114-MW16B located at 851 Garfield Avenue. **Figure I-3** presents the verification soil boring locations in the vicinity of MW7D and **Figure I-4** presents the verification soil boring locations in the vicinity of MW8D.

Soil samples collected from the initial verification boring at each outlier location were analyzed on a 3-day turnaround time to expedite decisions regarding analysis of the samples placed on hold. Soil samples were collected from a 6-inch interval within each of the soil borings as follows:

- Within the 2-foot interval above where potential CCPW was recorded in the boring log for the original outlier location;
- Within the interval where potential CCPW was recorded in the boring log for the original outlier location;
- Within the 2-foot interval below where potential CCPW was recorded in the boring log for the original outlier location; and,
- Quality assurance and quality control (QA/QC) samples included field blanks (one per day) and field duplicate samples (one per outlier location).

Results

No CCPW material was observed in any of the verification soil borings at any of the four outlier locations. **Table I-1** summarizes the physical attributes of the borings and visual observation results. **Attachment I-A** provides boring logs for the four outliers identified as part of the historical data review and the five verification borings completed at each outlier location during the SSRI.

Analytical results for the soil samples collected from the initial verification boring at each outlier location indicated that no Cr^{+6} concentrations exceeded the NJDEP CrSCC of 20 mg/kg and there were no concentrations of CCPW metals that exceeded their respective NJDEP Residential or Nonresidential Soil Remediation Standards. Therefore, none of the soil samples that were collected from the 5-foot radius step-out borings were analyzed. **Table I-2** summarizes the analytical results for the soil samples collected during this investigation. **Attachment I-B** provides the laboratory data packages and **Attachment I-C** includes the data validation reports.

Attachments

Tables
Figures
Attachment J-A: Boring Logs
Attachment J-B: Laboratory Data Packages
Attachment J-C: Data Validation Reports

Tables

Table J-1
Sample Investigation Details
Garfield Avenue Group
PPG, Jersey City, New Jersey

Boring ID	Date Completed	Total Boring Depth (ft bgs)	Easting Coordinates (ft NAD83)	Northing Coordinates (ft NAD83)	COPR Depth if encountered (ft bgs)	Green-Gray Mud Depth if Encountered (ft bgs)	Coal Tar, Ash, Oil, or other Potential Environmental issue	Comments
114-MW16AB-5E	1/24/2017	7.0	610616	683362	-	-	-	No CCPW (COPR or GGM) identified in any interval of this boring.
114-MW16AB-5N	1/24/2017	7.0	610613	683369	-	-	-	No CCPW (COPR or GGM) identified in any interval of this boring.
114-MW16AB-5S	1/24/2017	7.0	610610	683360	-	-	-	No CCPW (COPR or GGM) identified in any interval of this boring.
114-MW16AB-5W	1/24/2017	7.0	610607	683366	-	-	-	No CCPW (COPR or GGM) identified in any interval of this boring.
114-MW16AB-O	1/24/2017	7.0	610612	683364	-	-	-	No CCPW (COPR or GGM) identified in any interval of this boring.
MW7D-5E	1/25/2017	20.0	611823	682960	-	-	Slight petroleum odor	No CCPW (COPR or GGM) identified in any interval of this boring.
MW7D-5E	1/25/2017	20.0	611823	682967	-	-	Cinders, petroleum odor	No CCPW (COPR or GGM) identified in any interval of this boring.
MW7D-5S	1/25/2017	20.0	611816	682960	-	-	Cinders, petroleum odor	No CCPW (COPR or GGM) identified in any interval of this boring.
MW7D-5W	1/25/2017	20.0	611816	682967	-	-	Cinders, petroleum odor	No CCPW (COPR or GGM) identified in any interval of this boring.
MW7D-O	1/25/2017	20.0	611821	682962	-	-	Cinders, petroleum odor	No CCPW (COPR or GGM) identified in any interval of this boring.
MW8D-5E	1/26/2017	15.0	611499	682646	-	-	Ash, coal	No CCPW (COPR or GGM) identified in any interval of this boring.
MW8D-5N	1/26/2017	15.0	611499	682654	-	-	Ash, coal	No CCPW (COPR or GGM) identified in any interval of this boring.
MW8D-5S	1/26/2017	15.0	611492	682647	-	-	Ash, coal	No CCPW (COPR or GGM) identified in any interval of this boring.
MW8D-5W	1/26/2017	15.0	611492	682654	-	-	Ash, coal	No CCPW (COPR or GGM) identified in any interval of this boring.
MW8D-O	1/26/2017	15.0	611496	682649	-	-	Ash, coal	No CCPW (COPR or GGM) identified in any interval of this boring.

NOTES:
- = not encountered
CCPW = Chromate Chemical Production Waste
COPR = Chromite Ore Processing Residue
ft bgs = feet below ground surface
ft NAD83 = feet in the New Jersey State Plane North American Datum of 1983
GGM = green-gray mud

Table J-2
Analytical Results - Verification Borings
Garfield Avenue Group
PPG, Jersey City, New Jersey

						CHROMIUM (HEXAVALENT)		ANTIMONY		CHROMIUM		NICKEL		THALLIUM		VANADIUM	
Analyte						CHROMIUM (HEXAVALENT)		ANTIMONY		CHROMIUM		NICKEL		THALLIUM		VANADIUM	
CAS-RN						18540-29-9		7440-36-0		7440-47-3		7440-02-0		7440-28-0		7440-62-2	
Units						mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
RDCSRS						20*		31		120000		1600		5		390*	
NRDCSRS						20*		450				23000		79		1100	
Location	**Depth Interval**	**Sample ID**	**Lab ID**	**Date Collected**	**Sample Type**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
114-MW16AB-O	2.0 - 2.5 ft	114-MW16AB-O-2.0-2.5	JC36049-1	1/24/2017	N	2.3	J										
114-MW16AB-O	2.0 - 2.5 ft	114-MW16AB-O-2.0-2.5	JC36049-1A	1/24/2017	N			< 0.39	UJ	53.5		16.2	J	< 0.53	U	28.4	
114-MW16AB-O	4.5 - 5.0 ft	114-MW16AB-O-4.5-5.0	JC36049-2	1/24/2017	N	4.0	J										
114-MW16AB-O	4.5 - 5.0 ft	114-MW16AB-O-4.5-5.0	JC36049-2A	1/24/2017	N			< 0.35	U	19.3		10.9		< 0.48	U	30.0	
114-MW16AB-O	4.5 - 5.0 ft	114-MW16AB-O-4.5-5.0X	JC36049-3A	1/24/2017	N			< 0.35	U	16.4		11.0		< 0.48	U	22.0	
114-MW16AB-O	4.5 - 5.0 ft	114-MW16AB-O-4.5-5.0X	JC36049-3R	1/24/2017	N	1.4	J										
114-MW16AB-O	5.5 - 6.0 ft	114-MW16AB-O-5.5-6.0	JC36049-4	1/24/2017	N	1.7	J										
114-MW16AB-O	5.5 - 6.0 ft	114-MW16AB-O-5.5-6.0	JC36049-4A	1/24/2017	N			< 0.34	U	23.0		17.5		< 0.46	U	43.5	
MW7D-O	4.5 - 5.0 ft	MW7D-O-4.5-5.0	JC36135-30A	1/25/2017	N			4.7		433		26.2		< 1.4	U	66.5	
MW7D-O	4.5 - 5.0 ft	MW7D-O-4.5-5.0	JC36135-30R	1/25/2017	N	2.1	J										
MW7D-O	6.0 - 6.5 ft	MW7D-O-6.0-6.5	JC36135-31	1/25/2017	N	< 0.33	UJ										
MW7D-O	6.0 - 6.5 ft	MW7D-O-6.0-6.5	JC36135-31A	1/25/2017	N			1.4	J	20.5		14.7		< 0.46	U	28.2	
MW7D-O	9.5 - 10.0 ft	MW7D-O-9.5-10.0	JC36135-32A	1/25/2017	N			< 0.34	U	17.0		13.3		< 0.46	U	28.5	
MW7D-O	9.5 - 10.0 ft	MW7D-O-9.5-10.0	JC36135-32R	1/25/2017	N	0.59	J										
MW7D-O	13.5 - 14.0 ft	MW7D-O-13.5-14.0	JC36135-26A	1/25/2017	N			< 0.33	U	22.9	J	13.0		< 0.45	U	34.7	
MW7D-O	13.5 - 14.0 ft	MW7D-O-13.5-14.0	JC36135-26R	1/25/2017	N	0.65	J										
MW7D-O	13.5 - 14.0 ft	MW7D-O-13.5-14.0X	JC36135-27A	1/25/2017	FD			< 0.34	U	35.9	J	12.4		< 0.47	U	32.0	
MW7D-O	13.5 - 14.0 ft	MW7D-O-13.5-14.0X	JC36135-27R	1/25/2017	FD	0.36	J										
MW7D-O	14.5 - 15.0 ft	MW7D-O-14.5-15.0	JC36135-28	1/25/2017	N	0.53	J										
MW7D-O	14.5 - 15.0 ft	MW7D-O-14.5-15.0	JC36135-28A	1/25/2017	N			< 0.38	U	18.7		16.7		< 0.52	U	25.4	
MW7D-O	17.5 - 18.0 ft	MW7D-O-17.5-18.0	JC36135-29	1/25/2017	N	0.91	J										
MW7D-O	17.5 - 18.0 ft	MW7D-O-17.5-18.0	JC36135-29A	1/25/2017	N			< 0.33	UJ	14.6		8.7		< 0.45	U	21.4	
MW8D-O	4.0 - 4.5 ft	MW8D-O-4.0-4.5	JC36204-15	1/26/2017	N	< 0.34	UJ										
MW8D-O	4.0 - 4.5 ft	MW8D-O-4.0-4.5	JC36204-15A	1/26/2017	N			0.60	J	25.3		17.1		< 0.47	U	29.8	
MW8D-O	4.0 - 4.5 ft	MW8D-O-4.0-4.5X	JC36204-16	1/26/2017	FD	< 0.33	UJ										
MW8D-O	4.0 - 4.5 ft	MW8D-O-4.0-4.5X	JC36204-16A	1/26/2017	FD			1.1	J	19.1		15.1		< 0.45	U	27.1	
MW8D-O	7.0 - 7.5 ft	MW8D-O-7.0-7.5	JC36204-17A	1/26/2017	N			< 0.34	UJ	17.6		15.7		< 0.46	U	26.7	
MW8D-O	7.0 - 7.5 ft	MW8D-O-7.0-7.5	JC36204-17R	1/26/2017	N	0.75	J										
MW8D-O	11.0 - 11.5 ft	MW8D-O-11.0-11.5	JC36204-14	1/26/2017	N	< 0.34	UJ										
MW8D-O	11.0 - 11.5 ft	MW8D-O-11.0-11.5	JC36204-14A	1/26/2017	N			< 0.27	U	19.0		14.0		< 0.37	U	31.7	

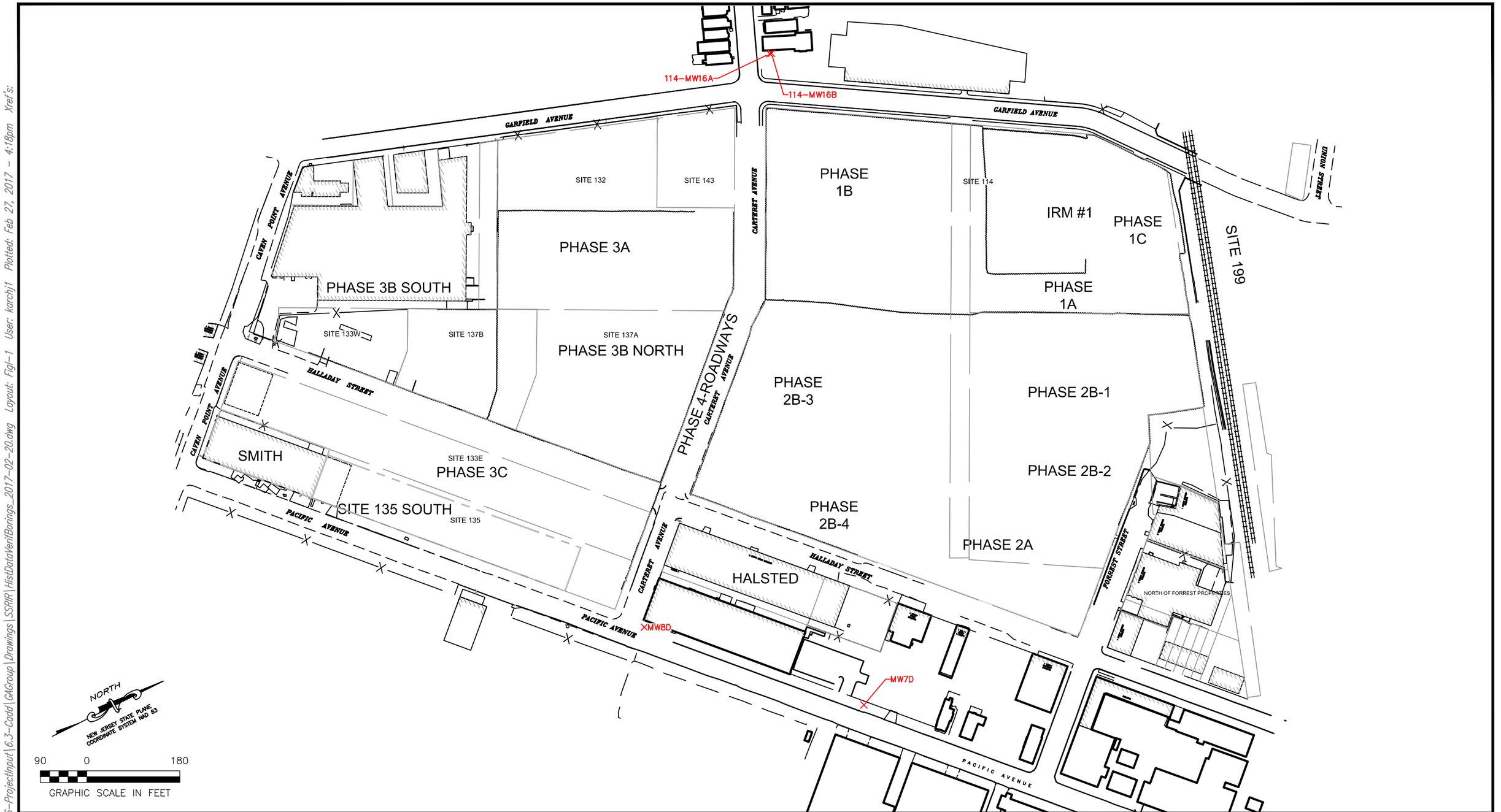
Notes:

*For hexavalent chromium, analytical resluts were compared to the CrSCC. A site-specific ARS is used in place of the RDCSRS for vanadium.

1. Results are reported in milligrams per kilogram (mg/kg).
2. Depths are presented in feet below ground surface (bgs).
3. Sample Type = N indicates normal original sample; FD indicates duplicate sample.

ARS = Alternative Remediation Standard
CAS-RN = Chemical Abstract Service Registry Number
CCPW = Chromate Chemical Production Waste
CrSCC = Chromium Soil Cleanup Criteria
ft = feet
ID = Identification
NJDEP = New Jersey Department of Environmental Protection
NRDCSRS = NJDEP Non-Residential Direct Contact Soil Remediation Standard
RDCSRS = NJDEP Residential Direct Contact Soil Remediation Standard
SRS = Soil Remediation Standard
J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.
U - Indicates the analyte was not detected in the sample above the sample reporting limit.
UJ - Indicates the analyte was not detected above the reporting limit and the reporitng limit was approximate.

Figures



LEGEND

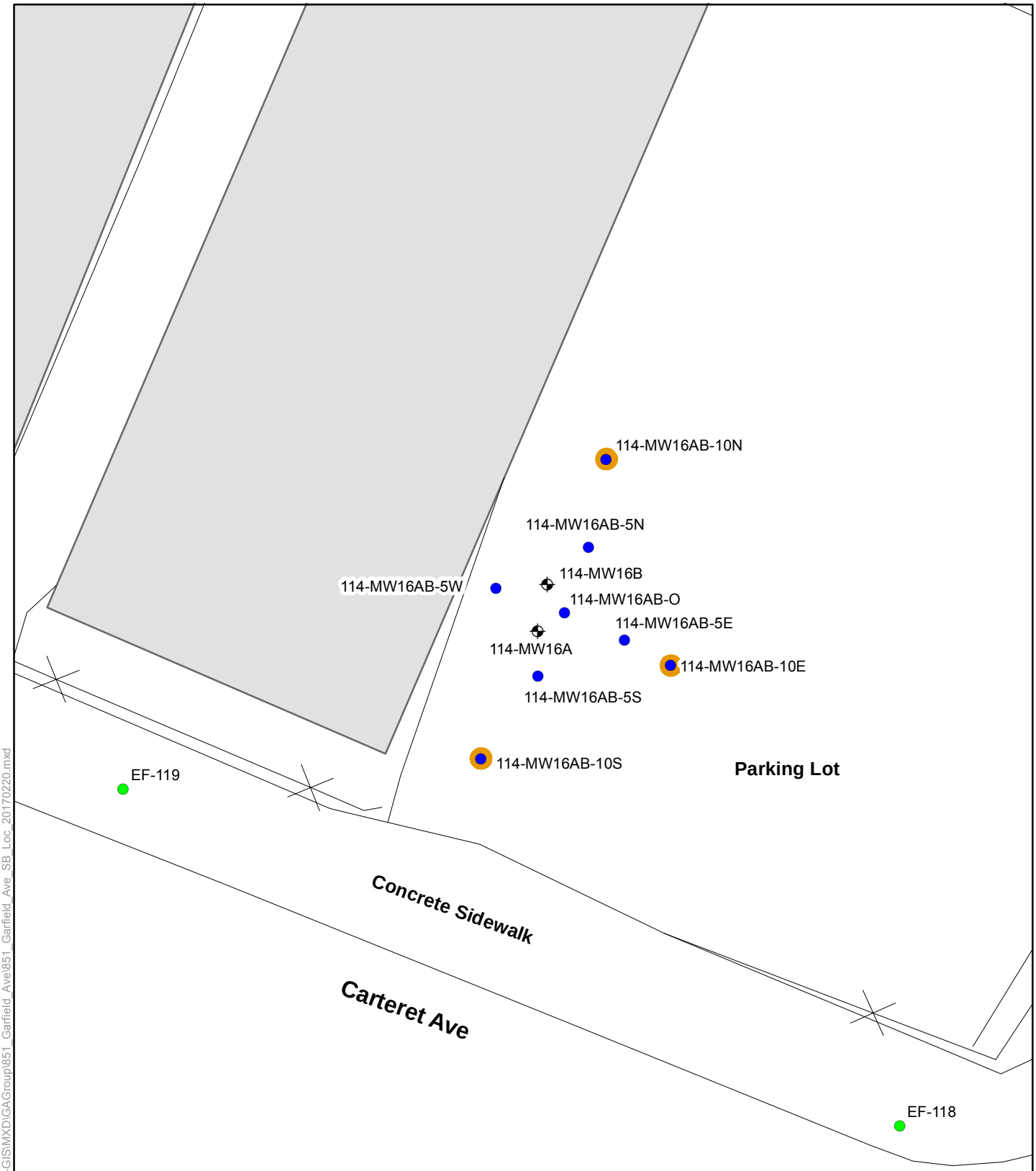
- MW7D — VERIFICATION BORING LOCATION
- PROPERTY LINES
- CHAIN LINK FENCE
- EXISTING EXCAVATION SHORING
- CURB
- NEW JERSEY TRANSIT-LIGHT RAIL
- EXISTING BUILDING

AECOM

PPG
GARFIELD AVENUE GROUP OF SITES
JERSEY CITY, NEW JERSEY

OUTLIER LOCATIONS FROM HISTORICAL DATA REVIEW

DATE: 02/27/2017 | DRWN: TDL | **FIGURE J-1**



Legend

- Verification Soil Boring Location
- Contingent Verification Soil Boring Location (Not Advanced)
- Existing RI Soil Boring Location
- Existing Monitoring Well Location
- Fence

0 5 10 20 Feet

Notes:
1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. RI - Remedial Investigation.

AECOM

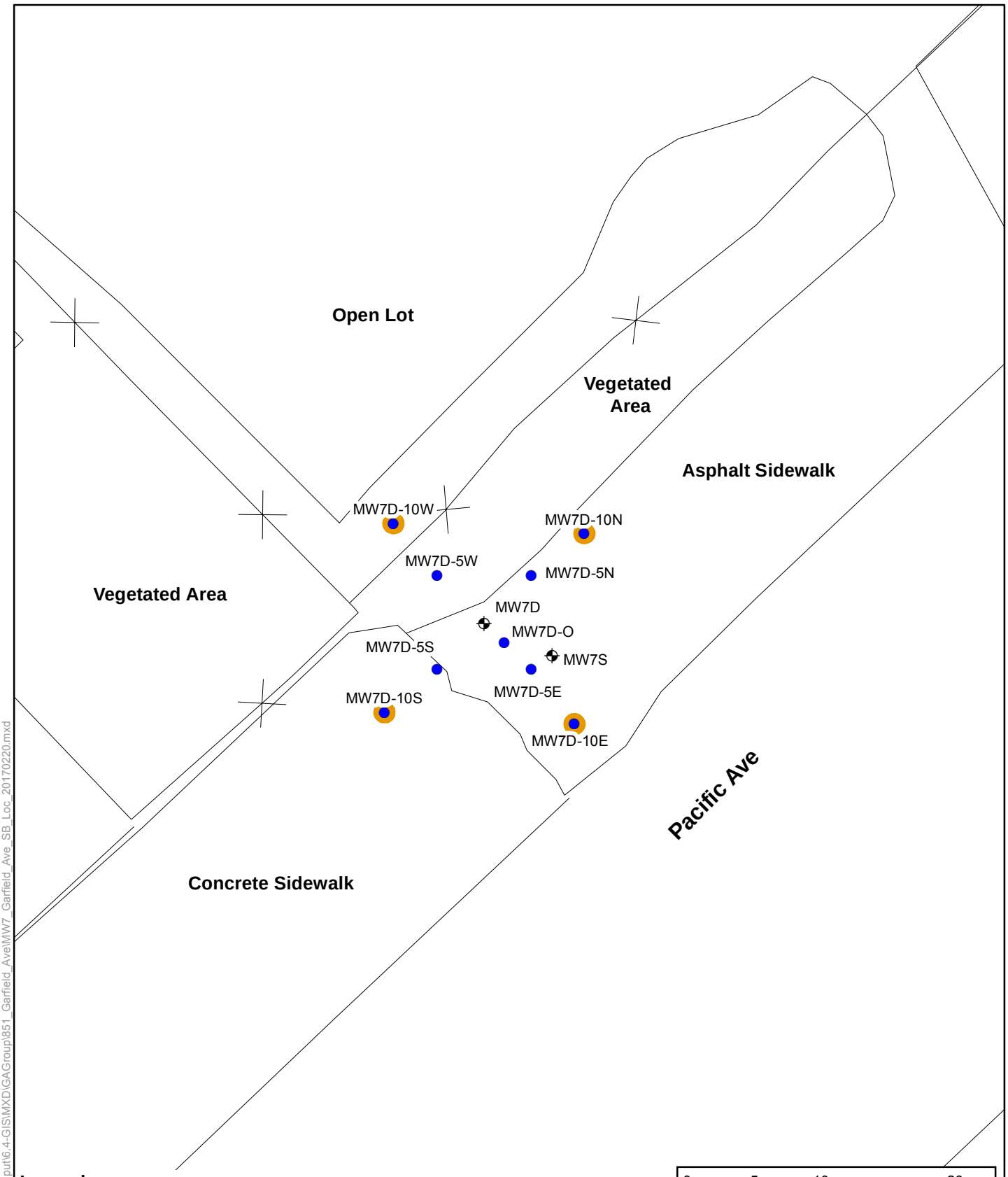
N W E S

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY

DATE: FEB 2017 | DRAWN BY: JL | CHECKED BY: WS

FIGURE J-2
VERIFICATION
SOIL BORING LOCATIONS
851 GARFIELD AVENUE

Path: J:\Project\PPG-NJCProgram\6-ProjectInput\6.4-GIS\MXD\GAGroup\851_Garfield_Ave\851_Garfield_Ave_SB_Loc_20170220.mxd



Legend

- Verification Soil Boring Location
- Contingent Verification Soil Boring Location (Not Advanced)
- Existing Monitoring Well Location
- Fence

0 5 10 20 Feet

Notes:
1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.

AECOM

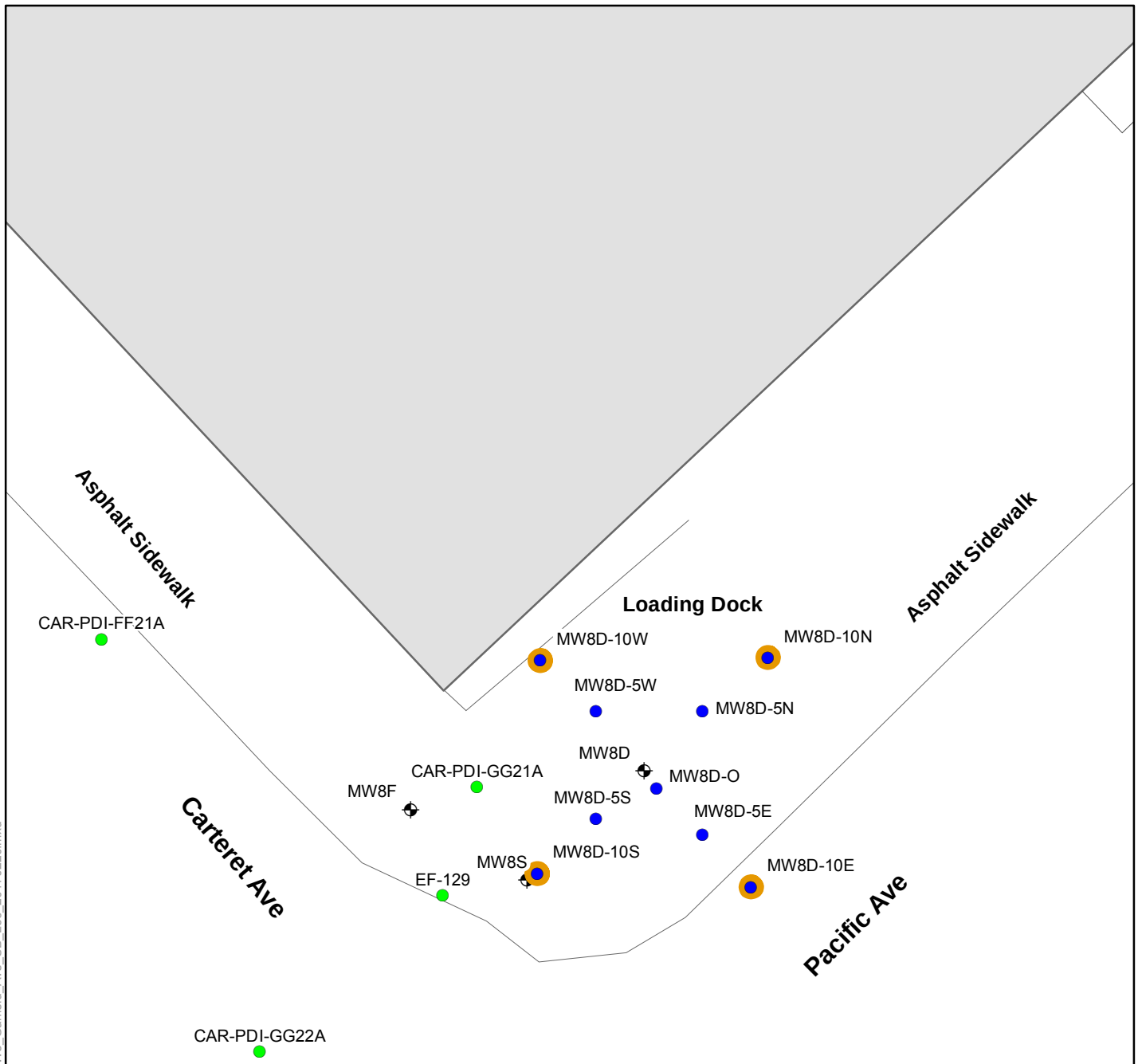
N W E S

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY

DATE: FEB 2017 | DRAWN BY: JL | CHECKED BY: WS

FIGURE J-3
VERIFICATION
SOIL BORING LOCATIONS
MW7D AREA

Path: J:\Project\PPG-NJCProgram\6-ProjectInput\6.4-GIS\MXD\GAGroup\851_Garfield_Ave\MW7_Garfield_Ave_SB_Loc_20170220.mxd



Legend

- Verification Soil Boring Location
- Contingent Verification Soil Boring Location (Not Advanced)
- Existing RI Soil Boring Location
- Existing Monitoring Well Location

0 5 10 20 Feet

Notes:
1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. RI - Remedial Investigation.

AECOM

N W E S

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY

DATE: FEB 2017 | DRAWN BY: JL | CHECKED BY: WS

FIGURE J-4
VERIFICATION
SOIL BORING LOCATIONS
MW8D AREA

Path: J:\Project\PPG-NJCProgram\6-ProjectInput\6.4-GIS\MXD\GAGroup\851_Garfield_Ave\MW8_Garfield_Ave_SB_Loc_20170220.mxd

Attachment J-A: Boring Logs

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

Boring ID: 114-MW16AB-5E

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push/Hand Auger	**Coordinates (NJSPNAD83) x:** 610616
Date Started Drilling: 1/24/2017 10:20:00 AM	**Rig Type:** Geoprobe/Hand Auger	**Coordinates (NJSPNAD83) y:** 683362
Date Finished Drilling: 1/24/2017 10:45:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 7 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 5.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 15.486 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	5	0.0		ASPHALT		ASPHALT	
1			moist	FILL		SILT, trace fine sand and fill material, (7.5YR 4/2) brown, firm, moist, no odor, no staining.	
2							114-MW16AB-5E-2.0-2.5
3							
4							114-MW16AB-5E-4.0-4.5
5	2	0.0	wet	FILL		fine silty SAND, some clay, (10YR 5/4) yellowish brown, medium dense, wet, no odor, no staining, water at 5.0 feet.	
6							114-MW16AB-5E-5.5-6.0
7							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

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

Boring ID: 114-MW16AB-5N

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push/Hand Auger	**Coordinates (NJSPNAD83) x:** 610613
Date Started Drilling: 1/24/2017 9:35:00 AM	**Rig Type:** Geoprobe/Hand Auger	**Coordinates (NJSPNAD83) y:** 683369
Date Finished Drilling: 1/24/2017 10:10:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 7 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 5.5 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 15.948 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0		0.0		ASPHALT		ASPHALT	
1			moist	FILL		SILT, trace fine sand and clay, (7.5YR 3/2) dark brown, firm, moist, no odor, no staining.	
2	5						114-MW16AB-5N-2.0-2.5
3							
4							
5							114-MW16AB-5N-4.5-5.0
		0.0					
6	2		wet	FILL		fine silty SAND, some clay, (10YR 5/4) yellowish brown, medium dense, wet, no odor, no staining, water at 5.5 feet.	114-MW16AB-5N-5.5-6.0
7							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

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

Boring ID: 114-MW16AB-5S

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push/Hand Auger	**Coordinates (NJSPNAD83) x:** 610610
Date Started Drilling: 1/24/2017 10:55:00 AM	**Rig Type:** Geoprobe/Hand Auger	**Coordinates (NJSPNAD83) y:** 683360
Date Finished Drilling: 1/24/2017 11:20:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 7 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 4.5 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 16.009 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0		0.0		ASPHALT		ASPHALT	
1	5		moist	FILL		fine silty SAND, some clay and fill material, (7.5YR 4/2) brown, medium dense, moist, no odor, no staining.	
2							114-MW16AB-5S-2.0-2.5
3							
4							
5			wet	FILL		fine silty SAND, some clay, (10YR 5/4) yellowish brown, medium dense, wet, no odor, no staining, water at 4.5 feet.	114-MW16AB-5S-4.5-5.0
6	2	0.0					114-MW16AB-5S-5.5-6.0
7							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

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

Boring ID: 114-MW16AB-5W

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push/Hand Auger	**Coordinates (NJSPNAD83) x:** 610607
Date Started Drilling: 1/24/2017 11:25:00 AM	**Rig Type:** Geoprobe/Hand Auger	**Coordinates (NJSPNAD83) y:** 683366
Date Finished Drilling: 1/24/2017 11:55:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 7 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 4.5 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 16.304 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0		0.0		ASPHALT		ASPHALT	
1			moist	FILL		SILT, trace clay and fill material, (7.5YR 4/2) brown, firm, moist, no odor, no staining.	
2	5						114-MW16AB-5W-2.0-2.5
3							
4							
5			wet	FILL		fine to medium silty SAND, some clay, (10YR 5/4) yellowish brown, medium dense, wet, no odor, no staining, water at 4.5 feet.	114-MW16AB-5W-4.5-5.0
6	2	0.0					114-MW16AB-5W-5.5-6.0
7							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

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

Boring ID: 114-MW16AB-O

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push/Hand Auger	**Coordinates (NJSPNAD83) x:** 610612
Date Started Drilling: 1/24/2017 8:50:00 AM	**Rig Type:** Geoprobe/Hand Auger	**Coordinates (NJSPNAD83) y:** 683364
Date Finished Drilling: 1/24/2017 9:30:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 7 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 4.5 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 15.845 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0		0.0		ASPHALT		ASPHALT	
1	5		moist	FILL		SILT, trace fine sand and clay, (7.5YR 3/2) dark brown, firm, moist, no odor, no staining.	
2							114-MW16AB-O-2.0-2.5
3							
4							
5			wet	FILL		fine silty SAND, (10YR 5/4) yellowish brown, medium dense, wet, no odor, no staining, water at 4.5 feet.	114-MW16AB-O-4.5-5.0
6	2	0.0					114-MW16AB-O-5.5-6.0
7							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

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

Boring ID: MW7D-5E

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push	**Coordinates (NJSPNAD83) x:** 611823
Date Started Drilling: 1/25/2017 9:30:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682960
Date Finished Drilling: 1/25/2017 10:10:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 20 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 6.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 11.0 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	5	146		FILL		COBBLESTONE	
			moist	FILL		fine to coarse SAND, little silt, trace cinders, (7.5YR 3/2) dark brown, medium dense, moist, slight petroleum odor, no staining.	
5	5	0.0	moist	FILL		fine to coarse SAND, little silt, trace fill material, (7.5YR 3/2) dark brown, medium dense, moist, no odor, no staining, water at 6.0 feet.	MW7D-5E-4.5-5.0
10	5	0.0	moist	FILL		fine SAND, trace silt and fine gravel, (7.5YR 6/3) light brown, medium dense, moist, no odor, no staining.	MW7D-5E-6.5-7.0 MW7D-5E-9.5-10.0
			moist	ML		fine sandy SILT, trace fine gravel, (7.5YR 6/3) light brown, medium dense, moist, no odor, no staining.	
15	5	0.0	moist	PT		PEAT (degraded vegetated material), 80% organic fibers, 20% organic silt, (5YR 3/2) dark reddish brown, soft, moist, slight organic odor, no staining. Soils consistent with UNDorg.	MW7D-5E-12.0-12.5
			moist	SM		fine SAND, some silt, (7.5YR 4/2) brown, medium dense, moist, no odor, no staining. Soils consistent with UNDno.	MW7D-5E-14.5-15.0
20	5		moist	SP		fine to coarse SAND, (7.5YR 4/2) brown, medium dense, moist, no odor, no staining. Soils consistent with UNDno.	MW7D-5E-17.5-18.0
			wet	SP		fine SAND, (7.5YR 4/2) brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

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

Boring ID: MW7D-5N

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push	**Coordinates (NJSPNAD83) x:** 611823
Date Started Drilling: 1/25/2017 10:20:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682967
Date Finished Drilling: 1/25/2017 10:55:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 20 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 6.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 11.2 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0		312		FILL		COBBLESTONE	
1	5		slightly moist	FILL		fine to coarse SAND, some cinders, little silt, (7.5YR 3/2) dark brown, medium dense, slightly moist, moderate petroleum odor, no staining.	
2							
3							
4			moist	FILL		fine to coarse SAND, little silt, trace fill material, (7.5YR 3/2) dark brown, medium dense, moist, no odor, no staining.	MW7D-5N-4.5-5.0
5		36					
6	5		moist	ML		fine sandy SILT, trace fine gravel, (7.5YR 6/3) light brown, medium dense, moist, no odor, no staining, water at 6.0 feet.	MW7D-5N-6.0-6.5
7							
8							
9							
10							MW7D-5N-9.5-10.0
11	5	0.0					
12							
13							
14							MW7D-5N-13.5-14.0
15			moist	PT		PEAT (degraded vegetated material), 80% organic fibers, 20% organic silt, (5YR 3/2) dark reddish brown, stiff, moist, slight organic odor, no staining. Soils consistent with UNDorg.	MW7D-5N-14.5-15.0
16	5	0.0	moist	ML		SILT, (7.5YR 4/2) brown, stiff, moist, no odor, no staining. Soils consistent with UNDno.	
17							
18							MW7D-5N-17.5-18.0
19			wet	SP		fine to coarse SAND, (7.5YR 4/2) brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	
20							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: MW7D-5S

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push	**Coordinates (NJSPNAD83) x:** 611816
Date Started Drilling: 1/25/2017 11:55:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682960
Date Finished Drilling: 1/25/2017 12:30:00 PM	**Core Size:** 3.0 in	**Boring Total Depth:** 20 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 5.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 11.3 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	5	383		CONCRETE		Concrete Sidewalk	
1–5			dry	FILL		fine to coarse SAND, some cinders, little silt, (7.5YR 3/2) dark brown, medium dense, dry to moist, moderate petroleum odor, no staining.	MW7D-5S-4.5-5.0
5–10	5	280	wet	ML		fine SAND, trace silt and fine gravel, (7.5YR 4/2) brown, medium dense, wet, moderate petroleum odor, no staining, water at 5.0 feet. Soils consistent with UNDno.	MW7D-5S-7.0-7.5
			moist	SM		fine silty SAND, (7.5YR 6/3) light brown, medium dense, moist, slight petroleum odor, no staining. Soils consistent with UNDno.	MW7D-5S-9.5-10.0
10–15	5	0.0	moist	PT		PEAT (degraded vegetated material), 80% organic fibers, 20% organic silt, (5YR 3/2) dark reddish brown, stiff, moist, slight organic odor no staining. Soils consistent with UNDorg.	MW7D-5S-12.0-12.5
			wet	SP		fine SAND, (7.5YR 4/2) brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	MW7D-5S-15.0-15.5
15–20	5	0.0	wet	SP		fine to coarse SAND, (7.5YR 6/3) light brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	MW7D-5S-17.5-18.0
			moist	SM		fine SAND, some silt, (7.5YR 6/3) light brown, medium dense, moist, no odor, no staining. Soils consistent with UNDno.	

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

PPG - 2012-09 RA PPG_LOGS_A.GDT - 2/14/17 15:04

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

Boring ID: MW7D-5W

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push	**Coordinates (NJSPNAD83) x:** 611816
Date Started Drilling: 1/25/2017 11:00:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682967
Date Finished Drilling: 1/25/2017 11:50:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 20 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 6.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 11.4 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	5	415	dry	FILL		fine to medium SAND, trace silt and fine to medium gravel, (7.5YR 4/2) brown, loose, dry, no odor, no staining.	
1			slightly moist	FILL		fine to coarse SAND, some cinders, trace fill material, (7.5YR 3/2) dark brown, medium dense, slightly moist, moderate petroleum odor, no staining.	
2							
3							
4							
5							MW7D-5W-4.5-5.0
5	5	124	moist	ML		fine sandy SILT, (7.5YR 4/2) brown, moist, moderate petroleum odor, no staining, water at 6.0 feet. Soils consistent with UNDno.	
6							
7							MW7D-5W-7.0-7.5
8							
9			moist	SP		fine SAND, trace fine gravel, (7.5YR 6/3) light brown, medium dense, moist, slight petroleum odor, no staining. Soils consistent with UNDno.	
10							MW7D-5W-9.5-10.0
10	5	0.0					
11							
12			moist	PT		PEAT (degraded vegetated material), 80% organic fibers, 20% organic silt, (5YR 3/2) dark reddish brown, stiff, moist, slight petroleum odor, no staining. Soils consistent with UNDorg.	MW7D-5W-12.0-12.5
13							
14							
15	5	0.0	wet	SP		fine SAND, (7.5YR 4/2) brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	MW7D-5W-15.0-15.5
16							
17							
18			wet	SP		fine to coarse SAND, (7.5YR 6/3) light brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	MW7D-5W-17.5-18.0
19							
20			wet	SP		fine SAND, (7.5YR 4/2) brown, dense, wet, no odor, no staining. Soils consistent with UNDno.	

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: MW7D-O

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push	**Coordinates (NJSPNAD83) x:** 611821
Date Started Drilling: 1/25/2017 8:20:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682962
Date Finished Drilling: 1/25/2017 9:25:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 20 ft
Logged By: E. Acs	**Project Manager:** Bill Spronz	**Depth to Water:** 6.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 11.1 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0		310		FILL		COBBLESTONE	
1	5		moist	FILL		fine to coarse SAND, some silt, trace cinders, (7.5YR 3/2) dark brown, medium dense, moist, moderate petroleum odor, no staining.	
5			moist	FILL		fine to coarse SAND, little silt and fill material, (7.5YR 4/2) brown, medium dense, moist, strong petroleum odor, no staining, water at 6.0 feet.	MW7D-O-4.5-5.0
5	5	288					MW7D-O-6.0-6.5
9			moist	FILL		fine SAND, trace silt and fine gravel, (7.5YR 6/3) light brown, medium dense, moist, slight petroleum odor, no staining.	MW7D-O-9.5-10.0
10	5	36	moist	ML		fine sandy SILT, trace fine gravel, (7.5YR 6/3) light brown, medium dense, moist, slight petroleum odor, no staining. Soils consistent with UNDno.	MW7D-O-13.5-14.0
15	5	0.0	moist	PT		PEAT (degraded vegetated material), 80% organic fibers, 20% organic silt, (5YR 3/2) dark reddish brown, stiff, moist, slight organic odor, no staining. Soils consistent with UNDorg.	MW7D-O-14.5-15.0
18			wet	SP		fine SAND, (7.5YR 4/2) brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	MW7D-O-17.5-18.0
19			wet	SP		fine to coarse SAND, (7.5YR 4/2) brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	
20			wet	SP		fine SAND, (7.5YR 4/2) brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

PPG - 2012-09 RA PPG_LOGS_A.GDT - 2/14/17 15:04

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: MW8D-5E

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push	**Coordinates (NJSPNAD83) x:** 611499
Date Started Drilling: 1/26/2017 10:00:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682646
Date Finished Drilling: 1/26/2017 10:20:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 15 ft
Logged By: Eric Stone	**Project Manager:** Bill Spronz	**Depth to Water:** 5.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 8.7 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	5	0.0		ASPHALT		ASPHALT	
1			dry	FILL		fine to medium SAND, some ash, little brick and fill debris, (7.5YR 3/3) dark brown, medium dense, dry, no odor, no staining.	
2							
3			moist	FILL		fine to medium silty SAND, little fill debris, trace coal and ash, (7.5YR 3/3) dark brown, medium dense, moist, no odor, no staining.	
4			moist	FILL		ASH, some coal, little fill debris, (5Y 5/1) gray, medium dense, moist, no odor, no staining.	MW8D-5E-4.0-4.5
5	5	0.0	wet	FILL		fine silty SAND, some concrete, little fill debris, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining, water at 5.0 feet.	
6			wet	SM		fine silty SAND, little fine gravel, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	
7							MW8D-5E-7.0-7.5
8							
9							
10	5	0.0					
11							MW8D-5E-11.0-11.5
12							
13			dry	PT		PEAT (degraded vegetated material), 80% organic fibers, 20% organic silt, (5YR 3/3) dark reddish brown, stiff, dry, no odor, no staining. Soils consistent with MM.	
14							
15							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

PPG - 2012-09 RA PPG_LOGS_A.GDT - 2/14/17 15:04

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

Boring ID: MW8D-5N

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push	**Coordinates (NJSPNAD83) x:** 611499
Date Started Drilling: 1/26/2017 10:30:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682654
Date Finished Drilling: 1/26/2017 11:00:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 15 ft
Logged By: Eric Stone	**Project Manager:** Bill Spronz	**Depth to Water:** 5.5 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 9.1 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	5	0.0	dry	FILL		fine to coarse GRAVEL, some fine to medium sand, (7.5YR 4/3) brown, loose, dry, no odor, no staining.	
1			dry	FILL		fine to medium SAND, some ash, little coal, (7.5YR 4/3) brown, medium dense, dry, no odor, no staining.	
2							
3							
4			moist	FILL		ASH, (2.5Y 5/1) gray, loose, moist, no odor, no staining.	MW8D-5N-4.0-4.5
5	5	0.0	moist	FILL		fine SAND, little ash, trace silt, (5YR 4/4) reddish brown, medium dense, moist, no odor, no staining.	
6			wet	SM		fine to medium SAND, some silt, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining, water at 5.5 feet. Soils consistent with UNDno.	
7							MW8D-5N-7.0-7.5
8							
9							
10	5	0.0	wet	SM		fine silty SAND, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	
11							MW8D-5N-11.0-11.5
12							
13							
14			dry	PT		PEAT (degraded vegetated material), 80% organic fibers, 20% organic silt, (5YR 3/3) dark reddish brown, stiff, dry, slight organic odor, no staining. Soils consistent with MM.	
15							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: MW8D-5S

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push	**Coordinates (NJSPNAD83) x:** 611492
Date Started Drilling: 1/26/2017 11:10:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682647
Date Finished Drilling: 1/26/2017 12:00:00 PM	**Core Size:** 3.0 in	**Boring Total Depth:** 15 ft
Logged By: Eric Stone	**Project Manager:** Bill Spronz	**Depth to Water:** 5.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 8.8 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	5	0.0		ASPHALT		ASPHALT	
1			dry	FILL		fine to medium SAND, some ash, (7.5YR 3/3) dark brown, medium dense, dry, no odor, no staining.	
2							
3							
4			moist	FILL		ASH, some silty sand, little coal, trace wood, (2.5Y 5/1) gray, loose, moist, no odor, no staining.	MW8D-5S-4.0-4.5
5	5	0.0	wet	FILL		fine SAND, little fill debris, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining, water at 5.0 feet.	
6			wet	SM		fine SAND, little silt and fine gravel, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	
7							MW8D-5S-7.0-7.5
8							
9							
10	5	0.0	wet	SM		fine silty SAND, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	
11							MW8D-5S-11.0-11.5
12							
13							
14			dry	PT		PEAT (degraded vegetated material), 80% organic fibers, 20% organic silt, (5YR 3/3) dark reddish brown, stiff, dry, slight organic odor, no staining. Soils consistent with MM.	
15							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: MW8D-5W

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push/Soft Dig	**Coordinates (NJSPNAD83) x:** 611492
Date Started Drilling: 1/26/2017 8:30:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682654
Date Finished Drilling: 1/26/2017 9:00:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 15 ft
Logged By: Eric Stone	**Project Manager:** Bill Spronz	**Depth to Water:** 6.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 9.2 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
1–5	5	0.0	dry to moist	FILL		fine to medium SAND, little wood, little to trace silt and ash, (2.5Y 5/2) grayish brown, medium dense, dry to moist, no odor, no staining.	MW8D-5W-4.5-5.0
5–10	5	0.0	moist to wet	SM		fine to medium silty SAND, little fine gravel, (5YR 4/4) reddish brown, medium dense, moist to wet, no odor, no staining, water at 6.0 feet. Soils consistent with UNDno.	MW8D-5W-8.0-8.5
10–15	5	0.0	wet	ML		SILT, some fine sand, little fine gravel, (5YR 4/4) reddish brown, soft, wet, no odor, no staining. Soils consistent with UNDno.	MW8D-5W-11.0-11.5
14–15			dry	PT		PEAT (degraded vegetated material), 80% organic fibers, 20% organic silt, (5YR 3/3) dark reddish brown, stiff, dry, moderate organic odor, no staining. Soils consistent with MM.	

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

Boring ID: MW8D-O

Project Name: PPG Garfield Ave	**Drilling Company:** SGS North America	
Project Number: 60279173-GA.RI.RPT.HDS	**Drilling Method:** Direct Push	**Coordinates (NJSPNAD83) x:** 611496
Date Started Drilling: 1/26/2017 9:20:00 AM	**Rig Type:** Geoprobe	**Coordinates (NJSPNAD83) y:** 682649
Date Finished Drilling: 1/26/2017 9:50:00 AM	**Core Size:** 3.0 in	**Boring Total Depth:** 15 ft
Logged By: Eric Stone	**Project Manager:** Bill Spronz	**Depth to Water:** 5.0 ft
Physical Location: Actual - Historical Data Study		**Surface Elevation:** 9.1 ft NAVD88

Depth Range (ft bgs)	Recovery (ft/ft)	PID (ppm)	Moisture Content	USCS	Graphic Log	Surface Cover and Thickness:	Sample ID
0	5	0.0	dry	FILL		fine to medium SAND, some organics, little fine gravel, (7.5YR 4/3) brown, medium dense, dry, no odor, no staining.	
1			dry	FILL		fine to medium SAND, some ash, little fill debris, (7.5YR 3/3) dark brown, medium dense, dry, no odor, no staining.	
2							
3							
4			moist	FILL		fine to medium SAND, some glass, little fine gravel, (5YR 4/4) reddish brown, medium dense, moist, no odor, no staining.	MW8D-O-4.0-4.5
5			moist	FILL		fine to medium SAND, some silt, little ash, trace fill debris, (7.5YR 4/1) dark gray, medium dense, moist, no odor, no staining.	
6	5	0.0	wet	FILL			
7			wet	SM		fine to medium silty SAND, some concrete, (5YR 4/3) reddish brown, medium dense, wet, no odor, no staining, water at 5.0 feet.	
8						fine to medium silty SAND, little fine gravel, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	MW8D-O-7.0-7.5
9							
10							
11	3.5	0.0	wet	ML		SILT, some fine to medium sand, little fine gravel, (5YR 4/3) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno.	MW8D-O-11.0-11.5
12							
13							
14				NR		NO RECOVERY	
15							

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

Comments: No CCPW (COPR or GGM) identified in any interval of this boring.

Attachment J-B: Laboratory Data Packages

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

PPG Garfield Avenue, Jersey City, NJ

60279183.GA.RI.RPT.HDS.FIELD

SGS Accutest Job Number: JC36049

Sampling Date: 01/24/17

Report to:

AECOM, INC.
30 Knightsbridge Road Suite 520
Piscataway, NJ 08854
NJlabdata@aecom.com; Christine.DeAmbrogio@aecom.com

ATTN: Mary O'Connell Kozik

Total number of pages in report: 53

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4 5 6 7

Table of Contents

Sample Summary

AECOM, INC.

Job No: JC36049

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC36049-1	01/24/17	09:05	MOK	01/24/17	SO	Soil	114-MW16AB-O-2.0-2.5
JC36049-1D	01/24/17	09:05	MOK	01/24/17	SO	Soil Dup/MSD	114-MW16AB-O-2.0-2.5
JC36049-1S	01/24/17	09:05	MOK	01/24/17	SO	Soil Matrix Spike	114-MW16AB-O-2.0-2.5
JC36049-2	01/24/17	09:15	MOK	01/24/17	SO	Soil	114-MW16AB-O-4.5-5.0
JC36049-3	01/24/17	09:20	MOK	01/24/17	SO	Soil	114-MW16AB-O-4.5-5.0X
JC36049-4	01/24/17	09:25	MOK	01/24/17	SO	Soil	114-MW16AB-O-5.5-6.0
JC36049-5	01/24/17	10:25	MOK	01/24/17	SO	Soil	114-MW16AB-5E-2.0-2.5
JC36049-6	01/24/17	10:35	MOK	01/24/17	SO	Soil	114-MW16AB-5E-4.0-4.5
JC36049-7	01/24/17	10:40	MOK	01/24/17	SO	Soil	114-MW16AB-5E-5.5-6.0
JC36049-8	01/24/17	09:45	MOK	01/24/17	SO	Soil	114-MW16AB-5N-2.0-2.5
JC36049-9	01/24/17	09:50	MOK	01/24/17	SO	Soil	114-MW16AB-5N-4.5-5.0
JC36049-10	01/24/17	10:00	MOK	01/24/17	SO	Soil	114-MW16AB-5N-5.5-6.0
JC36049-11	01/24/17	11:10	MOK	01/24/17	SO	Soil	114-MW16AB-5S-2.0-2.5

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

AECOM, INC.

Job No: JC36049

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC36049-12	01/24/17	11:15	MOK	01/24/17	SO	Soil	114-MW16AB-5S-4.5-5.0
JC36049-13	01/24/17	11:20	MOK	01/24/17	SO	Soil	114-MW16AB-5S-5.5-6.0
JC36049-14	01/24/17	11:35	MOK	01/24/17	SO	Soil	114-MW16AB-5W-2.0-2.5
JC36049-15	01/24/17	11:40	MOK	01/24/17	SO	Soil	114-MW16AB-5W-4.5-5.0
JC36049-16	01/24/17	11:45	MOK	01/24/17	SO	Soil	114-MW16AB-5W-5.5-6.0
JC36049-17	01/24/17	14:00	MOK	01/24/17	AQ	Field Blank Soil	HDS-FB20170124

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: AECOM, INC. **Job No** JC36049

Site: PPG Garfield Avenue, Jersey City, NJ **Report Date** 2/3/2017 2:37:39 PM

On 01/24/2017, 4 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 5.4 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC36049 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Wet Chemistry By Method ASTM D1498-76

Matrix: AQ **Batch ID:** GN58601

- The data for ASTM D1498-76 meets quality control requirements.

Wet Chemistry By Method ASTM D1498-76M

Matrix: SO **Batch ID:** GN58538

- Sample(s) JC36049-1DUP were used as the QC samples for Redox Potential Vs H2.

Wet Chemistry By Method SM2540 G-97

Matrix: SO **Batch ID:** GN58506

- The data for SM2540 G-97 meets quality control requirements.

Matrix: SO **Batch ID:** GN58547

- The data for SM2540 G-97 meets quality control requirements.

Wet Chemistry By Method SM4500H+ B-11

Matrix: AQ **Batch ID:** R160863

- The data for SM4500H+ B-11 meets quality control requirements.
- JC36049-17 for pH: Sample received out of holding time for pH analysis.

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO **Batch ID:** GP2869

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36049-1DUP, JC36049-1MS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (99_%) on this sample.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP2869-D1. High RPD due to possible sample nonhomogeneity.
- GP2869-S2 for Chromium, Hexavalent: Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.

Wet Chemistry By Method SW846 7196A

Matrix:	AQ	Batch ID:	GN58460

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36051-5DUP, JC36051-5MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 9045D

Matrix:	SO	Batch ID:	GN58537

- Sample(s) JC36049-1DUP were used as the QC samples for pH.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC36049
Account: AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Collected: 01/24/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC36049-1	**114-MW16AB-O-2.0-2.5**					
Chromium, Hexavalent		2.3	0.51	0.36	mg/kg	SW846 3060A/7196A
Redox Potential Vs H2		310			mv	ASTM D1498-76M
pH		6.31			su	SW846 9045D
JC36049-2	**114-MW16AB-O-4.5-5.0**					
Chromium, Hexavalent		4.0	0.49	0.34	mg/kg	SW846 3060A/7196A
Redox Potential Vs H2		430			mv	ASTM D1498-76M
pH		6.61			su	SW846 9045D
JC36049-3	**114-MW16AB-O-4.5-5.0X**					
Chromium, Hexavalent		0.98	0.50	0.35	mg/kg	SW846 3060A/7196A
Redox Potential Vs H2		390			mv	ASTM D1498-76M
pH		6.95			su	SW846 9045D
JC36049-4	**114-MW16AB-O-5.5-6.0**					
Chromium, Hexavalent		1.7	0.48	0.34	mg/kg	SW846 3060A/7196A
Redox Potential Vs H2		361			mv	ASTM D1498-76M
pH		7.02			su	SW846 9045D
JC36049-17	**HDS-FB20170124**					
Redox Potential Vs H2		402			mv	ASTM D1498-76
pH [a]		7.04			su	SM4500H+ B-11

(a) Sample received out of holding time for pH analysis.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: 114-MW16AB-O-2.0-2.5
Lab Sample ID: JC36049-1
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/24/17
Date Received: 01/24/17
Percent Solids: 78.1

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	2.3	0.51	0.36	mg/kg	1	01/27/17 13:12	RI	SW846 3060A/7196A
Redox Potential Vs H2	310			mv	1	01/26/17 16:30	PO	ASTM D1498-76M
Solids, Percent	78.1			%	1	01/25/17 17:00	RI	SM2540 G-97
pH	6.31			su	1	01/26/17 15:57	PO	SW846 9045D

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	114-MW16AB-O-4.5-5.0		
Lab Sample ID:	JC36049-2	**Date Sampled:**	01/24/17
Matrix:	SO - Soil	**Date Received:**	01/24/17
		Percent Solids:	81.5
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	4.0	0.49	0.34	mg/kg	1	01/27/17 13:14	RI	SW846 3060A/7196A
Redox Potential Vs H2	430			mv	1	01/26/17 16:30	PO	ASTM D1498-76M
Solids, Percent	81.5			%	1	01/26/17 15:00	RI	SM2540 G-97
pH	6.61			su	1	01/26/17 15:57	PO	SW846 9045D

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	114-MW16AB-O-4.5-5.0X		
Lab Sample ID:	JC36049-3	**Date Sampled:**	01/24/17
Matrix:	SO - Soil	**Date Received:**	01/24/17
		Percent Solids:	80.8
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.98	0.50	0.35	mg/kg	1	01/27/17 13:14	RI	SW846 3060A/7196A
Redox Potential Vs H2	390			mv	1	01/26/17 16:30	PO	ASTM D1498-76M
Solids, Percent	80.8			%	1	01/26/17 15:00	RI	SM2540 G-97
pH	6.95			su	1	01/26/17 15:57	PO	SW846 9045D

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 114-MW16AB-O-5.5-6.0
Lab Sample ID: JC36049-4
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/24/17
Date Received: 01/24/17
Percent Solids: 83.4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.7	0.48	0.34	mg/kg	1	01/27/17 13:14	RI	SW846 3060A/7196A
Redox Potential Vs H2	361			mv	1	01/26/17 16:30	PO	ASTM D1498-76M
Solids, Percent	83.4			%	1	01/26/17 15:00	RI	SM2540 G-97
pH	7.02			su	1	01/26/17 15:57	PO	SW846 9045D

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	HDS-FB20170124		
Lab Sample ID:	JC36049-17	**Date Sampled:**	01/24/17
Matrix:	AQ - Field Blank Soil	**Date Received:**	01/24/17
		Percent Solids:	n/a
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.0039 U	0.010	0.0039	mg/l	1	01/25/17 12:12	TT	SW846 7196A
Redox Potential Vs H2	402			mv	1	01/27/17 10:57	JOO	ASTM D1498-76
pH [a]	7.04			su	1	01/24/17 17:28	SUB	SM4500H+ B-11

(a) Sample received out of holding time for pH analysis.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC36049
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Redox Potential Vs H2		**ASTM D1498-76M**	SO	Accutest is not certified for this parameter. [a]
Redox Potential Vs H2		**ASTM D1498-76**	AQ	Accutest is not certified for this parameter. [a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

AECOM

SO, FB

JC36049

COC ID: 2017-01-24-RI-HDS-COC

TURNAROUND TIME: See Special Instructions

RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	Fil.	PRESERV.	ANALYSIS	HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)									
114-MW16AB-0-2.0-2.5	1	SO	2017/01/24	09:05	G	2	2 (8oz) jars MS/MSD				X	X	X	1								BM
114-MW16AB-0-4.5-5.0	2	SO	2017/01/24	09:15	G	1	1 (8oz) jar				X	X	X	2								
114-MW16AB-0-4.5-5.0X	3	SO	2017/01/24	09:20	G	1	1 (8oz) jar				X	X	X	3								AS
114-MW16AB-0-5.5-6.0	4	SO	2017/01/24	09:25	G	1	1 (8oz) jar				X	X	X	4								G20
114-MW16AB-5E-2.0-2.5	5	SO	2017/01/24	10:25	G	1	1 (8 oz) jar-hold				H	H	H	5								
114-MW16AB-5E-4.0-4.5	6	SO	2017/01/24	10:35	G	1	1 (8oz) jar-hold				H	H	H	6								
114-MW16AB-5E-5.5-6.0	7	SO	2017/01/24	10:40	G	1	1 (8oz) jar-hold				H	H	H	7								
114-MW16AB-5N-2.0-2.5	8	SO	2017/01/24	09:45	G	1	1 (8oz) jar-hold				H	H	H	8								
114-MW16AB-5N-4.5-5.0	9	SO	2017/01/24	09:50	G	1	1 (8oz) jar-hold				H	H	H	9								
114-MW16AB-5N-5.5-6.0	10	SO	2017/01/24	10:00	G	1	1 (8oz) jar-hold				H	H	H	10								

INITIAL ASESSMENT 3A JK

LABEL VERIFICATION JK

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM	1/24/17 1530	AECOM	1/24/17 1600
	AECOM	1/24/17 1600		1-24-17 1615
		1-24-17 1710	SAS	1/24/17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tate	Mobile #	
Sampler's Signature		Date/Time	

04.0°C IP

Page 1 of 2

AECOM

JC36049

COC ID: 2017-01-24-RI-HDS-COC | TURNAROUND TIME: See Special Instructions | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	Filt.	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)											
114-MW16AB-5S-2.0-2.5	11	SO	2017/01/24	11:10	G	1	1 (8oz) jar-hold			H	H	H	11										
114-MW16AB-5S-4.5-5.0	12	SO	2017/01/24	11:15	G	1	1 (8oz) jar-hold			H	H	H	12										
114-MW16AB-5S-5.5-6.0	13	SO	2017/01/24	11:20	G	1	1 (8oz) jar-hold			H	H	H	13										
114-MW16AB-5W-2.0-2.5	14	SO	2017/01/24	11:35	G	1	1 (8oz) jar-hold			H	H	H	14										
114-MW16AB-5W-4.5-5.0	15	SO	2017/01/24	11:40	G	1	1 (8oz) jar-hold			H	H	H	15										
114-MW16AB-5W-5.5-6.0	16	SO	2017/01/24	11:45	G	1	1 (8oz) jar-hold			H	H	H	16										
HDS-FB20170124	17	WQ	2017/01/24	14:00	G	1	field blank			X	X	X	17										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

3 Day TAT
Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions.
Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file
H=HOLD (Extract/freeze and hold as necessary)

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	1-24-17 1610		1-24-17 1610
	1-24-17 1710		1-24-17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tot	Mobile #	
Sampler's Signature		Date/Time	

04.0 CIP

SGS Accutest Sample Receipt Summary

Job Number: JC36049 **Client:** _____ **Project:** _____

Date / Time Received: 1/24/2017 5:10:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (4.0);

Cooler Temps (Corrected) °C: Cooler 1: (5.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

Job Change Order: JC36049

Requested Date:	1/30/2017	**Received Date:**	1/24/2017
Account Name:	AECOM, INC.	**Due Date:**	1/27/2017
Project Description:	PPG Garfield Avenue, Jersey City, NJ	**Deliverable:**	FULT1
CSR:	malay.parekh	**TAT (Days):**	3

==========

Sample #: JC36049-1 to 4
Change: Due to XCR spike, Log in XXCRAR

Dept:

TAT: 3

==========

==========

Sample #: JC36049-1
Change: Due to XCR spike Log in FE2/7, SULFS, TOCLK.

Dept:

TAT: 3

114-MW16AB-0-2.0-2.5

==========

Above Changes Per: AECOM

Date/Time: 1/30/2017 10:49:24 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

JC36049: Chain of Custody
Page 4 of 4

Internal Sample Tracking Chronicle

AECOM, INC.

Job No: JC36049

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC36049-1	Collected: 24-JAN-17 09:05 By: MOK		Received: 24-JAN-17 By: AS			
114-MW16AB-O-2.0-2.5						
JC36049-1	SM2540 G-97	25-JAN-17 17:00	RI			SOL104
JC36049-1	SW846 9045D	26-JAN-17 15:57	PO			PH
JC36049-1	ASTM D1498-76M	26-JAN-17 16:30	PO			EH
JC36049-1	SW846 3060A/7196A	27-JAN-17 13:12	RI	25-JAN-17	SP	XCRA
JC36049-2	Collected: 24-JAN-17 09:15 By: MOK		Received: 24-JAN-17 By: AS			
114-MW16AB-O-4.5-5.0						
JC36049-2	SM2540 G-97	26-JAN-17 15:00	RI			SOL104
JC36049-2	SW846 9045D	26-JAN-17 15:57	PO			PH
JC36049-2	ASTM D1498-76M	26-JAN-17 16:30	PO			EH
JC36049-2	SW846 3060A/7196A	27-JAN-17 13:14	RI	25-JAN-17	SP	XCRA
JC36049-3	Collected: 24-JAN-17 09:20 By: MOK		Received: 24-JAN-17 By: AS			
114-MW16AB-O-4.5-5.0X						
JC36049-3	SM2540 G-97	26-JAN-17 15:00	RI			SOL104
JC36049-3	SW846 9045D	26-JAN-17 15:57	PO			PH
JC36049-3	ASTM D1498-76M	26-JAN-17 16:30	PO			EH
JC36049-3	SW846 3060A/7196A	27-JAN-17 13:14	RI	25-JAN-17	SP	XCRA
JC36049-4	Collected: 24-JAN-17 09:25 By: MOK		Received: 24-JAN-17 By: AS			
114-MW16AB-O-5.5-6.0						
JC36049-4	SM2540 G-97	26-JAN-17 15:00	RI			SOL104
JC36049-4	SW846 9045D	26-JAN-17 15:57	PO			PH
JC36049-4	ASTM D1498-76M	26-JAN-17 16:30	PO			EH
JC36049-4	SW846 3060A/7196A	27-JAN-17 13:14	RI	25-JAN-17	SP	XCRA
JC36049-17	Collected: 24-JAN-17 14:00 By: MOK		Received: 24-JAN-17 By: AS			
HDS-FB20170124						
JC36049-17	SM4500H+ B-11	24-JAN-17 17:28	SUB			PH
JC36049-17	SW846 7196A	25-JAN-17 12:12	TT			XCR
JC36049-17	ASTM D1498-76	27-JAN-17 10:57	JOO			EH

SGS Accutest Internal Chain of Custody

Job Number: JC36049
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-1.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-1.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-1.1	Secured Storage	Luis Villanueva	01/25/17 15:26	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-1.1	Luis Villanueva	Secured Storage	01/25/17 16:26	Return to Storage
JC36049-1.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-1.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-1.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-1.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-1.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-1.1	Secured Storage	Minhaj Hashmi	01/31/17 08:07	Retrieve from Storage
JC36049-1.1	Minhaj Hashmi	Sanchita Patel	01/31/17 09:23	Custody Transfer
JC36049-1.1	Sanchita Patel	Secured Storage	01/31/17 09:49	Return to Storage
JC36049-1.1	Secured Storage	Christopher Hall	01/31/17 21:30	Retrieve from Storage
JC36049-1.1	Christopher Hall	Secured Staging Area	01/31/17 21:30	Return to Storage
JC36049-1.1	Secured Staging Area	Mahendra Patel	02/01/17 08:16	Retrieve from Storage
JC36049-1.1	Mahendra Patel	Secured Storage	02/01/17 12:16	Return to Storage
JC36049-1.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-1.1
JC36049-1.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-1.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-1.1
JC36049-1.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-1.1
JC36049-1.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-1.2	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
JC36049-1.2	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-1.2	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-1.2	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-1.2	Secured Storage	Alfredo Crespo	01/26/17 07:24	Retrieve from Storage
JC36049-1.2	Alfredo Crespo	Secured Staging Area	01/26/17 07:24	Return to Storage
JC36049-1.2	Secured Staging Area	Paul Ojugo	01/26/17 08:53	Retrieve from Storage
JC36049-1.2	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-1.2	Secured Storage	Gage Donahue	02/01/17 08:33	Retrieve from Storage
JC36049-1.2	Gage Donahue	Secured Staging Area	02/01/17 08:33	Return to Storage
JC36049-1.2	Secured Staging Area	Courtney Dringus	02/01/17 10:21	Retrieve from Storage
JC36049-1.2	Courtney Dringus	Secured Storage	02/01/17 18:33	Return to Storage
JC36049-2.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-2.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-2.1	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-2.1	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-2.1	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36049
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-2.1	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-2.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-2.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-2.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-2.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-2.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-2.1	Secured Storage	Minhaj Hashmi	01/31/17 08:07	Retrieve from Storage
JC36049-2.1	Minhaj Hashmi	Sanchita Patel	01/31/17 09:23	Custody Transfer
JC36049-2.1	Sanchita Patel	Secured Storage	01/31/17 09:49	Return to Storage
JC36049-2.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-2.1
JC36049-2.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-2.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-2.1
JC36049-2.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-2.1
JC36049-2.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-3.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-3.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-3.1	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-3.1	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-3.1	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-3.1	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-3.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-3.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-3.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-3.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-3.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-3.1	Secured Storage	Minhaj Hashmi	01/31/17 08:07	Retrieve from Storage
JC36049-3.1	Minhaj Hashmi	Sanchita Patel	01/31/17 09:23	Custody Transfer
JC36049-3.1	Sanchita Patel	Secured Storage	01/31/17 09:49	Return to Storage
JC36049-3.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-3.1
JC36049-3.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-3.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-3.1
JC36049-3.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-3.1
JC36049-3.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-4.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-4.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-4.1	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				

SGS Accutest Internal Chain of Custody

Job Number: JC36049
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-4.1	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-4.1	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-4.1	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-4.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-4.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-4.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-4.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-4.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-4.1	Secured Storage	Minhaj Hashmi	01/31/17 08:07	Retrieve from Storage
JC36049-4.1	Minhaj Hashmi	Sanchita Patel	01/31/17 09:23	Custody Transfer
JC36049-4.1	Sanchita Patel	Secured Storage	01/31/17 09:49	Return to Storage
JC36049-4.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-4.1
JC36049-4.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-4.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-4.1
JC36049-4.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-4.1
JC36049-4.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-17.1	Secured Storage	Sahara Feliciano	01/26/17 13:43	Retrieve from Storage
JC36049-17.1	Sahara Feliciano	Secured Staging Area	01/26/17 13:43	Return to Storage
JC36049-17.1	Secured Staging Area	Deval Patel	01/26/17 14:45	Retrieve from Storage
JC36049-17.1	Deval Patel	Radhika Mistry	01/26/17 16:03	Custody Transfer
JC36049-17.1	Radhika Mistry	Deval Patel	01/26/17 16:08	Custody Transfer
JC36049-17.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36049-17.1.1	Radhika Mistry	Metals Digestion	01/26/17 16:04	Digestate from JC36049-17.1
JC36049-17.1.1	Metals Digestion	Radhika Mistry	01/26/17 16:04	Digestate from JC36049-17.1
JC36049-17.1.1	Radhika Mistry	Metals Digestate Storage	01/26/17 16:04	Return to Storage
JC36049-17.2	Secured Storage	Todd Shoemaker	01/25/17 08:03	Retrieve from Storage
JC36049-17.2	Todd Shoemaker	Secured Staging Area	01/25/17 08:04	Return to Storage
JC36049-17.2	Secured Staging Area	Rie Iwasaki	01/25/17 10:23	Retrieve from Storage
JC36049-17.2	Rie Iwasaki	Secured Storage	01/25/17 12:51	Return to Storage
JC36049-17.2	Secured Storage	Alfredo Crespo	01/26/17 07:27	Retrieve from Storage
JC36049-17.2	Alfredo Crespo	Secured Staging Area	01/26/17 07:27	Return to Storage
JC36049-17.2	Secured Staging Area	Diana Mathes	01/26/17 08:04	Retrieve from Storage
JC36049-17.2	Diana Mathes	Secured Storage	01/26/17 09:55	Return to Storage
JC36049-17.2	Secured Storage	Alfredo Crespo	01/27/17 08:14	Retrieve from Storage
JC36049-17.2	Alfredo Crespo	Secured Staging Area	01/27/17 08:14	Return to Storage
JC36049-17.2	Secured Storage	Dwayne Johnson	01/27/17 09:20	Retrieve from Storage
Analyst unavailable for custody transfer.				
JC36049-17.2	Dwayne Johnson	Secured Staging Area	01/27/17 09:21	Return to Storage
JC36049-17.2	Secured Staging Area	Jared O. Onindo	01/27/17 10:06	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36049
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-17.2	Jared O. Onindo	Secured Storage	01/27/17 18:02	Return to Storage

General Chemistry

6

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Percent Solids Raw Data Summary

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36049
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN58460	0.010	0.0	mg/l	.15	0.14	93.3	90-110%
Chromium, Hexavalent	GP2869/GN58610			mg/kg	40	37.5	93.8	80-120%
Chromium, Hexavalent	GP2869/GN58610	0.40	0.0	mg/kg	946.04	940	99.4	80-120%

Associated Samples:
Batch GP2869: JC36049-1, JC36049-2, JC36049-3, JC36049-4
Batch GN58460: JC36049-17
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36049
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN58460	JC36051-5	mg/l	0.0	0.0	0.0	0-20%
Chromium, Hexavalent	GP2869/GN58610	JC36049-1	mg/kg	2.3	7.4	105.2*(a)	0-20%
Redox Potential Vs H2	GN58538	JC36049-1	mv	310	295	5.0	0-18%
pH	GN58537	JC36049-1	su	6.31	6.31	0.0	0-5%

Associated Samples:
Batch GP2869: JC36049-1, JC36049-2, JC36049-3, JC36049-4
Batch GN58460: JC36049-17
Batch GN58537: JC36049-1, JC36049-2, JC36049-3, JC36049-4
Batch GN58538: JC36049-1, JC36049-2, JC36049-3, JC36049-4
(*) Outside of QC limits
(a) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36049
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN58460	JC36051-5	mg/l	0.0	.15	0.14	93.3	85-115%
Chromium, Hexavalent	GP2869/GN58610	JC36049-1	mg/kg	2.3	1170	1180	101.1(a)	75-125%
Chromium, Hexavalent	GP2869/GN58610	JC36049-1	mg/kg	2.3	49.8	35.6	66.8N(b)	75-125%

Associated Samples:
Batch GP2869: JC36049-1, JC36049-2, JC36049-3, JC36049-4
Batch GN58460: JC36049-17
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.
(b) Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (99_%) on this sample.

Percent Solids Raw Data Summary

Job Number: JC36049
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36049-1 **Analyzed:** 25-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-O-2.0-2.5

Wet Weight (Total)	26.57	g
Tare Weight	19.03	g
Dry Weight (Total)	24.92	g
Solids, Percent	78.1	%

Sample: JC36049-2 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-O-4.5-5.0

Wet Weight (Total)	31.6	g
Tare Weight	25.86	g
Dry Weight (Total)	30.54	g
Solids, Percent	81.5	%

Sample: JC36049-3 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-O-4.5-5.0X

Wet Weight (Total)	35.88	g
Tare Weight	27.87	g
Dry Weight (Total)	34.34	g
Solids, Percent	80.8	%

Sample: JC36049-4 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-O-5.5-6.0

Wet Weight (Total)	27.15	g
Tare Weight	21.01	g
Dry Weight (Total)	26.13	g
Solids, Percent	83.4	%

General Chemistry

Raw Data

Hexavalent Chromium

Test Title:	XCr
GN Batch:	GN58460
Analyst:	RI
Prep Date:	NA
Analysis Date:	1/25/2017
Instrument ID:	P

1

Method: SW846 7196A

Note: Use 4 for CLP list pointer, 1 for reg. List pointer.

Corr. Coef: 0.99993

Slope: 0.8687

Y intercept: 4E-05

Bottle ID	Sample #	Sample Absorbance	BKGRD Abs	Analyzed Times	Y Values Corr Sample Absorbance	X Values Conc(mg/l)	Final Vol. (ml)	Sam Vol. (ml)	Dilution	Final Conc.	Units	MDL	RDL
	Cal. Blk.	0.001	NA	8:50	0.001	0.0000							
	STD1	0.008	NA		0.008	0.0100							
	STD2	0.047	NA		0.047	0.0500							
	STD3	0.089	NA		0.089	0.1000							
	STD4	0.258	NA		0.258	0.3000							
	STD5	0.426	NA		0.426	0.5000							
	STD6	0.698	NA		0.698	0.8000							
	STD7	0.871	NA	8:53	0.871	1.0000							
	CCV	0.431	NA	12:08	0.431	0.4961	NA	NA	NA	NA	mg/l	0.001	0.010
	CCB	0.000	NA	12:08	0.000	0.0000	NA	NA	NA	NA	mg/l	0.0013	0.010
	GN58460-MB1	0.000	0.000		0.000	0.0000	50.0	50.0	1	0.000	mg/l	0.0014	0.010
	GN58460-B1	0.125	0.000		0.125	0.1438	50.0	50.0	1	0.144	mg/l	0.0014	0.010
	GN58460-S1	0.153	0.031		0.122	0.1404	50.0	50.0	1	0.140	mg/l	0.0014	0.010
	GN58460-D1	0.034	0.033		0.001	0.0011	50.0	50.0	1	0.001	mg/l	0.0014	0.010
1*	JC36051-5	0.033	0.032		0.001	0.0011	50.0	50.0	1	0.001	mg/l	0.0014	0.010
4	JC36040-1	0.000	0.000		0.000	0.0000	50.0	50.0	1	0.000	mg/l	0.0014	0.010
2	JC36049-17	0.000	0.000		0.000	0.0000	50.0	50.0	1	0.000	mg/l	0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
	CCV	0.431	NA	12:12	0.431	0.4961	NA	NA	NA	NA	mg/l	0.0013	0.010
	CCB	0.000	NA	12:12	0.000	0.0000	NA	NA	NA	NA	mg/l	0.0013	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
	CCV		NA				NA	NA	NA	NA	mg/l	0.0013	0.010
	CCB		NA				NA	NA	NA	NA	mg/l	0.0013	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
	CCV		NA				NA	NA	NA	NA	mg/l	0.0013	0.010
	CCB		NA				NA	NA	NA	NA	mg/l	0.0013	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
	CCV		NA				NA	NA	NA	NA	mg/l	0.0013	0.010
	CCB		NA				NA	NA	NA	NA	mg/l	0.0013	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010
							50.0	50.0	1	#VALUE!		0.0014	0.010

7.1

7

ACCUTEST

Test: **Hexavalent Chromium**
Product: **XCr**
Method: **SW846 7196A**

MDL = 0.0024 mg/l
RDL = 0.010 mg/l

GNBatch ID: GN58460
Date: 1-25-2017

Digestion Batch QC Summary Units = mg/l

Method Blank ID: GN58460-MB1 Date: 1-25-2017 Result: <RDL RDL: 0.01 <RDL: Yes
Spike Blank ID: SB1 Date: 1 Result: 0.144 Spike: 0.150 %Rec.: 96
Duplicate ID: DP1 Samp. Result: <DL Dup. Result: <DL %RPD: 0
MS ID: V1S1 Samp. Result: <DL MS Result: 0.140 Spike: 0.150 %Rec: 93.3
Diluted Sample ID: _____ Samp. Result: _____ Dil. Result: _____ %RPD: _____
pH adj. PS ID: _____ Samp. Result: _____ MS Result: _____ Spike: _____ %Rec: _____

Analysis Batch QC Summary Units = mg/l

CCV: 1-25-2017 Result: 0.4961 TV: 0.500 %Rec.: 99.2
CCV: 1 Result: 1 TV: 1 %Rec.: _____
CCV: _____ Result: _____ TV: _____ %Rec.: _____
CCV: _____ Result: _____ TV: _____ %Rec.: _____
CCV: _____ Result: _____ TV: _____ %Rec.: _____
CCV: _____ Result: _____ TV: _____ %Rec.: _____

CCB: 1-25-2017 Result: <RDL RDL: 0.01 <RDL: Yes
CCB: 1 Result: 1 RDL: 1 <RDL: _____
CCB: _____ Result: _____ RDL: _____ <RDL: _____
CCB: _____ Result: _____ RDL: _____ <RDL: _____
CCB: _____ Result: _____ RDL: _____ <RDL: _____
CCB: _____ Result: _____ RDL: _____ <RDL: _____

Reagent Reference Numbers:

Initial Calibration Source:
Continuing Calibration Source:

Analyst: _____ Date: 1-25-2017

Comments: _____

Form: GN076-02
Rev. Date: 06/24/13

7.1
7

ACCUTEST

Hexavalent Chromium pH Adjustment Log
Method: SW846 7196A

pH adj. start time: 11:58 _____ pH Adjust: 1/25/17
pH adj. end time: 12:00 _____ GN Batch ID: GN58460

Sample ID	Initial Sample Volume (ml)	Final Volume (ml)	pH after H2SO4	bkg pH after H2SO4	Spike Info	Comments
CCV	45	50	1.96	NA	5ML	5PPM ULTRA
CCV						
CCV						
CCV						
CCB	45	50	1.89	NA		
CCB						
CCB						
CCB						
MS JC36051-5(91)	45	50	1.91	1.82	1ML	7.5PPM LGC.
DUP 1-5(DL)	45	50	1.89	1.80		
SB -B1	45	50	1.86	1.92	1ML	7.5PPM LGC.
MB -MB1	45	50	1.91	1.84		
1 JC36051-5	45	50	1.82	1.64		
2 JC36040-1	45	50	1.93	1.94		
3 JC36049-17	45	50	1.84	1.62		
4	45	50				
5	45	50				
6	45	50				
7	45	50				
8	45	50				
9	45	50				
10	45	50				
11	45	50				
12	45	50				
13	45	50				
14	45	50				
15	45	50				
16	45	50				
17	45	50				
18	45	50				
19	45	50				
PS	45	50				
PS	45	50				
DIL	45	50				
DIL	45	50				

Reagent Information: _____

Analyst: _____ Date: 1-25-17 QC Reviewer: _____ Date: _____

Form: GN077-01
Rev. Date:1/10/11

GN58460

ACCUTEST

Reagent Information Log - XCR - water - 7196A

Reagent	Exp. Date	Reagent # or Manufacturer/Lot
Calibration Source: Hexavalent Chromium, 1000 mg/L Stock	2/1/2018	LGC VHG Lot : 84971-4
Calibration Checks: Hexavalent Chromium, 1000 mg/L Stock	12/31/2020	Ultra lot # R01215
External Check (5PPM ULTRA)	5/19/2017	GNE11-49165-XCR
Spiking Solution (7.5 PPM)	5/19/2017	GNE11-49164-XCRA
Diphenyl carbazide Solution	2/3/2017	GNE1-49540-XCR
Sulfuric Acid, 10%	5/29/2017	GNE11-49230-XCR
Filter 0.45um	na	140604154
1N NaOH	1/22/2017	GNE7-47992-XCR
5PPM LGC (CURVE)	6/7/2017	GNE12-49327-XCR

7.1

7

Form: GN087A-23
Rev. Date: 10/3/05

ACCUTEST

HEXAVALENT CHROMIUM STANDARD PREPARATION LOG

Product: XCR

GN or GP Number: GN58460

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume used in ml	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
10 ppm		1000 ppm	1.0 ml	DI	100 mls	10 mg/l			
100 ppm		1000 ppm	10 ml	DI	100 mls	100 mg/l			
5 ppm ULTRA	ULTRA R01215	1000 ppm	1.0 ml	DI	200 mg/l	5 mg/l	12/31/2020	RP	11/19/2016
7.5 ppm	LGC 84971-9	1000 ppm	1.5 ml	DI	200 mg/l	7.5 mg/l	6/30/2018	RP	11/19/2016
5 ppm LGC	LGC 84971-9	1000 ppm	1.0 ml	DI	100 mg/l	10 mg/l	6/30/2018	RP	12/7/2016

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Diluent	Final Volume	Final Conc. Of Standard (mg/l)	Expiration Date	Analyst	Date
.010 ppm	5.0 ppm LGC	5.0 ppm	0.1 ppm	DI	50 mls	0.01 mg/l	1/26/2017	TT	1/25/2017
.050 ppm	5.0 ppm LGC	5.0 ppm	0.5 ppm	DI	50 mls	0.05 mg/l	1/26/2017	TT	1/25/2017
.10 ppm	5.0 ppm LGC	5.0 ppm	1.0 ppm	DI	50 mls	0.10 mg/l	1/26/2017	TT	1/25/2017
.30 ppm	5.0 ppm LGC	5.0 ppm	3.0 ppm	DI	50 mls	0.30 mg/l	1/26/2017	TT	1/25/2017
.50 ppm	5.0 ppm LGC	5.0 ppm	5.0 ppm	DI	50 mls	0.50 mg/l	1/26/2017	TT	1/25/2017
.80 ppm	5.0 ppm LGC	5.0 ppm	8.0 ppm	DI	50 mls	0.80 mg/l	1/26/2017	TT	1/25/2017
1.00 ppm	5.0 ppm LGC	5.0 ppm	10.0 ppm	DI	50 mls	1.0 mg/l	1/26/2017	TT	1/25/2017

Form: GN205-02
Rev. Date:10/16/09

ACCUTEST

Hexavalent Chromium pH Adjustment Log

Method: SW846 7196A

pH adj. start time: 8:34 _____ pH Adjust. Date: 1/25/17

pH adj. end time: 8:36 _____ GN Batch ID: GN58460

Sample ID	Initial Sample Volume (ml)	Final Volume (ml)	pH after H2SO4	Comments	Spike Info.
Calibration Blank	45	50	1.79	0	
0.010 mg/l standard	45	50	1.74	5ppm LGC	0.10 ml of 5 mg/l to 50 ml FV
0.050 mg/l standard	45	50	1.73	5ppm LGC	0.50 ml of 5 mg/l to 50 mL FV
0.100 mg/l standard	45	50	1.80	5ppm LGC	1.00 ml of 5 mg/l to 50 mL FV
0.300 mg/l standard	45	50	1.71	5ppm LGC	3.00 ml of 5 mg/l to 50 mL FV
0.500 mg/l standard	45	50	1.77	5ppm LGC	5.00 ml of 5 mg/l to 50 mL FV
0.800 mg/l standard	45	50	1.62	5ppm LGC	8.00 ml of 5 mg/l to 50 mL FV
1.00 mg/l standard	45	50	1.65	5ppm LGC	10.0 ml of 5 mg/l to 50 mL FV

Reagent Information:

Analyst: [signature] Date: 1/25/17

Form: GN078-01
Rev. Date: 1/10/11

SGS ACCUTEST

Test: **pH, Corrosivity**
Method: **SW846 9040B or SW846 9045C**
SM4500H+ B-11
Thermometer ID: 303655
Correction Factor: -0.7

Product: **PH, CORR**
Analyst: PO
GN Batch ID: GN58537
Analysis Date: 1/26/2017
pH Meter ID: 50

QC Summary

Duplicate ID: GN58537-D1
Dup Result: 6.31
Sample ID: JC36049-1
% RPD: 0.00%

Sample ID	Wt./Vol. used for soilds	Uncorrected/ Corrected Temp in Deg C.	Result	Corrosivity	Read time
Buffer Check: 4		25	4.01		14:30
Buffer Check: 7		25	7		
Buffer Check: 10		25	9.99		
GN58537-D1		25	6.31		
JC35816-1		25	8.32		
JC35816-2		25	7.49		
JC35816-3		25	5.58		
JC35816-4		25	8.06		
JC35826-1		25	7.50		
JC35826-2		25	6.35		
JC35827-1		25	6.75		
JC35828-1		25	6.99		
JC35828-2		25	7.08		
Buffer Check: 4		25	4.01		
Buffer Check: 10		25	9.98		
JC35828-3		25	6.68		
JC35828-4		25	7.08		
JC36017-2		25	7.08		
JC36036-1		25	11.78		
JC36036-2		25	11.81		
JC36049-1		25	6.31		
JC36049-2		25	6.61		
JC36049-3		25	6.95		
JC36049-4		25	7.02		
Buffer Check: 4		25	4.00		
Buffer Check: 13		25	12.98		15:57
Buffer Check:					
Buffer Check:					

Comments:

Validated By: Nancy Cole
Validated Date: 6/5/13 (metho
Document Control #: **AGN-PH CORR-AQ-03**

SGS ACCUTEST

Preparation Log for PH and CORR Soils and Solid Wastes

Method SW846 9045D

Batch: GN58537-PH GN 58538-PH

Analyst: PO

Date: 1/26/17

Balance ID: B-36

	Sample ID	Sample mass (g)	Volume of water added (mL)	Spun for 5 min	Settled for 1 h Start	Settled for 1 h End
1	JC36017-2	9.04	8 mL	✓	11:20	12:00
2	JC36049-1	50.55	50 mL	✓		
3	JC36049-2	50.60	50 mL	✓		
4	JC36049-3	50.55	50 mL	✓		
5	JC36049-4	50.69	50 mL	✓		
6	~~JC36041-1~~ PO 1/26/17					
7	JC36036-1	50.61	50mL	✓		
8	JC36036-2	50.18	50mL	✓		
9	JC35816-1	50.52	50mL	✓		
10	-2	50.58	50mL	✓		
11	-3	50.00	50mL	✓		
12	-4	50.19	50 mL	✓		
13	JC35826-1	50.22	50mL	✓		
14	-2	50.07	50 mL	✓		
15	JC35827-1	50.61	50mL	✓		
16	JC35828-1	50.48	50mL	✓		
17	-2	50.12	50mL	✓		
18	-3	50.66	50mL	✓		
19	-4	50.46	50mL	✓		
20					✓	✓
21	DUP JC36049-1	50.61	50mL	✓		

Reviewer & Date:

Form: AGN_PH9045_01
Revised: 26-Aug-2015

Reagent Information Log
Test Name:_____pH_____

GN58537

Reagent	
pH 2 Buffer Solution	FICHER LOT#111107 EXP 3/13
pH 4 Buffer Solution	FISCHER LOT#115547 EXP 10/13
pH 7 Buffer Solution	RICCA LOT#2111388 EXP 10/13
pH 10 Buffer Solution	FISCHER LOT#110749 EXP 03/13
pH 13 Buffer Solution	AQUA SOL. LOT#1080516 EXP 08/12

7.2

7

Form: GN087-01
Rev. Date:1/26/2017

ACCUTEST LABORATORIES

Test: Redox Potential | **Test Code: REDOX** | **Analyst:** PO

Matrix: Aqueous (◉) | Method: ASTM D1498-76 | **Date:** 01/26/17

Matrix: Solid (○) | Method: ASTM D1498-76 Mod. | **GN Batch ID:** GN58538

Temp (Deg C): 23

Quality Control Summary

Sample ID: JC36049-1 Results: 309.70% Dup: 295.40% % RPD: **4.73%**

Ferrous-Ferric True: 675	Found	**675**	% Rec	**100.00%**
pH 4 Quinhydrone True: 462	Found	**489.3**	% Rec	**105.91%**
pH 4 Quinhydrone True: 462	Found	**468.2**	% Rec	**101.34%**
pH 4 Quinhydrone True: 462	Found	**468.3**	% Rec	**101.36%**
pH 7 Quinhydrone True: 285	Found	**293.5**	% Rec	**102.98%**
pH 7 Quinhydrone True: 285	Found	**282.2**	% Rec	**99.02%**
pH 7 Quinhydrone True: 285	Found	**280.6**	% Rec	**98.46%**

Sample #:	mv vs. Ag/AgCl Electrode	Corrected results (mv vs. Hydrogen electrode) ***	Analysis Time
Ferrous-Ferric Solution	474.8	675	12:00
pH 4 Quinhydrone	289	489.3	
pH 7 Quinhydrone	93.5	293.5	
Dup GN58538-D1	80.3	295.4	
1. JC35816-1	73.4	271.5	
2. JC35816-2	217.2	418.5	
3. JC35816-3	241.1	439.4	
4. JC35816-4	137.9	336.6	
5. JC35826-1	181.5	382	
6. JC35826-2	247.5	447.7	
7. JC35827-1	244.7	444.9	
8. JC35828-1	233	432.6	
9. JC35828-2	162.8	363	
pH 4 Quinhydrone	268	468.2	
pH 7 Quinhydrone	82.1	282.2	
10. JC35828-3	173.4	373.1	
11. JC35828-4	125.1	325.4	
12. JC36017-2	261.9	462.1	
13. JC36036-1	-68	132.2	
14. JC36036-2	-62.1	138	
15. JC36049-1	109.6	309.7	
16. JC36049-2	229.6	429.8	
17. JC36049-3	189.9	390.3	
18. JC36049-4	160.9	361.2	
19.			
pH 4 Quinhydrone	268.1	468.3	
pH 7 Quinhydrone	80.4	280.6	16:30

*** Note: Results vs Ag/AgCl electrode are converted to corrected results automatically at the instrument by changing to the relative mv scale. This conversion is done by adding about 200 mV to the Ag/AgCl reading.

Reagent Numbers: GNE10-48853-ORP XP: 4/24/2017

Comments:

Validated By: **Nancy Cole** Validated Date: **8/1/2012**

Document Control #: **AGN-REDOX-AQ-01**

SGS ACCUTEST

Preparation Log for PH and CORR Soils and Solid Wastes

Method SW846 9045D

Batch: GN58537-PH GN 58538-PH

Analyst: PO

Date: 11/26/17

Balance ID: B-36

	Sample ID	Sample mass (g)	Volume of water added (mL)	Spun for 5 min	Settled for 1 h Start	Settled for 1 h End
1	5C36017-2	8.04	8 mL	✓	11:20	12:20
2	5C36049-1	50.55	50 mL	✓		
3	5C36049-2	50.60	50 mL	✓		
4	5C36049-3	50.55	50 mL	✓		
5	5C36049-4	50.69	50 mL	✓		
6	~~5C36041-1~~ PO 11/26/17					
7	5C36036-1	50.61	50mL	✓		
8	5C36036-2	50.18	50mL	✓		
9	5C35816-1	50.52	50mL	✓		
10	-2	50.58	50mL	✓		
11	-3	50.00	50mL	✓		
12	-4	50.19	50 mL	✓		
13	5C35826-1	50.22	50mL	✓		
14	-2	50.07	50 mL	✓		
15	5C35827-1	50.61	50mL	✓		
16	5C35828-1	50.48	50mL	✓		
17	-2	50.12	50mL	✓		
18	-3	50.66	50mL	✓		
19	-4	50.46	50mL	✓		
20						
21	DUP 5C36049-1	50.61	50mL	✓		

Reviewer & Date:

Form: AGN_PH9045_01
Revised: 26-Aug-2015

Reagent Information Log
Test Name:_____EH_____

GN58538

Reagent

Redox Standand	GNE7-48853-ORP 04/24/2017
Quinhydrone, 98%	LOT#A0318649 EXP 2/17/19
pH 4 Buffer Solution	FISHER LOT#164668 EXP 7/18
pH 7 Buffer Solution	FISHER LOT #155866 EXP 9/17

7.3

7

Form: GN087-01
Rev. Date:12/30/2016

ACCUTEST LABORATORIES

Test: Redox Potential | **Test Code: REDOX** | **Analyst:** JAREDO

Matrix: Aqueous (◉) | Method: ASTM D1498-76 | **Date:** 01/27/17

Matrix: Solid (○) | Method: ASTM D1498-76 Mod. | **GN Batch ID:** GN58601

Temp (Deg C): 25

Quality Control Summary

Sample ID: NA | Results: NA | Dup: NA | % RPD:

Ferrous-Ferric True: 675	Found	**676.4**	% Rec	**100.21%**
pH 4 Quinhydrone True: 462	Found	**491.2**	% Rec	**106.32%**
pH 4 Quinhydrone True: 462	Found	**491.4**	% Rec	**106.36%**
pH 4 Quinhydrone True: 462	Found		% Rec	
pH 7 Quinhydrone True: 285	Found	**294.3**	% Rec	**103.26%**
pH 7 Quinhydrone True: 285	Found	**299.7**	% Rec	**105.16%**
pH 7 Quinhydrone True: 285	Found		% Rec	

Sample #:	mv vs. Ag/AgCl Electrode	Corrected results (mv vs. Hydrogen electrode) ***	Analysis Time
Ferrous-Ferric Solution	464.6	676.4	10:00
pH 4 Quinhydrone	293.4	491.2	
pH 7 Quinhydrone	99.1	294.3	
Dup JC36049-17	190.3	402	
1. JC36135-1	262	473.2	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
pH 4 Quinhydrone	279.7	491.4	
pH 7 Quinhydrone	92.1	299.7	10:57
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
pH 4 Quinhydrone			
pH 7 Quinhydrone			

*** Note: Results vs Ag/AgCl electrode are converted to corrected results automatically at the instrument by changing to the relative mv scale. This conversion is done by adding about 200 mV to the Ag/AgCl reading.

Reagent Numbers: GNE3-46665-ORP xp 9/5/16

Comments:

Validated By: **Nancy Cole** Validated Date: **8/11/2012**

Document Control #: **AGN-REDOX-AQ-01**

GN 58601

Reagent Information Log
Test Name:_____EH_____

Reagent

Redox Standand	GNE7-48853-ORP 04/24/2017
Quinhydrone, 98%	LOT#A0318649 EXP 2/17/19
pH 4 Buffer Solution	FISHER LOT#164668 EXP 7/18
pH 7 Buffer Solution	FISHER LOT #155866 EXP 9/17

7.4

7

Form: GN087-01
Rev. Date:12/30/2016

Hexavalent Chromium

Test Title:	XCRA
GN Batch:	GN58610
Analyst:	RI
Prep Date:	1/25/2017
Analysis Date:	1/27/2017
Instrument ID:	P

Method: SW846 3060A, 7196A

Note: All results below shown on a wet weight basis.

Corr. Coef: 0.99997

Slope: 0.8489

Y intercept: 0.0019

Bottle #	Sample #	Sample Absorbance	BKGRD Abs	Analysis Times	Y Values Corr Sample Absorbance	X Values Conc(mg/l)	Final Vol. (ml)	Sam. Wt. (g)	Dilution	Final Conc.	Units	MDL	RDL
	Cal. Blk.	0.000	NA	9:55	0.000	0.0000							
	STD 1	0.009	NA	9:59	0.009	0.0100							
	STD 2	0.045	NA	9:59	0.045	0.0500							
	STD 3	0.090	NA	9:59	0.090	0.1000							
	STD 4	0.254	NA	9:59	0.254	0.3000							
	STD 5	0.430	NA	9:59	0.430	0.5000							
	STD 6	0.679	NA	9:59	0.679	0.8000							
	STD 7	0.851	NA	9:59	0.851	1.0000							
	CCV	0.426	NA	13:06	0.426	0.4996	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.001	NA	13:06	0.001	-0.0010	NA	NA	NA	NA	mg/l	0.007	0.010
	GP2869-MB1	0.001	0.000	13:12	0.001	-0.0010	100.0	2.5000	1	-0.041	mg/kg	0.280	0.400
	GP2869-B1	0.798	0.000	13:12	0.798	0.9378	100.0	2.5000	1	37.512	mg/kg	0.280	0.400
	GP2869-S1	0.692	0.083	13:12	0.609	0.7152	100.0	2.5700	1	27.828	mg/kg	0.280	0.389
	GP2869-D1	0.194	0.067	13:12	0.127	0.1474	100.0	2.5400	1	5.803	mg/kg	0.280	0.394
	JC36049-1	0.111	0.069	13:12	0.042	0.0473	100.0	2.6000	1	1.818	mg/kg	0.280	0.385
	JC36049-1PSCONF	0.496	0.039	13:12	0.457	0.5361	100.0	2.6000	2	41.240	mg/kg	0.280	0.769
	GP2869-B2	>3	OVR	13:12		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	GP2869-S2	>3	OVR	13:12		#VALUE!	100.0	2.5100	1	#VALUE!	mg/kg	0.280	0.398
	GP2869-B2	0.401	0.000	13:12	0.401	0.4702	100.0	2.5000	50	940.314	mg/kg	0.280	20.000
	GP2869-S2	0.398	0.005	13:12	0.393	0.4607	100.0	2.5100	50	917.796	mg/kg	0.280	19.920
	CCV	0.426	NA	13:12	0.426	0.4996	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.001	NA	13:12	0.001	-0.0010	NA	NA	NA	NA	mg/l	0.007	0.010
	JC36049-2	0.073	0.004	13:14	0.069	0.0791	100.0	2.4500	1	3.228	mg/kg	0.280	0.408
	JC36049-3	0.027	0.008	13:14	0.019	0.0202	100.0	2.5600	1	0.788	mg/kg	0.280	0.391
	JC36049-4	0.039	0.006	13:14	0.033	0.0367	100.0	2.5500	1	1.438	mg/kg	0.280	0.392
				13:14		#VALUE!	100.0	2.4600	5	#VALUE!	mg/kg	0.280	2.033
				13:14		#VALUE!	100.0	2.4600	2	#VALUE!	mg/kg	0.280	0.813
				13:14		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:14		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:14		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:14		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:14		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV	0.424	NA	13:14	0.424	0.4972	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.001	NA	13:14	0.001	-0.0010	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400

7.5

7

SGS ACCUTEST - Dayton

3060A/7196A POST-DIGEST SPIKE LEVEL CALCULATION SPREADSHEET

GP Batch: GP2869

NOTE: Always dilute post-spike first, then take a 45 ml aliquot of the diluted post-spike and add the spike amount.

Sample ID	PS Aliquot Weight in g Digested in 100 ml	Weight in 45 ml	Results in mg/kg.	Amount in ml to add of 100 ppm solution	Dilution needed	Suggested Dilution to use	Actual Dilution to be used	Suggested ml of 100 ppm to spike on dilution of sample.	Actual ml of 100 ppm to spike on dilution of sample.	Est. Read-back on curve in mg/l	Calculated Spike Amount in mg/kg	Use calculated or default spike?
JC36049-1	2.6	1.17	1.818	0.468	yes	1	2	0.234	0.234	0.544	40.000	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike

3060A/7196A INSOLUBLE SPIKE CALCULATION

Weight of PbCrO4	Weight of Sample	Amount Spiked
0.0147	2.5	946.040
0.0142	2.51	910.221
		#DIV/0!
		#DIV/0!
		#DIV/0!

Validated By: JJY
Doc. Control #: AGN-XCRAPSCALC-01

Date Validated: 2/26/13

ACCUTEST

Test: **Hexavalent Chromium** MDL = 0.28 mg/kg GNBatch ID: GN58610
Product: **XCr** RDL = 0.4 mg/kg Date: 1-27-2017
Method: **SW846 3060A/7196A**

Digestion Batch QC Summary Units = mg/kg

Method Blank ID: GP58619-MB1 Date: 1-27-2017 Result: <RDL RDL: 0.40 <RDL: Yes
Sol. Spike Blank ID: B1 Date: Result: 37.512 Spike: 40.03 %Rec.: 93.74
Insol. Spike Blank ID: B2 Date: Result: 940.314 Spike: 946.07 %Rec.: 99.39
Duplicate ID: D1 Samp. Result: 1.414 Dup. Result: 5.803 %RPD: 104.58
Sol. MS ID: S1 Samp. Result: MS Result: 27.244 Spike: 38.91 %Rec: 66.45
Insol. MS ID: S2 Samp. Result: MS Result: 917.996 Spike: 910.22 %Rec: 100.63
Post Spike ID: JC36049-1 Samp. Result: PS Result: 41.24 Spike: 40.05 %Rec: 98.56
Diluted Sample ID: not done Samp. Result: Dil. Result: %RPD:
pH adj. PS ID: Samp. Result: MS Result: Spike: 42.10 %Rec:

Analysis Batch QC Summary Units = mg/l

CCV: 1-27-2017 Result: 0.499 TV: 0.500 %Rec.: 99.93
CCV: " Result: " TV: 0.500 %Rec.: "
CCV: " Result: 0.497 TV: 0.500 %Rec.: 99.47
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:

CCB: 1-27-2017 Result: <RDL RDL: 0.010 <RDL: Yes
CCB: " Result: " RDL: 0.010 <RDL: "
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:

Reagent Reference Information - refer to attached reagent reference information page(s).

Insoluble spike = $PbCrO_4$ Molecular weight = 323.2 g/mol Cr = 52.0 g/mol

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount

Analyst: Date: 1-27-2017

Comments:

Form: GN066-04
Rev. Date: 16-Mar-2016

ACCUTEST

Hexavalent Chromium pH Adjustment Log
Method Sw846 3060A/7196A

pH adj. start time: 12:38
pH adj. end time: 12:45
pH Meter ID: 62
Digestion Date: 1/25/17
pH adj. Date: 1-27-2017
GN Batch ID: GN 5861

Sample ID (GP 2869)	Sample Weight in g	pH after HNO3 (7.0 to 8.0)	Final Volume (ml)	pH after H2SO4 (1.5 to 2.5)	bkg pH after H2SO4	Spike Amounts	Spike Solution	Digestate Description/Comments
CCV		7.41	100	1.91	—	5.0 ml	10 ppm ultra	
CCV								
CCV								
CCV								
CCB		7.62	100	1.96	—			
CCB								
CCB								
CCB								
MS (Sol) JC 36049-1	2.57	7.73	100	1.96	1.92	1.0ml	100ppm LGC	
MS (Insol.)	2.51	7.51		1.91	OVR	0.01429	PbCrO4	
DUP	2.54	7.42		1.89	1.64			
SB (Sol)	2.50g	7.61		1.92	1.59	1.0ml	100ppm LGC	
SB (Insol)	2.50g	7.50		1.92	OVR	0.01479	PbCrO4	
MB	2.50g	7.42		1.94	1.92			
1 JC 36049-1	2.60	7.90		1.96	1.90			Dark Brown yellow
2 -2	2.45	7.49		1.99	1.89			
3 -3	2.56	7.21		1.92	1.67			
4 -4	2.55	7.32		1.94	1.93			
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
SB (Insol)	2.50g	7.50	100	1.92	1.93			
MS (Insol.)	2.51	7.51		1.94	1.67			dilution1:50 1ml to 50ml
PS	2.60	7.90		1.92	1.82	0.2344	100ppm LGC	dilution 1:50 1ml to 50ml
pH adjusted PS	2.41	7.21		1.86	1.93	0.2222	100ppm LGC	2.25ml to 50ml ph= 4.4
1:5 dil.	2.41	7.21		1.92	1.64			10ml to 50ml
JC 36049-1	2.46	7.22		—	—			

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Digestion analyst & date: SP 1/25/17
Analysis analyst & date: 1-27-2017
Spike Witness: MH

Form: GN067-02b

ACCUTEST

GN/GP Batch ID: GP 2869 GN5761°

Reagent Information Log - XCRA (soil 3060A/7196)

Reagent	Exp. Date	Reagent # or Manufacturer/Lot
Calibration Source: Hexavalent Chromium, 1000 mg/L Stock	6/30/2018	VHG Labs 84971-9
Calibration Checks: Hexavalent Chromium, 1000 mg/L Stock	12/31/2020	Ultra Lot : R01215
10.0ppm Ultra CCV Spike	6/17/2017	GNE12-49422-XCRA
Spiking Solution Source 100 PPM LGC VHG	7/12/2017	GNE1-49648-XCRA
Lead Chromate (Insoluble Hexavalent Chromium Spike)	11/16/2020	Sigma Aldrich Lot #BCBP0031V
Magnesium Chloride, Anhydrous	8/14/2018	Alfa Aesar Lot #F19Z033
1N NaOH	7/13/2017	GNE1-49667-XCR
Digestion Solution	2/8/2017	GNE1-49617-XCR
Phosphate Buffer Solution	5/5/2017	GNE8-49027-XCRA
5.0 M Nitric Acid	7/11/2017	GNE1-49638-XCRA
Diphenylcarbazide Solution	2/15/2017	GNE1-49678-XCR
Sulfuric Acid, 10%	7/10/2017	GNE1-49627-XCR
Filter	NA	LOT# 150130034
Teflon Chips	NA	919120
0.45um syringe filter	NA	151221062

Form: GN087A-21B
Rev. Date: 2/18/10

7.5
7

SGS ACCUTEST

HEXAVALENT CHROMIUM TEMPERATURE & TIME DIGESTON LOG (METHOD SW846 3060A)

Digest batches for a minimum of 1 hour.

Record temperatures at the start, middle and end of each digestion.

Corrected temperatures must be from 90-95 deg. C.

Digestion Date: 1/25/17		Hot Plate ID: 9 Thermometer ID: 453 Correction Factor: (-1)		Hot Plate ID: 8 Thermometer ID: 463 Correction Factor: (-1)		Hot Plate ID: 11 Thermometer ID: 3124165 Correction Factor: (-2.0)		Hot Plate ID: 6 Thermometer ID: 462 Correction Factor: (0)		Hot Plate ID: 10 Thermometer ID: 3106914 Correction Factor: (-1.0)			
		Temperatures		Temperatures		Temperatures		Temperatures		Temperatures			
GP Batch ID(s)	Time	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Analyst Check	2nd Analyst Check
GP 2863	Start time 9:50	94	93	93	92	94	92	91	91	95	94	SP	MH
GP 2864 GP2865 GP2866	Half time 10:20	94	93	93	92	94	92	91	91	95	94	MH	SP
	End time 10:50	94	93	93	92	94	92	91	91	95	94	SP	MH
GP 2867	Start time 11:00	95	94	94	93	95	93	90	90	95	94	SP	MH
GP 2868	Half time 11:30	95	94	94	93	95	93	90	90	95	94	SP	MH
GP 2869	End time 12:00	95	94	94	93	95	93	90	90	95	94	SP	MH
	Start time												
	Half time												
	End time												

Data Reviewed: _____

Form: GN074-03
Revised: 28-Nov-16

ACCUTEST.

Hexavalent Chromium pH Adjustment Log
Method: SW846 3060A/7196A

pH adj. start time: 9-37 9:45
pH adj. end time: 9-42 9:49
pH adjustment Date: 1-29-2017
GN Batch ID: GN 58610

Sample ID	Sample Weight in g	pH after HNO3	Final Volume (ml)	pH after H2SO4	Comments	Spike Info.
Calibration Blank	NA	9.61	100	2.04		
0.010 mg/l standard	NA	9.32	100	2.01	10ppm LGC VHG	0.10 ml of 10 mg/l
0.050 mg/l standard	NA	9.46	100	1.99	10ppm LGC VHG	0.50 ml of 10 mg/l
0.100 mg/l standard	NA	9.30	100	1.96	10ppm LGC VHG	1.00 ml of 10 mg/l
0.300 mg/l standard	NA	9.60	100	1.89	10ppm LGC VHG	3.00 ml of 10 mg/l
0.500 mg/l standard	NA	9.81	100	1.93	10ppm LGC VHG	5.00 ml of 10 mg/l
0.800 mg/l standard	NA	9.90	100	1.94	10ppm LGC VHG	8.00 ml of 10 mg/l
1.00 mg/l standard	NA	9.44	100	2.07	10ppm LGC VHG	10.0 ml of 10 mg/l

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Anayst: [signature]
Date: 1-29-2017

Form: GN068-01
Rev. Date:5/22/06

ACCUTEST.

HEXAVALENT CHROMIUM STANDARD PREPARATION LOG

Product: XCRA

GN or GP Number: GN5861

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume used in ml	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
10 ppm	Lot # 84971-4	1000 ppm	1.0 ml	DI	100 mls	10 mg/l	2/1/2018	RR	1-29-2018
100 ppm	Lot # 84971-4	1000 ppm	10 ml	DI	100 mls	100 mg/l	2/1/2018		
5 ppm		1000 ppm	1.0 ml	DI	200 mg/l	5 mg/l			
7.5 ppm		1000 ppm	1.5 ml	DI	200 mg/l	7.5 mg/l			
10 ppm	ULTRALOT#R01215	1000 ppm	1.0 ml	DI	100 mg/l	10 mg/l	12/31/2020		

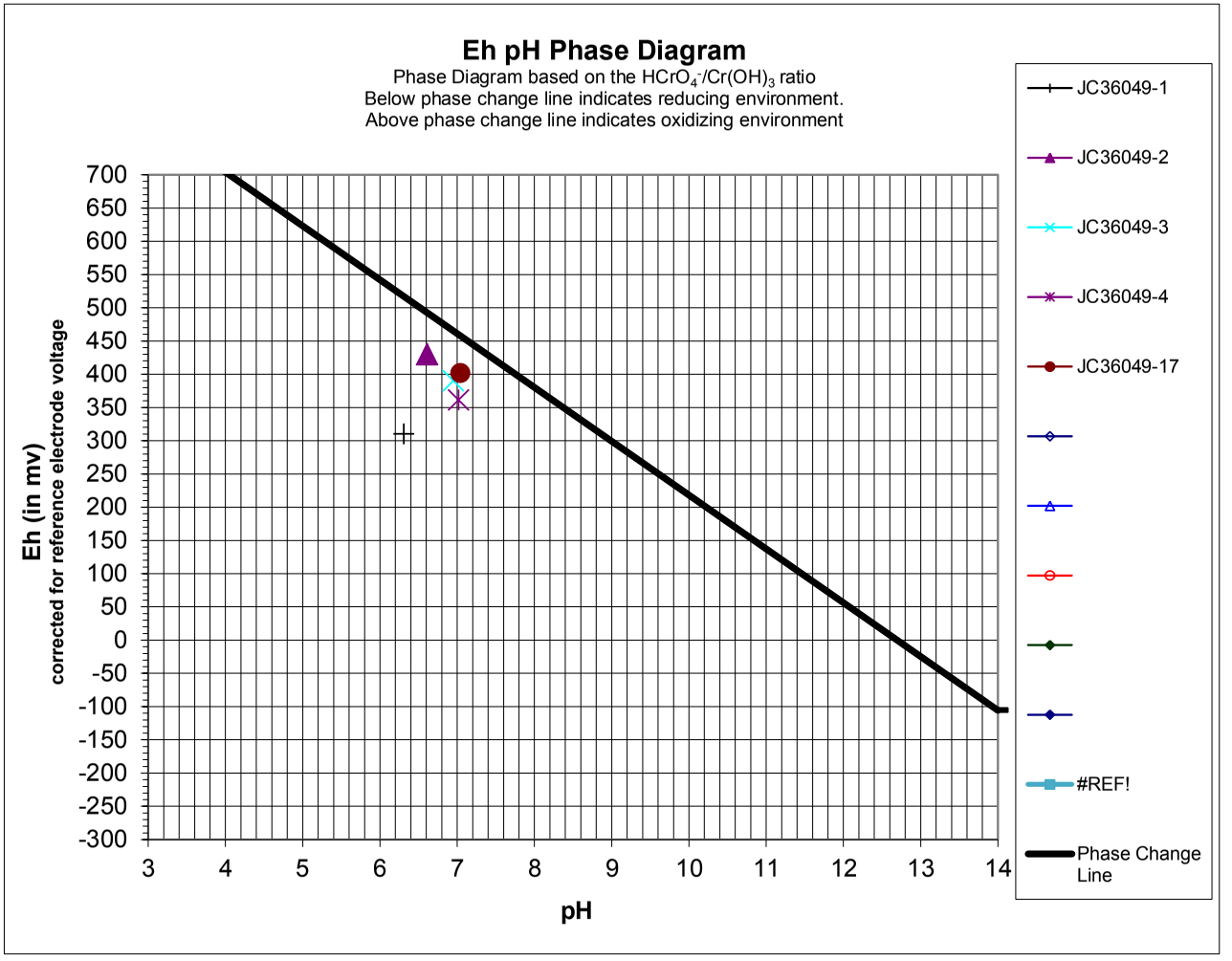
Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Diluent	Final Volume	Final Conc. Of Standard (mg/l)	Expiration Date	Analyst	Date
.010 ppm	10.0 ppm	10.0 ppm	0.1 ppm	DI	100 mls	0.01 mg/l	1-28-2018	RR	1-29-2018
.050 ppm	10.0 ppm	10.0 ppm	0.5 ppm	DI	100 mls	0.05 mg/l			
.10 ppm	10.0 ppm	10.0 ppm	1.0 ppm	DI	100 mls	0.10 mg/l			
.03 ppm	10.0 ppm	10.0 ppm	3.0 ppm	DI	100 mls	0.30 mg/l			
.50 ppm	10.0 ppm	10.0 ppm	5.0 ppm	DI	100 mls	0.50 mg/l			
.80 ppm	10.0 ppm	10.0 ppm	8.0 ppm	DI	100 mls	0.80 mg/l			
1.00 ppm	10.0 ppm	10.0 ppm	10.0 ppm	DI	100 mls	1.0 mg/l			

Form: GN205-01
Rev. Date:9/10/07

SGS ACCUTEST

	pH	eH (MV)
Phase Change Line	0	1027.7
	14	-105.6

Sample Number	pH	eH (mv)
JC36049-1	6.31	310
JC36049-2	6.61	430
JC36049-3	6.95	390
JC36049-4	7.02	361
JC36049-17	7.04	402



Note that the Eh values plotted on this diagram are corrected for the reference electrode voltage and the values shown are versus the standard hydrogen electrode

Reference for graph: SW846 method 3060A

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

PPG Garfield Avenue, Jersey City, NJ

60279183.GA.RI.RPT.HDS.FIELD

SGS Accutest Job Number: JC36049A

Sampling Date: 01/24/17

Report to:

AECOM, INC.
30 Knightsbridge Road Suite 520
Piscataway, NJ 08854
NJlabdata@aecom.com; Christine.DeAmbrogio@aecom.com

ATTN: Mary O'Connell Kozik

Total number of pages in report: **182**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4 5 6 7

Table of Contents

Sample Summary

AECOM, INC.

Job No: JC36049A

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC36049-1A	01/24/17	09:05	MOK	01/24/17	SO	Soil	114-MW16AB-0-2.0-2.5
JC36049-1AD	01/24/17	09:05	MOK	01/24/17	SO	Soil Dup/MSD	114-MW16AB-0-2.0-2.5
JC36049-1AS	01/24/17	09:05	MOK	01/24/17	SO	Soil Matrix Spike	114-MW16AB-0-2.0-2.5
JC36049-2A	01/24/17	09:15	MOK	01/24/17	SO	Soil	114-MW16AB-0-4.5-5.0
JC36049-3A	01/24/17	09:20	MOK	01/24/17	SO	Soil	114-MW16AB-0-4.5-5.0X
JC36049-4A	01/24/17	09:25	MOK	01/24/17	SO	Soil	114-MW16AB-0-5.5-6.0
JC36049-17A	01/24/17	14:00	MOK	01/24/17	AQ	Field Blank Soil	HDS-FB20170124

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	AECOM, INC.	**Job No**	JC36049A
Site:	PPG Garfield Avenue, Jersey City, NJ	**Report Date**	1/30/2017 11:59:41 A

On 01/24/2017, 4 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 5.4 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC36049A was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Metals By Method SW846 6010C

Matrix: AQ **Batch ID:** MP98367

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36147-1MS, JC36147-1MSD, JC36147-1PS, JC36147-1SDL, JC36147-1DUP were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Antimony, Chromium, Nickel, Vanadium are outside control limits for sample MP98367-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: SO **Batch ID:** MP98350

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36049-1AMS, JC36049-1AMSD, JC36049-1ASDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Antimony are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike Duplicate Recovery(s) for Antimony are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- RPD(s) for MSD for Nickel, Thallium are outside control limits for sample MP98350-S2. High rpd due to possible sample nonhomogeneity.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC36049A
Account: AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Collected: 01/24/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC36049-1A	**114-MW16AB-0-2.0-2.5**					
Chromium		53.5	1.3	0.16	mg/kg	SW846 6010C
Nickel		16.2	5.3	0.10	mg/kg	SW846 6010C
Vanadium		28.4	6.6	0.11	mg/kg	SW846 6010C
JC36049-2A	**114-MW16AB-0-4.5-5.0**					
Chromium		19.3	1.2	0.14	mg/kg	SW846 6010C
Nickel		10.9	4.8	0.091	mg/kg	SW846 6010C
Vanadium		30.0	6.0	0.10	mg/kg	SW846 6010C
JC36049-3A	**114-MW16AB-0-4.5-5.0X**					
Chromium		16.4	1.2	0.14	mg/kg	SW846 6010C
Nickel		11.0	4.9	0.092	mg/kg	SW846 6010C
Vanadium		22.0	6.1	0.10	mg/kg	SW846 6010C
JC36049-4A	**114-MW16AB-0-5.5-6.0**					
Chromium		23.0	1.2	0.14	mg/kg	SW846 6010C
Nickel		17.5	4.7	0.088	mg/kg	SW846 6010C
Vanadium		43.5	5.8	0.097	mg/kg	SW846 6010C
JC36049-17A	**HDS-FB20170124**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: 114-MW16AB-0-2.0-2.5
Lab Sample ID: JC36049-1A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/24/17
Date Received: 01/24/17
Percent Solids: 78.1

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.39 U	2.6	0.39	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	53.5	1.3	0.16	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	16.2	5.3	0.10	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.53 U	1.3	0.53	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	28.4	6.6	0.11	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98350

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 114-MW16AB-0-4.5-5.0
Lab Sample ID: JC36049-2A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/24/17
Date Received: 01/24/17
Percent Solids: 81.5

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.35 U	2.4	0.35	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	19.3	1.2	0.14	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	10.9	4.8	0.091	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.48 U	1.2	0.48	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	30.0	6.0	0.10	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98350

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 114-MW16AB-0-4.5-5.0X
Lab Sample ID: JC36049-3A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/24/17
Date Received: 01/24/17
Percent Solids: 80.8

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.35 U	2.4	0.35	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	16.4	1.2	0.14	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	11.0	4.9	0.092	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.48 U	1.2	0.48	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	22.0	6.1	0.10	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98350

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 114-MW16AB-0-5.5-6.0
Lab Sample ID: JC36049-4A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/24/17
Date Received: 01/24/17
Percent Solids: 83.4

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.34 U	2.3	0.34	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	23.0	1.2	0.14	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	17.5	4.7	0.088	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.46 U	1.2	0.46	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	43.5	5.8	0.097	mg/kg	1	01/26/17	01/26/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98350

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: HDS-FB20170124
Lab Sample ID: JC36049-17A
Matrix: AQ - Field Blank Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/24/17
Date Received: 01/24/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	3.3 U	6.0	3.3	ug/l	1	01/26/17	01/26/17	DE	SW846 6010C [1]	SW846 3010A [2]
Chromium	0.81 U	10	0.81	ug/l	1	01/26/17	01/26/17	DE	SW846 6010C [1]	SW846 3010A [2]
Nickel	0.76 U	10	0.76	ug/l	1	01/26/17	01/26/17	DE	SW846 6010C [1]	SW846 3010A [2]
Thallium	1.9 U	2.0	1.9	ug/l	1	01/26/17	01/26/17	DE	SW846 6010C [1]	SW846 3010A [2]
Vanadium	0.66 U	50	0.66	ug/l	1	01/26/17	01/26/17	DE	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA41238
(2) Prep QC Batch: MP98367

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

AECOM SO, FB JC36049 E

COC ID:	2017-01-24-RI-HDS-COC	TURNAROUND TIME:	See Special Instructions	RUSH:	

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS — ANALYSIS REQUESTED — Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)		
114-MW16AB-0-2.0-2.5	1	SO	2017/01/24	09:05	G	2	2 (8oz) jars MS/MSD	X	X	X	1	B14
114-MW16AB-0-4.5-5.0	2	SO	2017/01/24	09:15	G	1	1 (8oz) jar	X	X	X	2	
114-MW16AB-0-4.5-5.0X	3	SO	2017/01/24	09:20	G	1	1 (8oz) jar	X	X	X	3	AS
114-MW16AB-0-5.5-6.0	4	SO	2017/01/24	09:25	G	1	1 (8oz) jar	X	X	X	4	G20
114-MW16AB-5E-2.0-2.5	5	SO	2017/01/24	10:25	G	1	1 (8 oz) jar-hold	H	H	H	5	
114-MW16AB-5E-4.0-4.5	6	SO	2017/01/24	10:35	G	1	1 (8oz) jar-hold	H	H	H	6	
114-MW16AB-5E-5.5-6.0	7	SO	2017/01/24	10:40	G	1	1 (8oz) jar-hold	H	H	H	7	
114-MW16AB-5N-2.0-2.5	8	SO	2017/01/24	09:45	G	1	1 (8oz) jar-hold	H	H	H	8	INITIAL ASESSMENT 3A JK
114-MW16AB-5N-4.5-5.0	9	SO	2017/01/24	09:50	G	1	1 (8oz) jar-hold	H	H	H	9	LABEL VERIFICATION JS
114-MW16AB-5N-5.5-6.0	10	SO	2017/01/24	10:00	G	1	1 (8oz) jar-hold	H	H	H	10	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	[signature] AECOM	1/24/17 1530	[signature] AECOM	1/24/17 1600
	[signature] AECOM	1/24/17 1600	[signature]	1-24-17 1615
	[signature]	1-24-17 1710	[signature] SGS	1/24/17 1710

NB OF BOTTLES RETURNED/DESCRIPTION				
	Sampler's Name	Brian Tate	Mobile #	
	Sampler's Signature	[signature]	Date/Time	

04.0°C IR Page 1 of 2

5.1 5

JC36049A: Chain of Custody
Page 1 of 3

AECOM

JC36049

COC ID: 2017-01-24-RI-HDS-COC | TURNAROUND TIME: See Special Instructions | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	Filt.	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)											
114-MW16AB-5S-2.0-2.5	11	SO	2017/01/24	11:10	G	1	1 (8oz) jar-hold			H	H	H	11										
114-MW16AB-5S-4.5-5.0	12	SO	2017/01/24	11:15	G	1	1 (8oz) jar-hold			H	H	H	12										
114-MW16AB-5S-5.5-6.0	13	SO	2017/01/24	11:20	G	1	1 (8oz) jar-hold			H	H	H	13										
114-MW16AB-5W-2.0-2.5	14	SO	2017/01/24	11:35	G	1	1 (8oz) jar-hold			H	H	H	14										
114-MW16AB-5W-4.5-5.0	15	SO	2017/01/24	11:40	G	1	1 (8oz) jar-hold			H	H	H	15										
114-MW16AB-5W-5.5-6.0	16	SO	2017/01/24	11:45	G	1	1 (8oz) jar-hold			H	H	H	16										
HDS-FB20170124	17	WQ	2017/01/24	14:00	G	1	field blank			X	X	X	17										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	[signature] AECOM	1-24-17 1610	[signature]	1-24-17 1610
	[signature]	1-24-17 1710	[signature]	1-24-17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tot	Mobile #	
Sampler's Signature	[signature]	Date/Time	

04.0 C IP

SGS Accutest Sample Receipt Summary

Job Number: JC36049 **Client:** _____ **Project:** _____

Date / Time Received: 1/24/2017 5:10:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (4.0);

Cooler Temps (Corrected) °C: Cooler 1: (5.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC36049A: Chain of Custody
Page 3 of 3

Internal Sample Tracking Chronicle

AECOM, INC.

Job No: JC36049A

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC36049-1A	Collected: 24-JAN-17 09:05 By: MOK 114-MW16AB-0-2.0-2.5			Received: 24-JAN-17	By: AS	
JC36049-1A	SW846 6010C	26-JAN-17 17:39	ND	26-JAN-17	DM	CR,NI,SB,TL,V
JC36049-2A	Collected: 24-JAN-17 09:15 By: MOK 114-MW16AB-0-4.5-5.0			Received: 24-JAN-17	By: AS	
JC36049-2A	SW846 6010C	26-JAN-17 17:42	ND	26-JAN-17	DM	CR,NI,SB,TL,V
JC36049-3A	Collected: 24-JAN-17 09:20 By: MOK 114-MW16AB-0-4.5-5.0X			Received: 24-JAN-17	By: AS	
JC36049-3A	SW846 6010C	26-JAN-17 17:59	ND	26-JAN-17	DM	CR,NI,SB,TL,V
JC36049-4A	Collected: 24-JAN-17 09:25 By: MOK 114-MW16AB-0-5.5-6.0			Received: 24-JAN-17	By: AS	
JC36049-4A	SW846 6010C	26-JAN-17 18:02	ND	26-JAN-17	DM	CR,NI,SB,TL,V
JC36049-17A	Collected: 24-JAN-17 14:00 By: MOK HDS-FB20170124			Received: 24-JAN-17	By: AS	
JC36049-17A	SW846 6010C	26-JAN-17 22:30	DE	26-JAN-17	RM	CR,NI,SB,TL,V

SGS Accutest Internal Chain of Custody

Job Number: JC36049A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-1.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-1.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-1.1	Secured Storage	Luis Villanueva	01/25/17 15:26	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-1.1	Luis Villanueva	Secured Storage	01/25/17 16:26	Return to Storage
JC36049-1.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-1.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-1.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-1.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-1.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-1.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-1.1
JC36049-1.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-1.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-1.1
JC36049-1.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-1.1
JC36049-1.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-1.2	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
JC36049-1.2	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-1.2	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-1.2	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-1.2	Secured Storage	Alfredo Crespo	01/26/17 07:24	Retrieve from Storage
JC36049-1.2	Alfredo Crespo	Secured Staging Area	01/26/17 07:24	Return to Storage
JC36049-1.2	Secured Staging Area	Paul Ojugo	01/26/17 08:53	Retrieve from Storage
JC36049-1.2	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-2.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-2.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-2.1	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-2.1	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-2.1	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-2.1	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-2.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-2.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-2.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-2.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-2.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-2.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-2.1
JC36049-2.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-2.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-2.1

SGS Accutest Internal Chain of Custody

Job Number: JC36049A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-2.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-2.1
JC36049-2.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-3.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-3.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-3.1	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-3.1	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-3.1	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-3.1	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-3.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-3.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-3.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-3.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-3.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-3.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-3.1
JC36049-3.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-3.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-3.1
JC36049-3.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-3.1
JC36049-3.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-4.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-4.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-4.1	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-4.1	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-4.1	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-4.1	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-4.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-4.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-4.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-4.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-4.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-4.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-4.1
JC36049-4.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-4.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-4.1
JC36049-4.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-4.1
JC36049-4.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-17.1	Secured Storage	Sahara Feliciano	01/26/17 13:43	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36049A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-17.1	Sahara Feliciano	Secured Staging Area	01/26/17 13:43	Return to Storage
JC36049-17.1	Secured Staging Area	Deval Patel	01/26/17 14:45	Retrieve from Storage
JC36049-17.1	Deval Patel	Radhika Mistry	01/26/17 16:03	Custody Transfer
JC36049-17.1	Radhika Mistry	Deval Patel	01/26/17 16:08	Custody Transfer
JC36049-17.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36049-17.1.1	Radhika Mistry	Metals Digestion	01/26/17 16:04	Digestate from JC36049-17.1
JC36049-17.1.1	Metals Digestion	Radhika Mistry	01/26/17 16:04	Digestate from JC36049-17.1
JC36049-17.1.1	Radhika Mistry	Metals Digestate Storage	01/26/17 16:04	Return to Storage
JC36049-17.2	Secured Storage	Todd Shoemaker	01/25/17 08:03	Retrieve from Storage
JC36049-17.2	Todd Shoemaker	Secured Staging Area	01/25/17 08:04	Return to Storage
JC36049-17.2	Secured Staging Area	Rie Iwasaki	01/25/17 10:23	Retrieve from Storage
JC36049-17.2	Rie Iwasaki	Secured Storage	01/25/17 12:51	Return to Storage
JC36049-17.2	Secured Storage	Alfredo Crespo	01/26/17 07:27	Retrieve from Storage
JC36049-17.2	Alfredo Crespo	Secured Staging Area	01/26/17 07:27	Return to Storage
JC36049-17.2	Secured Staging Area	Diana Mathes	01/26/17 08:04	Retrieve from Storage
JC36049-17.2	Diana Mathes	Secured Storage	01/26/17 09:55	Return to Storage
JC36049-17.2	Secured Storage	Alfredo Crespo	01/27/17 08:14	Retrieve from Storage
JC36049-17.2	Alfredo Crespo	Secured Staging Area	01/27/17 08:14	Return to Storage
JC36049-17.2	Secured Storage	Dwayne Johnson	01/27/17 09:20	Retrieve from Storage
Analyst unavailable for custody transfer.				
JC36049-17.2	Dwayne Johnson	Secured Staging Area	01/27/17 09:21	Return to Storage
JC36049-17.2	Secured Staging Area	Jared O. Onindo	01/27/17 10:06	Retrieve from Storage
JC36049-17.2	Jared O. Onindo	Secured Storage	01/27/17 18:02	Return to Storage

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:24	MA41238-STD1	1		STDA
11:28	MA41238-STD2	1		STDB
11:32	ZZZZZZ	1		
11:37	ZZZZZZ	1		
11:43	ZZZZZZ	1		
11:49	ZZZZZZ	1		
11:54	ZZZZZZ	1		
12:00	MA41238-ICV1	1		
12:06	MA41238-ICB1	1		
12:10	MA41238-ICCV1	1		
12:16	MA41238-CCB1	1		
12:23	MA41238-CRI1	1		
12:28	MA41238-CRID1	1		
12:32	MA41238-CRIA1	1		
12:36	MA41238-ICSA1	1		
12:41	MA41238-ICSAB1	1		
12:45	MA41238-HSTD1	1		
12:49	MA41238-HSTD2	1		
12:54	ZZZZZZ	1		
12:58	ZZZZZZ	1		
13:03	ZZZZZZ	1		
13:07	MA41238-CCV1	1		
13:11	MA41238-CCB2	1		
13:15	MP98336-MB1	1		
13:20	MP98336-B1	1		
13:24	ZZZZZZ	1		
13:28	ZZZZZZ	1		
13:33	ZZZZZZ	1		
13:37	MP98336-S1	1		
13:41	MP98336-S2	1		
13:45	TC97966-1	1		(sample used for QC only; not part of login JC36049A)
13:50	MP98336-SD1	5		
13:54	MA41238-CCV2	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:58	MA41238-CCB3	1		
14:03	MP98176-MB1	1		
14:07	MP98176-MB2	1		
14:11	ZZZZZZ	1		
14:15	MP98176-B2	1		
14:20	ZZZZZZ	1		
14:26	ZZZZZZ	1		
14:30	MP98336-D1	1		
14:35	MA41238-CCV3	1		
14:39	MA41238-CCB4	1		
14:43	ZZZZZZ	1		
14:47	MP98347-B1	5		
14:51	MP98347-MB1	5		
14:56	MP98347-S1	5		
15:00	MP98347-S2	5		
15:04	JC35948-1B	5		(sample used for QC only; not part of login JC36049A)
15:09	MP98347-SD1	25		
15:13	MP98176-B1	1		
15:17	ZZZZZZ	5		
15:22	MA41238-CCV4	1		
15:26	MA41238-CCB5	1		
15:30	ZZZZZZ	5		
15:34	ZZZZZZ	5		
15:39	MP98326-MB1	1		
15:43	MP98326-B1	1		
15:47	ZZZZZZ	1		
15:51	MP98326-S1	1		
15:55	MP98326-S2	1		
15:59	JC35947-1A	1		(sample used for QC only; not part of login JC36049A)
16:04	MP98326-SD1	5		
16:08	MA41238-CCV5	1		
16:12	MA41238-CCB6	1		
16:16	MP98336-S1	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:21	ZZZZZZ	1		
16:25	MP98336-S2	5		
16:29	ZZZZZZ	1		
16:40	ZZZZZZ	1		
16:49	ZZZZZZ	1		
16:54	ZZZZZZ	.1		
16:58	TC97966-1	5		(sample used for QC only; not part of login JC36049A)
17:02	MA41238-CCV6	1		
17:07	MA41238-CCB7	1		
17:11	MP98336-SD1	25		
17:15	MP98336-D1	5		
17:19	MP98336-S1	20		
17:24	MP98336-S2	20		
17:28	TC97966-1	20		(sample used for QC only; not part of login JC36049A)
17:32	MP98336-SD1	100		
17:37	MP98336-D1	20		
17:41	MA41238-CCV7	1		
17:45	MA41238-CCB8	1		
17:49	ZZZZZZ	1		
17:54	ZZZZZZ	1		
17:58	ZZZZZZ	2		
18:02	ZZZZZZ	1		
18:06	ZZZZZZ	5		
18:10	ZZZZZZ	2		
18:15	ZZZZZZ	10		
18:19	MA41238-CCV8	1		
18:23	MA41238-CCB9	1		
18:28	ZZZZZZ	5		
18:32	ZZZZZZ	1		
18:36	ZZZZZZ	5		
18:41	ZZZZZZ	1		
18:45	ZZZZZZ	5		
18:49	ZZZZZZ	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:54	MA41238-CCV9	1		
18:58	MA41238-CCB10	1		
19:02	MA41238-CRI2	1		
19:06	MA41238-CRID2	1		
19:11	MA41238-CRIA2	1		
19:15	MA41238-ICSA2	1		
19:20	MA41238-ICSAB2	1		
19:24	MA41238-CCV10	1		
19:28	MA41238-CCB11	1		
19:32	MP98332-MB1	1		
19:37	MP98332-B1	1		
19:41	ZZZZZZ	1		
19:45	MP98332-S1	1		
19:49	MP98332-S2	1		
19:53	ZZZZZZ	1		
19:58	ZZZZZZ	1		
20:02	JC36048-1	1		(sample used for QC only; not part of login JC36049A)
20:06	MP98332-SD1	5		
20:10	MA41238-CCV11	1		
20:15	MA41238-CCB12	1		
20:19	ZZZZZZ	1		
20:23	MP98323-MB2	5		
20:28	MP98323-B2	5		
20:32	ZZZZZZ	5		
20:36	ZZZZZZ	1		
20:41	ZZZZZZ	1		
20:45	ZZZZZZ	1		
20:49	ZZZZZZ	1		
20:53	ZZZZZZ	1		
20:58	MA41238-CCV12	1		
21:02	MA41238-CCB13	1		
21:06	ZZZZZZ	1		
21:10	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
21:14	ZZZZZZ	1		
21:19	ZZZZZZ	1		
21:23	ZZZZZZ	1		
21:27	ZZZZZZ	1		
21:31	ZZZZZZ	1		
21:36	ZZZZZZ	1		
21:40	ZZZZZZ	5		
21:44	MA41238-CCV13	1		
21:48	MA41238-CCB14	1		
21:55	MP98367-MB1	1		
21:59	MP98367-B1	1		
22:04	MP98367-S1	1		Tl neg
22:08	MP98367-S2	1		Tl neg
22:12	JC36147-1	1		(sample used for QC only; not part of login JC36049A)
22:16	MP98367-SD1	5		Tl neg
22:20	MP98367-D1	1		Tl neg
22:25	MP98367-PS1	1		
22:30	JC36049-17A	1		
---------->	Last reportable sample/prep for job JC36049A			
22:34	MA41238-CCV14	1		
22:41	MA41238-CCV15	1		
22:45	MA41238-CCB15	1		
22:50	MP98367-S1	2		not needed
22:54	MP98367-S2	2		not needed
22:58	ZZZZZZ	5		
23:02	ZZZZZZ	5		
23:07	ZZZZZZ	5		
23:11	ZZZZZZ	5		
23:15	ZZZZZZ	5		
23:20	ZZZZZZ	5		
23:24	ZZZZZZ	5		
23:29	MA41238-CCV16	1		
23:33	MA41238-CCB16	1		
23:37	ZZZZZZ	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
23:42	ZZZZZZ	5		
23:46	ZZZZZZ	5		
23:50	ZZZZZZ	1		
23:55	ZZZZZZ	1		
23:59	ZZZZZZ	1		
00:03	ZZZZZZ	1		
00:07	ZZZZZZ	1		
00:12	ZZZZZZ	1		
00:16	MA41238-CCV17	1		
00:20	MA41238-CCB17	1		
00:24	ZZZZZZ	1		
00:28	ZZZZZZ	1		
00:33	ZZZZZZ	1		
00:37	ZZZZZZ	1		
00:41	ZZZZZZ	1		
00:45	ZZZZZZ	1		
00:49	ZZZZZZ	1		
00:54	ZZZZZZ	1		
00:58	ZZZZZZ	1		
01:02	MA41238-CCV18	1		
01:06	MA41238-CCB18	1		
01:11	ZZZZZZ	1		
01:15	ZZZZZZ	1		
01:19	ZZZZZZ	1		
01:23	MA41238-CCV19	1		
01:27	MA41238-CCB19	1		
01:32	MA41238-CRI3	1		
01:36	MA41238-CRID3	1		
01:41	MA41238-CRIA3	1		
01:45	MA41238-ICSA3	1		
01:49	MA41238-ICSAB3	1		
01:54	MA41238-CCV20	1		
01:58	MA41238-CCB20	1		
---------->	Last reportable CCB for job JC36049A			

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
02:02	MP98307-MB1	1		CCV out
02:06	MP98307-B1	1		CCV out
02:11	MP98307-S1	1		FE, Ca, Ba, Zn high
02:15	MP98307-S2	1		FE, Ca, Ba, Zn high
02:19	JC35868-8	1		(sample used for QC only; not part of login JC36049A)
02:24	MP98307-SD1	5		FE, and Zn high
02:28	ZZZZZZ	1		
02:32	ZZZZZZ	1		
02:37	ZZZZZZ	1		
02:41	MA41238-CCV21	1		
02:45	MA41238-CCB21	1		
02:49	ZZZZZZ	1		
02:54	ZZZZZZ	1		
02:58	ZZZZZZ	1		
03:02	ZZZZZZ	1		
03:06	ZZZZZZ	1		
03:11	ZZZZZZ	1		
03:15	ZZZZZZ	1		
03:19	ZZZZZZ	1		
03:23	ZZZZZZ	1		
03:28	MA41238-CCV22	1		
03:32	MA41238-CCB22	1		
03:36	ZZZZZZ	1		
03:40	ZZZZZZ	1		
03:45	ZZZZZZ	1		
03:49	ZZZZZZ	1		
03:53	ZZZZZZ	1		
03:57	ZZZZZZ	1		
04:01	ZZZZZZ	1		
04:06	MA41238-CCV23	1		
04:10	MA41238-CCB23	1		
04:14	MA41238-CRI4	1		
04:19	MA41238-CRIA4	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
04:23	MA41238-CCV24	1		
04:27	MA41238-CCB24	1		
04:32	ZZZZZZ	1		
04:36	ZZZZZZ	1		
04:40	ZZZZZZ	1		
04:45	ZZZZZZ	1		
04:49	ZZZZZZ	1		
04:54	ZZZZZZ	1		
04:58	ZZZZZZ	1		
05:02	ZZZZZZ	1		
05:07	ZZZZZZ	1		
05:11	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:24	MA41238-STD1	2588 R	79936 R	21017 R	6552 R
11:28	MA41238-STD2	2416	74440	20569	5506
11:32	ZZZZZZ	2491	76534	20859	5762
11:37	ZZZZZZ	2578	80009	21106	6535
11:43	ZZZZZZ	2477	76664	20973	5763
11:49	ZZZZZZ	2470	75537	20450	5715
11:54	ZZZZZZ	2479	75756	20790	5739
12:00	MA41238-ICV1	2462	76097	20901	5718
12:06	MA41238-ICB1	2578	79787	20940	6546
12:10	MA41238-ICCV1	2476	76157	20906	5735
12:16	MA41238-CCB1	2561	79843	21021	6499
12:23	MA41238-CRI1	2509	79170	21465	6290
12:28	MA41238-CRID1	2537	79654	21086	6433
12:32	MA41238-CRIA1	2549	79468	21073	6435
12:36	MA41238-ICSA1	2274	69965	20275	4987
12:41	MA41238-ICSAB1	2259	69949	20370	4977
12:45	MA41238-HSTD1	2495	78095	21098	6196
12:49	MA41238-HSTD2	2321	71144	20393	5059
12:54	ZZZZZZ	2501	77518	20769	6335
12:58	ZZZZZZ	2494	79210	20829	6418
13:03	ZZZZZZ	2561	79452	20824	6488
13:07	MA41238-CCV1	2461	75840	20609	5691
13:11	MA41238-CCB2	2553	79962	20945	6464
13:15	MP98336-MB1	2547	79995	21202	6443
13:20	MP98336-B1	2481	77043	21068	5850
13:24	ZZZZZZ	2538	78915	21877	5691
13:28	ZZZZZZ	2360	72870	20981	5054
13:33	ZZZZZZ	2402	74390	20934	5180
13:37	MP98336-S1	2260	72358	20527	6011
13:41	MP98336-S2	2236	72122	20601	6034
13:45	TC97966-1	2266	73018	20706	6236
13:50	MP98336-SD1	2501	77809	21043	6333
13:54	MA41238-CCV2	2473	76184	20777	5726

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:58	MA41238-CCB3	2561	80013	21097	6506
14:03	MP98176-MB1	2550	80144	21672	6581
14:07	MP98176-MB2	2556	80439	21546	6606
14:11	ZZZZZZ	2473	77367	21460	5892
14:15	MP98176-B2	2546	80213	21451	6579
14:20	ZZZZZZ	2552	80258	21589	6589
14:26	ZZZZZZ	2550	80589	21526	6580
14:30	MP98336-D1	2278	72402	20537	6201
14:35	MA41238-CCV3	2467	76043	20804	5724
14:39	MA41238-CCB4	2546	79864	20951	6484
14:43	ZZZZZZ	2474	76955	21256	5900
14:47	MP98347-B1	2393	73953	20698	5507
14:51	MP98347-MB1	2368	72809	20592	5510
14:56	MP98347-S1	2396	73607	20536	5480
15:00	MP98347-S2	2380	72970	20651	5451
15:04	JC35948-1B	2413	73181	20545	5515
15:09	MP98347-SD1	2486	77008	20582	6042
15:13	MP98176-B1	2471	76728	20557	5845
15:17	ZZZZZZ	2405	73632	20643	5559
15:22	MA41238-CCV4	2467	75823	20634	5729
15:26	MA41238-CCB5	2562	80129	20740	6518
15:30	ZZZZZZ	2375	73403	20661	5537
15:34	ZZZZZZ	2392	73102	20507	5578
15:39	MP98326-MB1	2561	80280	20928	6529
15:43	MP98326-B1	2488	77001	20778	5885
15:47	ZZZZZZ	2583	80086	21630	6038
15:51	MP98326-S1	2542	78946	21537	5745
15:55	MP98326-S2	2546	78813	21468	5767
15:59	JC35947-1A	2621	80949	21660	6093
16:04	MP98326-SD1	2605	80767	21030	6381
16:08	MA41238-CCV5	2466	76222	20603	5741
16:12	MA41238-CCB6	2566	80075	20748	6526
16:16	MP98336-S1	2490	77978	20728	6231

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:21	ZZZZZZ	2574	79784	20734	6557
16:25	MP98336-S2	2481	77587	20724	6233
16:29	ZZZZZZ	2572	79789	20717	6545
16:40	ZZZZZZ	2571	79664	20680	6550
16:49	ZZZZZZ	2573	80119	20757	6551
16:54	ZZZZZZ	2574	80216	20863	6559
16:58	TC97966-1	2478	78278	21000	6321
17:02	MA41238-CCV6	2470	76208	20521	5753
17:07	MA41238-CCB7	2568	79657	20664	6537
17:11	MP98336-SD1	2571	79649	20810	6480
17:15	MP98336-D1	2510	77764	20764	6370
17:19	MP98336-S1	2566	79284	20715	6437
17:24	MP98336-S2	2563	79174	20726	6425
17:28	TC97966-1	2569	79508	20741	6478
17:32	MP98336-SD1	2584	79940	20616	6535
17:37	MP98336-D1	2576	79457	20665	6484
17:41	MA41238-CCV7	2486	75923	20426	5775
17:45	MA41238-CCB8	2586	79913	20480	6561
17:49	ZZZZZZ	2571	80318	20757	6525
17:54	ZZZZZZ	2504	76723	20432	5914
17:58	ZZZZZZ	2589	79691	21025	6201
18:02	ZZZZZZ	2524	76703	20553	5911
18:06	ZZZZZZ	2437	74775	20253	5680
18:10	ZZZZZZ	2268	69415	19734	5021
18:15	ZZZZZZ	2457	75209	20268	5737
18:19	MA41238-CCV8	2495	76009	20375	5777
18:23	MA41238-CCB9	2595	80121	20578	6582
18:28	ZZZZZZ	2480	76028	20354	5904
18:32	ZZZZZZ	2587	79953	20779	6565
18:36	ZZZZZZ	2451	74758	20340	5719
18:41	ZZZZZZ	2336	70596	20023	5206
18:45	ZZZZZZ	2489	76385	20547	5891
18:49	ZZZZZZ	2469	75740	20582	5843

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:54	MA41238-CCV9	2502	76114	20334	5789
18:58	MA41238-CCB10	2595	79825	20436	6575
19:02	MA41238-CRI2	2561	78633	20362	6382
19:06	MA41238-CRID2	2613	79822	20479	6524
19:11	MA41238-CRIA2	2591	79585	20459	6529
19:15	MA41238-ICSA2	2301	69643	19651	5057
19:20	MA41238-ICSAB2	2309	69823	19598	5063
19:24	MA41238-CCV10	2505	76052	20228	5795
19:28	MA41238-CCB11	2607	79944	20327	6569
19:32	MP98332-MB1	2639	81147	20997	6784
19:37	MP98332-B1	2535	77223	20500	6014
19:41	ZZZZZZ	2612	79741	20718	6697
19:45	MP98332-S1	2523	77029	20597	5973
19:49	MP98332-S2	2529	77506	20710	5985
19:53	ZZZZZZ	2592	79859	20826	6547
19:58	ZZZZZZ	2587	79661	20765	6551
20:02	JC36048-1	2590	79898	20779	6551
20:06	MP98332-SD1	2584	79379	20270	6540
20:10	MA41238-CCV11	2500	75760	20066	5780
20:15	MA41238-CCB12	2598	79641	20234	6571
20:19	ZZZZZZ	2587	79764	20280	6555
20:23	MP98323-MB2	2408	73361	19983	5549
20:28	MP98323-B2	2442	73437	20003	5542
20:32	ZZZZZZ	2452	73562	19893	5623
20:36	ZZZZZZ	2525	77208	20184	6091
20:41	ZZZZZZ	2521	77648	20379	6094
20:45	ZZZZZZ	2553	78029	20681	5873
20:49	ZZZZZZ	2646	80857	21232	6023
20:53	ZZZZZZ	2648	80816	21424	5991
20:58	MA41238-CCV12	2509	76683	20223	5808
21:02	MA41238-CCB13	2608	80498	20344	6598
21:06	ZZZZZZ	2641	79902	21163	5998
21:10	ZZZZZZ	2661	80625	21345	6039

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
21:14	ZZZZZZ	2611	79969	21108	5979
21:19	ZZZZZZ	2758	84190	22260	5988
21:23	ZZZZZZ	2656	80130	21521	5846
21:27	ZZZZZZ	2664	80245	21226	6005
21:31	ZZZZZZ	2570	78236	20984	5809
21:36	ZZZZZZ	2481	75222	20187	5825
21:40	ZZZZZZ	2430	74012	20232	5593
21:44	MA41238-CCV13	2520	76590	20232	5833
21:48	MA41238-CCB14	2609	80540	20363	6617
21:55	MP98367-MB1	2591	80932	20660	6594
21:59	MP98367-B1	2526	77918	20422	5982
22:04	MP98367-S1	2364	76080	20784	6162
22:08	MP98367-S2	2363	76008	20758	6167
22:12	JC36147-1	2447	78122	20880	6580
22:16	MP98367-SD1	2567	80875	20839	6630
22:20	MP98367-D1	2451	78221	20875	6581
22:25	MP98367-PS1	2332	73103	20249	5729
22:30	JC36049-17A	2592	81186	20725	6620
22:34	MA41238-CCV14	No results reported for the elements associated with this internal standard.			
22:41	MA41238-CCV15	2514	76931	20218	5845
22:45	MA41238-CCB15	2614	80889	20380	6636
22:50	MP98367-S1	No results reported for the elements associated with this internal standard.			
22:54	MP98367-S2	No results reported for the elements associated with this internal standard.			
22:58	ZZZZZZ	2397	73488	19996	5496
23:02	ZZZZZZ	2459	74500	20044	5659
23:07	ZZZZZZ	2399	74062	19930	5526
23:11	ZZZZZZ	2416	73920	19812	5538
23:15	ZZZZZZ	2441	74511	19918	5626
23:20	ZZZZZZ	2449	74289	19998	5614
23:24	ZZZZZZ	2470	74935	20070	5703
23:29	MA41238-CCV16	2532	77138	20001	5891
23:33	MA41238-CCB16	2640	81233	20107	6693
23:37	ZZZZZZ	2518	74861	20007	5723

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
23:42	ZZZZZZ	2463	74445	19943	5636
23:46	ZZZZZZ	2432	73764	19727	5530
23:50	ZZZZZZ	2643	80204	20371	6312
23:55	ZZZZZZ	2682	81485	21103	6148
23:59	ZZZZZZ	2652	80870	21122	6105
00:03	ZZZZZZ	2557	77896	20798	5657
00:07	ZZZZZZ	2648	80876	21085	6075
00:12	ZZZZZZ	2664	81493	21190	6147
00:16	MA41238-CCV17	2541	77399	20157	5906
00:20	MA41238-CCB17	2642	81460	20320	6715
00:24	ZZZZZZ	2549	77659	20830	5619
00:28	ZZZZZZ	2612	80041	20887	6049
00:33	ZZZZZZ	2684	81803	21176	6093
00:37	ZZZZZZ	2661	81385	20900	6109
00:41	ZZZZZZ	2604	77532	20696	5919
00:45	ZZZZZZ	2553	78368	20516	5960
00:49	ZZZZZZ	2586	80304	21074	6148
00:54	ZZZZZZ	2630	81182	21009	6138
00:58	ZZZZZZ	2542	79202	20602	6086
01:02	MA41238-CCV18	2548	77620	20047	5924
01:06	MA41238-CCB18	2645	81221	20271	6717
01:11	ZZZZZZ	2700	81976	21250	6153
01:15	ZZZZZZ	2585	79142	21165	5639
01:19	ZZZZZZ	2536	77483	20352	5721
01:23	MA41238-CCV19	2547	77406	19961	5918
01:27	MA41238-CCB19	2644	81447	20100	6720
01:32	MA41238-CRI3	2608	80205	20041	6511
01:36	MA41238-CRID3	2624	80274	19986	6641
01:41	MA41238-CRIA3	2623	80912	20002	6650
01:45	MA41238-ICSA3	2309	70216	19373	5112
01:49	MA41238-ICSAB3	2318	70304	19321	5144
01:54	MA41238-CCV20	2542	77076	19842	5901
01:58	MA41238-CCB20	2636	80923	19913	6693

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
02:02	MP98307-MB1	2644	81481	20317	6725
02:06	MP98307-B1	2545	78111	19904	6037
02:11	MP98307-S1	2361	73615	19933	5456
02:15	MP98307-S2	2352	73243	19819	5699
02:19	JC35868-8	2401	74274	19711	5989
02:24	MP98307-SD1	2557	77871	19831	6256
02:28	ZZZZZZ	2762	83245	21550	6108
02:32	ZZZZZZ	2625	79830	20302	6199
02:37	ZZZZZZ	2657	80742	20386	6239
02:41	MA41238-CCV21	2525	76423	19720	5894
02:45	MA41238-CCB21	2627	80447	19888	6682
02:49	ZZZZZZ	2714	82290	21023	6169
02:54	ZZZZZZ	2677	81381	20860	6125
02:58	ZZZZZZ	2651	80559	20563	6191
03:02	ZZZZZZ	2658	80613	20587	6231
03:06	ZZZZZZ	2693	81712	20842	6170
03:11	ZZZZZZ	2698	80792	20981	6036
03:15	ZZZZZZ	2633	80543	20630	6142
03:19	ZZZZZZ	2582	78484	20141	6003
03:23	ZZZZZZ	2497	76394	20104	5747
03:28	MA41238-CCV22	2524	76642	19727	5867
03:32	MA41238-CCB22	2619	80672	19890	6657
03:36	ZZZZZZ	2574	79169	20495	6021
03:40	ZZZZZZ	2582	78624	20441	5834
03:45	ZZZZZZ	2606	79313	20331	6091
03:49	ZZZZZZ	2622	80427	20334	6141
03:53	ZZZZZZ	2596	79466	20116	6209
03:57	ZZZZZZ	2533	77848	20055	5947
04:01	ZZZZZZ	2387	74437	19646	6151
04:06	MA41238-CCV23	2521	76610	19628	5874
04:10	MA41238-CCB23	2632	80578	19706	6646
04:14	MA41238-CRI4	2578	79218	19664	6449
04:19	MA41238-CRIA4	2598	80249	19598	6598

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41238
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
04:23	MA41238-CCV24	2516	76377	19488	5852
04:27	MA41238-CCB24	2578	80096	19739	6567
04:32	ZZZZZZ	2663	76158	20523	5809
04:36	ZZZZZZ	2369	72850	18961	5565
04:40	ZZZZZZ	2368	72798	19069	5569
04:45	ZZZZZZ	2591	79809	19651	6575
04:49	ZZZZZZ	2599	80914	19487	6620
04:54	ZZZZZZ	2619	80631	19739	6654
04:58	ZZZZZZ	2623	81111	19687	6651
05:02	ZZZZZZ	2613	80086	19590	6588
05:07	ZZZZZZ	2599	79805	19662	6601
05:11	ZZZZZZ	2608	79840	19615	6635

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time: / Sample ID:			12:06 ICB1		12:16 CCB1		13:11 CCB2		13:58 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	1.7	<6.0	1.0	<6.0	0.40	<6.0	0.80	<6.0
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2								
Boron	100	1.2								
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	0.20	<10	0.40	<10	0.50	<10	0.30	<10
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8								
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.8	-0.10	<10	0.10	<10	-0.50	<10	-0.20	<10
Palladium	50	2.2								
Phosphorus	50									
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1	anr							
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4	anr							
Strontium	10	.22								
Thallium	2.0	1.7	0.20	<2.0	0.90	<2.0	-0.80	<2.0	0.80	<2.0
Tin	10	1.1								
Titanium	10	.7	anr							
Tungsten	50	1.8								
Vanadium	50	.7	0.60	<50	-0.10	<50	0.20	<50	0.10	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time: / Sample ID:			12:06 ICB1		12:16 CCB1		13:11 CCB2		13:58 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time:			14:39		15:26		16:12		17:07	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	-0.50	<6.0	1.2	<6.0	-0.50	<6.0	-0.70	<6.0
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2								
Boron	100	1.2								
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	0.30	<10	0.50	<10	0.50	<10	0.20	<10
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8								
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.8	-0.50	<10	-0.20	<10	0.0	<10	-0.10	<10
Palladium	50	2.2								
Phosphorus	50									
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1	anr							
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4	anr							
Strontium	10	.22								
Thallium	2.0	1.7	0.50	<2.0	0.80	<2.0	1.8	<2.0	0.50	<2.0
Tin	10	1.1								
Titanium	10	.7	anr							
Tungsten	50	1.8								
Vanadium	50	.7	0.0	<50	0.30	<50	0.0	<50	0.10	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time: / Sample ID:			14:39 CCB4		15:26 CCB5		16:12 CCB6		17:07 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time:			17:45		18:23		18:58		19:28	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	-0.30	<6.0	-0.60	<6.0	-0.40	<6.0	-0.10	<6.0
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2								
Boron	100	1.2								
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	0.30	<10	0.40	<10	0.40	<10	0.80	<10
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8								
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.8	-0.10	<10	-0.30	<10	-0.30	<10	-0.20	<10
Palladium	50	2.2								
Phosphorus	50									
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1	anr							
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4	anr							
Strontium	10	.22								
Thallium	2.0	1.7	1.2	<2.0	0.20	<2.0	0.60	<2.0	0.50	<2.0
Tin	10	1.1								
Titanium	10	.7	anr							
Tungsten	50	1.8								
Vanadium	50	.7	0.10	<50	0.40	<50	0.60	<50	0.10	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time: / Sample ID:			17:45 CCB8		18:23 CCB9		18:58 CCB10		19:28 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time: / Sample ID:			20:15 CCB12		21:02 CCB13		21:48 CCB14		22:45 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	-0.10	<6.0	0.10	<6.0	-0.70	<6.0	0.20	<6.0
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2								
Boron	100	1.2								
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	0.0	<10	0.10	<10	-0.10	<10	0.20	<10
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8								
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.8	-0.40	<10	0.0	<10	-0.20	<10	-0.20	<10
Palladium	50	2.2								
Phosphorus	50									
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1	anr							
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4	anr							
Strontium	10	.22								
Thallium	2.0	1.7	0.90	<2.0	0.80	<2.0	1.3	<2.0	1.2	<2.0
Tin	10	1.1								
Titanium	10	.7	anr							
Tungsten	50	1.8								
Vanadium	50	.7	0.10	<50	-0.20	<50	0.50	<50	0.30	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time: / Sample ID:			20:15 CCB12		21:02 CCB13		21:48 CCB14		22:45 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time:			23:33		00:20		01:06		01:27	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	0.50	<6.0	-1.3	<6.0	-0.10	<6.0	-0.10	<6.0
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2								
Boron	100	1.2								
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	0.40	<10	0.30	<10	0.40	<10	0.10	<10
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8								
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.8	-0.50	<10	-0.20	<10	0.10	<10	-0.10	<10
Palladium	50	2.2								
Phosphorus	50									
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1	anr							
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4	anr							
Strontium	10	.22								
Thallium	2.0	1.7	-0.20	<2.0	-0.50	<2.0	0.70	<2.0	0.10	<2.0
Tin	10	1.1								
Titanium	10	.7	anr							
Tungsten	50	1.8								
Vanadium	50	.7	-0.50	<50	0.30	<50	0.10	<50	0.20	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time:			23:33		00:20		01:06		01:27	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time:			01:58	
Sample ID:			CCB20	
Metal	RL	IDL	raw	final
Aluminum	200	20	anr	
Antimony	6.0	1.8	0.40	<6.0
Arsenic	3.0	1.3	anr	
Barium	200	.4	anr	
Beryllium	1.0	.1	anr	
Bismuth	20	2		
Boron	100	1.2		
Cadmium	3.0	.4	anr	
Calcium	5000	27	anr	
Chromium	10	.7	0.30	<10
Cobalt	50	.6	anr	
Copper	10	1.7	anr	
Iron	100	8.6	anr	
Lead	3.0	1.6	anr	
Lithium	20	2.8		
Magnesium	5000	33	anr	
Manganese	15	.1	anr	
Molybdenum	20	.4	anr	
Nickel	10	.8	-0.30	<10
Palladium	50	2.2		
Phosphorus	50			
Potassium	10000	39	anr	
Selenium	10	3	anr	
Silicon	200	3.1	anr	
Silver	10	.9	anr	
Sodium	10000	11	anr	
Sulfur	50	4.4	anr	
Strontium	10	.22		
Thallium	2.0	1.7	0.50	<2.0
Tin	10	1.1		
Titanium	10	.7	anr	
Tungsten	50	1.8		
Vanadium	50	.7	0.50	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41238 Units: ug/l

Time:			01:58	
Sample ID:			CCB20	
Metal	RL	IDL	raw	final
Zinc	20	2.6	anr	
Zirconium	10	.5		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		12:10	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	2000	2000	100.0
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	2000	2040	102.0
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	2000	2040	102.0
Palladium			
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon	anr		
Silver	anr		
Sodium	anr		
Sulfur	anr		
Strontium			
Thallium	2000	2090	104.5
Tin			
Titanium	anr		
Tungsten			
Vanadium	2000	2040	102.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		12:10	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		12:00			13:07			13:54	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1990	99.5	2000	2020	101.0	2000	2010	100.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	2020	101.0	2000	2050	102.5	2000	2050	102.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	2000	100.0	2000	2050	102.5	2000	2040	102.0
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium									
Thallium	2000	2070	103.5	2000	2150	107.5	2000	2090	104.5
Tin									
Titanium	anr								
Tungsten									
Vanadium	2000	2010	100.5	2000	2030	101.5	2000	2040	102.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		12:00			13:07			13:54	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		14:35			15:22			16:08	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2010	100.5	2000	2010	100.5	2000	2020	101.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	2060	103.0	2000	2090	104.5	2000	2070	103.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	2030	101.5	2000	2050	102.5	2000	2050	102.5
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium									
Thallium	2000	2030	101.5	2000	2010	100.5	2000	1970	98.5
Tin									
Titanium	anr								
Tungsten									
Vanadium	2000	2050	102.5	2000	2070	103.5	2000	2070	103.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		14:35			15:22			16:08	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		17:02			17:41			18:19	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2010	100.5	2000	2000	100.0	2000	2000	100.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	2080	104.0	2000	2080	104.0	2000	2090	104.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	2040	102.0	2000	2040	102.0	2000	2050	102.5
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium									
Thallium	2000	1950	97.5	2000	1970	98.5	2000	2010	100.5
Tin									
Titanium	anr								
Tungsten									
Vanadium	2000	2080	104.0	2000	2070	103.5	2000	2070	103.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		17:02			17:41			18:19	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		18:54			19:24			20:10	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2000	100.0	2000	1990	99.5	2000	1990	99.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	2100	105.0	2000	2090	104.5	2000	2100	105.0
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	2050	102.5	2000	2050	102.5	2000	2060	103.0
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium									
Thallium	2000	2010	100.5	2000	2050	102.5	2000	2040	102.0
Tin									
Titanium	anr								
Tungsten									
Vanadium	2000	2070	103.5	2000	2070	103.5	2000	2080	104.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		18:54			19:24			20:10	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		20:58			21:44			22:41	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV15	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2000	100.0	2000	2000	100.0	2000	2010	100.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	2100	105.0	2000	2100	105.0	2000	2120	106.0
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	2060	103.0	2000	2050	102.5	2000	2050	102.5
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium									
Thallium	2000	2000	100.0	2000	1990	99.5	2000	1900	95.0
Tin									
Titanium	anr								
Tungsten									
Vanadium	2000	2080	104.0	2000	2080	104.0	2000	2100	105.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		20:58			21:44			22:41	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV15	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		23:29			00:16			01:02	
Sample ID:	CCV	CCV16		CCV	CCV17		CCV	CCV18	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1980	99.0	2000	1970	98.5	2000	1970	98.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	2100	105.0	2000	2090	104.5	2000	2090	104.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	2030	101.5	2000	2030	101.5	2000	2020	101.0
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium									
Thallium	2000	1840	92.0	2000	1840	92.0	2000	1830	91.5
Tin									
Titanium	anr								
Tungsten									
Vanadium	2000	2090	104.5	2000	2090	104.5	2000	2090	104.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		23:29			00:16			01:02	
Sample ID:	CCV	CCV16		CCV	CCV17		CCV	CCV18	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		01:23			01:54	
Sample ID:	CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	2000	1970	98.5	2000	1970	98.5
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	2000	2090	104.5	2000	2110	105.5
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	2000	2030	101.5	2000	2030	101.5
Palladium						
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon	anr					
Silver	anr					
Sodium	anr					
Sulfur	anr					
Strontium						
Thallium	2000	1810	90.5	2000	1800	90.0
Tin						
Titanium	anr					
Tungsten						
Vanadium	2000	2090	104.5	2000	2100	105.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41238 Units: ug/l

Time:		01:23			01:54	
Sample ID:	CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41238 Units: ug/l

Time:		12:45			12:49	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	5000	5180	103.6			
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	5000	5180	103.6			
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	5000	4980	99.6			
Palladium						
Phosphorus						
Potassium						
Selenium	anr					
Silicon	anr					
Silver	anr					
Sodium						
Sulfur	anr					
Strontium						
Thallium	5000	5330	106.6			
Tin						
Titanium	anr					
Tungsten						
Vanadium	5000	5100	102.0			

HIGH STANDARD CHECK SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41238 Units: ug/l

Time:		12:45			12:49	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41238 Units: ug/l

Time:				12:23		12:28		12:32	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	7.1	118.3	3.1	103.3	18.2	91.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	10.3	103.0	2.1	105.0		
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	9.4	94.0	4.1	102.5		
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200			anr					
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50			anr					
Strontium	10								
Thallium	10		2.0	10.8	108.0	2.4	120.0		
Tin	10								
Titanium	10			anr					
Tungsten	50								
Vanadium	50		2.0	50.2	100.4	1.9	95.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41238 Units: ug/l

Time:				12:23		12:28		12:32	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41238 Units: ug/l

Time:				19:02		19:06		19:11	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	5.5	91.7	3.7	123.3	16.8	84.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	10.6	106.0	2.5	125.0		
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	10.1	101.0	4.1	102.5		
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200			anr					
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50			anr					
Strontium	10								
Thallium	10		2.0	10.9	109.0	2.3	115.0		
Tin	10								
Titanium	10			anr					
Tungsten	50								
Vanadium	50		2.0	52.6	105.2	2.3	115.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41238 Units: ug/l

Time:				19:02		19:06		19:11	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41238 Units: ug/l

Time:				01:32		01:36		01:41	
Sample ID:	CRI	CRIA	CRID	CRI3		CRID3		CRIA3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	5.4	90.0	2.8	93.3	18.2	91.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	11.0	110.0	2.2	110.0		
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	9.8	98.0	3.8	95.0		
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200			anr					
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50			anr					
Strontium	10								
Thallium	10		2.0	9.5	95.0	2.5	125.0		
Tin	10								
Titanium	10			anr					
Tungsten	50								
Vanadium	50		2.0	54.3	108.6	2.0	100.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41238 Units: ug/l

Time:				01:32		01:36		01:41	
Sample ID:	CRI	CRIA	CRID	CRI3		CRID3		CRIA3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41238 Units: ug/l

Time:			12:36		12:41		19:15		19:20	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	482000	96.4	473000	94.6	487000	97.4	475000	95.0
Antimony		1000	1.8		1100	110.0	1.4		1080	108.0
Arsenic		1000	-1.2		1020	102.0	-3.1		1010	101.0
Barium		500	-0.40		496	99.2	-0.20		492	98.4
Beryllium		500	-0.10		482	96.4	-0.10		479	95.8
Bismuth		500	4.1		494	98.8	6.5		491	98.2
Boron		500	-2.5		478	95.6	-6.3		473	94.6
Cadmium		1000	0.50		1010	101.0	0.60		1010	101.0
Calcium	400000	400000	359000	89.8	355000	88.8	358000	89.5	361000	90.3
Chromium		500	4.1		492	98.4	4.0		509	101.8
Cobalt		500	1.1		484	96.8	1.1		490	98.0
Copper		500	4.1		514	102.8	2.6		509	101.8
Iron	200000	200000	181000	90.5	176000	88.0	179000	89.5	175000	87.5
Lead		1000	4.4		956	95.6	5.9		960	96.0
Lithium		500	-0.40		499	99.8	-1.5		483	96.6
Magnesium	500000	500000	480000	96.0	473000	94.6	483000	96.6	480000	96.0
Manganese		500	-0.20		491	98.2	-0.10		497	99.4
Molybdenum		500	-1.1		487	97.4	-1.1		485	97.0
Nickel		1000	-0.90		980	98.0	-1.1		989	98.9
Palladium		500	-15		-6.9	0.0*	-16		-5.2	0.0*
Phosphorus		500	11.3		474	94.8	9.6		472	94.4
Potassium			-410		-410		-430		-410	
Selenium		1000	-4.7		1020	102.0	-3.3		1010	101.0
Silicon		500	-15		456	91.2	-17		454	90.8
Silver		1000	2.5		1040	104.0	4.7		1050	105.0
Sodium			7.4		11.2		34.1		30.0	
Sulfur		500	-27		449	89.8	-27		445	89.0
Strontium		500	0.10		495	99.0	-0.20		488	97.6
Thallium		1000	-1.4		951	95.1	-2.1		937	93.7
Tin		500	-1.3		448	89.6	-2.8		453	90.6
Titanium		500	-1.2		495	99.0	-0.90		491	98.2
Tungsten		500	11.1		494	98.8	9.5		494	98.8
Vanadium		500	8.1		488	97.6	7.3		500	100.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41238 Units: ug/l

Time:			12:36		12:41		19:15		19:20	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.4		949	94.9	2.9		976	97.6
Zirconium		500	4.8		484	96.8	5.1		483	96.6

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41238 Units: ug/l

Time:			01:45		01:49	
Sample ID:	ICSA	ICSAB	ICSA3		ICSAB3	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	475000	95.0	468000	93.6
Antimony		1000	0.80		1090	109.0
Arsenic		1000	-3.2		1030	103.0
Barium		500	-0.40		484	96.8
Beryllium		500	-0.10		473	94.6
Bismuth		500	7.8		491	98.2
Boron		500	-5.1		479	95.8
Cadmium		1000	0.40		1020	102.0
Calcium	400000	400000	362000	90.5	361000	90.3
Chromium		500	3.6		515	103.0
Cobalt		500	1.0		494	98.8
Copper		500	1.7		494	98.8
Iron	200000	200000	176000	88.0	172000	86.0
Lead		1000	-5.5		948	94.8
Lithium		500	-1.0		475	95.0
Magnesium	500000	500000	478000	95.6	475000	95.0
Manganese		500	0.50		495	99.0
Molybdenum		500	-1.0		482	96.4
Nickel		1000	-0.50		986	98.6
Palladium		500	-18		-9.4	0.0*
Phosphorus		500	1.9		471	94.2
Potassium			-430		-400	
Selenium		1000	-4.0		1040	104.0
Silicon		500	-9.7		465	93.0
Silver		1000	9.1		1050	105.0
Sodium			7.7		16.5	
Sulfur		500	-28		459	91.8
Strontium		500	-0.90		481	96.2
Thallium		1000	-1.5		832	83.2
Tin		500	-3.3		465	93.0
Titanium		500	-2.0		494	98.8
Tungsten		500	10.8		495	99.0
Vanadium		500	6.5		509	101.8

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41238 Units: ug/l

Time:			01:45		01:49	
Sample ID:	ICSA	ICSAB	ICSA3		ICSAB3	
Metal	True	True	Results	% Rec	Results	% Rec
Zinc		1000	3.4		1020	102.0
Zirconium		500	5.6		476	95.2

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:30	MA41246-STD1	1		STDA
12:33	MA41246-STD2	1		STDB
12:37	ZZZZZZ	1		
12:40	ZZZZZZ	1		
12:45	ZZZZZZ	1		
12:56	ZZZZZZ	1		
13:01	MA41246-ICV1	1		
13:14	MA41246-ICB1	1		
13:20	MA41246-ICCV1	1		
13:28	MA41246-CCB1	1		
13:31	MA41246-CRI1	1		
13:34	MA41246-CRID1	1		
13:37	MA41246-ICSA1	1		
13:41	MA41246-ICSAB1	1		
13:44	MA41246-HSTD1	1		
13:47	MA41246-HSTD2	1		
13:51	ZZZZZZ	1		
13:54	ZZZZZZ	1		
13:57	ZZZZZZ	1		
14:00	MA41246-CCV1	1		
14:05	MA41246-CCB2	1		
14:08	MP98174-MB3	1		
14:11	MP98174-MB4	1		
14:15	MP98174-B3	1		
14:18	MP98174-B4	1		
14:21	ZZZZZZ	1		
14:24	ZZZZZZ	1		
14:27	MP98170-MB3	1		
14:30	MP98170-MB4	1		
14:33	MA41246-CCV2	1		
14:37	MA41246-CCB3	1		
14:40	MP98170-B2	1		
14:43	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:46	ZZZZZZ	1		
14:50	ZZZZZZ	1		
14:53	ZZZZZZ	1		
14:56	MP98187-B2	1		
14:59	ZZZZZZ	1		
15:02	ZZZZZZ	1		
15:05	ZZZZZZ	1		
15:08	MA41246-CCV3	1		
15:14	MA41246-CCB4	1		
15:18	ZZZZZZ	1		
15:21	ZZZZZZ	1		
15:24	MP98187-MB3	1		
15:27	MP98187-MB4	1		
15:34	MA41246-CRI2	1		
15:37	MA41246-CRID2	1		
15:41	MA41246-CCV4	1		
15:46	MA41246-CCB5	1		
16:08	ZZZZZZ	1		
16:11	MP98354-S1	2		
16:14	MP98354-S2	2		
16:17	MP98354-SD1	10		
16:21	MP98354-S1	10		
16:24	MP98354-S2	10		
16:27	MP98354-SD1	50		
16:30	MA41246-CCV5	1		
16:33	MA41246-CCB6	1		
16:43	MP98350-MB1	1		
16:46	MP98350-B1	1		
16:49	MP98350-S1	1		
16:52	MP98350-S2	1		
16:55	ZZZZZZ	1		
16:58	MP98350-SD1	5		
17:01	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:04	ZZZZZZ	1		
17:08	ZZZZZZ	1		
17:11	MA41246-CCV6	1		
17:14	MA41246-CCB7	1		
17:17	ZZZZZZ	1		
17:20	ZZZZZZ	1		
17:23	ZZZZZZ	1		
17:27	ZZZZZZ	1		
17:30	ZZZZZZ	1		
17:33	ZZZZZZ	1		
17:36	ZZZZZZ	1		
17:39	JC36049-1A	1		
17:42	JC36049-2A	1		
17:46	MA41246-CCV7	1		
17:49	MA41246-CCB8	1		
17:59	JC36049-3A	1		
18:02	JC36049-4A	1		
---------->	Last reportable sample/prep for job JC36049A			
18:05	ZZZZZZ	1		
18:08	ZZZZZZ	1		
18:11	ZZZZZZ	1		
18:14	ZZZZZZ	1		
18:17	ZZZZZZ	1		
18:21	ZZZZZZ	1		
18:24	ZZZZZZ	3		
18:27	MA41246-CCV8	1		
18:30	MA41246-CCB9	1		
18:44	MA41246-CRI3	1		
18:47	MA41246-CRID3	1		
18:50	MA41246-CRIA1	1		
18:54	MA41246-CCV9	1		
18:57	MA41246-CCB10	1		
19:00	MP98351-MB1	1		
19:03	MP98351-MB2	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:06	ZZZZZZ	1		
19:09	ZZZZZZ	1		
19:12	MP98351-B3	1		
19:15	MP98351-S1	1		
19:19	MP98351-S2	1		
19:22	MP98351-S3	1		
19:25	MP98351-S4	1		
19:29	MA41246-CCV10	1		
19:32	MA41246-CCB11	1		
19:35	JC36016-1	1		(sample used for QC only; not part of login JC36049A)
19:38	MP98351-SD1	5		
19:41	ZZZZZZ	1		
19:44	ZZZZZZ	1		
19:47	ZZZZZZ	1		
19:51	ZZZZZZ	1		
19:54	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:00	MP98351-B1	1		
20:03	MA41246-CCV11	1		
20:07	MA41246-CCB12	1		
20:10	MP98351-B2	1		
20:13	MP98351-SD1	5		
20:19	MP98158-MB2	1		
20:22	MP98158-B2	1		
20:25	ZZZZZZ	1		
20:29	ZZZZZZ	1		
20:32	MA41246-CCV12	1		
20:35	MA41246-CCB13	1		
20:38	MA41246-ICSA2	1		
20:41	MA41246-ICSAB2	1		
20:45	MA41246-CCV13	1		
20:48	MA41246-CCB14	1		
---------->	Last reportable CCB for job JC36049A			
20:51	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:54	ZZZZZZ	1		
20:57	ZZZZZZ	1		
21:00	ZZZZZZ	1		
21:04	ZZZZZZ	1		
21:07	ZZZZZZ	1		
21:10	ZZZZZZ	1		
21:13	ZZZZZZ	1		
21:16	ZZZZZZ	1		
21:19	ZZZZZZ	1		
21:23	ZZZZZZ	1		
21:26	ZZZZZZ	1		
21:29	MA41246-CCV14	1		
21:32	MA41246-CCB15	1		
23:42	MA41246-CCV15	1		
23:45	MA41246-CCB16	1		
23:50	MP98355-MB1	1		
23:53	MP98355-B1	1		
23:56	MP98355-S1	1		
23:59	MP98355-S2	1		
00:02	JC36135-29A	1		(sample used for QC only; not part of login JC36049A)
00:05	MP98355-SD1	5		
00:08	ZZZZZZ	1		
00:12	ZZZZZZ	1		
00:15	ZZZZZZ	1		
00:18	MA41246-CCV16	1		
00:21	MA41246-CCB17	1		
00:24	ZZZZZZ	1		
00:28	ZZZZZZ	1		
00:31	ZZZZZZ	1		
00:34	ZZZZZZ	1		
00:37	ZZZZZZ	2		
00:40	ZZZZZZ	2		
00:43	ZZZZZZ	2		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:47	ZZZZZZ	2		
00:50	MA41246-CCV17	1		
00:53	MA41246-CCB18	1		
00:56	ZZZZZZ	1		
00:59	ZZZZZZ	1		
01:02	ZZZZZZ	1		
01:06	ZZZZZZ	1		
01:09	ZZZZZZ	1		
01:12	ZZZZZZ	1		
01:15	ZZZZZZ	1		
01:18	ZZZZZZ	1		
01:21	ZZZZZZ	1		
01:25	MA41246-CCV18	1		
01:28	MA41246-CCB19	1		
01:31	MA41246-CRI4	1		
01:34	MA41246-CRIA2	1		
01:37	MA41246-CCV19	1		
01:40	MA41246-CCB20	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:30	MA41246-STD1	9723 R	238980 R	27912 R	13719 R
12:33	MA41246-STD2	9373	225860	27816	12980
12:37	ZZZZZZ	9589	231640	28060	13267
12:40	ZZZZZZ	9654	239530	28395	13620
12:45	ZZZZZZ	9524	232330	27808	13165
12:56	ZZZZZZ	9880	242220	999999 !	13903
13:01	MA41246-ICV1	9584	231770	27735	13219
13:14	MA41246-ICB1	9739	237390	30437	13724
13:20	MA41246-ICCV1	9677	234420	27892	13338
13:28	MA41246-CCB1	9784	242830	28765	13760
13:31	MA41246-CRI1	9799	239600	28491	13758
13:34	MA41246-CRID1	9772	238210	28278	13744
13:37	MA41246-ICSA1	9030	212850	26448	12257
13:41	MA41246-ICSAB1	9050	214280	26863	12291
13:44	MA41246-HSTD1	9454	236040	28532	13410
13:47	MA41246-HSTD2	9189	217720	27222	12380
13:51	ZZZZZZ	9681	238590	28343	13875
13:54	ZZZZZZ	9639	238820	28492	13770
13:57	ZZZZZZ	9806	239950	28599	13827
14:00	MA41246-CCV1	9612	230670	27846	13284
14:05	MA41246-CCB2	9777	238090	28695	13807
14:08	MP98174-MB3	9783	240390	28836	13824
14:11	MP98174-MB4	9782	240080	28662	13809
14:15	MP98174-B3	9694	240920	29188	13608
14:18	MP98174-B4	9885	244940	29368	14035
14:21	ZZZZZZ	9911	243080	29596	14085
14:24	ZZZZZZ	9939	246380	29101	14152
14:27	MP98170-MB3	9476	241110	28230	13417
14:30	MP98170-MB4	9731	240330	28382	13755
14:33	MA41246-CCV2	9528	228770	27830	13230
14:37	MA41246-CCB3	9744	239390	28263	13785
14:40	MP98170-B2	9621	233320	28107	13437
14:43	ZZZZZZ	9484	239200	28728	13472

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:46	ZZZZZZ	9921	236360	28491	14049
14:50	ZZZZZZ	9818	240540	28470	13864
14:53	ZZZZZZ	9791	241370	28777	13829
14:56	MP98187-B2	9545	232950	27819	13332
14:59	ZZZZZZ	9865	240530	28771	13937
15:02	ZZZZZZ	9735	241430	28746	13776
15:05	ZZZZZZ	9822	244160	28465	13934
15:08	MA41246-CCV3	9926	232750	27351	13772
15:14	MA41246-CCB4	9798	241200	28413	13939
15:18	ZZZZZZ	9812	241000	28829	13911
15:21	ZZZZZZ	9837	239710	28694	13924
15:24	MP98187-MB3	9868	250960	28634	13939
15:27	MP98187-MB4	9864	243510	28702	13949
15:34	MA41246-CRI2	9769	237410	28378	13850
15:37	MA41246-CRID2	9870	243220	28450	14036
15:41	MA41246-CCV4	9642	235000	28117	13441
15:46	MA41246-CCB5	9857	241010	28709	14028
16:08	ZZZZZZ	9886	240660	29485	14108
16:11	MP98354-S1	9215	215330	27697	12646
16:14	MP98354-S2	9237	215770	27336	12672
16:17	MP98354-SD1	9700	231130	27938	13644
16:21	MP98354-S1	9615	231280	27918	13511
16:24	MP98354-S2	9701	230070	27980	13610
16:27	MP98354-SD1	9804	239010	28294	13941
16:30	MA41246-CCV5	9675	231110	28143	13539
16:33	MA41246-CCB6	9803	241480	28507	14002
16:43	MP98350-MB1	10053	245010	29418	14340
16:46	MP98350-B1	9683	235770	28689	13627
16:49	MP98350-S1	10322	246150	30273	13718
16:52	MP98350-S2	10513	249880	30912	13640
16:55	ZZZZZZ	10448	272850	30423	13905
16:58	MP98350-SD1	9944	241780	28412	13915
17:01	ZZZZZZ	10006	243540	28828	14102

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:04	ZZZZZZ	10136	239590	29265	13996
17:08	ZZZZZZ	10721	253790	31156	13896
17:11	MA41246-CCV6	9672	232490	27539	13532
17:14	MA41246-CCB7	9840	237070	27912	14061
17:17	ZZZZZZ	17371 !	408730 !	39112 !	24734 !
17:20	ZZZZZZ	10563	246260	29880	14382
17:23	ZZZZZZ	9906	240420	29225	13607
17:27	ZZZZZZ	9760	237550	29353	13250
17:30	ZZZZZZ	10014	242840	29193	14067
17:33	ZZZZZZ	9616	230710	28249	14625
17:36	ZZZZZZ	9964	241160	28868	13888
17:39	JC36049-1A	10428	252950	30194	13858
17:42	JC36049-2A	10278	247130	29551	14002
17:46	MA41246-CCV7	9677	230020	27515	13531
17:49	MA41246-CCB8	9996	243800	28056	14244
17:59	JC36049-3A	10235	247040	29518	14007
18:02	JC36049-4A	10401	250310	29907	14064
18:05	ZZZZZZ	10078	251650	29294	14380
18:08	ZZZZZZ	10130	240700	29038	14028
18:11	ZZZZZZ	10212	240890	28841	14179
18:14	ZZZZZZ	10147	240080	29627	14090
18:17	ZZZZZZ	10325	244060	29233	14169
18:21	ZZZZZZ	10336	241710	29341	14205
18:24	ZZZZZZ	9877	241160	28413	14347
18:27	MA41246-CCV8	10020	234540	27641	13960
18:30	MA41246-CCB9	10025	241130	28246	14293
18:44	MA41246-CRI3	9757	237070	27892	13926
18:47	MA41246-CRID3	9852	238650	27700	14065
18:50	MA41246-CRIA1	9793	236830	27942	13996
18:54	MA41246-CCV9	9641	230140	27210	13497
18:57	MA41246-CCB10	9832	243530	27921	14045
19:00	MP98351-MB1	10127	245750	28751	14549
19:03	MP98351-MB2	9956	248250	28771	14264

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:06	ZZZZZZ	9895	348730 !	28144	13981
19:09	ZZZZZZ	10112	240050	28537	14501
19:12	MP98351-B3	9813	235000	28198	13857
19:15	MP98351-S1	9550	225950	27889	13209
19:19	MP98351-S2	9443	222470	27555	13071
19:22	MP98351-S3	9497	222020	27697	13226
19:25	MP98351-S4	9536	225080	27962	13271
19:29	MA41246-CCV10	9552	227890	27495	13355
19:32	MA41246-CCB11	9753	240370	28202	13910
19:35	JC36016-1	9530	227170	27739	13258
19:38	MP98351-SD1	9825	234200	27506	13893
19:41	ZZZZZZ	9984	237680	28714	13929
19:44	ZZZZZZ	9939	238320	28532	14043
19:47	ZZZZZZ	9911	240110	28448	13996
19:51	ZZZZZZ	9949	242650	28628	14208
19:54	ZZZZZZ	10002	243760	28706	14232
19:57	ZZZZZZ	9888	230580	28479	13766
20:00	MP98351-B1	9878	235360	28240	13931
20:03	MA41246-CCV11	9671	230030	27504	13519
20:07	MA41246-CCB12	9922	239810	27931	14160
20:10	MP98351-B2	10078	247700	28856	14477
20:13	MP98351-SD1	9753	234550	27722	13873
20:19	MP98158-MB2	10025	244260	28771	14410
20:22	MP98158-B2	9737	234430	28221	13781
20:25	ZZZZZZ	9412	219340	27626	13329
20:29	ZZZZZZ	9473	221250	27944	13226
20:32	MA41246-CCV12	9601	229880	27227	13469
20:35	MA41246-CCB13	9879	238810	27832	14126
20:38	MA41246-ICSA2	9075	210920	26070	12498
20:41	MA41246-ICSAB2	9065	211830	26172	12525
20:45	MA41246-CCV13	9630	227610	27328	13517
20:48	MA41246-CCB14	9856	241290	27828	14133
20:51	ZZZZZZ	10121	227320	27782	13670

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:54	ZZZZZZ	9873	236890	28037	14112
20:57	ZZZZZZ	9898	239150	28019	14158
21:00	ZZZZZZ	9867	238190	27396	14135
21:04	ZZZZZZ	9824	236090	27865	14092
21:07	ZZZZZZ	9783	237890	27763	14093
21:10	ZZZZZZ	9314	221830	26802	13146
21:13	ZZZZZZ	9348	223480	25085	13016
21:16	ZZZZZZ	9859	239990	27930	14267
21:19	ZZZZZZ	9794	237620	27801	14088
21:23	ZZZZZZ	9336	216760	26650	13026
21:26	ZZZZZZ	9883	240600	27794	14279
21:29	MA41246-CCV14	9622	231250	27078	13581
21:32	MA41246-CCB15	9880	239230	27903	14227
23:42	MA41246-CCV15	9600	229850	27393	13682
23:45	MA41246-CCB16	9850	237810	27582	14337
23:50	MP98355-MB1	9857	238480	28010	14272
23:53	MP98355-B1	9722	233040	27709	13880
23:56	MP98355-S1	9831	234100	27906	13731
23:59	MP98355-S2	9914	236430	28132	13815
00:02	JC36135-29A	10080	237600	28572	14160
00:05	MP98355-SD1	10002	244660	28036	14293
00:08	ZZZZZZ	10280	245900	29461	13976
00:12	ZZZZZZ	10156	241300	28784	14134
00:15	ZZZZZZ	10137	244450	29354	14124
00:18	MA41246-CCV16	9737	234420	27444	13811
00:21	MA41246-CCB17	9953	242940	27917	14437
00:24	ZZZZZZ	10177	242880	29023	14141
00:28	ZZZZZZ	9873	242050	28477	14082
00:31	ZZZZZZ	10050	238280	28685	14069
00:34	ZZZZZZ	9971	241420	28505	14175
00:37	ZZZZZZ	10172	243140	28949	14128
00:40	ZZZZZZ	10147	240240	28717	14266
00:43	ZZZZZZ	10136	242480	28844	14247

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
00:47	ZZZZZZ	10136	242550	28618	14244
00:50	MA41246-CCV17	9799	235390	27511	13877
00:53	MA41246-CCB18	10031	244530	28010	14514
00:56	ZZZZZZ	10583	252680	29907	14217
00:59	ZZZZZZ	10557	253120	29646	14355
01:02	ZZZZZZ	10653	254880	30112	14335
01:06	ZZZZZZ	9951	240980	28751	14675
01:09	ZZZZZZ	10241	248310	29363	14467
01:12	ZZZZZZ	10528	252990	29863	14269
01:15	ZZZZZZ	10100	243420	28894	14064
01:18	ZZZZZZ	10048	240960	28740	13948
01:21	ZZZZZZ	10156	245190	28793	14047
01:25	MA41246-CCV18	9905	234420	27781	14013
01:28	MA41246-CCB19	10163	246670	28629	14688
01:31	MA41246-CRI4	10070	243360	28271	14514
01:34	MA41246-CRIA2	10079	247740	28487	14571
01:37	MA41246-CCV19	9874	234640	27928	13973
01:40	MA41246-CCB20	10129	245070	28332	14627

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time:			13:14		13:28		14:05		14:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-1.6	<6.0	0.10	<6.0	-0.90	<6.0	0.20	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	-0.40	<10	-0.10	<10	-0.20	<10	0.30	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	0.10	<10	0.0	<10	0.0	<10	0.40	<10
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	-0.40	<2.0	0.40	<2.0	-0.10	<2.0	0.50	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	0.30	<50	0.30	<50	0.30	<50	0.0	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			13:14 ICB1		13:28 CCB1		14:05 CCB2		14:37 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time:			15:14		15:46		16:33		17:14	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-0.60	<6.0	-0.40	<6.0	-1.5	<6.0	1.1	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.0	<10	0.0	<10	0.0	<10	-0.10	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	0.0	<10	-0.10	<10	-0.20	<10	0.20	<10
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	-0.70	<2.0	0.0	<2.0	0.0	<2.0	-0.70	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	-0.30	<50	0.0	<50	-0.20	<50	0.20	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			15:14 CCB4		15:46 CCB5		16:33 CCB6		17:14 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time:			17:49		18:30		18:57		19:32	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-0.10	<6.0	-0.80	<6.0	-1.3	<6.0	-0.20	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.30	<10	0.0	<10	0.30	<10	0.30	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	0.10	<10	0.10	<10	-0.10	<10	0.10	<10
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	0.50	<2.0	0.10	<2.0	-0.10	<2.0	0.40	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	-0.20	<50	0.0	<50	0.10	<50	0.0	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			17:49 CCB8		18:30 CCB9		18:57 CCB10		19:32 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			20:07 CCB12		20:35 CCB13		20:48 CCB14	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	16	anr					
Antimony	6.0	2.7	-1.1	<6.0	-0.30	<6.0	-0.50	<6.0
Arsenic	3.0	1.4	anr					
Barium	200	.5	anr					
Beryllium	1.0	.1	anr					
Bismuth	20	3.6	anr					
Boron	100	4.6	anr					
Cadmium	3.0	.4	anr					
Calcium	5000	45	anr					
Chromium	10	.5	0.10	<10	0.10	<10	0.0	<10
Cobalt	50	.4	anr					
Copper	10	.5	anr					
Iron	100	2.8	anr					
Lead	3.0	1.2	anr					
Lithium	20	3.7	anr					
Magnesium	5000	21	anr					
Manganese	15	.1	anr					
Molybdenum	20	.4	anr					
Nickel	10	.6	-0.20	<10	0.10	<10	0.10	<10
Palladium	50	3						
Phosphorus	50		anr					
Potassium	10000	84	anr					
Selenium	10	3.2	anr					
Silicon	200	2.3	anr					
Silver	10	1	anr					
Sodium	10000	38	anr					
Sulfur	50	4.1	anr					
Strontium	10	.1	anr					
Thallium	2.0	1.8	-0.40	<2.0	0.80	<2.0	0.40	<2.0
Tin	10	1.1	anr					
Titanium	10	.5	anr					
Tungsten	50	1.9	anr					
Vanadium	50	.4	-0.30	<50	0.0	<50	0.30	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			20:07 CCB12		20:35 CCB13		20:48 CCB14	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	1.8	anr					
Zirconium	10	.4	anr					

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:20	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	2000	1970	98.5
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth	anr		
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	2000	1990	99.5
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	2000	2010	100.5
Palladium			
Phosphorus	anr		
Potassium	anr		
Selenium	anr		
Silicon	anr		
Silver	anr		
Sodium	anr		
Sulfur	anr		
Strontium	anr		
Thallium	2000	2030	101.5
Tin	anr		
Titanium	anr		
Tungsten	anr		
Vanadium	2000	1980	99.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:20	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium	anr		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:01			14:00			14:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1990	99.5	2000	1950	97.5	2000	1980	99.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	1950	97.5	2000	1960	98.0	2000	2040	102.0
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	2040	102.0	2000	1990	99.5	2000	2010	100.5
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	2040	102.0	2000	2010	100.5	2000	2030	101.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	1940	97.0	2000	1940	97.0	2000	2030	101.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:01			14:00			14:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		15:08			15:41			16:30	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1900	95.0	2000	1940	97.0	2000	1910	95.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	2010	100.5	2000	1960	98.0	2000	1950	97.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	1940	97.0	2000	1970	98.5	2000	1920	96.0
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	1960	98.0	2000	2000	100.0	2000	1970	98.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	2000	100.0	2000	1950	97.5	2000	1940	97.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		15:08			15:41			16:30	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		17:11			17:46			18:27	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1940	97.0	2000	1950	97.5	2000	1860	93.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	1950	97.5	2000	2010	100.5	2000	1970	98.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	1960	98.0	2000	1980	99.0	2000	1880	94.0
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	1990	99.5	2000	2010	100.5	2000	1930	96.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	1930	96.5	2000	1990	99.5	2000	1950	97.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		17:11			17:46			18:27	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		18:54			19:29			20:03	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1900	95.0	2000	1960	98.0	2000	1940	97.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	1960	98.0	2000	2010	100.5	2000	2030	101.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	1920	96.0	2000	1980	99.0	2000	1970	98.5
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	1970	98.5	2000	2010	100.5	2000	2000	100.0
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	1950	97.5	2000	1980	99.0	2000	2000	100.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		18:54			19:29			20:03	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		20:32			20:45	
Sample ID:	CCV	CCV12		CCV	CCV13	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	2000	1960	98.0	2000	1950	97.5
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth	anr					
Boron	anr					
Cadmium	anr					
Calcium	anr					
Chromium	2000	2020	101.0	2000	2040	102.0
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium	anr					
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	2000	1980	99.0	2000	1970	98.5
Palladium						
Phosphorus	anr					
Potassium	anr					
Selenium	anr					
Silicon	anr					
Silver	anr					
Sodium	anr					
Sulfur	anr					
Strontium	anr					
Thallium	2000	2020	101.0	2000	2010	100.5
Tin	anr					
Titanium	anr					
Tungsten	anr					
Vanadium	2000	1990	99.5	2000	2020	101.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		20:32			20:45	
Sample ID:	CCV	CCV12		CCV	CCV13	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium	anr					

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:44			13:47	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	5000	5110	102.2			
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth	anr					
Boron	anr					
Cadmium	anr					
Calcium						
Chromium	5000	5110	102.2			
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	5000	5230	104.6			
Palladium						
Phosphorus	anr					
Potassium						
Selenium	anr					
Silicon	anr					
Silver	anr					
Sodium						
Sulfur	anr					
Strontium	anr					
Thallium	5000	5190	103.8			
Tin	anr					
Titanium	anr					
Tungsten	anr					
Vanadium	5000	4980	99.6			

HIGH STANDARD CHECK SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:44			13:47	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium	anr					

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				13:31		13:34		15:34	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	7.0	116.7			5.4	90.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20			anr					
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	10.0	100.0			10.0	100.0
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	10.0	100.0	4.3	107.5	9.7	97.0
Palladium	50								
Phosphorus	50			anr					
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200			anr					
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50			anr					
Strontium	10			anr					
Thallium	10		2.0	9.8	98.0	2.2	110.0	9.8	98.0
Tin	10			anr					
Titanium	10			anr					
Tungsten	50			anr					
Vanadium	50		2.0	49.7	99.4	2.1	105.0	49.3	98.6

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				13:31		13:34		15:34	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10			anr					

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				15:37		18:44		18:47	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI3		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	3.0	100.0	6.3	105.0		
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	2.2	110.0	9.9	99.0	2.3	115.0
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	20								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	4.1	102.5	9.6	96.0	4.1	102.5
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50								
Strontium	10								
Thallium	10		2.0	1.6	80.0	8.7	87.0	1.8	90.0
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	1.9	95.0	48.8	97.6	2.0	100.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				15:37		18:44		18:47	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI3		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				18:50	
Sample ID:	CRI	CRIA	CRID	CRIA1	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	16.6	83.0
Arsenic	8.0	20	3.0	anr	
Barium	200		4.0		
Beryllium	2.0		1.0		
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0		
Calcium	5000	2000	1000	anr	
Chromium	10		2.0		
Cobalt	50		3.0		
Copper	10		2.0		
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	20				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0		
Molybdenum	20				
Nickel	10		4.0		
Palladium	50				
Phosphorus	50				
Potassium	5000		2000		
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0		
Sodium	5000		1000		
Sulfur	50				
Strontium	10				
Thallium	10		2.0		
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				18:50	
Sample ID:	CRI	CRIA	CRID	CRIA1	
Metal	True	True	True	Results	% Rec
Zinc	20		10		
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41246 Units: ug/l

Time:			13:37		13:41		20:38		20:41	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	498000	99.6	492000	98.4	485000	97.0	474000	94.8
Antimony		1000	1.5		1130	113.0	3.7		1110	111.0
Arsenic		1000	0.0		1050	105.0	-0.80		1030	103.0
Barium		500	1.6		512	102.4	1.4		490	98.0
Beryllium		500	0.10		499	99.8	0.10		484	96.8
Bismuth		500	7.2		504	100.8	7.9		491	98.2
Boron		500	-3.4		497	99.4	-2.6		486	97.2
Cadmium		1000	-0.60		1020	102.0	-0.60		1020	102.0
Calcium	400000	400000	374000	93.5	370000	92.5	374000	93.5	369000	92.3
Chromium		500	1.8		503	100.6	1.6		505	101.0
Cobalt		500	-0.20		493	98.6	-0.70		489	97.8
Copper		500	9.7		529	105.8	-0.50		528	105.6
Iron	200000	200000	189000	94.5	180000	90.0	180000	90.0	173000	86.5
Lead		1000	3.6		971	97.1	2.6		956	95.6
Lithium		500	-15		508	101.6	-8.4		496	99.2
Magnesium	500000	500000	494000	98.8	486000	97.2	484000	96.8	475000	95.0
Manganese		500	-0.80		504	100.8	-1.3		505	101.0
Molybdenum		500	1.5		503	100.6	1.4		509	101.8
Nickel		1000	-0.10		992	99.2	-0.50		968	96.8
Palladium		500	-12		-1.7	0.0*	-13		3.7	0.7*
Phosphorus		500	9.2		489	97.8	1.0		472	94.4
Potassium			-100		-76		283		184	
Selenium		1000	3.7		1040	104.0	2.7		1010	101.0
Silicon		500	-19		469	93.8	-22		466	93.2
Silver		1000	3.5		1060	106.0	1.8		1040	104.0
Sodium			5.7		20.2		478		432	
Sulfur		500	-6.2		484	96.8	-8.6		479	95.8
Strontium		500	1.3		520	104.0	0.60		506	101.2
Thallium		1000	-0.90		1010	101.0	1.1		1000	100.0
Tin		500	-6.4		468	93.6	-6.2		475	95.0
Titanium		500	-1.7		493	98.6	-2.0		486	97.2
Tungsten		500	0.10		495	99.0	2.3		487	97.4
Vanadium		500	1.8		490	98.0	0.60		489	97.8

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41246 Units: ug/l

Time:			13:37		13:41		20:38		20:41	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	3.1		975	97.5	3.2		985	98.5
Zirconium		500	7.3		502	100.4	6.1		497	99.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:06	MA41249-STD1	1		STDA
10:10	MA41249-STD2	1		STDB
10:14	ZZZZZZ	1		
10:18	ZZZZZZ	1		
10:24	ZZZZZZ	1		
10:28	MA41249-ICV1	1		
10:34	MA41249-ICB1	1		
10:38	MA41249-ICCV1	1		
10:46	MA41249-CCB1	1		
10:49	MA41249-CRI1	1		
10:53	MA41249-CRID1	1		
10:58	MA41249-CRIA1	1		
11:02	MA41249-ICSA1	1		
11:06	MA41249-ICSAB1	1		
11:11	MA41249-HSTD1	1		
11:15	MA41249-HSTD2	1		
11:19	ZZZZZZ	1		
11:24	ZZZZZZ	1		
11:28	ZZZZZZ	1		
11:33	MA41249-CCV1	1		
11:37	MA41249-CCB2	1		
12:33	MA41249-CCV2	1		
12:37	MA41249-CCB3	1		
12:41	ZZZZZZ	1		
12:45	ZZZZZZ	2		
12:50	ZZZZZZ	1		
12:54	ZZZZZZ	1		
12:58	MP98367-S1	2		
13:02	MP98367-S2	2		
13:07	JC36147-1	2		(sample used for QC only; not part of login JC36049A)
13:11	MP98367-SD1	10		
13:15	MP98367-D1	2		Tl neg
---------->	Last reportable sample/prep for job JC36049A			
13:19	MA41249-CCV3	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:23	MA41249-CCB4	1		
13:28	MP98307-MB1	1		
13:32	MP98307-B1	1		
13:36	MP98307-S1	2		
13:40	MP98307-S2	2		
13:45	JC35868-8	2		(sample used for QC only; not part of login JC36049A)
13:49	MP98307-SD1	10		
13:53	ZZZZZZ	1		
13:57	ZZZZZZ	1		
14:02	ZZZZZZ	1		
14:06	MA41249-CCV4	1		
14:10	MA41249-CCB5	1		
14:14	MP98307-S1	5		
14:18	MP98307-S2	5		
14:22	JC35868-8	5		(sample used for QC only; not part of login JC36049A)
14:27	MP98307-SD1	25		
14:31	ZZZZZZ	1		
14:35	ZZZZZZ	1		
14:39	ZZZZZZ	1		
14:44	ZZZZZZ	1		
14:48	ZZZZZZ	1		
14:52	MA41249-CCV5	1		
14:56	MA41249-CCB6	1		
15:01	ZZZZZZ	1		
15:05	ZZZZZZ	1		
15:09	ZZZZZZ	2		
15:13	ZZZZZZ	10		
15:17	ZZZZZZ	5		
15:22	ZZZZZZ	1		
15:26	ZZZZZZ	1		
15:30	ZZZZZZ	2		
15:34	ZZZZZZ	1		
15:39	MA41249-CCV6	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:43	MA41249-CCB7	1		
15:47	ZZZZZZ	1		
15:51	ZZZZZZ	1		
15:55	ZZZZZZ	2		
16:00	ZZZZZZ	1		
16:04	ZZZZZZ	2		
16:08	ZZZZZZ	1		
16:12	ZZZZZZ	5		
16:16	ZZZZZZ	1		
16:21	ZZZZZZ	2		
16:25	MA41249-CCV7	1		
16:29	MA41249-CCB8	1		
16:33	ZZZZZZ	1		
16:38	MP98176-MB5	1		
16:42	MP98176-MB6	1		rerun for Tl
16:46	MP98176-MB7	1		
16:51	MP98176-B5	1		
16:55	MP98176-B6	1		
16:59	ZZZZZZ	1		
17:03	ZZZZZZ	1		
17:08	ZZZZZZ	1		
17:12	MA41249-CCV8	1		
17:16	MA41249-CCB9	1		
17:20	MP98172-MB5	1		
17:25	MP98172-MB6	1		Tl neg
17:29	MP98172-MB7	1		
17:33	MP98172-B3	1		
17:37	ZZZZZZ	1		
17:42	ZZZZZZ	1		
17:46	ZZZZZZ	1		
17:51	MP98189-B3	1		
17:55	MP98189-MB5	1		
17:59	MA41249-CCV9	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:03	MA41249-CCB10	1		
18:07	MP98189-MB6	1		
18:12	MP98189-MB7	1		
18:16	ZZZZZZ	1		
18:20	ZZZZZZ	1		
18:25	ZZZZZZ	1		
18:29	MA41249-CCV10	1		
18:33	MA41249-CCB11	1		
18:38	MA41249-CRI2	1		
18:42	MA41249-CRID2	1		
18:46	MA41249-CRIA2	1		
18:51	MA41249-ICSA2	1		
18:55	MA41249-ICSAB2	1		
18:59	MA41249-CCV11	1		
19:04	MA41249-CCB12	1		
---------->	Last reportable CCB for job JC36049A			
19:08	MP98372-MB1	1		
19:12	MP98372-B1	1		
19:16	MP98372-S1	1		
19:20	MP98372-S2	1		
19:24	JC35839-1A	1		(sample used for QC only; not part of login JC36049A)
19:29	MP98372-SD1	5		
19:33	ZZZZZZ	1		
19:37	ZZZZZZ	1		
19:42	ZZZZZZ	1		
19:46	MA41249-CCV12	1		
19:50	MA41249-CCB13	1		
19:54	ZZZZZZ	1		
19:59	ZZZZZZ	1		
20:03	ZZZZZZ	1		
20:07	ZZZZZZ	1		
20:12	ZZZZZZ	1		
20:16	ZZZZZZ	1		
20:20	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:25	ZZZZZZ	1		
20:29	ZZZZZZ	1		
20:33	MA41249-CCV13	1		
20:37	MA41249-CCB14	1		
20:42	ZZZZZZ	1		
20:46	ZZZZZZ	1		
20:50	ZZZZZZ	1		
20:55	ZZZZZZ	1		
20:59	ZZZZZZ	1		
21:03	ZZZZZZ	1		
21:08	ZZZZZZ	1		
21:12	ZZZZZZ	1		
21:16	ZZZZZZ	2		
21:21	MA41249-CCV14	1		
21:25	MA41249-CCB15	1		
21:29	ZZZZZZ	1		
21:33	ZZZZZZ	1		
21:38	ZZZZZZ	1		
21:42	ZZZZZZ	1		
21:46	ZZZZZZ	1		
21:51	ZZZZZZ	1		
21:55	ZZZZZZ	1		
21:59	ZZZZZZ	1		
22:04	ZZZZZZ	1		
22:08	MA41249-CCV15	1		
22:12	MA41249-CCB16	1		
22:16	ZZZZZZ	1		
22:21	ZZZZZZ	1		
22:25	ZZZZZZ	1		
22:29	ZZZZZZ	1		
22:34	ZZZZZZ	1		
22:38	ZZZZZZ	1		
22:42	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
22:47	ZZZZZZ	1		
22:51	MA41249-CCV16	1		
22:55	MA41249-CCB17	1		
23:00	MA41249-CRI3	1		
23:04	MA41249-CRID3	1		
23:08	MA41249-CRIA3	1		
23:13	MA41249-CCV17	1		
23:17	MA41249-CCB18	1		
23:21	MP98378-MB1	1		
23:26	MP98378-B1	1		
23:30	MP98378-B2	1		
23:34	MP98378-S1	1		Na high
23:38	MP98378-S2	1		Na high
23:43	MP98378-S3	1		
23:47	MP98378-S4	1		
23:51	JC36134-1	1		(sample used for QC only; not part of login JC36049A)
23:56	MP98378-SD1	5		Na high
00:00	MA41249-CCV18	1		
00:04	MA41249-CCB19	1		
00:08	ZZZZZZ	1		
00:13	ZZZZZZ	1		
00:17	ZZZZZZ	1		
00:21	ZZZZZZ	1		
00:26	ZZZZZZ	1		
00:30	ZZZZZZ	1		
00:35	ZZZZZZ	1		
00:39	ZZZZZZ	1		
00:43	ZZZZZZ	1		
00:48	MA41249-CCV19	1		
00:52	MA41249-CCB20	1		
00:56	ZZZZZZ	1		
01:01	ZZZZZZ	1		
01:05	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
01:09	ZZZZZZ	1		
01:14	ZZZZZZ	1		
01:18	ZZZZZZ	1		
01:23	ZZZZZZ	1		
01:27	ZZZZZZ	1		
01:31	ZZZZZZ	1		
01:36	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:06	MA41249-STD1	2608 R	81525 R	19902 R	6755 R
10:10	MA41249-STD2	2448	75655	19790	5716
10:14	ZZZZZZ	2517	77580	19922	5977
10:18	ZZZZZZ	2621	81552	20175	6799
10:24	ZZZZZZ	2531	78364	20083	6026
10:28	MA41249-ICV1	2530	77984	20003	6002
10:34	MA41249-ICB1	2645	82073	20268	6831
10:38	MA41249-ICCV1	2549	78351	20062	6020
10:46	MA41249-CCB1	2633	81758	20111	6780
10:49	MA41249-CRI1	2604	80492	20088	6581
10:53	MA41249-CRID1	2628	81346	20036	6726
10:58	MA41249-CRIA1	2628	81543	20041	6731
11:02	MA41249-ICSA1	2348	71477	19367	5244
11:06	MA41249-ICSAB1	2349	71535	19415	5257
11:11	MA41249-HSTD1	2584	80171	19899	6504
11:15	MA41249-HSTD2	2398	72873	19629	5330
11:19	ZZZZZZ	2577	79987	20191	6637
11:24	ZZZZZZ	2589	81448	20135	6768
11:28	ZZZZZZ	2630	81653	20107	6777
11:33	MA41249-CCV1	2544	77759	19975	5989
11:37	MA41249-CCB2	2637	82127	20192	6788
12:33	MA41249-CCV2	2530	78025	19922	5991
12:37	MA41249-CCB3	2647	82351	20229	6813
12:41	ZZZZZZ	2633	78639	20345	6796
12:45	ZZZZZZ	2319	70933	19226	5219
12:50	ZZZZZZ	2612	82035	20212	6754
12:54	ZZZZZZ	2545	77182	20502	6090
12:58	MP98367-S1	2499	78916	20097	6429
13:02	MP98367-S2	2481	78961	20313	6419
13:07	JC36147-1	2513	79880	20276	6659
13:11	MP98367-SD1	2592	81085	20110	6726
13:15	MP98367-D1	2520	79510	20212	6654
13:19	MA41249-CCV3	2526	77421	19838	5937

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:23	MA41249-CCB4	2608	80840	19805	6713
13:28	MP98307-MB1	2600	81143	20088	6722
13:32	MP98307-B1	2548	78368	19886	6083
13:36	MP98307-S1	2446	75829	19749	5754
13:40	MP98307-S2	2456	76399	19977	5944
13:45	JC35868-8	2463	77080	19552	6139
13:49	MP98307-SD1	2606	80425	20128	6485
13:53	ZZZZZZ	2778	84582	21556	6221
13:57	ZZZZZZ	2633	80857	20306	6288
14:02	ZZZZZZ	2675	82326	20694	6354
14:06	MA41249-CCV4	2536	77700	19681	5975
14:10	MA41249-CCB5	2634	82208	20011	6786
14:14	MP98307-S1	2535	78772	20004	6123
14:18	MP98307-S2	2546	78947	20159	6215
14:22	JC35868-8	2558	79343	20086	6352
14:27	MP98307-SD1	2637	81317	20056	6613
14:31	ZZZZZZ	2724	83212	21070	6278
14:35	ZZZZZZ	2686	82025	20920	6228
14:39	ZZZZZZ	2655	81672	20686	6273
14:44	ZZZZZZ	2677	82219	20707	6340
14:48	ZZZZZZ	2724	82986	21079	6282
14:52	MA41249-CCV5	2541	77666	19780	5963
14:56	MA41249-CCB6	2643	81785	20022	6773
15:01	ZZZZZZ	2731	82643	20958	6159
15:05	ZZZZZZ	2662	81665	20775	6256
15:09	ZZZZZZ	2555	78873	20169	6088
15:13	ZZZZZZ	2627	84011	20173	6557
15:17	ZZZZZZ	2566	79375	20111	6418
15:22	ZZZZZZ	2636	82307	20267	6814
15:26	ZZZZZZ	2544	78434	20055	6106
15:30	ZZZZZZ	2560	79311	20279	5947
15:34	ZZZZZZ	2676	82218	20846	6170
15:39	MA41249-CCV6	2544	78102	19924	5993

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:43	MA41249-CCB7	2617	81821	19912	6744
15:47	ZZZZZZ	2649	81599	20783	6180
15:51	ZZZZZZ	2570	80714	20543	6211
15:55	ZZZZZZ	2611	81257	20432	6417
16:00	ZZZZZZ	2627	81917	20730	6213
16:04	ZZZZZZ	2633	81784	20565	6390
16:08	ZZZZZZ	2541	79793	20705	6153
16:12	ZZZZZZ	2629	81226	20311	6533
16:16	ZZZZZZ	2703	82755	21155	6229
16:21	ZZZZZZ	2575	80135	20624	5961
16:25	MA41249-CCV7	2547	78045	19795	6003
16:29	MA41249-CCB8	2636	82010	20120	6791
16:33	ZZZZZZ	2511	77946	20270	5752
16:38	MP98176-MB5	2654	82477	20515	6940
16:42	MP98176-MB6	2640	82371	20512	6901
16:46	MP98176-MB7	2630	81902	20514	6876
16:51	MP98176-B5	2551	79522	20424	6148
16:55	MP98176-B6	2630	84016	20637	6883
16:59	ZZZZZZ	2622	80747	20523	6842
17:03	ZZZZZZ	2624	82251	20505	6836
17:08	ZZZZZZ	2631	82402	20480	6863
17:12	MA41249-CCV8	2509	76831	20034	5927
17:16	MA41249-CCB9	2607	81215	19856	6717
17:20	MP98172-MB5	2599	81562	19983	6733
17:25	MP98172-MB6	2620	81612	19713	6728
17:29	MP98172-MB7	2606	81597	20054	6735
17:33	MP98172-B3	2539	78449	19808	6089
17:37	ZZZZZZ	2614	80830	20008	6728
17:42	ZZZZZZ	2616	81982	20079	6743
17:46	ZZZZZZ	2586	81503	19959	6647
17:51	MP98189-B3	2529	77976	19555	6043
17:55	MP98189-MB5	2626	81340	19915	6716
17:59	MA41249-CCV9	2557	77808	19750	5990

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:03	MA41249-CCB10	2654	81712	19845	6797
18:07	MP98189-MB6	2625	81424	19636	6725
18:12	MP98189-MB7	2628	81846	19895	6736
18:16	ZZZZZZ	2605	81682	20009	6684
18:20	ZZZZZZ	2632	81976	19932	6738
18:25	ZZZZZZ	2625	81747	19966	6727
18:29	MA41249-CCV10	2562	77933	19656	5989
18:33	MA41249-CCB11	2662	81681	19811	6790
18:38	MA41249-CRI2	2617	80381	19729	6579
18:42	MA41249-CRID2	2636	81353	19724	6702
18:46	MA41249-CRIA2	2638	81252	19592	6719
18:51	MA41249-ICSA2	2333	71210	18969	5180
18:55	MA41249-ICSAB2	2336	71544	18938	5206
18:59	MA41249-CCV11	2547	77832	19469	5968
19:04	MA41249-CCB12	2643	81637	19833	6756
19:08	MP98372-MB1	2624	82437	19943	6746
19:12	MP98372-B1	2566	78921	19684	6122
19:16	MP98372-S1	2461	75642	19491	5672
19:20	MP98372-S2	2457	75321	19434	5673
19:24	JC35839-1A	2465	75748	19420	5849
19:29	MP98372-SD1	2569	79421	19691	6412
19:33	ZZZZZZ	2504	76515	19511	5908
19:37	ZZZZZZ	2483	76727	19463	5970
19:42	ZZZZZZ	2551	77658	19493	6075
19:46	MA41249-CCV12	2549	77397	19468	5967
19:50	MA41249-CCB13	2653	81718	19799	6773
19:54	ZZZZZZ	2542	78859	19609	6230
19:59	ZZZZZZ	2443	75894	19289	5828
20:03	ZZZZZZ	2425	75605	19251	5814
20:07	ZZZZZZ	2512	81707	19487	6057
20:12	ZZZZZZ	2588	78560	19654	6098
20:16	ZZZZZZ	2555	78291	19582	6183
20:20	ZZZZZZ	2563	79389	19720	6245

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:25	ZZZZZZ	2571	78984	19714	6176
20:29	ZZZZZZ	2506	77264	19555	6046
20:33	MA41249-CCV13	2564	77618	19529	5972
20:37	MA41249-CCB14	2650	81493	19724	6757
20:42	ZZZZZZ	2507	77614	19548	6074
20:46	ZZZZZZ	2570	79415	19694	6233
20:50	ZZZZZZ	2537	78056	19546	6057
20:55	ZZZZZZ	2651	81667	19780	6772
20:59	ZZZZZZ	2538	78556	19630	6192
21:03	ZZZZZZ	2539	78285	19468	6131
21:08	ZZZZZZ	2540	78469	19495	6191
21:12	ZZZZZZ	2644	81681	19762	6757
21:16	ZZZZZZ	2685	81395	20164	6441
21:21	MA41249-CCV14	2565	77649	19385	5986
21:25	MA41249-CCB15	2654	81577	19680	6755
21:29	ZZZZZZ	2658	82129	19807	6776
21:33	ZZZZZZ	2568	78637	19607	6252
21:38	ZZZZZZ	2559	78278	19611	6230
21:42	ZZZZZZ	2570	79005	19635	6259
21:46	ZZZZZZ	2586	79491	19679	6360
21:51	ZZZZZZ	2620	80453	19556	6442
21:55	ZZZZZZ	2662	82175	19939	6793
21:59	ZZZZZZ	2570	79051	19723	6269
22:04	ZZZZZZ	2589	79892	19645	6375
22:08	MA41249-CCV15	2578	78188	19560	6017
22:12	MA41249-CCB16	2662	81946	19667	6797
22:16	ZZZZZZ	2604	80200	19673	6457
22:21	ZZZZZZ	2642	80936	19773	6628
22:25	ZZZZZZ	2669	82711	19947	6818
22:29	ZZZZZZ	2666	82699	20001	6817
22:34	ZZZZZZ	2516	77514	19351	5923
22:38	ZZZZZZ	No results reported for the elements associated with this internal standard.			
22:42	ZZZZZZ	No results reported for the elements associated with this internal standard.			

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
22:47	ZZZZZZ	2667	82517	19911	6821
22:51	MA41249-CCV16	2577	78439	19484	6019
22:55	MA41249-CCB17	2667	81972	19628	6811
23:00	MA41249-CRI3	2635	80866	19568	6613
23:04	MA41249-CRID3	2656	81488	19729	6756
23:08	MA41249-CRIA3	2653	81763	19673	6754
23:13	MA41249-CCV17	2574	78167	19505	6011
23:17	MA41249-CCB18	2728	83683	19960	6947
23:21	MP98378-MB1	2763	86234	21588	7142
23:26	MP98378-B1	2647	83547	22096	6350
23:30	MP98378-B2	2722	86297	22649	7061
23:34	MP98378-S1	2380	76352	21641	5299
23:38	MP98378-S2	2355	75649	21850	5268
23:43	MP98378-S3	2377	74661	21577	5353
23:47	MP98378-S4	2353	74769	21343	5374
23:51	JC36134-1	2363	75274	21604	5396
23:56	MP98378-SD1	2548	80451	21368	6096
00:00	MA41249-CCV18	2577	83077	21629	6048
00:04	MA41249-CCB19	2680	85337	21751	6872
00:08	ZZZZZZ	2630	87777	22297	6599
00:13	ZZZZZZ	2672	85148	22526	6696
00:17	ZZZZZZ	2681	85692	22747	6816
00:21	ZZZZZZ	2668	85888	22466	6777
00:26	ZZZZZZ	2369	74960	21363	5398
00:30	ZZZZZZ	2598	80818	22008	6089
00:35	ZZZZZZ	2304	72869	20954	5236
00:39	ZZZZZZ	2708	85985	22153	7030
00:43	ZZZZZZ	2649	84391	22093	6710
00:48	MA41249-CCV19	2577	80849	21395	6037
00:52	MA41249-CCB20	2696	85042	21200	6885
00:56	ZZZZZZ	2756	81057	22024	5975
01:01	ZZZZZZ	2407	76672	20531	5723
01:05	ZZZZZZ	2429	76936	20774	5734

INTERNAL STANDARD SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41249
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
01:09	ZZZZZZ	2683	84907	21463	6839
01:14	ZZZZZZ	2671	85632	21620	6876
01:18	ZZZZZZ	2683	85188	21651	6891
01:23	ZZZZZZ	2689	86348	21877	6903
01:27	ZZZZZZ	2682	85602	21681	6868
01:31	ZZZZZZ	2682	85425	21544	6863
01:36	ZZZZZZ	2696	85307	21653	6911

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41249 Units: ug/l

Time: / Sample ID:			10:34 ICB1		10:46 CCB1		11:37 CCB2		12:37 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	anr							
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2	anr							
Boron	100	1.2	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8	anr							
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.8	anr							
Palladium	50	2.2								
Phosphorus	50		anr							
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1	anr							
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4	anr							
Strontium	10	.22	anr							
Thallium	2.0	1.7	-1.4	<2.0	-0.80	<2.0	-0.70	<2.0	-0.30	<2.0
Tin	10	1.1	anr							
Titanium	10	.7	anr							
Tungsten	50	1.8	anr							
Vanadium	50	.7	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41249 Units: ug/l

Time: / Sample ID:			10:34 ICB1		10:46 CCB1		11:37 CCB2		12:37 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41249 Units: ug/l

Time: / Sample ID:			13:23 CCB4		14:10 CCB5		14:56 CCB6		15:43 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	anr							
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2	anr							
Boron	100	1.2	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8	anr							
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.8	anr							
Palladium	50	2.2								
Phosphorus	50		anr							
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1	anr							
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4	anr							
Strontium	10	.22	anr							
Thallium	2.0	1.7	-0.40	<2.0	0.10	<2.0	0.10	<2.0	0.60	<2.0
Tin	10	1.1	anr							
Titanium	10	.7	anr							
Tungsten	50	1.8	anr							
Vanadium	50	.7	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41249 Units: ug/l

Time:			13:23		14:10		14:56		15:43	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41249 Units: ug/l

Time: / Sample ID:			16:29 CCB8		17:16 CCB9		18:03 CCB10		18:33 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	anr							
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2	anr							
Boron	100	1.2	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8	anr							
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.8	anr							
Palladium	50	2.2								
Phosphorus	50		anr							
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1	anr							
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4	anr							
Strontium	10	.22	anr							
Thallium	2.0	1.7	-0.80	<2.0	-0.80	<2.0	0.10	<2.0	1.1	<2.0
Tin	10	1.1	anr							
Titanium	10	.7	anr							
Tungsten	50	1.8	anr							
Vanadium	50	.7	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41249 Units: ug/l

Time: / Sample ID:			16:29 CCB8		17:16 CCB9		18:03 CCB10		18:33 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41249 Units: ug/l

Time:			19:04	
Sample ID:			CCB12	
Metal	RL	IDL	raw	final
Aluminum	200	20	anr	
Antimony	6.0	1.8	anr	
Arsenic	3.0	1.3	anr	
Barium	200	.4	anr	
Beryllium	1.0	.1	anr	
Bismuth	20	2	anr	
Boron	100	1.2	anr	
Cadmium	3.0	.4	anr	
Calcium	5000	27	anr	
Chromium	10	.7	anr	
Cobalt	50	.6	anr	
Copper	10	1.7	anr	
Iron	100	8.6	anr	
Lead	3.0	1.6	anr	
Lithium	20	2.8	anr	
Magnesium	5000	33	anr	
Manganese	15	.1	anr	
Molybdenum	20	.4	anr	
Nickel	10	.8	anr	
Palladium	50	2.2		
Phosphorus	50		anr	
Potassium	10000	39	anr	
Selenium	10	3	anr	
Silicon	200	3.1	anr	
Silver	10	.9	anr	
Sodium	10000	11	anr	
Sulfur	50	4.4	anr	
Strontium	10	.22	anr	
Thallium	2.0	1.7	-1.0	<2.0
Tin	10	1.1	anr	
Titanium	10	.7	anr	
Tungsten	50	1.8	anr	
Vanadium	50	.7	anr	

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41249 Units: ug/l

Time:			19:04	
Sample ID:			CCB12	
Metal	RL	IDL	raw	final
Zinc	20	2.6	anr	
Zirconium	10	.5	anr	

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		10:38	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth	anr		
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Palladium			
Phosphorus	anr		
Potassium	anr		
Selenium	anr		
Silicon	anr		
Silver	anr		
Sodium	anr		
Sulfur	anr		
Strontium	anr		
Thallium	2000	2050	102.5
Tin	anr		
Titanium	anr		
Tungsten	anr		
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		10:38	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium	anr		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		10:28			11:33			12:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	2070	103.5	2000	2050	102.5	2000	2050	102.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		10:28			11:33			12:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		13:19			14:06			14:52	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	2070	103.5	2000	2060	103.0	2000	2050	102.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		13:19			14:06			14:52	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		15:39			16:25			17:12	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	2060	103.0	2000	2050	102.5	2000	2070	103.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		15:39			16:25			17:12	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		17:59			18:29			18:59	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	2050	102.5	2000	2050	102.5	2000	2050	102.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41249 Units: ug/l

Time:		17:59			18:29			18:59	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41249 Units: ug/l

Time:		11:11			11:15	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth	anr					
Boron	anr					
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Palladium						
Phosphorus	anr					
Potassium						
Selenium	anr					
Silicon	anr					
Silver	anr					
Sodium						
Sulfur	anr					
Strontium	anr					
Thallium	5000	5290	105.8			
Tin	anr					
Titanium	anr					
Tungsten	anr					
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41249 Units: ug/l

Time:		11:11			11:15	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium	anr					

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41249 Units: ug/l

Time:				10:49		10:53		10:58	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20			anr					
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Palladium	50								
Phosphorus	50			anr					
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200			anr					
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50			anr					
Strontium	10			anr					
Thallium	10		2.0	10.7	107.0	1.5	75.0		
Tin	10			anr					
Titanium	10			anr					
Tungsten	50			anr					
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41249 Units: ug/l

Time:				10:49		10:53		10:58	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10			anr					

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41249 Units: ug/l

Time:				18:38		18:42		18:46	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20			anr					
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Palladium	50								
Phosphorus	50			anr					
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200			anr					
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50			anr					
Strontium	10			anr					
Thallium	10		2.0	11.5	115.0	2.2	110.0		
Tin	10			anr					
Titanium	10			anr					
Tungsten	50			anr					
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41249 Units: ug/l

Time:				18:38		18:42		18:46	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10			anr					

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41249 Units: ug/l

Time:			11:02		11:06		18:51		18:55	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	492000	98.4	474000	94.8	495000	99.0	486000	97.2
Antimony		1000	3.6		1090	109.0	3.3		1100	110.0
Arsenic		1000	0.0		1010	101.0	-0.70		1020	102.0
Barium		500	-0.20		495	99.0	0.0		507	101.4
Beryllium		500	-0.10		480	96.0	-0.20		482	96.4
Bismuth		500	9.9		486	97.2	8.9		493	98.6
Boron		500	-4.3		466	93.2	-5.4		468	93.6
Cadmium		1000	0.10		1000	100.0	0.60		1020	102.0
Calcium	400000	400000	364000	91.0	357000	89.3	368000	92.0	361000	90.3
Chromium		500	2.7		495	99.0	2.8		498	99.6
Cobalt		500	1.0		482	96.4	0.80		489	97.8
Copper		500	2.2		513	102.6	0.90		524	104.8
Iron	200000	200000	181000	90.5	176000	88.0	180000	90.0	176000	88.0
Lead		1000	0.40		963	96.3	-1.9		986	98.6
Lithium		500	-0.30		497	99.4	-0.50		502	100.4
Magnesium	500000	500000	481000	96.2	478000	95.6	483000	96.6	479000	95.8
Manganese		500	1.1		499	99.8	0.60		503	100.6
Molybdenum		500	-0.90		486	97.2	-1.2		495	99.0
Nickel		1000	-0.70		986	98.6	-0.50		1010	101.0
Palladium		500	-22		-14	0.0*	-20		-11	0.0*
Phosphorus		500	14.7		477	95.4	21.5		490	98.0
Potassium			-450		-430		-460		-440	
Selenium		1000	2.0		986	98.6	-1.2		982	98.2
Silicon		500	-19		437	87.4	-16		438	87.6
Silver		1000	6.8		1040	104.0	0.60		1050	105.0
Sodium			-1.6		-4.9		-17		-10	
Sulfur		500	-40		427	85.4	-40		433	86.6
Strontium		500	0.10		502	100.4	0.20		512	102.4
Thallium		1000	2.8		942	94.2	2.2		947	94.7
Tin		500	-2.2		444	88.8	-1.9		447	89.4
Titanium		500	-0.30		491	98.2	-0.90		508	101.6
Tungsten		500	10.3		492	98.4	9.9		499	99.8
Vanadium		500	4.6		482	96.4	4.7		481	96.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41249 Units: ug/l

Time:			11:02		11:06		18:51		18:55	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.3		944	94.4	2.6		947	94.7
Zirconium		500	6.3		489	97.8	5.5		496	99.2

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	48	1.6	1.9		
Antimony	1.9	.26	.28	-0.048	<1.9
Arsenic	1.9	.13	.2		
Barium	19	.048	.078		
Beryllium	0.19	.0096	.021		
Bismuth	1.9	.35	.23		
Boron	9.6	.44	.43		
Cadmium	0.48	.038	.048		
Calcium	480	4.4	1.8		
Chromium	0.96	.048	.11	0.038	<0.96
Cobalt	4.8	.038	.057		
Copper	2.4	.048	.21		
Iron	48	.27	.76		
Lead	1.9	.12	.21		
Lithium	1.9	.36	.43		
Magnesium	480	2	5.7		
Manganese	1.4	.0096	.035		
Molybdenum	1.9	.038	.078		
Nickel	3.8	.058	.073	0.087	<3.8
Palladium	4.8	.29	.45		
Phosphorus	9.6		.45		
Potassium	960	8	18		
Selenium	1.9	.31	.45		
Silicon	19	.22	3.6		
Silver	0.48	.096	.095		
Sodium	960	3.6	3.7		
Strontium	0.96	.0096	.023		
Sulfur	4.8	.39	.56		
Thallium	0.96	.17	.38	0.14	<0.96
Tin	4.8	.11	.51		
Titanium	0.96	.048	.12		
Tungsten	4.8	.18	.32		
Vanadium	4.8	.038	.08	0.0	<4.8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/26/17

Metal	RL	IDL	MDL	MB raw	final
Zinc	4.8	.17	.21		
Zirconium	1.9	.038	.12		

Associated samples MP98350: JC36049-1A, JC36049-2A, JC36049-3A, JC36049-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	JC36049-1A Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	0.0	140	254	55.2N(a)	75-125
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	53.5	256	254	79.9	75-125
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	16.2	219	254	80.0	75-125
Palladium					
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	0.0	207	254	81.6	75-125
Tin					
Titanium					
Tungsten					
Vanadium	28.4	227	254	78.3	75-125

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/26/17

Metal	JC36049-1A Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP98350: JC36049-1A, JC36049-2A, JC36049-3A, JC36049-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	JC36049-1A Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	0.0	152	246	61.7N(a)	8.2	20
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	53.5	281	246	92.4	9.3	20
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	16.2	269	246	102.7	20.5 (b)	20
Palladium						
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	0.0	255	246	103.6	20.8 (b)	20
Tin						
Titanium						
Tungsten						
Vanadium	28.4	272	246	98.9	18.0	20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/26/17

Metal	JC36049-1A Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr					
Zirconium						

Associated samples MP98350: JC36049-1A, JC36049-2A, JC36049-3A, JC36049-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
(b) High rpd due to possible sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	228	198	115.1	80-120
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	229	198	115.6	80-120
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	229	198	115.6	80-120
Palladium				
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	229	198	115.6	80-120
Tin				
Titanium				
Tungsten				
Vanadium	228	198	115.1	80-120

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP98350: JC36049-1A, JC36049-2A, JC36049-3A, JC36049-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/26/17

Metal	JC36049-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	0.00	0.00	NC	0-10
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	405	424	4.5	0-10
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	123	124	1.1	0-10
Palladium				
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Tungsten				
Vanadium	215	226	5.1	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98350 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date: 01/26/17

Metal	JC36049-1A Original SDL 1:5	%DIF	QC Limits
Zinc	anr		
Zirconium			

Associated samples MP98350: JC36049-1A, JC36049-2A, JC36049-3A, JC36049-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/26/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	20	21		
Antimony	6.0	1.8	3.3	0.60	<6.0
Arsenic	3.0	1.3	2.2		
Barium	200	.4	.44		
Beryllium	1.0	.1	.25		
Bismuth	20	2	2.9		
Boron	100	1.2	3.9		
Cadmium	3.0	.4	.4		
Calcium	5000	27	33		
Chromium	10	.7	.81	0.20	<10
Cobalt	50	.6	.69		
Copper	10	1.7	2.4		
Iron	100	8.6	12		
Lead	3.0	1.6	2.3		
Lithium	20	2.8	4		
Magnesium	5000	33	85		
Manganese	15	.1	.39		
Molybdenum	20	.4	.88		
Nickel	10	.8	.76	-0.50	<10
Palladium	50	2.2	3.7		
Phosphorus	50		3.7		
Potassium	10000	39	120		
Selenium	10	3	4.1		
Silicon	200	3.1	29		
Silver	10	.9	.88		
Sodium	10000	11	24		
Sulfur	50	4.4	6.9		
Strontium	10	.22	.22		
Thallium	2.0	1.7	1.9	0.40	<2.0
Tin	10	1.1	2.3		
Titanium	10	.7	.99		
Tungsten	50	1.8	3.2		
Vanadium	50	.7	.66	0.0	<50

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/26/17

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	2.6	1.3		
Zirconium	10	.5	.94		

Associated samples MP98367: JC36049-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/26/17

Metal	JC36147-1 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony	9.2	2050	2000	102.0	75-125
Arsenic	anr				
Barium	anr				
Beryllium					
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Chromium	4.5	2120	2000	105.8	75-125
Cobalt					
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	5.0	1870	2000	93.3	75-125
Palladium					
Phosphorus					
Potassium					
Selenium	anr				
Silicon					
Silver	anr				
Sodium					
Sulfur					
Strontium					
Thallium	0.0	1950	2000	97.5	75-125
Tin					
Titanium					
Tungsten					
Vanadium	2.1	2130	2000	106.4	75-125

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/26/17

Metal	JC36147-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP98367: JC36049-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:					01/26/17				01/26/17	
Metal	JC36147-1 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit	JC36147-1 Original	DUP	RPD	QC Limits
Aluminum										
Antimony	9.2	2060	2000	102.5	0.5	20	9.2	10.8	16.0	0-20
Arsenic	anr									
Barium	anr									
Beryllium										
Bismuth										
Boron										
Cadmium	anr									
Calcium										
Chromium	4.5	2140	2000	106.8	0.9	20	4.5	4.6	2.2	0-20
Cobalt										
Copper	anr									
Iron	anr									
Lead	anr									
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel	5.0	1880	2000	93.8	0.5	20	5.0	4.6	8.3	0-20
Palladium										
Phosphorus										
Potassium										
Selenium	anr									
Silicon										
Silver	anr									
Sodium										
Sulfur										
Strontium										
Thallium	0.0	1960	2000	98.0	0.5	20				
Tin										
Titanium										
Tungsten										
Vanadium	2.1	2150	2000	107.4	0.9	20	2.1	2.0	4.9	0-20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:				01/26/17			01/26/17	
Metal	JC36147-1 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit	JC36147-1 Original DUP	RPD	QC Limits
Zinc	anr							
Zirconium								

Associated samples MP98367: JC36049-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/26/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony	2050	2000	102.5	80-120
Arsenic	anr			
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	2060	2000	103.0	80-120
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	2010	2000	100.5	80-120
Palladium				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Sulfur				
Strontium				
Thallium	1930	2000	96.5	80-120
Tin				
Titanium				
Tungsten				
Vanadium	2070	2000	103.5	80-120

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/26/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP98367: JC36049-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/26/17

Metal	JC36147-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	9.20	12.7	38.0 (a)	0-10
Arsenic	anr			
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	4.50	0.00	100.0(a)	0-10
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	5.00	4.40	12.0 (a)	0-10
Palladium				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Sulfur				
Strontium				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Tungsten				
Vanadium	2.10	3.70	76.2 (a)	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/26/17

Metal	JC36147-1 Original SDL 1:5	%DIF	QC Limits
Zinc	anr		
Zirconium			

Associated samples MP98367: JC36049-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/26/17

Metal	Sample ml	Final ml	JC36147-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony	9.1	10	9.2	8.372	543.1	0.5	10	500	106.9	80-120
Arsenic										
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium	9.1	10	4.5	4.095	514.3	0.5	10	500	102.0	80-120
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel	9.1	10	5	4.55	489.8	0.5	10	500	97.1	80-120
Palladium										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Sulfur										
Strontium										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium	9.1	10	2.1	1.911	522.8	0.5	10	500	104.2	80-120

POST DIGESTATE SPIKE SUMMARY

Login Number: JC36049A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98367 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/26/17

Metal	Sample ml	Final ml	JC36147-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Zinc										
Zirconium										

Associated samples MP98367: JC36049-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: JC36049A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36049-1 **Analyzed:** 25-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-0-2.0-2.5

Wet Weight (Total)	26.57	g
Tare Weight	19.03	g
Dry Weight (Total)	24.92	g
Solids, Percent	78.1	%

Sample: JC36049-2 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-0-4.5-5.0

Wet Weight (Total)	31.6	g
Tare Weight	25.86	g
Dry Weight (Total)	30.54	g
Solids, Percent	81.5	%

Sample: JC36049-3 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-0-4.5-5.0X

Wet Weight (Total)	35.88	g
Tare Weight	27.87	g
Dry Weight (Total)	34.34	g
Solids, Percent	80.8	%

Sample: JC36049-4 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-0-5.5-6.0

Wet Weight (Total)	27.15	g
Tare Weight	21.01	g
Dry Weight (Total)	26.13	g
Solids, Percent	83.4	%

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

PPG Garfield Avenue, Jersey City, NJ

60279183.GA.RI.RPT.HDS.FIELD

SGS Accutest Job Number: JC36049R

Sampling Date: 01/24/17

Report to:

AECOM, INC.

sharon.mckechnie@aecom.com

ATTN: Sharon Mckechnie

Total number of pages in report: **82**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4 5 6 7

Table of Contents

Sample Summary

AECOM, INC.

Job No: JC36049R

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC36049-1R	01/24/17	09:05	MOK	01/24/17	SO	Soil	114-MW16AB-O-2.0-2.5
JC36049-2R	01/24/17	09:15	MOK	01/24/17	SO	Soil	114-MW16AB-O-4.5-5.0
JC36049-3R	01/24/17	09:20	MOK	01/24/17	SO	Soil	114-MW16AB-O-4.5-5.0X
JC36049-4R	01/24/17	09:25	MOK	01/24/17	SO	Soil	114-MW16AB-O-5.5-6.0

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	AECOM, INC.	**Job No**	JC36049R
Site:	PPG Garfield Avenue, Jersey City, NJ	**Report Date**	2/2/2017 4:19:18 PM

On 01/24/2017, 4 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 5.4 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC36049R was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Wet Chemistry By Method ASTM D3872-86

Matrix: SO **Batch ID:** GN58793

- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36017-1RDUP, JC36017-1RMS were used as the QC samples for Iron, Ferrous.
- The following samples were run outside of holding time for method ASTM D3872-86: JC36049-1R 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.

Wet Chemistry By Method LLOYD KAHN 1988 MOD

Matrix: SO **Batch ID:** GP2935

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC35821-2MS, JC35821-2DUP were used as the QC samples for Total Organic Carbon.

Wet Chemistry By Method SM4500S2- A-11

Matrix: SO **Batch ID:** GN58794

- All method blanks for this batch meet method specific criteria.
- The following samples were run outside of holding time for method SM4500S2- A-11: JC36049-1R 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.

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO **Batch ID:** GP2991

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36049-1RMS, JC36049-1RDUP were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (96_%) on this sample.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits. RPD acceptable due to low duplicate and sample concentrations.
- GP2991-S2 for Chromium, Hexavalent: Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC36049R
Account: AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Collected: 01/24/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC36049-1R	**114-MW16AB-O-2.0-2.5**					
Chromium, Hexavalent		0.55	0.51	0.36	mg/kg	SW846 3060A/7196A
Iron, Ferrous [a]		0.33	0.20		%	ASTM D3872-86
Total Organic Carbon		13500	130	61	mg/kg	LLOYD KAHN 1988 MOD
JC36049-2R	**114-MW16AB-O-4.5-5.0**					
Chromium, Hexavalent		0.70	0.49	0.34	mg/kg	SW846 3060A/7196A
JC36049-3R	**114-MW16AB-O-4.5-5.0X**					
Chromium, Hexavalent		1.4	0.50	0.35	mg/kg	SW846 3060A/7196A
JC36049-4R	**114-MW16AB-O-5.5-6.0**					
Chromium, Hexavalent		0.75	0.48	0.34	mg/kg	SW846 3060A/7196A

(a) 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.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	114-MW16AB-O-2.0-2.5		
Lab Sample ID:	JC36049-1R	**Date Sampled:**	01/24/17
Matrix:	SO - Soil	**Date Received:**	01/24/17
		Percent Solids:	78.1
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.55	0.51	0.36	mg/kg	1	02/01/17 13:09	RI	SW846 3060A/7196A
Iron, Ferrous [a]	0.33	0.20		%	1	02/01/17 11:30	MP	ASTM D3872-86
Sulfide Screen [b]	NEGATIVE				1	02/01/17	MP	SM4500S2- A-11
Total Organic Carbon	13500	130	61	mg/kg	1	02/02/17 10:42	CD	LLOYD KAHN 1988 MOD

(a) 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.
(b) 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.

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	114-MW16AB-O-4.5-5.0		
Lab Sample ID:	JC36049-2R	**Date Sampled:**	01/24/17
Matrix:	SO - Soil	**Date Received:**	01/24/17
		Percent Solids:	81.5
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.70	0.49	0.34	mg/kg	1	02/01/17 13:11	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	114-MW16AB-O-4.5-5.0X		
Lab Sample ID:	JC36049-3R	**Date Sampled:**	01/24/17
Matrix:	SO - Soil	**Date Received:**	01/24/17
		Percent Solids:	80.8
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.4	0.50	0.35	mg/kg	1	02/01/17 13:11	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	114-MW16AB-O-5.5-6.0		
Lab Sample ID:	JC36049-4R	**Date Sampled:**	01/24/17
Matrix:	SO - Soil	**Date Received:**	01/24/17
		Percent Solids:	83.4
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.75	0.48	0.34	mg/kg	1	02/01/17 13:11	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC36049R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Iron, Ferrous		**ASTM D3872-86**	SO	Accutest is not certified for this parameter. [a]
Sulfide Screen		**SM4500S2- A-11**	SO	Accutest is not certified for this parameter. [a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

AECOM

SO, FB

JC36049

COC ID: 2017-01-24-RI-HDS-COC

TURNAROUND TIME: See Special Instructions

RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	Fil.	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)										
114-MW16AB-0-2.0-2.5	1	SO	2017/01/24	09:05	G	2	2 (8oz) jars MS/MSD			X	X	X	1									B14
114-MW16AB-0-4.5-5.0	2	SO	2017/01/24	09:15	G	1	1 (8oz) jar			X	X	X	2									
114-MW16AB-0-4.5-5.0X	3	SO	2017/01/24	09:20	G	1	1 (8oz) jar			X	X	X	3									A5
114-MW16AB-0-5.5-6.0	4	SO	2017/01/24	09:25	G	1	1 (8oz) jar			X	X	X	4									G20
114-MW16AB-5E-2.0-2.5	5	SO	2017/01/24	10:25	G	1	1 (8 oz) jar-hold			H	H	H	5									
114-MW16AB-5E-4.0-4.5	6	SO	2017/01/24	10:35	G	1	1 (8oz) jar-hold			H	H	H	6									
114-MW16AB-5E-5.5-6.0	7	SO	2017/01/24	10:40	G	1	1 (8oz) jar-hold			H	H	H	7									
114-MW16AB-5N-2.0-2.5	8	SO	2017/01/24	09:45	G	1	1 (8oz) jar-hold			H	H	H	8									
114-MW16AB-5N-4.5-5.0	9	SO	2017/01/24	09:50	G	1	1 (8oz) jar-hold			H	H	H	9									
114-MW16AB-5N-5.5-6.0	10	SO	2017/01/24	10:00	G	1	1 (8oz) jar-hold			H	H	H	10									

INITIAL ASESSMENT 3A JK

LABEL VERIFICATION JK

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM	1/24/17 1530	Akcom	1/24/17 1600
	Akcom	1/24/17 1600		1-24-17 1615
		1-24-17 1710	SAS	1/24/17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tate	Mobile #	
Sampler's Signature		Date/Time	

04.0°C-IR

5.2 5

JC36049R: Chain of Custody
Page 1 of 4

AECOM

JC36049

COC ID: 2017-01-24-RI-HDS-COC | TURNAROUND TIME: See Special Instructions | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	Filt.	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)											
114-MW16AB-5S-2.0-2.5	11	SO	2017/01/24	11:10	G	1	1 (8oz) jar-hold			H	H	H	11										
114-MW16AB-5S-4.5-5.0	12	SO	2017/01/24	11:15	G	1	1 (8oz) jar-hold			H	H	H	12										
114-MW16AB-5S-5.5-6.0	13	SO	2017/01/24	11:20	G	1	1 (8oz) jar-hold			H	H	H	13										
114-MW16AB-5W-2.0-2.5	14	SO	2017/01/24	11:35	G	1	1 (8oz) jar-hold			H	H	H	14										
114-MW16AB-5W-4.5-5.0	15	SO	2017/01/24	11:40	G	1	1 (8oz) jar-hold			H	H	H	15										
114-MW16AB-5W-5.5-6.0	16	SO	2017/01/24	11:45	G	1	1 (8oz) jar-hold			H	H	H	16										
HDS-FB20170124	17	WQ	2017/01/24	14:00	G	1	field blank			X	X	X	17										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	[signature] AECOM	1-24-17 1610	[signature]	1-24-17 1610
	[signature]	1-24-17 1710	[signature]	1-24-17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tot	Mobile #	
Sampler's Signature	[signature]	Date/Time	

04.0 CIP

SGS Accutest Sample Receipt Summary

Job Number: JC36049 **Client:** _____ **Project:** _____

Date / Time Received: 1/24/2017 5:10:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (4.0);

Cooler Temps (Corrected) °C: Cooler 1: (5.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

Job Change Order: JC36049

Requested Date:	1/30/2017	**Received Date:**	1/24/2017
Account Name:	AECOM, INC.	**Due Date:**	1/27/2017
Project Description:	PPG Garfield Avenue, Jersey City, NJ	**Deliverable:**	FULT1
CSR:	malay.parekh	**TAT (Days):**	3

==========

Sample #: JC36049-1 to 4
Change: Due to XCR spike, Log in XXCRAR

Dept:

TAT: 3

==========

==========

Sample #: JC36049-1
Change: Due to XCR spike Log in FE2/7, SULFS, TOCLK.

Dept:

TAT: 3

114-MW16AB-0-2.0-2.5

==========

Above Changes Per: AECOM **Date/Time:** 1/30/2017 10:49:24 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

JC36049R: Chain of Custody
Page 4 of 4

Internal Sample Tracking Chronicle

AECOM, INC.

Job No: JC36049R

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC36049-1R	Collected: 24-JAN-17 09:05 By: MOK		Received: 24-JAN-17 By: AS			
114-MW16AB-O-2.0-2.5						
JC36049-1R	SM4500S2- A-11	01-FEB-17	MP			SULFS
JC36049-1R	ASTM D3872-86	01-FEB-17 11:30	MP			FE2/7
JC36049-1R	SW846 3060A/7196A	01-FEB-17 13:09	RI	31-JAN-17	SP	XCRA
JC36049-1R	LLOYD KAHN 1988 MOD	02-FEB-17 10:42	CD	02-FEB-17	YZ	TOCLK
JC36049-2R	Collected: 24-JAN-17 09:15 By: MOK		Received: 24-JAN-17 By: AS			
114-MW16AB-O-4.5-5.0						
JC36049-2R	SW846 3060A/7196A	01-FEB-17 13:11	RI	31-JAN-17	SP	XCRA
JC36049-3R	Collected: 24-JAN-17 09:20 By: MOK		Received: 24-JAN-17 By: AS			
114-MW16AB-O-4.5-5.0X						
JC36049-3R	SW846 3060A/7196A	01-FEB-17 13:11	RI	31-JAN-17	SP	XCRA
JC36049-4R	Collected: 24-JAN-17 09:25 By: MOK		Received: 24-JAN-17 By: AS			
114-MW16AB-O-5.5-6.0						
JC36049-4R	SW846 3060A/7196A	01-FEB-17 13:11	RI	31-JAN-17	SP	XCRA

SGS Accutest Internal Chain of Custody

Job Number: JC36049R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-1.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-1.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-1.1	Secured Storage	Luis Villanueva	01/25/17 15:26	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-1.1	Luis Villanueva	Secured Storage	01/25/17 16:26	Return to Storage
JC36049-1.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-1.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-1.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-1.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-1.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-1.1	Secured Storage	Minhaj Hashmi	01/31/17 08:07	Retrieve from Storage
JC36049-1.1	Minhaj Hashmi	Sanchita Patel	01/31/17 09:23	Custody Transfer
JC36049-1.1	Sanchita Patel	Secured Storage	01/31/17 09:49	Return to Storage
JC36049-1.1	Secured Storage	Christopher Hall	01/31/17 21:30	Retrieve from Storage
JC36049-1.1	Christopher Hall	Secured Staging Area	01/31/17 21:30	Return to Storage
JC36049-1.1	Secured Staging Area	Mahendra Patel	02/01/17 08:16	Retrieve from Storage
JC36049-1.1	Mahendra Patel	Secured Storage	02/01/17 12:16	Return to Storage
JC36049-1.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-1.1
JC36049-1.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-1.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-1.1
JC36049-1.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-1.1
JC36049-1.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-1.2	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
JC36049-1.2	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-1.2	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-1.2	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-1.2	Secured Storage	Alfredo Crespo	01/26/17 07:24	Retrieve from Storage
JC36049-1.2	Alfredo Crespo	Secured Staging Area	01/26/17 07:24	Return to Storage
JC36049-1.2	Secured Staging Area	Paul Ojugo	01/26/17 08:53	Retrieve from Storage
JC36049-1.2	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-1.2	Secured Storage	Gage Donahue	02/01/17 08:33	Retrieve from Storage
JC36049-1.2	Gage Donahue	Secured Staging Area	02/01/17 08:33	Return to Storage
JC36049-1.2	Secured Staging Area	Courtney Dringus	02/01/17 10:21	Retrieve from Storage
JC36049-1.2	Courtney Dringus	Secured Storage	02/01/17 18:33	Return to Storage
JC36049-2.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-2.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-2.1	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-2.1	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-2.1	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36049R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-2.1	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-2.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-2.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-2.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-2.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-2.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-2.1	Secured Storage	Minhaj Hashmi	01/31/17 08:07	Retrieve from Storage
JC36049-2.1	Minhaj Hashmi	Sanchita Patel	01/31/17 09:23	Custody Transfer
JC36049-2.1	Sanchita Patel	Secured Storage	01/31/17 09:49	Return to Storage
JC36049-2.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-2.1
JC36049-2.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-2.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-2.1
JC36049-2.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-2.1
JC36049-2.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-3.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-3.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-3.1	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36049-3.1	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-3.1	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-3.1	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-3.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-3.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-3.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-3.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-3.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-3.1	Secured Storage	Minhaj Hashmi	01/31/17 08:07	Retrieve from Storage
JC36049-3.1	Minhaj Hashmi	Sanchita Patel	01/31/17 09:23	Custody Transfer
JC36049-3.1	Sanchita Patel	Secured Storage	01/31/17 09:49	Return to Storage
JC36049-3.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-3.1
JC36049-3.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-3.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-3.1
JC36049-3.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-3.1
JC36049-3.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage
JC36049-4.1	Secured Storage	Alfredo Crespo	01/25/17 08:44	Retrieve from Storage
JC36049-4.1	Alfredo Crespo	Secured Staging Area	01/25/17 08:44	Return to Storage
JC36049-4.1	Secured Storage	Dwayne Johnson	01/25/17 14:40	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				

SGS Accutest Internal Chain of Custody

Job Number: JC36049R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/24/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36049-4.1	Dwayne Johnson	Secured Staging Area	01/25/17 14:40	Return to Storage
JC36049-4.1	Secured Staging Area	Deval Patel	01/25/17 15:03	Retrieve from Storage
JC36049-4.1	Deval Patel	Secured Storage	01/25/17 19:43	Return to Storage
JC36049-4.1	Secured Storage	Alfredo Crespo	01/26/17 07:28	Retrieve from Storage
JC36049-4.1	Alfredo Crespo	Secured Staging Area	01/26/17 07:28	Return to Storage
JC36049-4.1	Secured Staging Area	Diana Mathes	01/26/17 09:10	Retrieve from Storage
JC36049-4.1	Diana Mathes	Paul Ojugo	01/26/17 09:55	Custody Transfer
JC36049-4.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36049-4.1	Secured Storage	Minhaj Hashmi	01/31/17 08:07	Retrieve from Storage
JC36049-4.1	Minhaj Hashmi	Sanchita Patel	01/31/17 09:23	Custody Transfer
JC36049-4.1	Sanchita Patel	Secured Storage	01/31/17 09:49	Return to Storage
JC36049-4.1.1	Diana Mathes	Diana Mathes	01/26/17 09:11	Aliquot from JC36049-4.1
JC36049-4.1.1	Diana Mathes		01/26/17 09:57	Depleted
JC36049-4.1.2	Diana Mathes	Metals Digestion	01/26/17 09:49	Digestate from JC36049-4.1
JC36049-4.1.2	Metals Digestion	Diana Mathes	01/26/17 09:50	Digestate from JC36049-4.1
JC36049-4.1.2	Diana Mathes	Metals Digestate Storage	01/26/17 09:50	Return to Storage

General Chemistry

6

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC
- Percent Solids Raw Data Summary

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36049R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP2991/GN58815			mg/kg	669.307	693	103.5	80-120%
Chromium, Hexavalent	GP2991/GN58815	0.40	0.0	mg/kg	40	36.8	92.0	80-120%
Iron, Ferrous	GN58793	0.20	<0.20	%				
Sulfide Screen	GN58794		NEGATIVE					
Total Organic Carbon	GP2935/GN58865	100	0.00	mg/kg	2000	1930	96.5	80-120%
Total Organic Carbon	GP2935/GN58865	100	0.0	mg/kg				
Total Organic Carbon	GP2935/GN58865	100	0.00	mg/kg				
Total Organic Carbon	GP2935/GN58865	100	0.00	mg/kg				

Associated Samples:
Batch GP2935: JC36049-1R
Batch GP2991: JC36049-1R, JC36049-2R, JC36049-3R, JC36049-4R
Batch GN58793: JC36049-1R
Batch GN58794: JC36049-1R
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36049R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP2991/GN58815	JC36049-1R	mg/kg	0.55	1.0	58.1(a)	0-20%
Iron, Ferrous	GN58793	JC36017-1R	%	0.63	0.63	0.0	0-26%
Sulfide Screen	GN58794	JC36017-1R		NEGATIVE	NEGATIVE		0-%
Total Organic Carbon	GP2935/GN58627	JC35821-2	mg/kg	484	549	12.6	0-50.8%

Associated Samples:
Batch GP2935: JC36049-1R
Batch GP2991: JC36049-1R, JC36049-2R, JC36049-3R, JC36049-4R
Batch GN58793: JC36049-1R
Batch GN58794: JC36049-1R
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36049R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP2991/GN58815	JC36049-1R	mg/kg	0.55	1320	1090	82.3(a)	75-125%
Chromium, Hexavalent	GP2991/GN58815	JC36049-1R	mg/kg	0.55	51	35.4	68.3N(b)	75-125%
Iron, Ferrous	GN58793	JC36017-1R	%	0.63	41.82	40.0	94.2	62-130%
Total Organic Carbon	GP2935/GN58627	JC35821-2	mg/kg	484	3930	4540	103.3	39.6-124.8%

Associated Samples:
Batch GP2935: JC36049-1R
Batch GP2991: JC36049-1R, JC36049-2R, JC36049-3R, JC36049-4R
Batch GN58793: JC36049-1R
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.
(b) Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (96_%) on this sample.

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: D70127S2.TXT Date Analyzed: 01/27/17 Methods: LLOYD KAHN 1988 MOD
Analyst: YZ Run ID: GN58627
Parameters: Total Organic Carbon

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:08	GN58627-STD1	1		STDA
11:30	GN58627-STD2	1		STDB
11:54	GN58627-STD3	1		STDC
12:20	GN58627-STD4	1		STDD
13:37	GN58627-STD5	1		STDE
14:08	GN58627-STD6	1		STDF
14:36	GN58627-STD7	1		STDG
07:49	GN58627-CRI1	1		
08:14	GN58627-HSTD1	1		
09:29	GN58627-ICV1	1		
09:59	GN58627-CCV1	1		
10:26	GP2935-MB1	1		
10:52	GP2935-B1	1		
14:10	GN58627-CCV2	1		
14:42	JC35821-2	1		(sample used for QC only; not part of login JC36049R)
15:04	ZZZZZZ	1		
15:19	ZZZZZZ	1		
15:34	ZZZZZZ	1		
15:49	GP2935-D1	1		Multiple injections indicate possible sample non-homogeneity.
16:20	GP2935-S1	1		
16:38	GN58627-CCV3	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC36049R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: D70127S2.TXT Date Analyzed: 01/27/17 Methods: LLOYD KAHN 1988 MOD
Run ID: GN58627 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN58627-CRI1	Total Organic Carbon	101	100	48	100	101.0	70-130
GN58627-HSTD1	Total Organic Carbon	5070	100	48	5000	101.4	90-110
GN58627-ICV1	Total Organic Carbon	2000	100	48	2000	100.0	90-110
GN58627-CCV1	Total Organic Carbon	2530	100	48	2500	101.2	90-110
GN58627-CCV2	Total Organic Carbon	2530	100	48	2500	101.2	90-110
GN58627-CCV3	Total Organic Carbon	2660	100	48	2500	106.4	90-110

(!) Outside of QC limits

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36049R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: E70202S1.TXT Date Analyzed: 02/02/17 Methods: LLOYD KAHN 1988 MOD
Analyst: CD Run ID: GN58865
Parameters: Total Organic Carbon

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:47	GN58865-STD1	1		STDA
08:09	GN58865-STD2	1		STDB
08:35	GN58865-STD3	1		STDC
09:07	GN58865-STD4	1		STDD
09:38	GN58865-STD5	1		STDE
10:08	GN58865-STD6	1		STDF
10:42	GN58865-STD7	1		STDG
07:56	GN58865-CRI1	1		
08:12	GN58865-HSTD1	1		
08:31	GN58865-ICV1	1		
08:51	GN58865-CCV1	1		
09:06	GP2935-MB3	1		
09:22	GP2935-B3	1		
09:37	GP2935-MB4	1		
09:47	GP2935-MB5	1		
10:02	GP2935-MB6	1		
10:42	JC36049-1R	1		
10:58	ZZZZZZ	1		
11:11	ZZZZZZ	1		
11:54	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:16	GN58865-CCV2	1		
13:36	ZZZZZZ	1		
13:52	ZZZZZZ	1		
14:09	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:41	GN58865-CCV3	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC36049R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: E70202S1.TXT Date Analyzed: 02/02/17 Methods: LLOYD KAHN 1988 MOD
Run ID: GN58865 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN58865-CRI1	Total Organic Carbon	92.1	100	48	100	92.1	70-130
GN58865-HSTD1	Total Organic Carbon	4940	100	48	5000	98.8	90-110
GN58865-ICV1	Total Organic Carbon	2010	100	48	2000	100.5	90-110
GN58865-CCV1	Total Organic Carbon	2460	100	48	2500	98.4	90-110
GN58865-CCV2	Total Organic Carbon	2460	100	48	2500	98.4	90-110
GN58865-CCV3	Total Organic Carbon	2320	100	48	2500	92.8	90-110

(!) Outside of QC limits

Report of Analysis

Client Sample ID:	114-MW16AB-O-2.0-2.5		
Lab Sample ID:	JC36049-1R	**Date Sampled:**	01/24/17
Matrix:	SO - Soil	**Date Received:**	01/24/17
		Percent Solids:	78.1
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.55	0.51	0.36	mg/kg	1	02/01/17 13:09	RI	SW846 3060A/7196A
Iron, Ferrous [a]	0.33	0.20		%	1	02/01/17 11:30	MP	ASTM D3872-86
Sulfide Screen [b]	NEGATIVE				1	02/01/17	MP	SM4500S2- A-11
Total Organic Carbon	13500	130	61	mg/kg	1	02/02/17 10:42	CD	LLOYD KAHN 1988 MOD

(a) 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.

(b) 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.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Percent Solids Raw Data Summary

Job Number: JC36049R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36049-1 **Analyzed:** 25-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-O-2.0-2.5

Wet Weight (Total)	26.57	g
Tare Weight	19.03	g
Dry Weight (Total)	24.92	g
Solids, Percent	78.1	%

Sample: JC36049-2 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-O-4.5-5.0

Wet Weight (Total)	31.6	g
Tare Weight	25.86	g
Dry Weight (Total)	30.54	g
Solids, Percent	81.5	%

Sample: JC36049-3 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-O-4.5-5.0X

Wet Weight (Total)	35.88	g
Tare Weight	27.87	g
Dry Weight (Total)	34.34	g
Solids, Percent	80.8	%

Sample: JC36049-4 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: 114-MW16AB-O-5.5-6.0

Wet Weight (Total)	27.15	g
Tare Weight	21.01	g
Dry Weight (Total)	26.13	g
Solids, Percent	83.4	%

General Chemistry

Raw Data

LABORATORY REVIEW SIGNATURE FORM
(To be stored with the raw data)

File ID: D70127S2.TXT Date Analyzed: 01/27/17 Methods: LLOYD KAHN 1988 MOD
Analyst: YZ Run ID: GN58627

The following analyst(s) have reviewd this run and attest that, to the best of their knowledge, this documentation is complete and correct:

Analyst: YZ Date 1/27/17

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

The following supervisor or their designee has reviewed this run and attests that, to the best of their knowledge, this documentation is complete and correct:

Supervisor (or designee): _____ Date 1/30/17

C:\TOC-L\Data\d70127s2.toc.tlx

	Type	Sample Name	Sample ID	Origin	Manual	Result	Comment
1	Unknown	CRI		TOCSMCALSW846	1.000	SSM-TC:0.1008mg/L	
2	Unknown	HSTD		TOCSMCALSW846	1.000	SSM-TC:5.074mg/L	
3	Unknown	ICV		TOCSMCALSW846	1.000	SSM-TC:2.002mg/L	
4	Unknown	CCV		TOCSMCALSW846	1.000	SSM-TC:2.530mg/L	
5	Unknown	GP2935-MB1	TOCLK	TOCSSMSW846.m	1.000	SSM-TC:0.00568mg/L	
6	Unknown	GP2935-B1		TOCSSMSW846.m	1.000	SSM-TC:2.019mg/L	
7	Unknown	CCV		TOCSMCALSW846	1.000	SSM-TC:2.530mg/L	
8	Unknown	JC35821-2		TOCSSM.met	1.000	SSM-TC:0.04119mg/L	
9	Unknown	JC36019-1		TOCSSM.met	1.000	SSM-TC:7.125mg/L	
10	Unknown	JC34922-4A		TOCSSM.met	1.000	SSM-TC:0.00927mg/L	
11	Unknown	JC34922-5A		TOCSSM.met	1.000	SSM-TC:0.00983mg/L	
12	Unknown	GP2935-D1	JC35821-2	TOCSSM.met	1.000	SSM-TC:0.04675mg/L	multiple injections
13	Unknown	GP2935-S1	JC35821-2	TOCSSM.met	1.000	SSM-TC:0.3863mg/L	
14	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.664mg/L	

7.1

7

1/27/2017 5:38:36 PM

ACCUTEST.

d 7012752

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-35

GN Batch ID GN58627
Date 1/27/17
Analyst YZ

Sample ID	Sample Weight	Bottle #	Sample Description & comments
CRI			
HSTD			
ICV			
CCV			
GP2935-MB1	1.000		
	1.000		
GP2935-B1	1.000		
	1.000		
JC35821-2	1.0419	3	
	1.0388		
	1.0244		
	1.0814		
JC36019-1	0.0517	1	
	0.0501		
	0.0534		
	0.0522		
JC34922-4A	1.000		x2 boats
JC34922-5A	1.000		x2 boats
GP2935-D1	1.0244	3	JC35821-2
	②1.0814		
	③1.0258		
	1.0742		

Analyst: YZ Date: 1/27/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments: 100ML ~~2000 mg/kg~~ 1.0g silica sand. TV=20.00 mg/kg

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST

d7012752

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-38

GN Batch ID GN58627
Date 1/27/17
Analyst YZ

Sample ID	Sample Weight	Bottle #	Sample Description & comments
GP2935-S1	0.5903	3	JC35824-2
	0.6070		TV= 3340.85
	0.5879		
	0.6012		
CCV			

Analyst: YZ Date: 1/27/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments:

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST LABORATORIES

Day 2

MDL Schedule Log

Product: TOCLK

Matrix: Soil

Instrument: TOC-D

Sample #: JC34922-4A→5A (MDL) or MDLVER x

Concentration: 100 mg/L or (mg/kg) or

Prep: 0.5mL 200000mg/kg ↑ 100mL with DI

100ML → 1.0g silica sand.

Sample #: MDL or MDLVER x

Concentration: mg/L or mg/kg or

Prep:

Date: 1/27/17

Analyst: YZ

Batch #: GN58627

Form: GN278-02 Revised: 10/16/12

7.1

7

ACCUTEST LABORATORIES

GN

Reagent Information Log - TOC - Soil

Reagent	Reagent # or Manufacturer/Lot	Exp. Date
Sucrose Stock Solution, 200000 mg/L	GNE12-49520-TOC	1/28/17
Glucose Stock Solution, 50000 ug/L	GNE12-49521-TOC	1/28/17
Glucose Check Solution, 25000 ug/L	GNE12-49529-TOC	1/28/17
Nitric Acid, Reagent Grade	Fisher 111560	7/3/17
Glucose Check Solution, 20000 ug/L	GNE12-49528-TOC	1/28/17

All standards and stocks were made as described in the SOP for this method (circle one): Y or N
If no (N), see attached page for standards prep.

Form: GN087A-66
Rev. Date:11/9/15

ACCUTEST

Balance : B-39
glass pipet : class A.

GENERAL CHEMISTRY STANDARD PREPARATION LOG

Product: TOC

GN or GP Number: _____

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume or weight used with units	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
GNE12-49520-TOC	fisher #155362 exp 7/8/21	Sucrose	47.59	B-39	DI H2O	100mL	200,000	1/28/17	YZ	12/31/16
GNE12-49521-TOC	fisher 120314 exp 7/10/17	Glucose	12.59	B-39	DI H2O	100mL	50,000	↓	↓	↓

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Standard (mg/l)	Expiration Date	Analyst	Date
Sucrose STDs										
GNE12-49522-TOC	GNE12-49520-TOC	200,000	0.5	autopipet 41	DI H2O	100mL	1000	1/28/17	YZ	12/31/16
GNE12-49523-TOC	↓	↓	2.5	↓	↓	↓	5000	↓	↓	↓
GNE12-49524-TOC			5.0	class A pipet			10000			
GNE12-49525-TOC			12.5	↓			25000			
GNE12-49526-TOC			20.0				40000			
GNE12-49527-TOC	↓	↓	25.0	↓	↓	↓	50000	↓	↓	↓
Glucose STDs										
GNE12-49528-TOC	GNE12-49521-TOC	50,000	40.0	class A pipet	DI H2O	100mL	20,000	1/28/17	YZ	12/31/16
GNE12-49529-TOC	↓	↓	50.0	↓	↓	↓	25,000	↓	↓	↓

* If Class A glass pipets are used, enter an A. For balances or autopipets, then enter the appropriate Accutest ID number.

Form: GN121-01
Rev. Date: 1/13/09

TOC-Control L Report

d61231s1.toc.tlx

Instr.Information

Instrument Options	TOC/SSM/Sparge Kit/
Catalyst	Regular Sensitivity

Cal. Curve

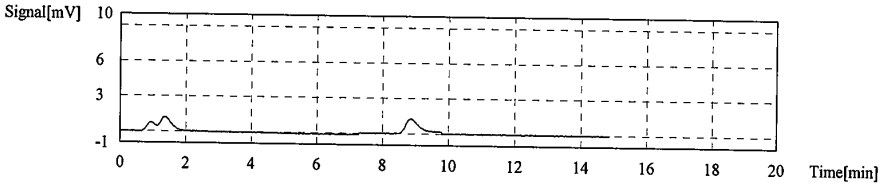
Sample Name:	Untitled
Sample ID:	Untitled
Cal. Curve:	d61231s1.2016_12_31_11_04_49.cal
Status	Completed

Type	Auto
Standard	SSM-TC

AbsC: 0.000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date/Time
1	4.216	4.216	0.000ug	100.0mg	*******		12/31/2016 11:08:38 AM
2	0.000	0.000	0.000ug	100.0mg	*******		12/31/2016 11:14:52 AM
3	3.250	3.250	0.000ug	100.0mg	*******		12/31/2016 11:19:29 AM
4	0.000	0.000	0.000ug	100.0mg	*******		12/31/2016 11:25:18 AM

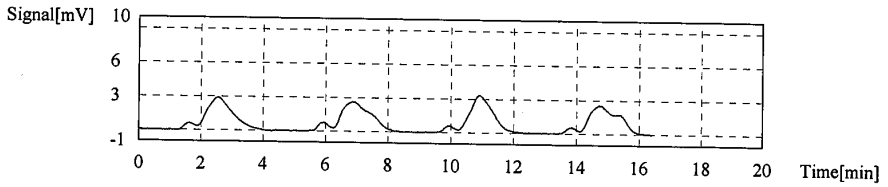
Mean Area 1.867
Mean CNV 1.867



AbsC: 0.01000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date/Time
1	18.09	18.09	0.01000ug	100.0mg	*******		12/31/2016 11:30:51 AM
2	17.93	17.93	0.01000ug	100.0mg	*******		12/31/2016 11:36:35 AM
3	17.27	17.27	0.01000ug	100.0mg	*******		12/31/2016 11:41:46 AM
4	17.36	17.36	0.01000ug	100.0mg	*******		12/31/2016 11:47:22 AM

Mean Area 17.66
Mean CNV 17.66



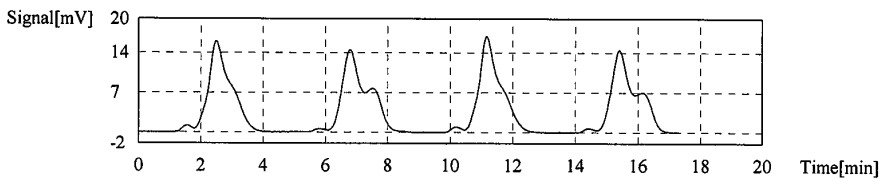
AbsC: 0.05000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date/Time
1	81.58	81.58	0.05000ug	100.0mg	*******		12/31/2016 11:54:15 AM
2	82.10	82.10	0.05000ug	100.0mg	*******		12/31/2016 12:00:07 PM
3	81.85	81.85	0.05000ug	100.0mg	*******		12/31/2016 12:06:44 PM
4	81.50	81.50	0.05000ug	100.0mg	*******		12/31/2016 12:12:56 PM

TOC-Control L Report

d61231s1.toc.tlx

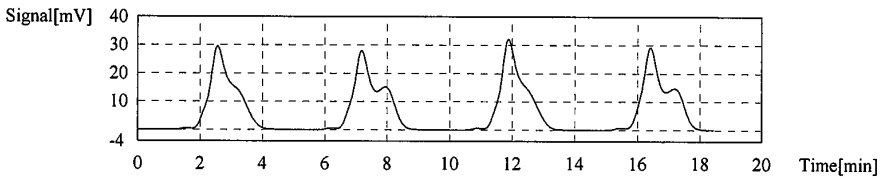
Mean Area 81.76
Mean CNV 81.76



AbsC: 0.1000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date / Time
1	161.3	161.3	0.1000ug	100.0mg	*******		12/31/2016 12:20:37 PM
2	164.9	164.9	0.1000ug	100.0mg	*******		12/31/2016 12:26:54 PM
3	166.6	166.6	0.1000ug	100.0mg	*******		12/31/2016 12:32:41 PM
4	167.1	167.1	0.1000ug	100.0mg	*******		12/31/2016 12:38:33 PM

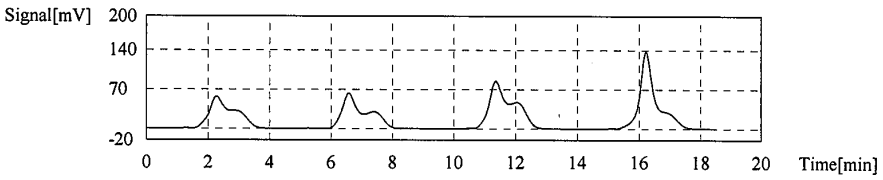
Mean Area 165.0
Mean CNV 165.0



AbsC: 0.2500ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date / Time
1	318.7	318.7	0.2500ug	100.0mg	*******		12/31/2016 1:37:39 PM
2	335.6	335.6	0.2500ug	100.0mg	*******		12/31/2016 1:45:00 PM
3	456.9	456.9	0.2500ug	100.0mg	*******		12/31/2016 1:52:55 PM
4	507.0	507.0	0.2500ug	100.0mg	*******		12/31/2016 2:01:48 PM

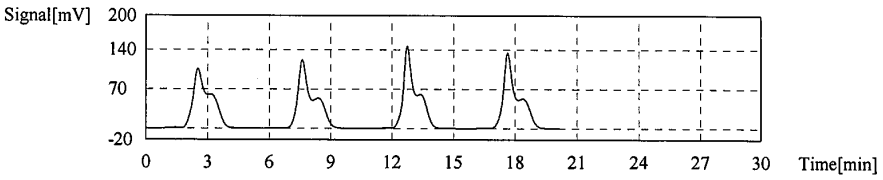
Mean Area 404.6
Mean CNV 404.5



AbsC: 0.4000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date / Time
1	617.4	617.4	0.4000ug	100.0mg	*******		12/31/2016 2:08:59 PM
2	637.9	637.9	0.4000ug	100.0mg	*******		12/31/2016 2:15:55 PM
3	649.5	649.5	0.4000ug	100.0mg	*******		12/31/2016 2:22:17 PM
4	649.4	649.4	0.4000ug	100.0mg	*******		12/31/2016 2:30:02 PM

Mean Area 638.5
Mean CNV 638.5



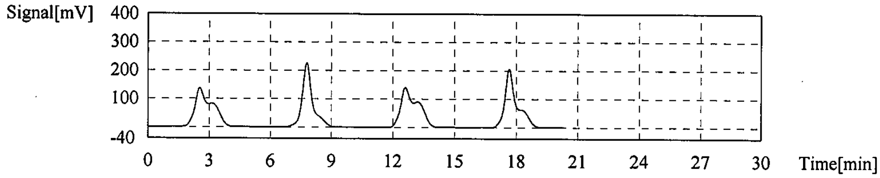
AbsC: 0.5000ug

TOC-Control L Report

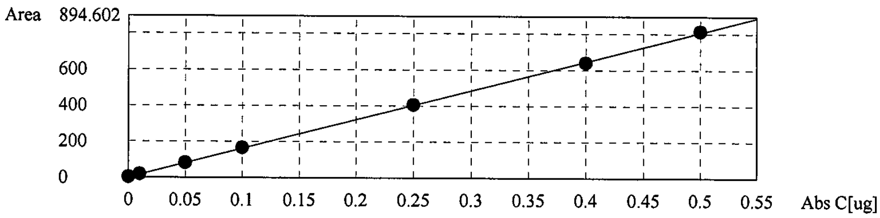
d61231s1.toc.tlx

No.	Area	CNV	Abs C	Weight	Rem.	Ex.	Date/Time
1	800.7	800.7	0.5000ug	100.0mg	*******		12/31/2016 2:36:47 PM
2	796.5	796.5	0.5000ug	100.0mg	*******		12/31/2016 2:43:32 PM
3	814.5	814.5	0.5000ug	100.0mg	*******		12/31/2016 2:49:57 PM
4	841.4	841.4	0.5000ug	100.0mg	*******		12/31/2016 2:57:43 PM

Mean Area 813.3
Mean CNV 813.3



Slope: 1612
Intercept 1.612
r^2 0.9998
r 0.9999
Zero Shift No



TOC-Control L Report

d70127s2.toc.tlx

Instr.Information

Instrument Options: TOC/SSM/Sparge Kit/
Catalyst: Regular Sensitivity

Sample

Sample Name: CRI
Sample ID:
Origin: TOCSMCALSW846.met
Status: Completed
Chk. Result:

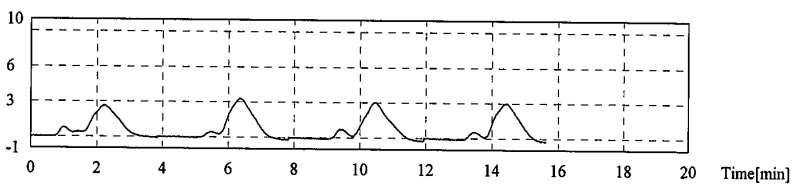
Type	Vial	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.1008mg/L

1. Det

Anal.: SSM-TC

No.	Area	CntV	Conc	Weight	Volume	Det	Cal Curve	Date/Time
1	16.45	16.45	0.09206mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 7:49:43 AM
2	18.46	18.46	0.1045mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 7:55:30 AM
3	19.02	19.02	0.1080mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:02:01 AM
4	17.52	17.52	0.09870mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:07:34 AM

Mean Conc. 0.1008mg/L
CV Conc 6.93%



Sample

Sample Name: HSTD
Sample ID:
Origin: TOCSMCALSW846.met
Status: Completed
Chk. Result:

Type	Vial	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:5.074mg/L

1. Det

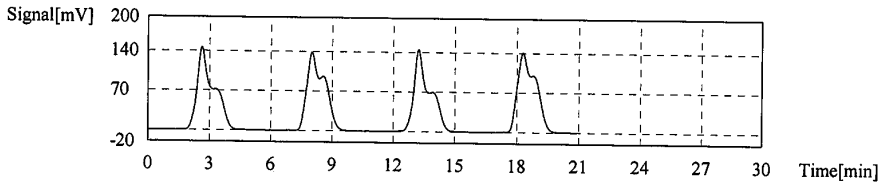
Anal.: SSM-TC

No.	Area	CntV	Conc	Weight	Volume	Det	Cal Curve	Date/Time
1	819.7	819.7	5.076mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:14:45 AM
2	826.6	826.6	5.119mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:25:20 AM
3	771.5	771.5	4.777mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:32:34 AM
4	859.8	859.8	5.325mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:41:36 AM

TOC-Control L Report

d70127s2.toc.tlx

Mean Conc. 5.074mg/L
CV Conc 4.45%



Sample

Sample Name: ICV
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

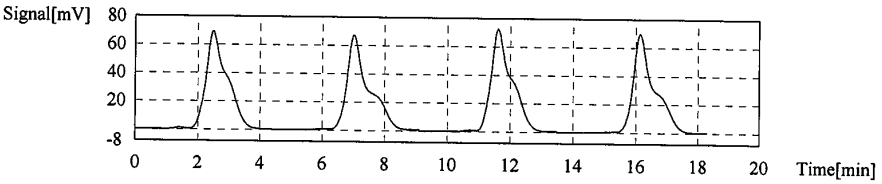
Type	Name	Dilution Factor	Istd Amt	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.002mg/L

1. Det

Anal.: SSM-TC

No.	Area	ONV	Conc	Weight	Volume	Cal Curve	Date/Time
1	322.5	322.5	1.991mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:29:27 AM
2	319.2	319.2	1.970mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:36:26 AM
3	329.2	329.2	2.033mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:45:58 AM
4	326.1	326.1	2.013mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:52:32 AM

Mean Conc. 2.002mg/L
CV Conc 1.34%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

Type	Name	Dilution Factor	Istd Amt	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.530mg/L

1. Det

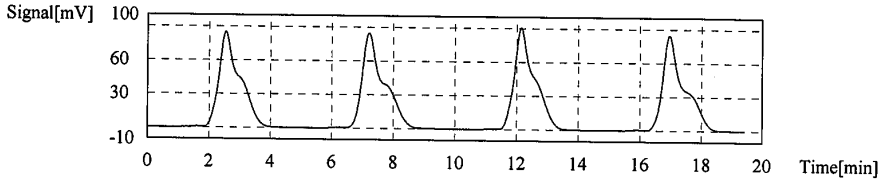
Anal.: SSM-TC

TOC-Control L Report

d70127s2.toc.tlx

No.	Area	NV	Conc.	Weight	Volume	Data Name	Date/Time
1	401.8	401.8	2.483mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:59:38 AM
2	414.8	414.8	2.564mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:07:04 AM
3	414.9	414.9	2.564mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:14:27 AM
4	405.9	405.9	2.508mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:22:24 AM

Mean Conc. 2.530mg/L
CV Conc 1.61%



Sample

Sample Name: GP2935-MB1
Sample ID: TOCLK
Origin: TOCSSMSW846.met
Status Completed
Chk. Result

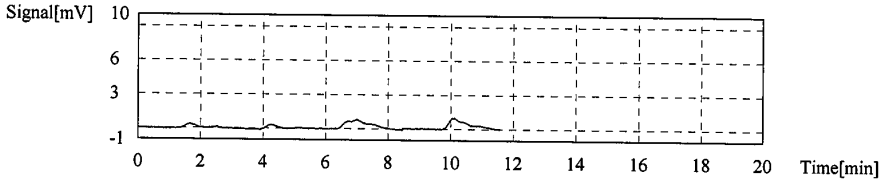
Type	Anal.	Dilution	Factor	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00568mg/L

1. Det

Anal.: SSM-TC

No.	Area	NV	Conc.	Weight	Volume	Data Name	Date/Time
1	0.7594	0.7594	-0.00529mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:26:22 AM
2	0.8808	0.8808	-0.00454mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:34:08 AM
3	4.528	4.528	0.01809mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:40:06 AM
4	3.940	3.940	0.01445mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:46:42 AM

Mean Conc. 0.00568mg/L
CV Conc 217.03%



Sample

Sample Name: GP2935-B1
Sample ID:
Origin: TOCSSMSW846.met
Status Completed
Chk. Result

Type	Anal.	Dilution	Factor	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.019mg/L

TOC-Control L Report

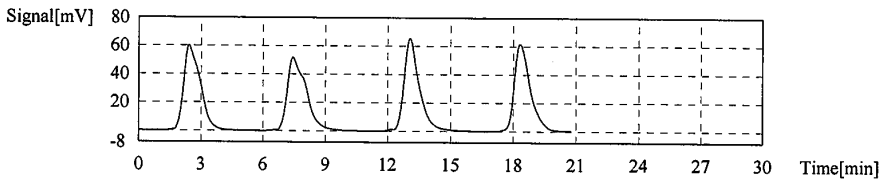
d70127s2.toc.tlx

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Conc.	Weight	Volume	Dil.	Cal. Curve	Date / Time
1	332.9	332.9	2.055mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:52:38 AM
2	324.1	324.1	2.001mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:59:35 AM
3	329.8	329.8	2.036mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 11:06:06 AM
4	321.5	321.5	1.985mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 11:24:11 AM

Mean Conc. 2.019mg/L
CV Conc 1.60%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

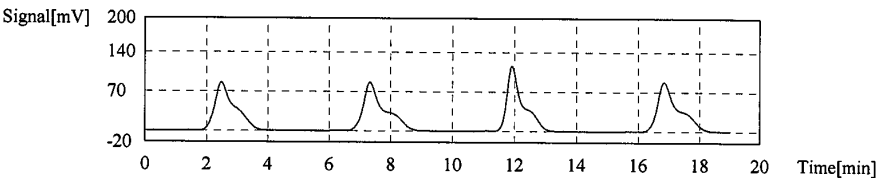
Type	Anal.	Weight / Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.530mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Conc.	Weight	Volume	Dil.	Cal. Curve	Date / Time
1	389.5	389.5	2.407mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:10:51 PM
2	411.7	411.7	2.544mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:18:34 PM
3	415.9	415.9	2.570mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:27:31 PM
4	420.4	420.4	2.598mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:34:26 PM

Mean Conc. 2.530mg/L
CV Conc 3.36%



Sample

Sample Name: JC35821-2
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

TOC-Control L Report

d70127s2.toc.tlx

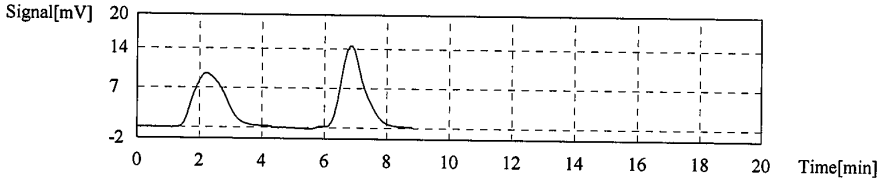
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.04119mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	64.78	64.78	0.03762mg/L	1042mg	1041uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:42:43 PM
2	76.57	76.80	0.04477mg/L	1039mg	1038uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:50:08 PM

Mean Conc. 0.04119mg/L
CV Conc 12.28%



Sample

Sample Name: JC36019-1
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

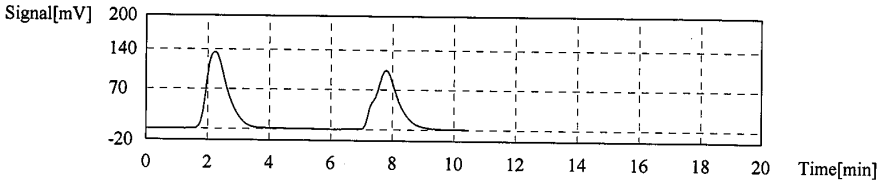
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:7.125mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	630.8	630.8	7.551mg/L	51.70mg	51uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:04:51 PM
2	542.6	559.9	6.700mg/L	50.10mg	50uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:13:25 PM

Mean Conc. 7.125mg/L
CV Conc 8.45%



Sample

Sample Name: JC34922-4A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

TOC-Control L Report

d70127s2.toc.tlx

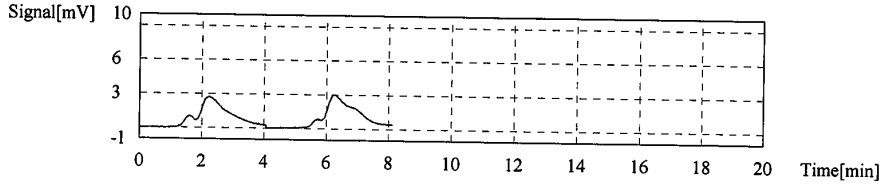
Type	Name	Method Name	Dilution	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00927mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Dilute	Weight	Volume	Cal. Curve	Date/Time
1	16.17	16.17	0.00903mg/L	1000mg	1000uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:19:36 PM
2	16.94	16.94	0.00951mg/L	1000mg	1000uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:28:51 PM

Mean Conc. 0.00927mg/L
CV Conc 3.64%



Sample

Sample Name: JC34922-5A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

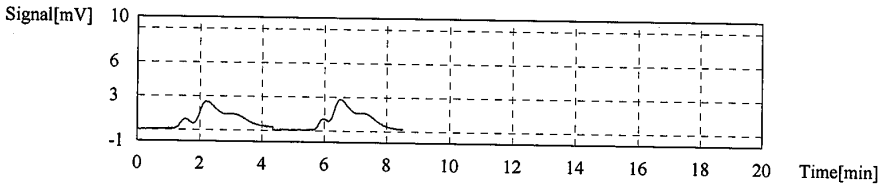
Type	Name	Method Name	Dilution	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00983mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Dilute	Weight	Volume	Cal. Curve	Date/Time
1	16.92	16.92	0.00950mg/L	1000mg	1000uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:34:15 PM
2	17.99	17.99	0.01016mg/L	1000mg	1000uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:42:11 PM

Mean Conc. 0.00983mg/L
CV Conc 4.78%



Sample

Sample Name: GP2935-D1
Sample ID: JC35821-2
Origin: TOCSSM.met
Status Completed
Chk. Result

TOC-Control L Report

d70127s2.toc.tlx

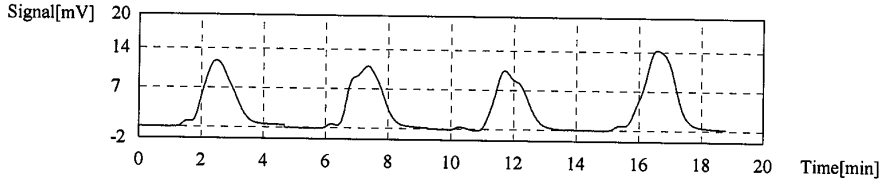
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.04675mg/L

1. Det

Anal.: SSM-TC

No.	Area	Corr. Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	75.96	75.96	0.04503mg/L	1024mg	1024uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:49:07 PM
2	77.94	77.83	0.04617mg/L	1026mg	1025uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:54:55 PM
3	69.70	66.03	0.03907mg/L	1081mg	1081uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:06:34 PM
4	99.84	95.21	0.05674mg/L	1074mg	1074uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:14:04 PM

Mean Conc. 0.04675mg/L
CV Conc 15.72%



Sample

Sample Name: GP2935-S1
Sample ID: JC35821-2
Origin: TOCSSM.met
Status Completed
Chk. Result

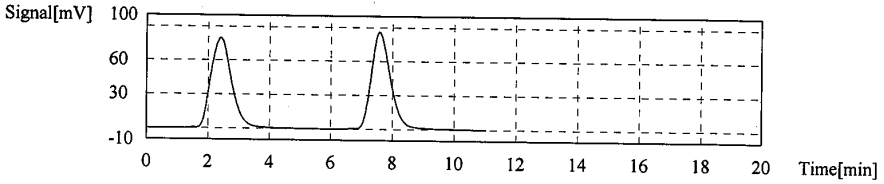
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.3863mg/L

1. Det

Anal.: SSM-TC

No.	Area	Corr. Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	373.2	373.2	0.3906mg/L	590.3mg	590uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:20:33 PM
2	375.4	365.1	0.3821mg/L	607.0mg	607uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:30:52 PM

Mean Conc. 0.3863mg/L
CV Conc 1.56%



Sample

TOC-Control L Report

d70127s2.toc.tlx

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

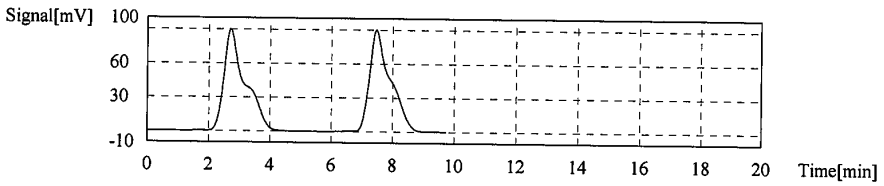
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.664mg/L

1. Det

Anal.: SSM-TC

No.	Area	Area	Conc.	Weight	Volume	Dil.	Data Name	Date Time
1	432.9	432.9	2.676mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:38:29 PM
2	429.0	429.0	2.652mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:46:22 PM

Mean Conc. 2.664mg/L
CV Conc 0.64%



mrp 02/01

TEST: Ferrous Iron (FE2/7) ANALYST: MRP GN BATCH: GN58793
METHOD: ASTM D3872-86 DATE: 2/1/2017 REAGENT ID's: See attached page
RDL: 0.20 %

F = Weight of Iron in g / Vol. Of Dichomate in mL = 0.0063

%Fe2/7 = ml Dichromate x F x 100 / sample wt in g x (%sol/100)

QC Summary						Units	Within limits? (Y/N)
Dup. Sample ID:	JC36017-1R	original- 0.63		Duplicate: 0.63 ✓	RPD 0.00		
MS Sample ID:	JC36017-1R	original 0.63	Amt.Spiked 41.82 ✓	MS 40.04 ✓	REC 94.23 ✓		
MB ID and prep date:	2/1/2017	Result:	<02	RDL: 0.2	<RDL? Y ✓		
SB ID and prep date:	2/1/2017	Amt. Spiked:		Result:	REC:		
External ID:		Known:		Result:	REC:		

Spike prep: 0.25 gms Iron sample+ 0.71gm sample taken

Bottle #	Sample Description	Sample Weight in g	Start Time/End Time	Titrant Start in ml	Titrant End in ml	Titrant Total (ml)	Result in mg/l	Final Result in mg/l	RDL	Units
	MB		11:30/11:45	0.00	0.05	0.05	0.063	<02	0.2	%
	B1	0.25		0.00	39.80	39.80	for std.only		0.2	%
2	JC36017-1R MS	0.71		0.00	38.00	38.00	40.0450	40.04	0.2	%
2	JC36017-1R DUP	0.71		0.00	0.60	0.60	0.6322	0.63	0.2	%
2	JC36017-1R ✓	0.71		0.00	0.60	0.60	0.6322	0.63	0.2	%
1	JC36049-1R ✓	0.61		0.00	0.25	0.25	0.3305	0.33	0.2	%
1	JC36135-26R	0.51		0.00	0.60	0.60	0.8792	0.88	0.2	%
2	JC36204-17R ✓	0.57		0.00	0.80	0.80	1.0470	1.05	0.2	%
1	JC35528-7R ✓	0.70		0.00	0.40	0.40	0.41	0.41	0.2	%
2	JC35528-21T ✓	0.60		0.00	0.30	0.30	0.3808	0.38		%
										%
										%
										%
										%
										%

	Description	% SOLIDS
	JC36017-1R	84.2
	JC36049-1R	78.10
	JC36135-26R	84.3
	JC36204-17R	84.4
	JC35528-7R	86.9
	JC35528-21T	82.70

MS = 0.25 x 100 / sample wt in g x (%sol/100)

= 25 / 0.71 / 0.842

= 41.82

Reason codes for data corrections : 1 - reviewer error correction; 2 - transcription error; 3-computer error; 4- analyst error

ANAL mrp 2/1/2017

COMMENTS:

02/

Form: GN198-01
Rev. Date: 6/16/06

SGS ACCUTEST

GN 58793

Reagent Information Log
Test Name: FE2/7

Reagent	Reagent # or Manufacturer/Lot
Iron Wire Std	Fisher # 135597 09/27/2018
HCL(1:1)	GNE12-56408-FE2/7 XP6/12/2017
60% Sulfuric Acid/Phosphoric Acid	GNE22-49866-fe2/7 8/1/17
Potassium Dichromate Solution	GNE2-49867-FE2/7 08/1/2017
Diphenyl Amine Indicator	GNE12-49429-FE2/7 XP 6/9/2017

All standards and stocks were made as described in the SOP for this method (circle one): Y or N
If no (N), see attached page for standards prep.

Form: GN087-01
Rev. Date:2/1/2017

mrp 02/01

ACCUTEST.

Analyst mrp

Method sulf

TIME ; 9.00 / 12.00

Prep Da 2/1/2017

Balance #____B-43_____

GN GN58794

Sample Prep Log

Sample ID	Sample Size	FINAL VOLUME	
GN58794-MB1	10 ML DI / H20	NEGATIVE	B.NO
JC36017-1R DUP	10.12GM	NEGATIVE	2
JC36017-1R ✓	10.10 GM	NEGATIVE	2
JC36049-1R ✓	10.18GM	NEGATIVE	1
JC36135-26R	10.10 GM	NEGATIVE	1
JC36204-17R ✓	10.25 GM	NEGATIVE	1
JC35528-7R ✓	10.25 GM	NEGATIVE	1
JC36528-21T ✓	10.10GM	NEGATIVE	2

Form: GN166-03
Rev. Date: 11/19/15

7.3

7

Hexavalent Chromium

Test Title:	XCRA
GN Batch:	GN58815
Analyst:	RI
Prep Date:	1/31/2017
Analysis Date:	2/1/2017
Instrument ID:	P

Method: SW846 3060A, 7196A

Note: All results below shown on a wet weight basis.

Corr. Coef: 0.99989

Slope: 0.8106

Y intercept: 0.0032

Bottle #	Sample #	Sample Absorbance	BKGRD Abs	Analysis Times	Y Values Corr Sample Absorbance	X Values Conc(mg/l)	Final Vol. (ml)	Sam. Wt. (g)	Dilution	Final Conc.	Units	MDL	RDL
	Cal. Blk.	0.000	NA	9:02	0.000	0.0000							
	STD 1	0.009	NA	9:09	0.009	0.0100							
	STD 2	0.045	NA	9:09	0.045	0.0500							
	STD 3	0.089	NA	9:09	0.089	0.1000							
	STD 4	0.251	NA	9:09	0.251	0.3000							
	STD 5	0.405	NA	9:09	0.405	0.5000							
	STD 6	0.645	NA	9:09	0.645	0.8000							
	STD 7	0.819	NA	9:09	0.819	1.0000							
	CCV	0.393	NA	13:04	0.393	0.4809	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.002	NA	13:04	0.002	-0.0015	NA	NA	NA	NA	mg/l	0.007	0.010
	GP2991-MB1	0.002	0.000	13:09	0.002	-0.0015	100.0	2.5000	1	-0.061	mg/kg	0.280	0.400
	GP2991-B1	0.749	0.000	13:09	0.749	0.9201	100.0	2.5000	1	36.803	mg/kg	0.280	0.400
	GP2991-S1	0.640	0.074	13:09	0.566	0.6943	100.0	2.5100	1	27.661	mg/kg	0.280	0.398
	GP2991-D1	0.076	0.056	13:09	0.020	0.0207	100.0	2.5300	1	0.818	mg/kg	0.280	0.395
	JC36049-1R	0.041	0.029	13:09	0.012	0.0108	100.0	2.5200	1	0.429	mg/kg	0.280	0.397
	JC36049-1RPSCONF	0.416	0.015	13:09	0.401	0.4907	100.0	2.5200	2	38.947	mg/kg	0.280	0.794
	GP2991-B2	>3	OVR	13:09		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	GP2991-S2	>3	OVR	13:09		#VALUE!	100.0	2.5200	1	#VALUE!	mg/kg	0.280	0.397
	GP2991-B2	0.284	0.000	13:09	0.284	0.3464	100.0	2.5000	50	692.776	mg/kg	0.280	20.000
	GP2991-S2	0.351	0.000	13:09	0.351	0.4290	100.0	2.5200	50	851.284	mg/kg	0.280	19.841
	CCV	0.393	NA	13:09	0.393	0.4809	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.002	NA	13:09	0.002	-0.0015	NA	NA	NA	NA	mg/l	0.007	0.010
	JC36049-2R	0.018	0.003	13:11	0.015	0.0145	100.0	2.5600	1	0.567	mg/kg	0.280	0.391
	JC36049-3R	0.029	0.003	13:11	0.026	0.0281	100.0	2.5100	1	1.119	mg/kg	0.280	0.398
	JC36049-4R	0.018	0.002	13:11	0.016	0.0158	100.0	2.5200	1	0.625	mg/kg	0.280	0.397
				13:11		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:11		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:11		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:11		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:11		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:11		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				13:11		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV	0.390	NA	13:11	0.390	0.4772	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.002	NA	13:11	0.002	-0.0015	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400

7.4

7

SGS ACCUTEST - Dayton

3060A/7196A POST-DIGEST SPIKE LEVEL CALCULATION SPREADSHEET

GP Batch: GP2991

NOTE: Always dilute post-spike first, then take a 45 ml aliquot of the diluted post-spike and add the spike amount.

Sample ID	PS Aliquot Weight in g Digested in 100 ml	Weight in 45 ml	Results in mg/kg.	Amount in ml to add of 100 ppm solution	Dilution needed	Suggested Dilution to use	Actual Dilution to be used	Suggested ml of 100 ppm to spike on dilution of sample.	Actual ml of 100 ppm to spike on dilution of sample.	Est. Read-back on curve in mg/l	Calculated Spike Amount in mg/kg	Use calculated or default spike?
JC26049-1R	2.52	1.134	0.429	0.454	yes	1	2	0.227	0.227	0.510	40.035	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike

3060A/7196A INSOLUBLE SPIKE CALCULATION

Weight of PbCrO4	Weight of Sample	Amount Spiked
0.0104	2.5	669.307
0.0162	2.52	1034.300
		#DIV/0!
		#DIV/0!
		#DIV/0!

Validated By: JJY
Doc. Control #: AGN-XCRAPSCALC-01

Date Validated: 2/26/13

ACCUTEST

Test: **Hexavalent Chromium** MDL = 0.28 mg/kg GNBatch ID: GN 58815
Product: **XCr** RDL = 0.4 mg/kg Date: 2-1-2017
Method: **SW846 3060A/7196A**

Digestion Batch QC Summary Units = mg/kg

Method Blank ID: GP2991-MB1 Date: 2-1-2017 Result: <RDL RDL: 0.40 <RDL: Ye
Sol. Spike Blank ID: B1 Date: Result: 36.507 Spike: 40.03 %Rec.: 92.01
Insol. Spike Blank ID: B2 Date: Result: 692.776 Spike: 669.30 %Rec.: 103.51
Duplicate ID: D1 Samp. Result: 0.429 Dup. Result: 0.518 %RPD: 62.39
Sol. MS ID: S1 Samp. Result: MS Result: 27.661 Spike: 39.854 %Rec: 68.35
Insol. MS ID: S2 Samp. Result: MS Result: 851.224 Spike: 1034.3 %Rec: 82.26
Post Spike ID: JC36049-1R Samp. Result: PS Result: 38.947 Spike: 40.035 %Rec: 96.21
Diluted Sample ID: Samp. Result: Dil. Result: %RPD:
pH adj. PS ID: Samp. Result: MS Result: Spike: %Rec:

Analysis Batch QC Summary Units = mg/l

CCV: 2-1-2017 Result: 0.4509 TV: 0.500 %Rec.: 96.01
CCV: " Result: " TV: 0.500 %Rec.: "
CCV: " Result: 0.4912 TV: 0.500 %Rec.: 95.47
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:

CCB: 2-1-2017 Result: <RDL RDL: 0.010 <RDL: Ye
CCB: " Result: " RDL: 0.010 <RDL: "
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:

Reagent Reference Information - refer to attached reagent reference information page(s).

Insoluble spike = $PbCrO_4$ Molecular weight = 323.2 g/mol Cr = 52.0 g/mol

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount

Analyst: RR Date: 2-1-2017

Comments:

Form: GN066-04
Rev. Date: 16-Mar-2016

ACCUTEST

Hexavalent Chromium pH Adjustment Log
Method Sw846 3060A/7196A

pH Meter ID: 62
Digestion Date: 1/31/17
pH adj. Date: 2-1-2017
GN Batch ID: GN 5AF15

pH adj. start time: 1232 / 1249
pH adj. end time: 1244 / 1259

GP 2991

Batch NO # Sample ID	Sample Weight in g	pH after HNO3 (7.0 to 8.0)	Final Volume (ml)	pH after H2SO4 (1.5 to 2.5)	bkg pH after H2SO4	Spike Amounts	Spike Solution	Digestate Description/Comments
CCV		7.42	100	1.96		5.0 ml	10 ppm ultra	
CCV								
CCV								
CCV								
CCB		7.30	100	1.97	—			
CCB								
CCB								
CCB								
MS (Sol) JC 36049-1R	2.51	7.51	100	1.80	1.72	1.0ml	100ppm LGC	
MS (Insol.)	2.52	7.32		1.82	DNE	0.01629	PbCrO4	
DUP	2.53	7.51		1.90	1.69			
SB (Sol)	2.50g	7.42		1.89	1.72	1.0ml	100ppm LGC	
SB (Insol)	2.50g	7.41		1.84	DNE	0.01049	PbCrO4	
MB	2.50g	7.40		1.81	1.67			
JC 36049-1R	2.52	7.51		1.92	1.72			yellow
2 -2R	2.56	7.42		1.84	1.70			Pale yellow
3 -3R	2.51	7.62		1.90	1.59			↓
4 -4R	2.52	7.31		1.84	1.64			
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
SB (Insol)	2.50g	7.41	100	1.92	1.71			dilution 1:50 1ml to 50ml
MS (Insol.)	2.52	7.32		1.86	1.74			dilution 1:50 1ml to 50ml
PS	2.52	7.51		1.90	1.72	0.229 ml	100ppm LGC	2.25ml to 50ml
pH adjusted PS							100ppm LGC	ph=
1:5 dil.								10ml to 50ml
JC 36049-1R	2.60							

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Digestion analyst & date: SP 1/31/17
Analysis analyst & date: 2-1-2017
Spike Witness: MH

Form: GN067-02b

ACCUTEST

GN/GP Batch ID: GP 2991 GN 58815

Reagent Information Log - XCRA (soil 3060A/7196)

Reagent	Exp. Date	Reagent # or Manufacturer/Lot
Calibration Source: Hexavalent Chromium, 1000 mg/L Stock	6/30/2018	VHG Labs 84971-9
Calibration Checks: Hexavalent Chromium, 1000 mg/L Stock	12/31/2020	Ultra Lot : R01215
10.0ppm Ultra CCV Spike	6/17/2017	GNE12-49422-XCRA
Spiking Solution Source 100 PPM LGC VHG	7/12/2017	GNE1-49648-XCRA
Lead Chromate (Insoluble Hexavalent Chromium Spike)	11/16/2020	Sigma Aldrich Lot #BCBP0031V
Magnesium Chloride, Anhydrous	8/14/2018	Alfa Aesar Lot #F19Z033
1N NaOH	7/13/2017	GNE1-49667-XCR
Digestion Solution	3/2/2017	GNE1-49617-XCR
Phosphate Buffer Solution	5/5/2017	GNE8-49027-XCRA
5.0 M Nitric Acid	7/11/2017	GNE1-49638-XCRA
Diphenylcarbazide Solution	2/22/2017	GNE1-49814-XCR
Sulfuric Acid, 10%	7/10/2017	GNE1-49627-XCR
Filter	NA	LOT# 150130034
Teflon Chips	NA	919120
0.45um syringe filter	NA	151221062

Form: GN087A-21B
Rev. Date: 2/18/10

7.4
7

SGS ACCUTEST

HEXAVALENT CHROMIUM TEMPERATURE & TIME DIGESTON LOG (METHOD SW846 3060A)

Digest batches for a minimum of 1 hour.

Record temperatures at the start, middle and end of each digestion.

Corrected temperatures must be from 90-95 deg. C.

Digestion Date: 1/31/17		Hot Plate ID: 9 Thermometer ID: 453 Correction Factor: (-1)		Hot Plate ID: 8 Thermometer ID: 463 Correction Factor: (-1)		Hot Plate ID: 11 Thermometer ID: 3124165 Correction Factor: (-2.0)		Hot Plate ID: 6 Thermometer ID: 462 Correction Factor: (0)		Hot Plate ID: 10 Thermometer ID: 3106914 Correction Factor: (-1.0)			
		Temperatures		Temperatures		Temperatures		Temperatures		Temperatures			
GP Batch ID(s)	Time	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Analyst Check	2nd Analyst Check
GP2988 GP2989 GP2990 GP2991	Start time 9:45	93	92	94	93	94	92	91	91	95	94	SP	MH
	Half time 10:15	93	92	94	93	94	92	91	91	95	94	SP	MH
	End time 10:45	93	92	94	93	94	92	91	91	95	94	SP	MH
GP 2992 GP 2993	Start time 10:50	94	93	93	92	93	91	90	90	95	94	SP	MH
	Half time 11:20	94	93	93	92	93	91	90	90	95	94	SP	MH
	End time 11:50	94	93	93	92	93	91	90	90	95	94	SP	MH
	Start time												
	Half time												
	End time												

Data Reviewed: _____

Form: GN074-03
Revised: 28-Nov-16

ACCUTEST.

Hexavalent Chromium pH Adjustment Log
Method: SW846 3060A/7196A

pH adj. start time: A=36 A=45
pH adj. end time: A=41 A=48

pH adjustment Date: 2-1-2017
GN Batch ID: GN 5FA15

Sample ID	Sample Weight in g	pH after HNO3	Final Volume (ml)	pH after H2SO4	Comments	Spike Info.
Calibration Blank	NA	9.90	100	1.84		
0.010 mg/l standard	NA	9.41	100	1.99	10ppm LGC VHG	0.10 ml of 10 mg/l
0.050 mg/l standard	NA	9.62	100	1.81	10ppm LGC VHG	0.50 ml of 10 mg/l
0.100 mg/l standard	NA	9.50	100	1.90	10ppm LGC VHG	1.00 ml of 10 mg/l
0.300 mg/l standard	NA	9.32	100	1.81	10ppm LGC VHG	3.00 ml of 10 mg/l
0.500 mg/l standard	NA	9.11	100	1.92	10ppm LGC VHG	5.00 ml of 10 mg/l
0.800 mg/l standard	NA	9.42	100	1.81	10ppm LGC VHG	8.00 ml of 10 mg/l
1.00 mg/l standard	NA	9.31	100	1.90	10ppm LGC VHG	10.0 ml of 10 mg/l

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Anayst: R2
Date: 2-1-2017

Form: GN068-01
Rev. Date:5/22/06

7.4
7

ACCUTEST.

HEXAVALENT CHROMIUM STANDARD PREPARATION LOG

Product: XCRA

GN or GP Number: GN 58815

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume used in ml	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
10 ppm	Lot # 84971-4	1000 ppm	1.0 ml	DI	100 mls	10 mg/l	2/1/2018	RZ	2-1-2017
100 ppm	Lot # 84971-4	1000 ppm	10 ml	DI	100 mls	100 mg/l	2/1/2018		
5 ppm		1000 ppm	1.0 ml	DI	200 mg/l	5 mg/l			
7.5 ppm		1000 ppm	1.5 ml	DI	200 mg/l	7.5 mg/l			
10 ppm	ULTRALOT#R01215	1000 ppm	1.0 ml	DI	100 mg/l	10 mg/l	12/31/2020		

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Diluent	Final Volume	Final Conc. Of Standard (mg/l)	Expiration Date	Analyst	Date
.010 ppm	10.0 ppm	10.0 ppm	0.1 ppm	DI	100 mls	0.01 mg/l	2-2-2017	RZ	2-1-2017
.050 ppm	10.0 ppm	10.0 ppm	0.5 ppm	DI	100 mls	0.05 mg/l			
.10 ppm	10.0 ppm	10.0 ppm	1.0 ppm	DI	100 mls	0.10 mg/l			
.03 ppm	10.0 ppm	10.0 ppm	3.0 ppm	DI	100 mls	0.30 mg/l			
.50 ppm	10.0 ppm	10.0 ppm	5.0 ppm	DI	100 mls	0.50 mg/l			
.80 ppm	10.0 ppm	10.0 ppm	8.0 ppm	DI	100 mls	0.80 mg/l			
1.00 ppm	10.0 ppm	10.0 ppm	10.0 ppm	DI	100 mls	1.0 mg/l			

Form: GN205-01
Rev. Date:9/10/07

LABORATORY REVIEW SIGNATURE FORM
(To be stored with the raw data)

File ID: E70202S1.TXT
Analyst: CD

Date Analyzed: 02/02/17
Run ID: GN58865

Methods: LLOYD KAHN 1988 MOD

The following analyst(s) have reviewd this run and attest that, to the best of their knowledge, this documentation is complete and correct:

Analyst: CD Date 2/2/17

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

The following supervisor or their designee has reviewed this run and attests that, to the best of their knowledge, this documentation is complete and correct:

Supervisor (or designee): _____ Date 2/03

7.5

C:\TOC-L\Data\e70202s1.toc.tlx

	Type	Sample Name	Sample ID	Origin	Manual Diluti	Result	Comment
1	Unknown	CRI		TOCSSMCAL.met	1.000	SSM-TC:0.09214mg/L	
2	Unknown	HSTD		TOCSSMCAL.met	1.000	SSM-TC:4.943mg/L	
3	Unknown	ICV		TOCSSMCAL.met	1.000	SSM-TC:2.005mg/L	
4	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.463mg/L	
5	Unknown	GP2935-MB3	LK	TOCSSM.met	1.000	SSM-TC:0.00124mg/L	
6	Unknown	GP29358-B3		TOCSSM.met	1.000	SSM-TC:0.1928mg/L	
7	Unknown	GP2935-MB4	LK	TOCSSM.met	1.000	SSM-TC:-0.00001mg/	
8	Unknown	GP2935-MB5	LK	TOCSSM.met	1.000	SSM-TC:0.00270mg/L	
9	Unknown	GP2935-MB6	LK	TOCSSM.met	1.000	SSM-TC:0.00201mg/L	
10	Unknown	JC36049-1R	(A)	TOCSSM.met	1.000	SSM-TC:1.053mg/L	
11	Unknown	JC36204-17R	(3)	TOCSSM.met	1.000	SSM-TC:0.1947mg/L	rerun 1.0g
12	Unknown	JC35528-21T	(A)	TOCSSM.met	1.000	SSM-TC:4.276mg/L	multiple injections
13	Unknown	JC36135-29R	(3)	TOCSSM.met	1.000	SSM-TC:0.09220mg/L	rerun 1.0g
14	Unknown	JC34923-1A		TOCSSM.met	1.000	SSM-TC:0.01171mg/L	
15	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.458mg/L	
16	Unknown	JC34923-2A	(A)	TOCSSM.met	1.000	SSM-TC:0.01163mg/L	
17	Unknown	JC34923-3A		TOCSSM.met	1.000	SSM-TC:0.01124mg/L	
18	Unknown	JC36204-17R		TOCSSM.met	1.000	SSM-TC:0.2980mg/L	
19	Unknown	JC36135-29R		TOCSSM.met	1.000	SSM-TC:0.07437mg/L	
20	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.317mg/L	

GN58865

e70202s1.toc
CZD 2/2/17

7.5

7

2/2/2017 2:47:21 PM

1/2

ACCUTEST

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-39

GN Batch ID GN58865
Date 2/2/17
Analyst CZD

Sample ID	Sample Weight	Bottle #	Sample Description & comments
CRI			
HSTD			
ICV			
CCV			
GP2935-MB3	1.0000		
	1.0000		
GP2935-B3	1.0000		
	1.0000		
GP2935-MB4	1.0000		
	1.0000		
GP2935-MB5	1.0000		
	1.0000		
GP2935-MB6	1.0000		
	1.0000		
JC36049-1R	0.1017	2	
	0.1007		
	0.1043		
	0.1061		
JC36264-17R	0.1000	2	Under range rerun at 1.0g
	0.1063		
	0.1011		
	0.1040		

Analyst: CZD Date: 2/2/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments:
BSP: 100ul of 2000 mg/kg c/l → 1.0g silica Sand TV=2000 mg/kg

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST.

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-39

GN Batch ID GN58865
Date 2/2/17
Analyst CZD

Sample ID	Sample Weight	Bottle #	Sample Description & comments
JC35528-21T	0.1070	1	multiple boats
	0.1008		
	0.1051		
	0.1017		
JC36135-29R	0.1075	1	under range rerun at 1.0g
	0.1043		
	0.1053		
	0.1026		
JC34923-1A	1.0000		
CCV	1.0000		
JC34923-2A	1.0000		
	1.0000		
JC34923-3A	1.0000		
	1.0000		
JC36204-17R	1.0067	2	
	1.0039		
	1.0021		
	1.0072		
JC36135-29R	1.0016	1	
	1.0005		
	1.0087		
	1.0037		
CCV			

Analyst: CZD Date: 2/2/17 QCReviewer:_____ Date:_____
Manager Review:_____ Date:_____
Comments:

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST LABORATORIES

Day 1

MDL Schedule Log

Product: TOCLK

Matrix: Soil

Instrument: TOC E

3 MB's

Sample #: JC34923-1A→3A (MDL) or MDLVER x

Concentration: 100 mg/L or (mg/kg) or

Prep:

Sample #: MDL or MDLVER x

Concentration: mg/L or mg/kg or

Prep:

Date: 2/2/17

Analyst: CLD

Batch #: GN58865

Form: GN278-02 Revised: 10/16/12

ACCUTEST LABORATORIES

GN58865

Reagent Information Log - TOC - Soil

LK

7.5.7

Reagent	Reagent # or Manufacturer/Lot	Exp. Date
Sucrose Stock Solution, 200000 mg/L	GNE1-49821-TOC	2/25/17
Glucose Stock Solution, 50000 ug/L	GNE1-49828-TOC	2/25/17
Glucose Check Solution, 25000 ug/L	GNE1-49830-TOC	2/25/17
Nitric Acid, Reagent Grade	Fisher 1115060	7/3/17
Glucose Check Solution, 20000 ug/L	GNE1-49829-TOC	2/25/17

All standards and stocks were made as described in the SOP for this method (circle one): Y or N
If no (N), see attached page for standards prep.

Form: GN087A-66
Rev. Date:11/9/15

ACCUTEST

Balance : B-39
glass pipet : class A.

GENERAL CHEMISTRY STANDARD PREPARATION LOG

Product: TOCLK

(GN) or GP Number: GN58865

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume or weight used with units	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
GNE1-49821-TOC	fisher #155362 exp 7/8/21	Sucrose	47.59	B-39	DI H_2O	100mL	200,000	2/25/17	YZ	1/28/17
GNE1-49828-TOC	fisher 120314 exp 7/10/17	Glucose	12.59	B-39	DI H_2O	100mL	50,000	↓	↓	↓

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Standard (mg/l)	Expiration Date	Analyst	Date
Sucrose STDs										
GNE1-49822-TOC	GNE1-49821-TOC	200,000	0.5	autopipet 41	DI H_2O	100mL	1000	2/25/17	YZ	1/28/17
GNE1-49823-TOC	↓	↓	2.5	↓	↓	↓	5000	↓	↓	↓
GNE1-49824-TOC			5.0	class A pipet			10000			
GNE1-49825-TOC			12.5	↓			25000			
GNE1-49826-TOC			20.0				40000			
GNE1-49827-TOC	↓	↓	25.0	↓	↓	↓	50000	↓	↓	↓
Glucose STDs										
GNE1-49829-TOC	GNE1-49828-TOC	50,000	40.0	class A pipet	DI H_2O	100mL	20,000	2/25/17	YZ	1/28/17
GNE1-49830-TOC	↓	↓	50.0	↓	↓	↓	25,000	↓	↓	↓

* If Class A glass pipets are used, enter an A. For balances or autopipets, then enter the appropriate Accutest ID number.

Form: GN121-01
Rev. Date: 1/13/09

TOC-Control L Report

e70130s1.toc.tlx

Instr.Information

Instrument Options	TOC/SSM/Sparge Kit/
Catalyst	Regular Sensitivity

Cal. Curve

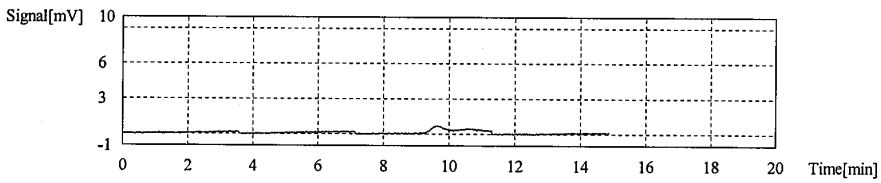
Sample Name:	Untitled
Sample ID:	Untitled
Cal. Curve:	e70130s1.2017_01_30_07_42_21.cal
Status	Completed

Type	Analyte
Standard	SSM-TC

AbsC: 0.000ug

NO.	Area	CNV	AbsC	Weight	Rem	F	Date / Time
1	0.000	0.000	0.000ug	100.0mg	*******		1/30/2017 7:47:03 AM
2	0.000	0.000	0.000ug	100.0mg	*******		1/30/2017 7:51:27 AM
3	2.842	2.842	0.000ug	100.0mg	*******		1/30/2017 7:56:51 AM
4	0.000	0.000	0.000ug	100.0mg	*******		1/30/2017 8:01:46 AM

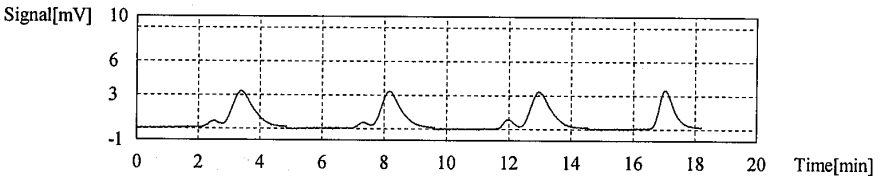
Mean Area 0.7105
Mean CNV 0.7105



AbsC: 0.01000ug

NO.	Area	CNV	AbsC	Weight	Rem	F	Date / Time
1	16.03	16.03	0.01000ug	100.0mg	*******		1/30/2017 8:09:01 AM
2	15.36	15.36	0.01000ug	100.0mg	*******		1/30/2017 8:15:39 AM
3	16.04	16.04	0.01000ug	100.0mg	*******		1/30/2017 8:21:57 AM
4	11.10	11.10	0.01000ug	100.0mg	*******		1/30/2017 8:28:08 AM

Mean Area 14.63
Mean CNV 14.63



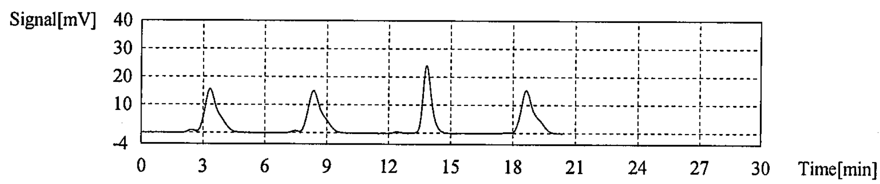
AbsC: 0.05000ug

NO.	Area	CNV	AbsC	Weight	Rem	F	Date / Time
1	72.78	72.78	0.05000ug	100.0mg	*******		1/30/2017 8:35:30 AM
2	72.56	72.56	0.05000ug	100.0mg	*******		1/30/2017 8:44:47 AM
3	72.45	72.45	0.05000ug	100.0mg	*******		1/30/2017 8:51:57 AM
4	71.06	71.06	0.05000ug	100.0mg	*******		1/30/2017 8:59:39 AM

TOC-Control L Report

e70130s1.toc.tlx

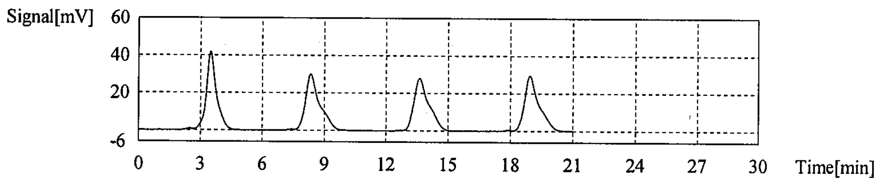
Mean Area 72.21
Mean CNV 72.21



AbsC: 0.1000ug

No.	Area	CNV	AbsC	Weight	Rem	Ex	Date/Time
1	144.2	144.2	0.1000ug	100.0mg	*******		1/30/2017 9:07:53 AM
2	143.0	143.0	0.1000ug	100.0mg	*******		1/30/2017 9:14:52 AM
3	141.5	141.5	0.1000ug	100.0mg	*******		1/30/2017 9:22:33 AM
4	143.5	143.5	0.1000ug	100.0mg	*******		1/30/2017 9:30:38 AM

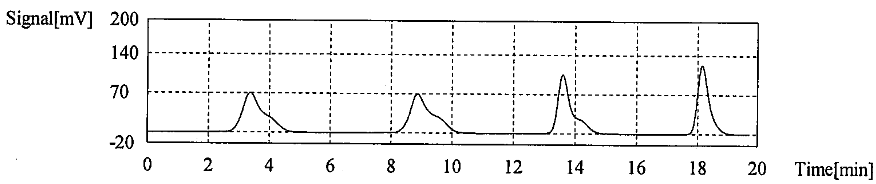
Mean Area 143.1
Mean CNV 143.1



AbsC: 0.2500ug

No.	Area	CNV	AbsC	Weight	Rem	Ex	Date/Time
1	355.6	355.6	0.2500ug	100.0mg	*******		1/30/2017 9:38:24 AM
2	358.9	358.9	0.2500ug	100.0mg	*******		1/30/2017 9:49:09 AM
3	342.1	342.1	0.2500ug	100.0mg	*******		1/30/2017 9:55:40 AM
4	332.3	332.3	0.2500ug	100.0mg	*******		1/30/2017 10:01:26 AM

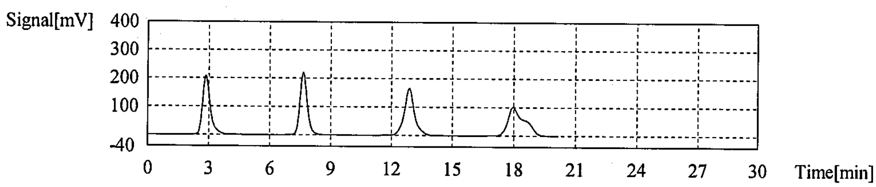
Mean Area 347.2
Mean CNV 347.2



AbsC: 0.4000ug

No.	Area	CNV	AbsC	Weight	Rem	Ex	Date/Time
1	546.7	546.7	0.4000ug	100.0mg	*******		1/30/2017 10:08:24 AM
2	552.5	552.5	0.4000ug	100.0mg	*******		1/30/2017 10:15:19 AM
3	582.1	582.1	0.4000ug	100.0mg	*******		1/30/2017 10:24:17 AM
4	564.4	564.4	0.4000ug	100.0mg	*******		1/30/2017 10:33:28 AM

Mean Area 561.4
Mean CNV 561.4



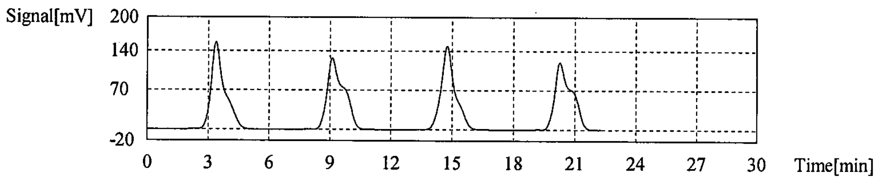
AbsC: 0.5000ug

TOC-Control L Report

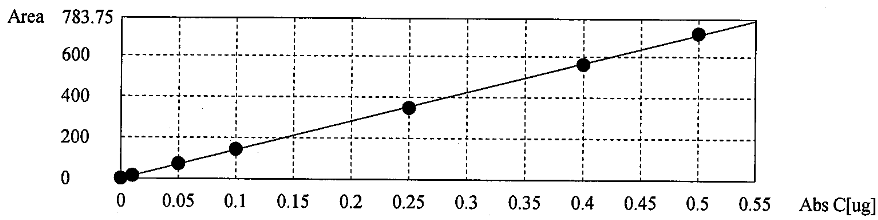
e70130s1.toc.tlx

No.	Area	CNV	Amt	Weight	Item		Date/Time
1	723.2	723.2	0.5000ug	100.0mg	*******		1/30/2017 10:42:00 AM
2	726.5	726.5	0.5000ug	100.0mg	*******		1/30/2017 10:49:33 AM
3	708.1	708.1	0.5000ug	100.0mg	*******		1/30/2017 10:58:31 AM
4	692.2	692.2	0.5000ug	100.0mg	*******		1/30/2017 11:05:43 AM

Mean Area 712.5
Mean CNV 712.5



Slope: 1413
Intercept 0.02087
r^2 0.9998
r 0.9999
Zero Shift No



TOC-Control L Report

e70202s1.toc.tlx

Instr.Information

Instrument Options: TOC/SSM/Sparge Kit/
Catalyst: Regular Sensitivity

Sample

Sample Name: CRI
Sample ID:
Origin: TOCSSMCAL.met
Status: Completed
Chk. Result

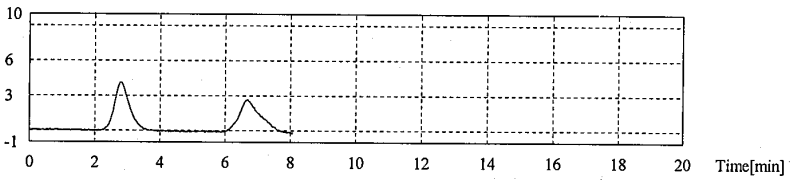
Type	Anal.	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.09214mg/L

1. Det

Anal.: SSM-TC

No.	Area	CMV	Conc.	Weight	Volume	Rack	Cal. Curve	Date/Time
1	13.12	13.12	0.09268mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 7:56:12 AM
2	12.97	12.97	0.09161mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:03:10 AM

Mean Conc. 0.09214mg/L
CV Conc 0.81%



Sample

Sample Name: HSTD
Sample ID:
Origin: TOCSSMCAL.met
Status: Completed
Chk. Result

Type	Anal.	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:4.943mg/L

1. Det

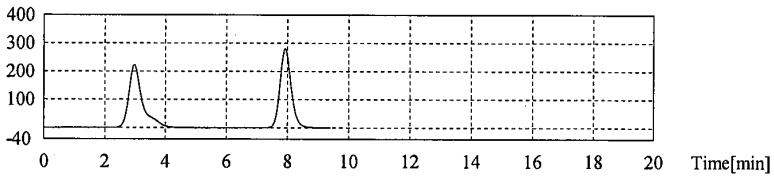
Anal.: SSM-TC

No.	Area	CMV	Conc.	Weight	Volume	Rack	Cal. Curve	Date/Time
1	688.3	688.3	4.870mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:12:40 AM
2	709.1	709.1	5.017mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:22:30 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 4.943mg/L
CV Conc 2.11%



Sample

Sample Name: ICV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

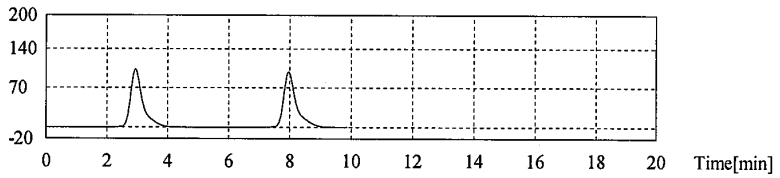
Type	Anal.	Method Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.005mg/L

1. Det

Anal.: SSM-TC

No.	Area	ONV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	286.3	286.3	2.025mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:31:43 AM
2	280.6	280.6	1.985mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:41:14 AM

Mean Conc. 2.005mg/L
CV Conc 1.42%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

Type	Anal.	Method Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.463mg/L

1. Det

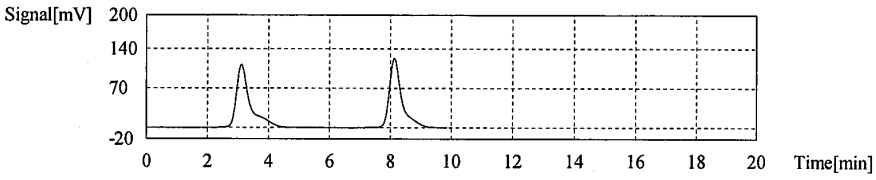
Anal.: SSM-TC

No.	Area	ONV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	347.8	347.8	2.461mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:51:10 AM
2	348.6	348.6	2.466mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:00:44 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 2.463mg/L
CV Conc 0.16%



Sample

Sample Name: GP2935-MB3
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

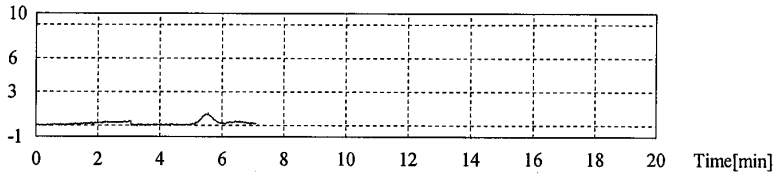
Type	Anal	Mean Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00124mg/L

1. Det

Anal.: SSM-TC

INJ	Area	CNV	Conc	Weight	Volume	ES	Cal. curve	Date/Time
1	0.000	0.000	-0.00001mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:06:40 AM
2	3.561	3.561	0.00250mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:13:37 AM

Mean Conc. 0.00124mg/L
CV Conc 143.10%



Sample

Sample Name: GP29358-B3
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal	Mean Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.1928mg/L

1. Det

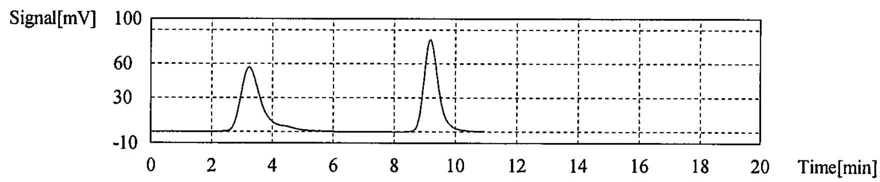
Anal.: SSM-TC

INJ	Area	CNV	Conc	Weight	Volume	ES	Cal. curve	Date/Time
1	274.7	274.7	0.1943mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:22:26 AM
2	270.3	270.3	0.1912mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:30:49 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.1928mg/L
CV Conc 1.14%



Sample

Sample Name: GP2935-MB4
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

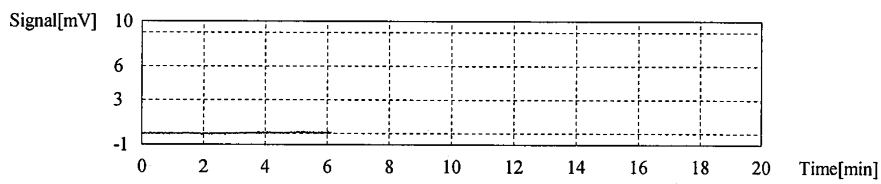
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:-0.00001mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	0.000	0.000	-0.00001mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:37:03 AM
2	0.000	0.000	-0.00001mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:41:08 AM

Mean Conc. -0.00001mg/L
CV Conc 0.00%



Sample

Sample Name: GP2935-MB5
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00270mg/L

1. Det

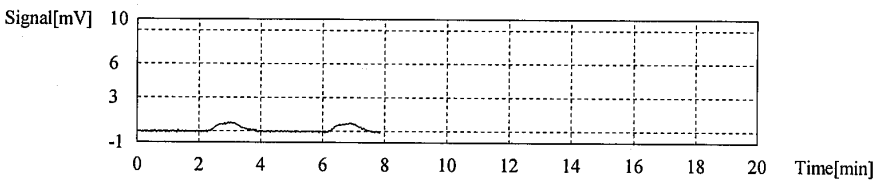
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	3.492	3.492	0.00246mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:47:07 AM
2	4.178	4.178	0.00294mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:53:53 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.00270mg/L
CV Conc 12.72%



Sample

Sample Name: GP2935-MB6
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

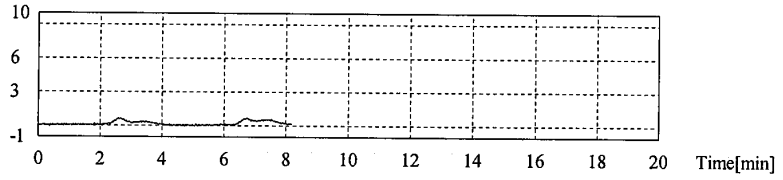
Type	Analyte	Weight/Volume	Dilution	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00201mg/L

1. Det

Anal.: SSM-TC

NO	Area	CNV	Conc	Weight	Volume	Rx	Cal Curve	Date/Time
1	1.868	1.868	0.00131mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:02:55 AM
2	3.858	3.858	0.00271mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:31:55 AM

Mean Conc. 0.00201mg/L
CV Conc 49.51%



Sample

Sample Name: JC36049-1R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Analyte	Weight/Volume	Dilution	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:1.053mg/L

1. Det

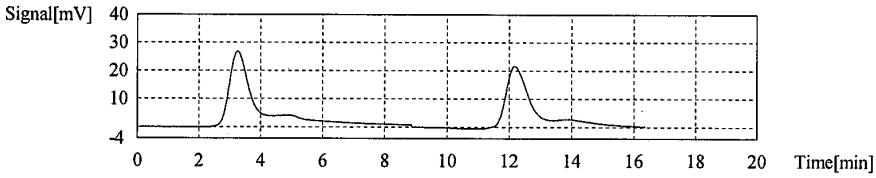
Anal.: SSM-TC

NO	Area	CNV	Conc	Weight	Volume	Rx	Cal Curve	Date/Time
1	163.3	163.3	1.136mg/L	101.7mg	101uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:42:42 AM
2	138.2	139.6	0.9708mg/L	100.7mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:52:09 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 1.053mg/L
CV Conc 11.08%



Sample

Sample Name: JC36204-17R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

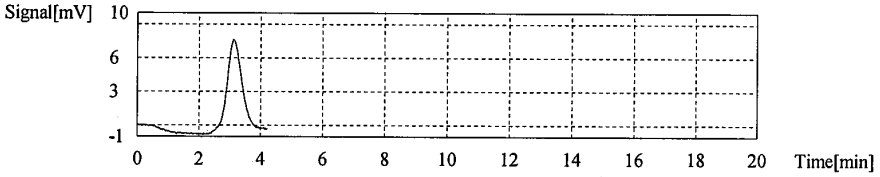
Type	Anal.	Dilution	Dens.	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.1947mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	27.54	27.54	0.1947mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:58:20 AM

Mean Conc. 0.1947mg/L
CV Conc 0.00%



Sample

Sample Name: JC35528-21T
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Dilution	Dens.	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:4.276mg/L

1. Det

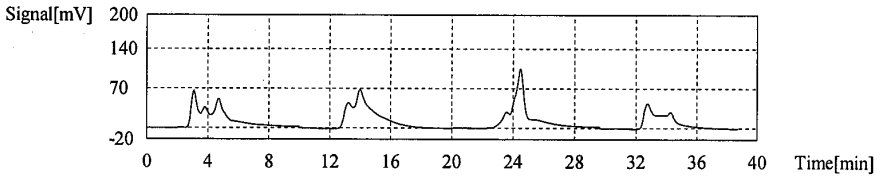
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	644.3	644.3	4.260mg/L	107.0mg	107uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:11:20 AM
2	758.0	804.6	5.320mg/L	100.8mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:24:04 AM
3	653.3	665.1	4.398mg/L	105.1mg	105uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:35:16 AM
4	449.5	472.9	3.127mg/L	101.7mg	101uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:48:23 AM

TOC-Control L Report

e70202s1.toc.tix

Mean Conc. 4.276mg/L
CV Conc 21.03%



Sample

Sample Name: JC36135-29R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

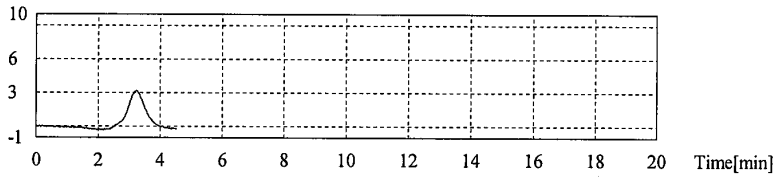
Type	Anal.	Multiplication	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.09220mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Dil.	Cal. Curve	Date/Time
1	14.03	14.03	0.09220mg/L	107.5mg	107uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:54:03 AM

Mean Conc. 0.09220mg/L
CV Conc 0.00%



Sample

Sample Name: JC34923-1A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Multiplication	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.01171mg/L

1. Det

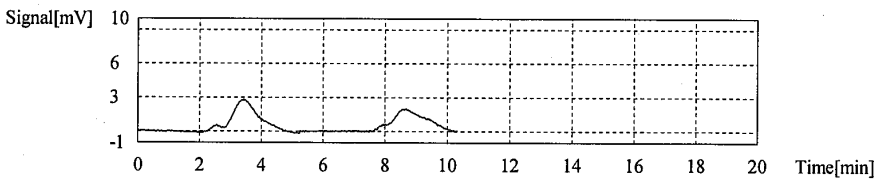
Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Dil.	Cal. Curve	Date/Time
1	18.40	18.40	0.01300mg/L	1000mg	1000uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:01:55 PM
2	14.74	14.74	0.01041mg/L	1000mg	1000uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:08:53 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.01171mg/L
CV Conc 15.64%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

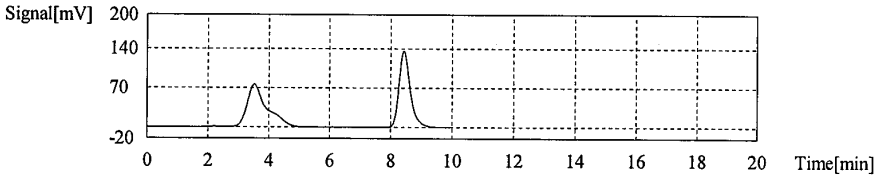
Type	Anal.	Dilution Factor	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.458mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Rx	Cal. Curve	Injection Time
1	346.8	346.8	2.453mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:16:22 PM
2	348.1	348.1	2.463mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:22:22 PM

Mean Conc. 2.458mg/L
CV Conc 0.26%



Sample

Sample Name: JC34923-2A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Dilution Factor	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.01163mg/L

1. Det

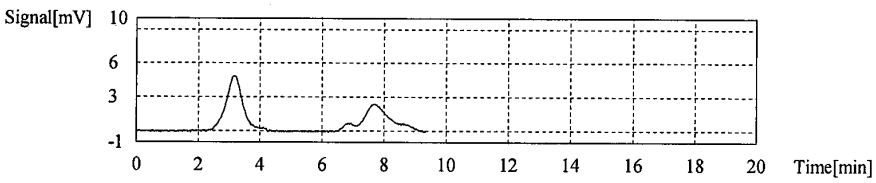
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Rx	Cal. Curve	Injection Time
1	17.26	17.26	0.01220mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:36:11 PM
2	15.66	15.66	0.01106mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:43:30 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.01163mg/L
CV Conc 6.88%



Sample

Sample Name: JC34923-3A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

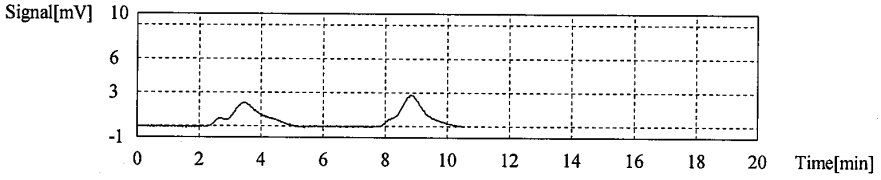
Type	Anal.	Multiplier	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.01124mg/L

1. Det

Anal.: SSM-TC

No.	Area	ON/W	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	15.48	15.48	0.01094mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:52:03 PM
2	16.34	16.34	0.01155mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:59:03 PM

Mean Conc. 0.01124mg/L
CV Conc 3.83%



Sample

Sample Name: JC36204-17R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Multiplier	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.2980mg/L

1. Det

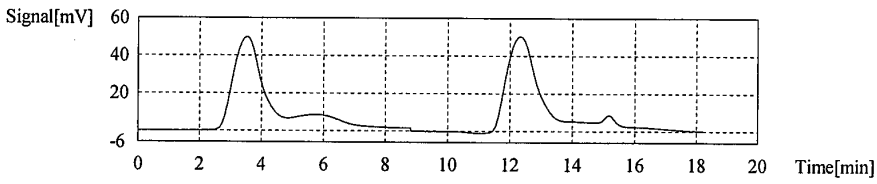
Anal.: SSM-TC

No.	Area	ON/W	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	405.9	405.9	0.2870mg/L	1001mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:09:12 PM
2	438.6	437.2	0.3091mg/L	1004mg	1003uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:20:16 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.2980mg/L
CV Conc 5.25%



Sample

Sample Name: JC36135-29R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

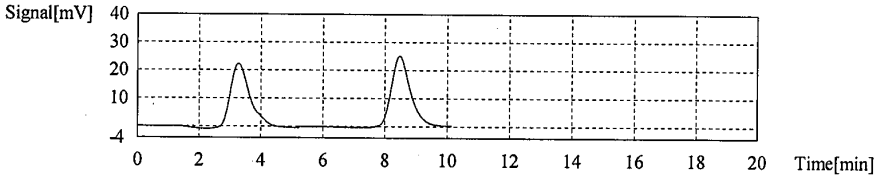
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.07437mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conv.	Conc.	Weight	Volume	IS	Cal. Curve	Date/Time
1	103.1	103.1	0.07281mg/L	1002mg	1001uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:27:23 PM
2	107.4	107.5	0.07593mg/L	1001mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:33:24 PM

Mean Conc. 0.07437mg/L
CV Conc 2.97%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.317mg/L

1. Det

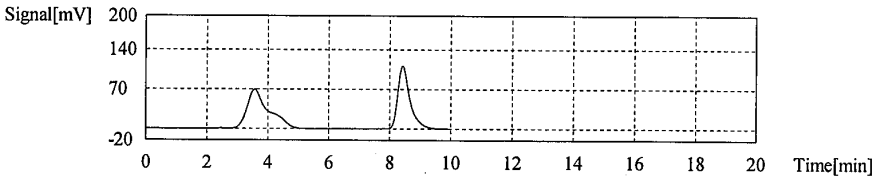
Anal.: SSM-TC

No.	Area	Conv.	Conc.	Weight	Volume	IS	Cal. Curve	Date/Time
1	345.8	345.8	2.446mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:41:14 PM
2	309.1	309.1	2.187mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:47:03 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc.	2.317mg/L
CV Conc	7.93%



e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

PPG Garfield Avenue, Jersey City, NJ

60279183.GA.RI.RPT.HDS.FIELD PO # 85111ACM

SGS Accutest Job Number: JC36135A

Sampling Date: 01/25/17

Report to:

AECOM, INC.

sharon.mckechnie@aecom.com

ATTN: Sharon Mckechnie

Total number of pages in report: **171**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4 5 6 7

Table of Contents

Sample Summary

AECOM, INC.

Job No: JC36135A

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD PO # 85111ACM

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC36135-1A	01/25/17	14:00	BT	01/25/17	AQ	Field Blank Soil	HDS-FB20170125
JC36135-26A	01/25/17	09:05	BT	01/25/17	SO	Soil	MW7D-O-13.5-14.0
JC36135-27A	01/25/17	09:10	BT	01/25/17	SO	Soil	MW7D-O-13.5-14.0X
JC36135-28A	01/25/17	09:15	BT	01/25/17	SO	Soil	MW7D-O-14.5-15.0
JC36135-29A	01/25/17	09:20	BT	01/25/17	SO	Soil	MW7D-O-17.5-18.0
JC36135-29AD	01/25/17	09:20	BT	01/25/17	SO	Soil Dup/MSD	MW7D-O-17.5-18.0
JC36135-29AS	01/25/17	09:20	BT	01/25/17	SO	Soil Matrix Spike	MW7D-O-17.5-18.0
JC36135-30A	01/25/17	08:50	BT	01/25/17	SO	Soil	MW7D-O-4.5-5.0
JC36135-31A	01/25/17	08:55	BT	01/25/17	SO	Soil	MW7D-O-6.0-6.5
JC36135-32A	01/25/17	09:00	BT	01/25/17	SO	Soil	MW7D-O-9.5-10.0

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	AECOM, INC.	**Job No**	JC36135A
Site:	PPG Garfield Avenue, Jersey City, NJ	**Report Date**	2/1/2017 5:47:42 PM

On 01/25/2017, 7 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 4.8 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC36135A was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Metals By Method SW846 6010C

Matrix: AQ **Batch ID:** MP98377

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC35801-2MS, JC35801-2MSD, JC35801-2SDL, JC35801-2FSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Chromium, Nickel, Vanadium, Chromium are outside control limits for sample MP98377-SD1, MP98377-SD2. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: SO **Batch ID:** MP98355

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36135-29AMS, JC36135-29AMSD, JC36135-29ASDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Antimony are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike Duplicate Recovery(s) for Antimony are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- JC36135-30A for Thallium: Elevated detection limit due to dilution required for high interfering element.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC36135A
Account: AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Collected: 01/25/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC36135-1A	**HDS-FB20170125**					
Nickel		1.1 B	10	0.76	ug/l	SW846 6010C
JC36135-26A	**MW7D-O-13.5-14.0**					
Chromium		22.9	1.1	0.13	mg/kg	SW846 6010C
Nickel		13.0	4.5	0.086	mg/kg	SW846 6010C
Vanadium		34.7	5.6	0.094	mg/kg	SW846 6010C
JC36135-27A	**MW7D-O-13.5-14.0X**					
Chromium		35.9	1.2	0.14	mg/kg	SW846 6010C
Nickel		12.4	4.7	0.089	mg/kg	SW846 6010C
Vanadium		32.0	5.9	0.098	mg/kg	SW846 6010C
JC36135-28A	**MW7D-O-14.5-15.0**					
Chromium		18.7	1.3	0.15	mg/kg	SW846 6010C
Nickel		16.7	5.2	0.099	mg/kg	SW846 6010C
Vanadium		25.4	6.5	0.11	mg/kg	SW846 6010C
JC36135-29A	**MW7D-O-17.5-18.0**					
Chromium		14.6	1.1	0.13	mg/kg	SW846 6010C
Nickel		8.7	4.5	0.086	mg/kg	SW846 6010C
Vanadium		21.4	5.6	0.094	mg/kg	SW846 6010C
JC36135-30A	**MW7D-O-4.5-5.0**					
Antimony		4.7	2.4	0.34	mg/kg	SW846 6010C
Chromium		433	1.2	0.14	mg/kg	SW846 6010C
Nickel		26.2	4.7	0.089	mg/kg	SW846 6010C
Vanadium		66.5	5.9	0.098	mg/kg	SW846 6010C
JC36135-31A	**MW7D-O-6.0-6.5**					
Antimony		1.4 B	2.3	0.33	mg/kg	SW846 6010C
Chromium		20.5	1.1	0.13	mg/kg	SW846 6010C
Nickel		14.7	4.6	0.087	mg/kg	SW846 6010C
Vanadium		28.2	5.7	0.095	mg/kg	SW846 6010C
JC36135-32A	**MW7D-O-9.5-10.0**					
Chromium		17.0	1.2	0.14	mg/kg	SW846 6010C

Summary of Hits

Job Number: JC36135A
Account: AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Collected: 01/25/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Nickel		13.3	4.6	0.088	mg/kg	SW846 6010C
Vanadium		28.5	5.8	0.096	mg/kg	SW846 6010C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: HDS-FB20170125
Lab Sample ID: JC36135-1A
Matrix: AQ - Field Blank Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/25/17
Date Received: 01/25/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	3.3 U	6.0	3.3	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]
Chromium	0.81 U	10	0.81	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]
Nickel	1.1 B	10	0.76	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]
Thallium	1.9 U	2.0	1.9	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]
Vanadium	0.66 U	50	0.66	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA41258
(2) Prep QC Batch: MP98377

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW7D-O-13.5-14.0
Lab Sample ID: JC36135-26A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/25/17
Date Received: 01/25/17
Percent Solids: 84.3

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.33 U	2.3	0.33	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	22.9	1.1	0.13	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	13.0	4.5	0.086	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.45 U	1.1	0.45	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	34.7	5.6	0.094	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98355

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW7D-O-13.5-14.0X
Lab Sample ID: JC36135-27A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/25/17
Date Received: 01/25/17
Percent Solids: 82.6

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.34 U	2.4	0.34	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	35.9	1.2	0.14	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	12.4	4.7	0.089	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.47 U	1.2	0.47	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	32.0	5.9	0.098	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98355

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW7D-O-14.5-15.0
Lab Sample ID: JC36135-28A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/25/17
Date Received: 01/25/17
Percent Solids: 73.5

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.38 U	2.6	0.38	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	18.7	1.3	0.15	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	16.7	5.2	0.099	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.52 U	1.3	0.52	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	25.4	6.5	0.11	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98355

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW7D-O-17.5-18.0
Lab Sample ID: JC36135-29A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/25/17
Date Received: 01/25/17
Percent Solids: 86.8

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.33 U	2.3	0.33	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	14.6	1.1	0.13	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	8.7	4.5	0.086	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.45 U	1.1	0.45	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	21.4	5.6	0.094	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98355

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW7D-O-4.5-5.0		
Lab Sample ID:	JC36135-30A	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	83.4
Project:	PPG Garfield Avenue, Jersey City, NJ		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	4.7	2.4	0.34	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [2]	SW846 3050B [3]
Chromium	433	1.2	0.14	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [2]	SW846 3050B [3]
Nickel	26.2	4.7	0.089	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [2]	SW846 3050B [3]
Thallium [a]	1.4 U	3.5	1.4	mg/kg	3	01/26/17	01/27/17	KS	SW846 6010C [1]	SW846 3050B [3]
Vanadium	66.5	5.9	0.098	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA41244
(2) Instrument QC Batch: MA41246
(3) Prep QC Batch: MP98355

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW7D-O-6.0-6.5		
Lab Sample ID:	JC36135-31A	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	84.3
Project:	PPG Garfield Avenue, Jersey City, NJ		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	1.4 B	2.3	0.33	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	20.5	1.1	0.13	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	14.7	4.6	0.087	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.46 U	1.1	0.46	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	28.2	5.7	0.095	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98355

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW7D-O-9.5-10.0		
Lab Sample ID:	JC36135-32A	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	83.2
Project:	PPG Garfield Avenue, Jersey City, NJ		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.34 U	2.3	0.34	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Chromium	17.0	1.2	0.14	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Nickel	13.3	4.6	0.088	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.46 U	1.2	0.46	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]
Vanadium	28.5	5.8	0.096	mg/kg	1	01/26/17	01/27/17	ND	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41246
(2) Prep QC Batch: MP98355

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

AECOM SO, FB

COC ID: 2017-01-25-RI-HDS-COC | TURNAROUND TIME: See Special Instructions | RUSH: JC36135

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	3.4c ofp
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	FIL	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)		
HDS-FB20170125	1	WQ	2017/01/25	14:00	G	2	field blank			X	X	X	1	A17
MW7D-5E-12.0-12.5	2	SO	2017/01/25	09:50	G	1	1 (8oz) jar			H	H	H	2	
MW7D-5E-14.5-15.0	3	SO	2017/01/25	09:55	G	1	1 (8oz) jar			H	H	H	3	B5
MW7D-5E-17.5-18.0	4	SO	2017/01/25	10:00	G	1	1 (8oz) jar			H	H	H	4	
MW7D-5E-4.5-5.0	5	SO	2017/01/25	09:35	G	1	1 (8oz) jar			H	H	H	5	
MW7D-5E-6.5-7.0	6	SO	2017/01/25	09:40	G	1	1 (8oz) jar			H	H	H	6	
MW7D-5E-9.5-10.0	7	SO	2017/01/25	09:45	G	1	1 (8oz) jar			H	H	H	7	
MW7D-5N-13.5-14.0	8	SO	2017/01/25	10:40	G	1	1 (8oz) jar			H	H	H	8	
MW7D-5N-14.5-15.0	9	SO	2017/01/25	10:45	G	1	1 (8oz) jar			H	H	H	9	
MW7D-5N-17.5-18.0	10	SO	2017/01/25	10:50	G	1	1 (8oz) jar			H	H	H	10	

INITIAL ASESSMENT 1BJK
LABEL VERIFICATION JK

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM / 1565	1/25/17 15:15	/ 1565	1/25/17 15:15
		1/25/17 17:28	SGS	1/25/17 1728

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tate	Mobile #	732 546 0068
Sampler's Signature		Date/Time	1/25/17 1430

1143

Page 1 of 4

JC36135A: Chain of Custody
Page 1 of 7

AECOM

COC ID:	2017-01-25-RI-HDS-COC	TURNAROUND TIME:	See Special Instructions	RUSH:	JC36135

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	3.4c0 IP
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	PRES:	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)	
MW7D-5N-4.5-5.0	11	SO	2017/01/25	10:25	G	1	1 (8oz) jar		H	H	H	11
MW7D-5N-6.0-6.5	12	SO	2017/01/25	10:30	G	1	1 (8oz) jar		H	H	H	12
MW7D-5N-9.5-10.0	13	SO	2017/01/25	10:35	G	1	1 (8oz) jar		H	H	H	13
MW7D-5S-12.0-12.5	14	SO	2017/01/25	12:15	G	1	1 (8oz) jar		H	H	H	14
MW7D-5S-15.0-15.5	15	SO	2017/01/25	12:20	G	1	1 (8oz) jar		H	H	H	15
MW7D-5S-17.5-18.0	16	SO	2017/01/25	12:25	G	1	1 (8oz) jar		H	H	H	16
MW7D-5S-4.5-5.0	17	SO	2017/01/25	12:00	G	1	1 (8oz) jar		H	H	H	17
MW7D-5S-7.0-7.5	18	SO	2017/01/25	12:05	G	1	1 (8oz) jar		H	H	H	18
MW7D-5S-9.5-10.0	19	SO	2017/01/25	12:10	G	1	1 (8oz) jar		H	H	H	19
MW7D-5W-12.0-12.5	20	SO	2017/01/25	11:35	G	1	1 (8oz) jar		H	H	H	20

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM SGS	1/25/17 15:15 1/25/17 17:28	SGS	1/25/17 15:15

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tate	Mobile #	735 546 0068
Sampler's Signature		Date/Time	1/25/17 1430

Page 2 of 4

JC36135A: Chain of Custody
Page 2 of 7

AECOM

COC ID:	2017-01-25-RI-HDS-COC	TURNAROUND TIME:	See Special Instructions	RUSH:	JC36135

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	3,4c DT P
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS								ANALYSIS REQUESTED													Filtered - F: Field, L: Lab, FL: Field & Lab, N: None
Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	FIL	PRESERV.	ANALYSIS	HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)								
MW7D-5W-15.0-15.5	21	SO	2017/01/25	11:40	G	1	1 (8oz) jar				H	H	H	21							
MW7D-5W-17.5-18.0	22	SO	2017/01/25	11:45	G	1	1 (8oz) jar				H	H	H	22							
MW7D-5W-4.5-5.0	23	SO	2017/01/25	11:05	G	1	1 (8oz) jar				H	H	H	23							
MW7D-5W-7.0-7.5	24	SO	2017/01/25	11:25	G	1	1 (8oz) jar				H	H	H	24							
MW7D-5W-9.5-10.0	25	SO	2017/01/25	11:30	G	1	1 (8oz) jar				H	H	H	25							
MW7D-O-13.5-14.0	26	SO	2017/01/25	09:05	G	1	1 (8oz) jar				X	X	X	26							
MW7D-O-13.5-14.0X	27	SO	2017/01/25	09:10	G	1	1 (8oz) jar				X	X	X	27							
MW7D-O-14.5-15.0	28	SO	2017/01/25	09:15	G	1	1 (8oz) jar				X	X	X	28							
MW7D-O-17.5-18.0	29	SO	2017/01/25	09:20	G	2	2 (8oz) jars MS/MSD				X	X	X	29							
MW7D-O-4.5-5.0	30	SO	2017/01/25	08:50	G	1	1 (8oz) jar				X	X	X	30							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM SGS	1/25/17 15:15 1/25/17 17:28	SGS	1/25/17 15:15

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Brian Tatu	Mobile #	732 546 0008
	Sampler's Signature		Date/Time	1/25/17 1430

AECOM

COC ID: 2017-01-25-RI-HDS-COC | TURNAROUND TIME: See Special Instructions | RUSH: JC36135

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	3,400 IP
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS | ANALYSIS REQUESTED | Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	Filt.	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)	
MW7D-O-6.0-6.5	31	SO	2017/01/25	08:55	G	1	1 (8oz) jar			X	X	X	31
MW7D-O-9.5-10.0	32	SO	2017/01/25	09:00	G	1	1 (8oz) jar			X	X	X	32

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	SGS	1/25/17 15:15 1/25/17 17:28	SGS	1/25/17 15:15

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tate	Mobile #	732 546 0068
Sampler's Signature		Date/Time	1/25/17 1430

Page 4 of 4

5.1 5

JC36135A: Chain of Custody
Page 4 of 7

SGS Accutest Sample Receipt Summary

Job Number: JC36135 **Client:** _____ **Project:** _____

Date / Time Received: 1/25/2017 5:28:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (4.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

Job Change Order: JC36135

Requested Date:	1/31/2017	**Received Date:**	1/25/2017
Account Name:	AECOM, INC.	**Due Date:**	1/30/2017
Project Description:	PPG Garfield Avenue, Jersey City, NJ	**Deliverable:**	FULT1
CSR:	malay.parekh	**TAT (Days):**	3

==========

Sample #: JC36135-26 to 32 **Change:**
Due to XCR spike Log in XXCRAR

Dept:

TAT: 3

==========

==========

Sample #: JC36135-26 **Change:**
Due to XCR spike Log in FE2/7, SULFS, TOCLK.

Dept:

TAT: 3

MW7D-O-13.5-14.0

==========

Above Changes Per: AECOM **Date/Time:** 1/31/2017 8:19:17 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

JC36135A: Chain of Custody
Page 6 of 7

Job Change Order: JC36135

Requested Date:	1/31/2017	**Received Date:**	1/25/2017
Account Name:	AECOM, INC.	**Due Date:**	1/30/2017
Project Description:	PPG Garfield Avenue, Jersey City, NJ	**Deliverable:**	FULT1
CSR:	malay.parekh	**TAT (Days):**	3

==========

Sample #: JC36135-26 to 32
Dept:
TAT: 3

Change:
Due to XCR spike Log in XXCRAR

==========

==========

Sample #: JC36135-29
Dept:
TAT: 3

MW7D-O-17.5-18.0

Change:
Due to XCR spike Log in FE2/7, SULFS, TOCLK.

==========

Above Changes Per: AECOM

Date/Time: 1/31/2017 5:27:19 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

JC36135A: Chain of Custody
Page 7 of 7

Internal Sample Tracking Chronicle

AECOM, INC.

Job No: JC36135A

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD PO # 85111ACM

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC36135-1A	Collected: 25-JAN-17 14:00 By: BT			Received: 25-JAN-17	By:	AS
HDS-FB20170125						
JC36135-1A	SW846 6010C	28-JAN-17 14:13	DE	27-JAN-17	CSF	CR, NI, SB, TL, V
JC36135-26A	Collected: 25-JAN-17 09:05 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-13.5-14.0						
JC36135-26A	SW846 6010C	27-JAN-17 00:56	ND	26-JAN-17	DP	CR, NI, SB, TL, V
JC36135-27A	Collected: 25-JAN-17 09:10 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-13.5-14.0X						
JC36135-27A	SW846 6010C	27-JAN-17 00:59	ND	26-JAN-17	DP	CR, NI, SB, TL, V
JC36135-28A	Collected: 25-JAN-17 09:15 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-14.5-15.0						
JC36135-28A	SW846 6010C	27-JAN-17 01:02	ND	26-JAN-17	DP	CR, NI, SB, TL, V
JC36135-29A	Collected: 25-JAN-17 09:20 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-17.5-18.0						
JC36135-29A	SW846 6010C	27-JAN-17 00:02	ND	26-JAN-17	DP	CR, NI, SB, TL, V
JC36135-30A	Collected: 25-JAN-17 08:50 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-4.5-5.0						
JC36135-30A	SW846 6010C	27-JAN-17 01:06	ND	26-JAN-17	DP	CR, NI, SB, V
JC36135-30A	SW846 6010C	27-JAN-17 15:19	KS	26-JAN-17	DP	TL
JC36135-31A	Collected: 25-JAN-17 08:55 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-6.0-6.5						
JC36135-31A	SW846 6010C	27-JAN-17 01:09	ND	26-JAN-17	DP	CR, NI, SB, TL, V
JC36135-32A	Collected: 25-JAN-17 09:00 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-9.5-10.0						
JC36135-32A	SW846 6010C	27-JAN-17 01:12	ND	26-JAN-17	DP	CR, NI, SB, TL, V

SGS Accutest Internal Chain of Custody

Job Number: JC36135A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36135-1.1	Secured Storage	Chelsea San Filippo	01/27/17 08:02	Retrieve from Storage
JC36135-1.1	Chelsea San Filippo	Secured Storage	01/27/17 11:43	Return to Storage
JC36135-1.1.1	Chelsea San Filippo	Metals Digestion	01/27/17 11:42	Digestate from JC36135-1.1
JC36135-1.1.1	Metals Digestion	Chelsea San Filippo	01/27/17 11:42	Digestate from JC36135-1.1
JC36135-1.1.1	Chelsea San Filippo	Metals Digestate Storage	01/27/17 11:42	Return to Storage
JC36135-1.2	Secured Storage	Christopher Hall	01/25/17 18:40	Retrieve from Storage
JC36135-1.2	Christopher Hall	Secured Staging Area	01/25/17 18:40	Return to Storage
JC36135-1.2	Secured Staging Area	Andray Tandacharry	01/25/17 19:48	Retrieve from Storage
JC36135-1.2	Andray Tandacharry	Secured Storage	01/25/17 22:53	Return to Storage
JC36135-1.2	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-1.2	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-1.2	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-1.2	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-1.2	Secured Storage	Alfredo Crespo	01/27/17 08:14	Retrieve from Storage
JC36135-1.2	Alfredo Crespo	Secured Staging Area	01/27/17 08:14	Return to Storage
JC36135-1.2	Secured Storage	Dwayne Johnson	01/27/17 09:20	Retrieve from Storage
Analyst unavailable for custody transfer.				
JC36135-1.2	Dwayne Johnson	Secured Staging Area	01/27/17 09:21	Return to Storage
JC36135-1.2	Secured Staging Area	Jared O. Onindo	01/27/17 10:06	Retrieve from Storage
JC36135-1.2	Jared O. Onindo	Secured Storage	01/27/17 18:02	Return to Storage
JC36135-26.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-26.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-26.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-26.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-26.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-26.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-26.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-26.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-26.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-26.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-26.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-26.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-26.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-26.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-26.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-26.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-26.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-26.1
JC36135-26.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-26.1
JC36135-26.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36135A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36135-27.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-27.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-27.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-27.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-27.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-27.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-27.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-27.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-27.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-27.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-27.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-27.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-27.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-27.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-27.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-27.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-27.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-27.1
JC36135-27.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-27.1
JC36135-27.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-28.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-28.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-28.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-28.1	Secured Storage	Luis Villanueva	01/26/17 12:00	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36135-28.1	Luis Villanueva	Secured Storage	01/26/17 13:24	Return to Storage
JC36135-28.1	Secured Storage	Edwin Gonzalez	01/26/17 15:11	Retrieve from Storage
JC36135-28.1	Edwin Gonzalez	Secured Staging Area	01/26/17 15:11	Return to Storage
JC36135-28.1	Secured Staging Area	Deval Patel	01/26/17 15:11	Retrieve from Storage
JC36135-28.1	Deval Patel	Radhika Mistry	01/26/17 16:03	Custody Transfer
JC36135-28.1	Radhika Mistry	Deval Patel	01/26/17 16:08	Custody Transfer
JC36135-28.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-28.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-28.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-28.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-28.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-28.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-28.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-28.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-28.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-28.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-28.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36135A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36135-28.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-28.1
JC36135-28.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-28.1
JC36135-28.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-29.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-29.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-29.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-29.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-29.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-29.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-29.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-29.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-29.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-29.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-29.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-29.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-29.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-29.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-29.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-29.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-29.1	Secured Storage	Edwin Gonzalez	02/01/17 19:56	Retrieve from Storage
JC36135-29.1	Edwin Gonzalez	Secured Staging Area	02/01/17 19:56	Return to Storage
JC36135-29.1	Secured Staging Area	Courtney Dringus	02/02/17 07:15	Retrieve from Storage
JC36135-29.1	Courtney Dringus	Secured Storage	02/02/17 14:13	Return to Storage
JC36135-29.2	Secured Storage	Luis Villanueva	01/26/17 12:00	Retrieve from Storage
JC36135-29.2	Luis Villanueva	Secured Storage	01/26/17 13:24	Return to Storage
JC36135-29.2	Secured Storage	Edwin Gonzalez	01/26/17 15:11	Retrieve from Storage
JC36135-29.2	Edwin Gonzalez	Secured Staging Area	01/26/17 15:11	Return to Storage
JC36135-29.2	Secured Staging Area	Deval Patel	01/26/17 15:11	Retrieve from Storage
JC36135-29.2	Deval Patel	Radhika Mistry	01/26/17 16:03	Custody Transfer
JC36135-29.2	Radhika Mistry	Deval Patel	01/26/17 16:08	Custody Transfer
JC36135-29.2	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-29.2	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-29.2	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-29.2	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-29.2	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-29.2.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-29.2
JC36135-29.2.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-29.2
JC36135-29.2.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-30.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-30.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36135A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36135-30.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-30.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-30.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-30.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-30.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-30.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-30.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-30.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-30.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-30.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-30.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-30.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-30.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-30.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-30.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-30.1
JC36135-30.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-30.1
JC36135-30.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-31.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-31.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-31.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-31.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-31.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-31.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-31.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-31.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-31.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-31.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-31.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-31.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-31.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-31.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-31.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-31.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-31.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-31.1
JC36135-31.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-31.1
JC36135-31.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-32.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-32.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-32.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-32.1	Secured Storage	Luis Villanueva	01/26/17 12:00	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36135A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36135-32.1	Luis Villanueva	Secured Storage	01/26/17 13:24	Return to Storage
JC36135-32.1	Secured Storage	Edwin Gonzalez	01/26/17 15:11	Retrieve from Storage
JC36135-32.1	Edwin Gonzalez	Secured Staging Area	01/26/17 15:11	Return to Storage
JC36135-32.1	Secured Staging Area	Deval Patel	01/26/17 15:11	Retrieve from Storage
JC36135-32.1	Deval Patel	Radhika Mistry	01/26/17 16:03	Custody Transfer
JC36135-32.1	Radhika Mistry	Deval Patel	01/26/17 16:08	Custody Transfer
JC36135-32.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-32.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-32.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-32.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-32.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-32.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-32.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-32.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-32.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-32.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-32.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-32.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-32.1
JC36135-32.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-32.1
JC36135-32.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:48	MA41244-STD1	1		STDA
11:52	MA41244-STD2	1		STDB
11:55	ZZZZZZ	1		
11:59	ZZZZZZ	1		
12:06	MA41244-ICV1	1		
12:11	MA41244-ICV2	1		
12:17	MA41244-ICB1	1		
12:20	MA41244-ICCV1	1		
12:28	MA41244-CCB1	1		
12:33	MA41244-CRI1	1		
12:36	MA41244-CRID1	1		
12:39	MA41244-CRIA1	1		
12:42	MA41244-ICSA1	1		
12:45	MA41244-ICSAB1	1		
12:48	MA41244-HSTD1	1		
12:52	MA41244-HSTD2	1		
12:55	ZZZZZZ	1		
12:58	ZZZZZZ	1		
13:01	ZZZZZZ	1		
13:04	MA41244-CCV1	1		
13:08	MA41244-CCB2	1		
13:12	MP98174-MB5	1		
13:15	MP98174-MB6	1		
13:18	MP98174-MB7	1		
13:21	MP98174-B5	1		
13:24	MP98174-B6	1		
13:27	ZZZZZZ	1		
13:30	ZZZZZZ	1		
13:34	ZZZZZZ	1		
13:37	MP98170-B3	1		
13:40	MA41244-CCV2	1		
13:43	MA41244-CCB3	1		
13:46	MP98170-MB5	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:49	MP98170-MB6	1		
13:52	MP98170-MB7	1		
13:55	ZZZZZZ	1		
13:58	ZZZZZZ	1		
14:02	ZZZZZZ	1		
14:05	ZZZZZZ	1		
14:08	MP98187-MB5	1		
14:11	MP98187-MB6	1		
14:14	MA41244-CCV3	1		
14:18	MA41244-CCB4	1		
14:21	MP98187-MB7	1		
14:24	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:30	ZZZZZZ	1		
14:33	MP98187-B3	1		
14:38	MP98174-MB6	1		
14:42	MP98174-MB7	1		
14:45	MP98334-B1	1		
14:48	MP98334-MB1	1		
14:51	MA41244-CCV4	1		
14:54	MA41244-CCB5	1		
14:57	MP98334-S1	1		
15:00	MP98334-S2	1		
15:03	JC35601-1	1		(sample used for QC only; not part of login JC36135A)
15:06	MP98334-SD1	5		
15:09	ZZZZZZ	1		
15:13	ZZZZZZ	1		
15:16	ZZZZZZ	1		
15:19	JC36135-30A	3		
15:22	ZZZZZZ	1		
15:30	MA41244-CCV5	1		
15:33	MA41244-CCB6	1		
15:38	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:41	ZZZZZZ	1		
15:44	ZZZZZZ	2		
15:47	ZZZZZZ	2		
15:50	ZZZZZZ	1		
15:53	ZZZZZZ	1		
15:56	ZZZZZZ	1		
15:59	MA41244-CCV6	1		
16:02	MA41244-CCB7	1		
16:06	JC36135-30A	10		
---------->	Last reportable sample/prep for job JC36135A			
16:09	ZZZZZZ	1		
16:12	ZZZZZZ	1		
16:15	ZZZZZZ	1		
16:18	ZZZZZZ	1		
16:21	ZZZZZZ	1		
16:24	ZZZZZZ	1		
16:28	MA41244-CCV7	1		
16:31	MA41244-CCB8	1		
16:34	MA41244-CRI2	1		
16:37	MA41244-CRID2	1		
16:40	MA41244-CRIA2	1		
16:43	MA41244-CCV8	1		
16:46	MA41244-CCB9	1		
---------->	Last reportable CCB for job JC36135A			
16:49	MP98368-MB1	5		
16:53	MP98368-B1	5		
16:56	MP98368-S1	5		
16:59	MP98368-S2	5		
17:02	JC35956-1	5		(sample used for QC only; not part of login JC36135A)
17:06	MP98368-SD1	25		
17:09	ZZZZZZ	5		
17:12	ZZZZZZ	5		
17:15	ZZZZZZ	5		
17:19	MA41244-CCV9	1		
17:22	MA41244-CCB10	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:25	ZZZZZZ	5		
17:28	ZZZZZZ	5		
17:31	ZZZZZZ	5		
17:35	ZZZZZZ	5		
17:38	ZZZZZZ	5		
17:41	ZZZZZZ	5		
17:44	ZZZZZZ	5		
17:48	ZZZZZZ	5		
17:51	ZZZZZZ	5		
17:54	MA41244-CCV10	1		
17:57	MA41244-CCB11	1		
18:16	MP98368-S1	20		Needs higher dilution for Zn
18:19	MP98368-S2	20		Needs higher dilution for Zn
18:22	JC35956-1	20		(sample used for QC only; not part of login JC36135A)
18:25	MP98368-SD1	100		Needs higher dilution for Zn
18:29	ZZZZZZ	10		
18:34	MA41244-CCV11	1		
18:37	MA41244-CCB12	1		
18:40	MA41244-CRI3	1		
18:43	MA41244-CRID3	1		
18:46	MA41244-CRIA3	1		
18:49	MA41244-CCV12	1		
18:53	MA41244-CCB13	1		
18:56	ZZZZZZ	1		
18:59	ZZZZZZ	1		
19:02	ZZZZZZ	1		
19:05	ZZZZZZ	1		
19:08	ZZZZZZ	1		
19:12	ZZZZZZ	1		
19:15	ZZZZZZ	1		
19:18	ZZZZZZ	1		
19:21	ZZZZZZ	1		
19:24	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:27	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:48	MA41244-STD1	9388 R	226030 R	26989 R	13591 R
11:52	MA41244-STD2	9102	218360	26289	12939
11:55	ZZZZZZ	9237	219720	26389	13139
11:59	ZZZZZZ	9457	227760	27121	13691
12:06	MA41244-ICV1	No results reported for the elements associated with this internal standard.			
12:11	MA41244-ICV2	9262	221130	26450	13174
12:17	MA41244-ICB1	9532	230400	27173	13786
12:20	MA41244-ICCV1	9325	221420	26826	13257
12:28	MA41244-CCB1	9460	228790	26950	13678
12:33	MA41244-CRI1	9388	225170	26962	13539
12:36	MA41244-CRID1	9435	227740	26919	13628
12:39	MA41244-CRIA1	9420	224680	27017	13631
12:42	MA41244-ICSA1	8745	206200	25472	12217
12:45	MA41244-ICSAB1	8800	206680	25646	12290
12:48	MA41244-HSTD1	9418	226610	27084	13655
12:52	MA41244-HSTD2	8906	209820	25684	12329
12:55	ZZZZZZ	9488	228450	27364	13932
12:58	ZZZZZZ	9357	227720	27254	13714
13:01	ZZZZZZ	9514	229180	27191	13759
13:04	MA41244-CCV1	9329	220030	26686	13214
13:08	MA41244-CCB2	9556	231720	27319	13758
13:12	MP98174-MB5	9806	236790	28403	14205
13:15	MP98174-MB6	9807	235270	28216	14202
13:18	MP98174-MB7	9737	234090	28105	14094
13:21	MP98174-B5	9536	230050	27824	13596
13:24	MP98174-B6	9657	234410	27995	13976
13:27	ZZZZZZ	9711	234440	28148	14047
13:30	ZZZZZZ	9698	233570	28095	14041
13:34	ZZZZZZ	9677	213550	27976	14007
13:37	MP98170-B3	9388	224990	26958	13328
13:40	MA41244-CCV2	9335	221780	26641	13196
13:43	MA41244-CCB3	9565	230600	27363	13763
13:46	MP98170-MB5	9618	231760	27505	13810

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:49	MP98170-MB6	9638	230180	27531	13848
13:52	MP98170-MB7	9629	232480	27758	13823
13:55	ZZZZZZ	9670	233590	27802	13887
13:58	ZZZZZZ	9662	235400	27741	13863
14:02	ZZZZZZ	9604	231640	27399	13788
14:05	ZZZZZZ	9705	227010	27070	13697
14:08	MP98187-MB5	9716	233170	27500	13860
14:11	MP98187-MB6	9715	235430	27664	13847
14:14	MA41244-CCV3	9479	225390	26863	13373
14:18	MA41244-CCB4	9641	231330	27150	13855
14:21	MP98187-MB7	9776	234990	27760	13961
14:24	ZZZZZZ	9781	234460	28008	14002
14:27	ZZZZZZ	9760	235430	27853	13951
14:30	ZZZZZZ	9745	235400	27709	13933
14:33	MP98187-B3	9520	227390	27261	13461
14:38	MP98174-MB6	10029	242470	28678	14470
14:42	MP98174-MB7	9964	242120	28151	14387
14:45	MP98334-B1	9715	229400	28056	13839
14:48	MP98334-MB1	9991	241490	28494	14427
14:51	MA41244-CCV4	9409	222920	27037	13277
14:54	MA41244-CCB5	9651	233280	27458	13863
14:57	MP98334-S1	9650	230070	27891	13687
15:00	MP98334-S2	9599	230420	27020	13622
15:03	JC35601-1	9806	236550	28032	14115
15:06	MP98334-SD1	9665	231880	27267	13962
15:09	ZZZZZZ	9776	235490	28246	14073
15:13	ZZZZZZ	9774	236200	28172	14066
15:16	ZZZZZZ	9668	232490	27688	13883
15:19	JC36135-30A	9633	230480	27366	13908
15:22	ZZZZZZ	9750	234620	27696	13973
15:30	MA41244-CCV5	9549	227400	27050	13492
15:33	MA41244-CCB6	9718	235540	27405	13994
15:38	ZZZZZZ	9973	231030	28211	14454

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:41	ZZZZZZ	9917	238380	28207	14300
15:44	ZZZZZZ	9725	229820	27322	13922
15:47	ZZZZZZ	9687	231500	27641	14006
15:50	ZZZZZZ	9894	239600	28381	14283
15:53	ZZZZZZ	9879	237030	27963	14326
15:56	ZZZZZZ	9648	229530	27037	13633
15:59	MA41244-CCV6	9535	226390	26828	13452
16:02	MA41244-CCB7	9715	234760	27673	13980
16:06	JC36135-30A	9713	240880	27663	13902
16:09	ZZZZZZ	10224	240400	28399	14123
16:12	ZZZZZZ	10030	236840	28654	13599
16:15	ZZZZZZ	10137	242160	28567	13988
16:18	ZZZZZZ	10210	238320	29383	13355
16:21	ZZZZZZ	10086	240120	28620	14059
16:24	ZZZZZZ	10107	237910	28842	13894
16:28	MA41244-CCV7	9668	229950	27249	13637
16:31	MA41244-CCB8	9853	238540	27669	14174
16:34	MA41244-CRI2	9805	236430	27540	14061
16:37	MA41244-CRID2	9819	238290	27535	14110
16:40	MA41244-CRIA2	9596	236050	27685	13865
16:43	MA41244-CCV8	9561	224360	27038	13512
16:46	MA41244-CCB9	9806	238140	27613	14094
16:49	MP98368-MB1	9596	221330	27380	13440
16:53	MP98368-B1	9541	223520	27361	13322
16:56	MP98368-S1	9224	215910	26720	12875
16:59	MP98368-S2	9278	215750	26799	12975
17:02	JC35956-1	9288	217600	26686	13019
17:06	MP98368-SD1	9651	227730	27296	13793
17:09	ZZZZZZ	9643	221580	27198	13501
17:12	ZZZZZZ	9587	221380	27111	13432
17:15	ZZZZZZ	9622	222720	27125	13450
17:19	MA41244-CCV9	9685	228780	27106	13667
17:22	MA41244-CCB10	9874	236130	27769	14215

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:25	ZZZZZZ	9664	224240	27455	13522
17:28	ZZZZZZ	9712	223180	27403	13583
17:31	ZZZZZZ	9723	226740	27506	13575
17:35	ZZZZZZ	9732	225210	27511	13604
17:38	ZZZZZZ	9706	227610	26002	13642
17:41	ZZZZZZ	9706	226280	27209	13592
17:44	ZZZZZZ	9705	226640	27390	13621
17:48	ZZZZZZ	9742	226650	27197	13670
17:51	ZZZZZZ	9661	223550	27269	13452
17:54	MA41244-CCV10	9768	233890	27123	13752
17:57	MA41244-CCB11	10001	239160	28073	14355
18:16	MP98368-S1	9443	222170	26812	13497
18:19	MP98368-S2	9430	224530	26773	13470
18:22	JC35956-1	9453	223760	26597	13518
18:25	MP98368-SD1	9662	232520	27189	13959
18:29	ZZZZZZ	9539	225090	26794	13540
18:34	MA41244-CCV11	9455	225120	26659	13370
18:37	MA41244-CCB12	9705	232580	27182	13986
18:40	MA41244-CRI3	9691	230880	27062	13928
18:43	MA41244-CRID3	9653	231430	27076	13896
18:46	MA41244-CRIA3	9651	232460	27142	13915
18:49	MA41244-CCV12	9464	224800	26678	13378
18:53	MA41244-CCB13	9696	233800	27025	13979
18:56	ZZZZZZ	9961	224560	27034	13523
18:59	ZZZZZZ	9245	219240	26225	13072
19:02	ZZZZZZ	9220	216200	26130	12866
19:05	ZZZZZZ	9801	236290	27422	14034
19:08	ZZZZZZ	9762	233830	27409	14057
19:12	ZZZZZZ	9800	235260	27316	14207
19:15	ZZZZZZ	9837	237170	27444	14124
19:18	ZZZZZZ	9856	236060	27490	14151
19:21	ZZZZZZ	9739	235500	27221	13970
19:24	ZZZZZZ	9735	236330	27161	13999

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
Analyst: KS Run ID: MA41244
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:27	ZZZZZZ	9734	236660	27232	14008

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41244 Units: ug/l

Time: / Sample ID:			12:17 ICB1		12:28 CCB1		13:08 CCB2		13:43 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	anr							
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	anr							
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	0.50	<2.0	1.1	<2.0	1.2	<2.0	0.20	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41244 Units: ug/l

Time: / Sample ID:			12:17 ICB1		12:28 CCB1		13:08 CCB2		13:43 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41244 Units: ug/l

Time: / Sample ID:			14:18 CCB4		14:54 CCB5		15:33 CCB6		16:02 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	anr							
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	anr							
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	1.3	<2.0	-0.90	<2.0	1.4	<2.0	-0.20	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41244 Units: ug/l

Time: / Sample ID:			14:18 CCB4		14:54 CCB5		15:33 CCB6		16:02 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41244 Units: ug/l

Time: / Sample ID:			16:31 CCB8		16:46 CCB9	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	16	anr			
Antimony	6.0	2.7	anr			
Arsenic	3.0	1.4	anr			
Barium	200	.5	anr			
Beryllium	1.0	.1	anr			
Bismuth	20	3.6	anr			
Boron	100	4.6	anr			
Cadmium	3.0	.4	anr			
Calcium	5000	45	anr			
Chromium	10	.5	anr			
Cobalt	50	.4	anr			
Copper	10	.5	anr			
Iron	100	2.8	anr			
Lead	3.0	1.2	anr			
Lithium	20	3.7	anr			
Magnesium	5000	21	anr			
Manganese	15	.1	anr			
Molybdenum	20	.4	anr			
Nickel	10	.6	anr			
Palladium	50	3				
Phosphorus	50		anr			
Potassium	10000	84	anr			
Selenium	10	3.2	anr			
Silicon	200	2.3	anr			
Silver	10	1	anr			
Sodium	10000	38	anr			
Sulfur	50	4.1	anr			
Strontium	10	.1	anr			
Thallium	2.0	1.8	0.70	<2.0	-0.40	<2.0
Tin	10	1.1	anr			
Titanium	10	.5	anr			
Tungsten	50	1.9	anr			
Vanadium	50	.4	anr			

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41244 Units: ug/l

Time: / Sample ID:			16:31 CCB8		16:46 CCB9	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	1.8	anr			
Zirconium	10	.4	anr			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41244 Units: ug/l

Time:		12:20	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth	anr		
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Palladium			
Phosphorus	anr		
Potassium	anr		
Selenium	anr		
Silicon	anr		
Silver	anr		
Sodium	anr		
Sulfur	anr		
Strontium	anr		
Thallium	2000	2040	102.0
Tin	anr		
Titanium	anr		
Tungsten	anr		
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41244 Units: ug/l

Time:		12:20	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium	anr		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41244 Units: ug/l

Time:		12:11			13:04			13:40	
Sample ID:	ICV	ICV2		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	2060	103.0	2000	2030	101.5	2000	1960	98.0
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41244 Units: ug/l

Time:		12:11			13:04			13:40	
Sample ID:	ICV	ICV2		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41244 Units: ug/l

Time:		14:14			14:51			15:30	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	1950	97.5	2000	1970	98.5	2000	1940	97.0
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41244 Units: ug/l

Time:		14:14			14:51			15:30	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41244 Units: ug/l

Time:		15:59			16:28			16:43	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	1900	95.0	2000	1910	95.5	2000	1960	98.0
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41244 Units: ug/l

Time:		15:59			16:28			16:43	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41244 Units: ug/l

Time:		12:48			12:52	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth	anr					
Boron	anr					
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Palladium						
Phosphorus	anr					
Potassium						
Selenium	anr					
Silicon	anr					
Silver	anr					
Sodium						
Sulfur	anr					
Strontium	anr					
Thallium	5000	5050	101.0			
Tin	anr					
Titanium	anr					
Tungsten	anr					
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41244 Units: ug/l

Time:		12:48			12:52	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium	anr					

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41244 Units: ug/l

Time:				12:33		12:36		12:39	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20			anr					
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Palladium	50								
Phosphorus	50			anr					
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200			anr					
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50			anr					
Strontium	10			anr					
Thallium	10		2.0	10.7	107.0	2.4	120.0		
Tin	10			anr					
Titanium	10			anr					
Tungsten	50			anr					
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41244 Units: ug/l

Time:				12:33		12:36		12:39	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10			anr					

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41244 Units: ug/l

Time:				16:34		16:37		16:40	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20			anr					
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Palladium	50								
Phosphorus	50			anr					
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200			anr					
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50			anr					
Strontium	10			anr					
Thallium	10		2.0	10.3	103.0	1.8	90.0		
Tin	10			anr					
Titanium	10			anr					
Tungsten	50			anr					
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41244 Units: ug/l

Time:				16:34		16:37		16:40	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10			anr					

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41244 Units: ug/l

Time:			12:42		12:45	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	476000	95.2	468000	93.6
Antimony		1000	3.2		1110	111.0
Arsenic		1000	-2.9		1020	102.0
Barium		500	1.2		485	97.0
Beryllium		500	0.10		477	95.4
Bismuth		500	9.3		488	97.6
Boron		500	-2.3		482	96.4
Cadmium		1000	-0.60		990	99.0
Calcium	400000	400000	356000	89.0	358000	89.5
Chromium		500	1.5		487	97.4
Cobalt		500	-1.2		479	95.8
Copper		500	2.1		507	101.4
Iron	200000	200000	182000	91.0	176000	88.0
Lead		1000	-3.3		942	94.2
Lithium		500	-9.1		483	96.6
Magnesium	500000	500000	477000	95.4	466000	93.2
Manganese		500	-0.40		490	98.0
Molybdenum		500	0.80		489	97.8
Nickel		1000	-0.30		962	96.2
Palladium		500	-14		3.2	0.6*
Phosphorus		500	11.7		478	95.6
Potassium			-200		-230	
Selenium		1000	-0.10		1000	100.0
Silicon		500	-20		446	89.2
Silver		1000	3.4		1030	103.0
Sodium			-6.4		-37	
Sulfur		500	-9.2		471	94.2
Strontium		500	1.1		490	98.0
Thallium		1000	2.4		976	97.6
Tin		500	-6.6		456	91.2
Titanium		500	-2.1		478	95.6
Tungsten		500	3.1		486	97.2
Vanadium		500	2.5		476	95.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012717M1.ICP Date Analyzed: 01/27/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41244 Units: ug/l

Time:			12:42		12:45	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Zinc		1000	2.2		949	94.9
Zirconium		500	6.8		487	97.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:30	MA41246-STD1	1		STDA
12:33	MA41246-STD2	1		STDB
12:37	ZZZZZZ	1		
12:40	ZZZZZZ	1		
12:45	ZZZZZZ	1		
12:56	ZZZZZZ	1		
13:01	MA41246-ICV1	1		
13:14	MA41246-ICB1	1		
13:20	MA41246-ICCV1	1		
13:28	MA41246-CCB1	1		
13:31	MA41246-CRI1	1		
13:34	MA41246-CRID1	1		
13:37	MA41246-ICSA1	1		
13:41	MA41246-ICSAB1	1		
13:44	MA41246-HSTD1	1		
13:47	MA41246-HSTD2	1		
13:51	ZZZZZZ	1		
13:54	ZZZZZZ	1		
13:57	ZZZZZZ	1		
14:00	MA41246-CCV1	1		
14:05	MA41246-CCB2	1		
14:08	MP98174-MB3	1		
14:11	MP98174-MB4	1		
14:15	MP98174-B3	1		
14:18	MP98174-B4	1		
14:21	ZZZZZZ	1		
14:24	ZZZZZZ	1		
14:27	MP98170-MB3	1		
14:30	MP98170-MB4	1		
14:33	MA41246-CCV2	1		
14:37	MA41246-CCB3	1		
14:40	MP98170-B2	1		
14:43	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:46	ZZZZZZ	1		
14:50	ZZZZZZ	1		
14:53	ZZZZZZ	1		
14:56	MP98187-B2	1		
14:59	ZZZZZZ	1		
15:02	ZZZZZZ	1		
15:05	ZZZZZZ	1		
15:08	MA41246-CCV3	1		
15:14	MA41246-CCB4	1		
15:18	ZZZZZZ	1		
15:21	ZZZZZZ	1		
15:24	MP98187-MB3	1		
15:27	MP98187-MB4	1		
15:34	MA41246-CRI2	1		
15:37	MA41246-CRID2	1		
15:41	MA41246-CCV4	1		
15:46	MA41246-CCB5	1		
16:08	ZZZZZZ	1		
16:11	MP98354-S1	2		
16:14	MP98354-S2	2		
16:17	MP98354-SD1	10		
16:21	MP98354-S1	10		
16:24	MP98354-S2	10		
16:27	MP98354-SD1	50		
16:30	MA41246-CCV5	1		
16:33	MA41246-CCB6	1		
16:43	MP98350-MB1	1		
16:46	MP98350-B1	1		
16:49	MP98350-S1	1		
16:52	MP98350-S2	1		
16:55	ZZZZZZ	1		
16:58	MP98350-SD1	5		
17:01	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:04	ZZZZZZ	1		
17:08	ZZZZZZ	1		
17:11	MA41246-CCV6	1		
17:14	MA41246-CCB7	1		
17:17	ZZZZZZ	1		
17:20	ZZZZZZ	1		
17:23	ZZZZZZ	1		
17:27	ZZZZZZ	1		
17:30	ZZZZZZ	1		
17:33	ZZZZZZ	1		
17:36	ZZZZZZ	1		
17:39	JC36049-1A	1		(sample used for QC only; not part of login JC36135A)
17:42	ZZZZZZ	1		
17:46	MA41246-CCV7	1		
17:49	MA41246-CCB8	1		
17:59	ZZZZZZ	1		
18:02	ZZZZZZ	1		
18:05	ZZZZZZ	1		
18:08	ZZZZZZ	1		
18:11	ZZZZZZ	1		
18:14	ZZZZZZ	1		
18:17	ZZZZZZ	1		
18:21	ZZZZZZ	1		
18:24	ZZZZZZ	3		
18:27	MA41246-CCV8	1		
18:30	MA41246-CCB9	1		
18:44	MA41246-CRI3	1		
18:47	MA41246-CRID3	1		
18:50	MA41246-CRIA1	1		
18:54	MA41246-CCV9	1		
18:57	MA41246-CCB10	1		
19:00	MP98351-MB1	1		
19:03	MP98351-MB2	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:06	ZZZZZZ	1		
19:09	ZZZZZZ	1		
19:12	MP98351-B3	1		
19:15	MP98351-S1	1		
19:19	MP98351-S2	1		
19:22	MP98351-S3	1		
19:25	MP98351-S4	1		
19:29	MA41246-CCV10	1		
19:32	MA41246-CCB11	1		
19:35	JC36016-1	1		(sample used for QC only; not part of login JC36135A)
19:38	MP98351-SD1	5		
19:41	ZZZZZZ	1		
19:44	ZZZZZZ	1		
19:47	ZZZZZZ	1		
19:51	ZZZZZZ	1		
19:54	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:00	MP98351-B1	1		
20:03	MA41246-CCV11	1		
20:07	MA41246-CCB12	1		
20:10	MP98351-B2	1		
20:13	MP98351-SD1	5		
20:19	MP98158-MB2	1		
20:22	MP98158-B2	1		
20:25	ZZZZZZ	1		
20:29	ZZZZZZ	1		
20:32	MA41246-CCV12	1		
20:35	MA41246-CCB13	1		
20:38	MA41246-ICSA2	1		
20:41	MA41246-ICSAB2	1		
20:45	MA41246-CCV13	1		
20:48	MA41246-CCB14	1		
20:51	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:54	ZZZZZZ	1		
20:57	ZZZZZZ	1		
21:00	ZZZZZZ	1		
21:04	ZZZZZZ	1		
21:07	ZZZZZZ	1		
21:10	ZZZZZZ	1		
21:13	ZZZZZZ	1		
21:16	ZZZZZZ	1		
21:19	ZZZZZZ	1		
21:23	ZZZZZZ	1		
21:26	ZZZZZZ	1		
21:29	MA41246-CCV14	1		
21:32	MA41246-CCB15	1		
23:42	MA41246-CCV15	1		
23:45	MA41246-CCB16	1		
23:50	MP98355-MB1	1		
23:53	MP98355-B1	1		
23:56	MP98355-S1	1		
23:59	MP98355-S2	1		
00:02	JC36135-29A	1		
00:05	MP98355-SD1	5		
00:08	ZZZZZZ	1		
00:12	ZZZZZZ	1		
00:15	ZZZZZZ	1		
00:18	MA41246-CCV16	1		
00:21	MA41246-CCB17	1		
00:24	ZZZZZZ	1		
00:28	ZZZZZZ	1		
00:31	ZZZZZZ	1		
00:34	ZZZZZZ	1		
00:37	ZZZZZZ	2		
00:40	ZZZZZZ	2		
00:43	ZZZZZZ	2		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:47	ZZZZZZ	2		
00:50	MA41246-CCV17	1		
00:53	MA41246-CCB18	1		
00:56	JC36135-26A	1		
00:59	JC36135-27A	1		
01:02	JC36135-28A	1		
01:06	JC36135-30A	1		FE high
01:09	JC36135-31A	1		
01:12	JC36135-32A	1		
---------->	Last reportable sample/prep for job JC36135A			
01:15	ZZZZZZ	1		
01:18	ZZZZZZ	1		
01:21	ZZZZZZ	1		
01:25	MA41246-CCV18	1		
01:28	MA41246-CCB19	1		
01:31	MA41246-CRI4	1		
01:34	MA41246-CRIA2	1		
01:37	MA41246-CCV19	1		
01:40	MA41246-CCB20	1		
---------->	Last reportable CCB for job JC36135A			

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:30	MA41246-STD1	9723 R	238980 R	27912 R	13719 R
12:33	MA41246-STD2	9373	225860	27816	12980
12:37	ZZZZZZ	9589	231640	28060	13267
12:40	ZZZZZZ	9654	239530	28395	13620
12:45	ZZZZZZ	9524	232330	27808	13165
12:56	ZZZZZZ	9880	242220	999999 !	13903
13:01	MA41246-ICV1	9584	231770	27735	13219
13:14	MA41246-ICB1	9739	237390	30437	13724
13:20	MA41246-ICCV1	9677	234420	27892	13338
13:28	MA41246-CCB1	9784	242830	28765	13760
13:31	MA41246-CRI1	9799	239600	28491	13758
13:34	MA41246-CRID1	9772	238210	28278	13744
13:37	MA41246-ICSA1	9030	212850	26448	12257
13:41	MA41246-ICSAB1	9050	214280	26863	12291
13:44	MA41246-HSTD1	9454	236040	28532	13410
13:47	MA41246-HSTD2	9189	217720	27222	12380
13:51	ZZZZZZ	9681	238590	28343	13875
13:54	ZZZZZZ	9639	238820	28492	13770
13:57	ZZZZZZ	9806	239950	28599	13827
14:00	MA41246-CCV1	9612	230670	27846	13284
14:05	MA41246-CCB2	9777	238090	28695	13807
14:08	MP98174-MB3	9783	240390	28836	13824
14:11	MP98174-MB4	9782	240080	28662	13809
14:15	MP98174-B3	9694	240920	29188	13608
14:18	MP98174-B4	9885	244940	29368	14035
14:21	ZZZZZZ	9911	243080	29596	14085
14:24	ZZZZZZ	9939	246380	29101	14152
14:27	MP98170-MB3	9476	241110	28230	13417
14:30	MP98170-MB4	9731	240330	28382	13755
14:33	MA41246-CCV2	9528	228770	27830	13230
14:37	MA41246-CCB3	9744	239390	28263	13785
14:40	MP98170-B2	9621	233320	28107	13437
14:43	ZZZZZZ	9484	239200	28728	13472

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:46	ZZZZZZ	9921	236360	28491	14049
14:50	ZZZZZZ	9818	240540	28470	13864
14:53	ZZZZZZ	9791	241370	28777	13829
14:56	MP98187-B2	9545	232950	27819	13332
14:59	ZZZZZZ	9865	240530	28771	13937
15:02	ZZZZZZ	9735	241430	28746	13776
15:05	ZZZZZZ	9822	244160	28465	13934
15:08	MA41246-CCV3	9926	232750	27351	13772
15:14	MA41246-CCB4	9798	241200	28413	13939
15:18	ZZZZZZ	9812	241000	28829	13911
15:21	ZZZZZZ	9837	239710	28694	13924
15:24	MP98187-MB3	9868	250960	28634	13939
15:27	MP98187-MB4	9864	243510	28702	13949
15:34	MA41246-CRI2	9769	237410	28378	13850
15:37	MA41246-CRID2	9870	243220	28450	14036
15:41	MA41246-CCV4	9642	235000	28117	13441
15:46	MA41246-CCB5	9857	241010	28709	14028
16:08	ZZZZZZ	9886	240660	29485	14108
16:11	MP98354-S1	9215	215330	27697	12646
16:14	MP98354-S2	9237	215770	27336	12672
16:17	MP98354-SD1	9700	231130	27938	13644
16:21	MP98354-S1	9615	231280	27918	13511
16:24	MP98354-S2	9701	230070	27980	13610
16:27	MP98354-SD1	9804	239010	28294	13941
16:30	MA41246-CCV5	9675	231110	28143	13539
16:33	MA41246-CCB6	9803	241480	28507	14002
16:43	MP98350-MB1	10053	245010	29418	14340
16:46	MP98350-B1	9683	235770	28689	13627
16:49	MP98350-S1	10322	246150	30273	13718
16:52	MP98350-S2	10513	249880	30912	13640
16:55	ZZZZZZ	10448	272850	30423	13905
16:58	MP98350-SD1	9944	241780	28412	13915
17:01	ZZZZZZ	10006	243540	28828	14102

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:04	ZZZZZZ	10136	239590	29265	13996
17:08	ZZZZZZ	10721	253790	31156	13896
17:11	MA41246-CCV6	9672	232490	27539	13532
17:14	MA41246-CCB7	9840	237070	27912	14061
17:17	ZZZZZZ	17371 !	408730 !	39112 !	24734 !
17:20	ZZZZZZ	10563	246260	29880	14382
17:23	ZZZZZZ	9906	240420	29225	13607
17:27	ZZZZZZ	9760	237550	29353	13250
17:30	ZZZZZZ	10014	242840	29193	14067
17:33	ZZZZZZ	9616	230710	28249	14625
17:36	ZZZZZZ	9964	241160	28868	13888
17:39	JC36049-1A	10428	252950	30194	13858
17:42	ZZZZZZ	10278	247130	29551	14002
17:46	MA41246-CCV7	9677	230020	27515	13531
17:49	MA41246-CCB8	9996	243800	28056	14244
17:59	ZZZZZZ	10235	247040	29518	14007
18:02	ZZZZZZ	10401	250310	29907	14064
18:05	ZZZZZZ	10078	251650	29294	14380
18:08	ZZZZZZ	10130	240700	29038	14028
18:11	ZZZZZZ	10212	240890	28841	14179
18:14	ZZZZZZ	10147	240080	29627	14090
18:17	ZZZZZZ	10325	244060	29233	14169
18:21	ZZZZZZ	10336	241710	29341	14205
18:24	ZZZZZZ	9877	241160	28413	14347
18:27	MA41246-CCV8	10020	234540	27641	13960
18:30	MA41246-CCB9	10025	241130	28246	14293
18:44	MA41246-CRI3	9757	237070	27892	13926
18:47	MA41246-CRID3	9852	238650	27700	14065
18:50	MA41246-CRIA1	9793	236830	27942	13996
18:54	MA41246-CCV9	9641	230140	27210	13497
18:57	MA41246-CCB10	9832	243530	27921	14045
19:00	MP98351-MB1	10127	245750	28751	14549
19:03	MP98351-MB2	9956	248250	28771	14264

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:06	ZZZZZZ	9895	348730 !	28144	13981
19:09	ZZZZZZ	10112	240050	28537	14501
19:12	MP98351-B3	9813	235000	28198	13857
19:15	MP98351-S1	9550	225950	27889	13209
19:19	MP98351-S2	9443	222470	27555	13071
19:22	MP98351-S3	9497	222020	27697	13226
19:25	MP98351-S4	9536	225080	27962	13271
19:29	MA41246-CCV10	9552	227890	27495	13355
19:32	MA41246-CCB11	9753	240370	28202	13910
19:35	JC36016-1	9530	227170	27739	13258
19:38	MP98351-SD1	9825	234200	27506	13893
19:41	ZZZZZZ	9984	237680	28714	13929
19:44	ZZZZZZ	9939	238320	28532	14043
19:47	ZZZZZZ	9911	240110	28448	13996
19:51	ZZZZZZ	9949	242650	28628	14208
19:54	ZZZZZZ	10002	243760	28706	14232
19:57	ZZZZZZ	9888	230580	28479	13766
20:00	MP98351-B1	9878	235360	28240	13931
20:03	MA41246-CCV11	9671	230030	27504	13519
20:07	MA41246-CCB12	9922	239810	27931	14160
20:10	MP98351-B2	10078	247700	28856	14477
20:13	MP98351-SD1	9753	234550	27722	13873
20:19	MP98158-MB2	10025	244260	28771	14410
20:22	MP98158-B2	9737	234430	28221	13781
20:25	ZZZZZZ	9412	219340	27626	13329
20:29	ZZZZZZ	9473	221250	27944	13226
20:32	MA41246-CCV12	9601	229880	27227	13469
20:35	MA41246-CCB13	9879	238810	27832	14126
20:38	MA41246-ICSA2	9075	210920	26070	12498
20:41	MA41246-ICSAB2	9065	211830	26172	12525
20:45	MA41246-CCV13	9630	227610	27328	13517
20:48	MA41246-CCB14	9856	241290	27828	14133
20:51	ZZZZZZ	10121	227320	27782	13670

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:54	ZZZZZZ	9873	236890	28037	14112
20:57	ZZZZZZ	9898	239150	28019	14158
21:00	ZZZZZZ	9867	238190	27396	14135
21:04	ZZZZZZ	9824	236090	27865	14092
21:07	ZZZZZZ	9783	237890	27763	14093
21:10	ZZZZZZ	9314	221830	26802	13146
21:13	ZZZZZZ	9348	223480	25085	13016
21:16	ZZZZZZ	9859	239990	27930	14267
21:19	ZZZZZZ	9794	237620	27801	14088
21:23	ZZZZZZ	9336	216760	26650	13026
21:26	ZZZZZZ	9883	240600	27794	14279
21:29	MA41246-CCV14	9622	231250	27078	13581
21:32	MA41246-CCB15	9880	239230	27903	14227
23:42	MA41246-CCV15	9600	229850	27393	13682
23:45	MA41246-CCB16	9850	237810	27582	14337
23:50	MP98355-MB1	9857	238480	28010	14272
23:53	MP98355-B1	9722	233040	27709	13880
23:56	MP98355-S1	9831	234100	27906	13731
23:59	MP98355-S2	9914	236430	28132	13815
00:02	JC36135-29A	10080	237600	28572	14160
00:05	MP98355-SD1	10002	244660	28036	14293
00:08	ZZZZZZ	10280	245900	29461	13976
00:12	ZZZZZZ	10156	241300	28784	14134
00:15	ZZZZZZ	10137	244450	29354	14124
00:18	MA41246-CCV16	9737	234420	27444	13811
00:21	MA41246-CCB17	9953	242940	27917	14437
00:24	ZZZZZZ	10177	242880	29023	14141
00:28	ZZZZZZ	9873	242050	28477	14082
00:31	ZZZZZZ	10050	238280	28685	14069
00:34	ZZZZZZ	9971	241420	28505	14175
00:37	ZZZZZZ	10172	243140	28949	14128
00:40	ZZZZZZ	10147	240240	28717	14266
00:43	ZZZZZZ	10136	242480	28844	14247

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
Analyst: ND Run ID: MA41246
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
00:47	ZZZZZZ	10136	242550	28618	14244
00:50	MA41246-CCV17	9799	235390	27511	13877
00:53	MA41246-CCB18	10031	244530	28010	14514
00:56	JC36135-26A	10583	252680	29907	14217
00:59	JC36135-27A	10557	253120	29646	14355
01:02	JC36135-28A	10653	254880	30112	14335
01:06	JC36135-30A	9951	240980	28751	14675
01:09	JC36135-31A	10241	248310	29363	14467
01:12	JC36135-32A	10528	252990	29863	14269
01:15	ZZZZZZ	10100	243420	28894	14064
01:18	ZZZZZZ	10048	240960	28740	13948
01:21	ZZZZZZ	10156	245190	28793	14047
01:25	MA41246-CCV18	9905	234420	27781	14013
01:28	MA41246-CCB19	10163	246670	28629	14688
01:31	MA41246-CRI4	10070	243360	28271	14514
01:34	MA41246-CRIA2	10079	247740	28487	14571
01:37	MA41246-CCV19	9874	234640	27928	13973
01:40	MA41246-CCB20	10129	245070	28332	14627

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time:			13:14		13:28		14:05		14:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-1.6	<6.0	0.10	<6.0	-0.90	<6.0	0.20	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	-0.40	<10	-0.10	<10	-0.20	<10	0.30	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	0.10	<10	0.0	<10	0.0	<10	0.40	<10
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	-0.40	<2.0	0.40	<2.0	-0.10	<2.0	0.50	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	0.30	<50	0.30	<50	0.30	<50	0.0	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			13:14 ICB1		13:28 CCB1		14:05 CCB2		14:37 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time:			15:14		15:46		16:33		17:14	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-0.60	<6.0	-0.40	<6.0	-1.5	<6.0	1.1	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.0	<10	0.0	<10	0.0	<10	-0.10	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	0.0	<10	-0.10	<10	-0.20	<10	0.20	<10
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	-0.70	<2.0	0.0	<2.0	0.0	<2.0	-0.70	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	-0.30	<50	0.0	<50	-0.20	<50	0.20	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			15:14 CCB4		15:46 CCB5		16:33 CCB6		17:14 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time:			17:49		18:30		18:57		19:32	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-0.10	<6.0	-0.80	<6.0	-1.3	<6.0	-0.20	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.30	<10	0.0	<10	0.30	<10	0.30	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	0.10	<10	0.10	<10	-0.10	<10	0.10	<10
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	0.50	<2.0	0.10	<2.0	-0.10	<2.0	0.40	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	-0.20	<50	0.0	<50	0.10	<50	0.0	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			17:49 CCB8		18:30 CCB9		18:57 CCB10		19:32 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			20:07 CCB12		20:35 CCB13		20:48 CCB14		21:32 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-1.1	<6.0	-0.30	<6.0	-0.50	<6.0	-2.5	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.10	<10	0.10	<10	0.0	<10	0.0	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	-0.20	<10	0.10	<10	0.10	<10	-0.20	<10
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	-0.40	<2.0	0.80	<2.0	0.40	<2.0	0.40	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	-0.30	<50	0.0	<50	0.30	<50	-0.30	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			20:07 CCB12		20:35 CCB13		20:48 CCB14		21:32 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time:			23:45		00:21		00:53		01:28	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-0.80	<6.0	-0.60	<6.0	-1.3	<6.0	-0.90	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6	anr							
Boron	100	4.6	anr							
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.0	<10	-0.10	<10	-0.10	<10	0.20	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4	anr							
Nickel	10	.6	0.0	<10	-0.10	<10	-0.20	<10	-0.30	<10
Palladium	50	3								
Phosphorus	50		anr							
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3	anr							
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1	anr							
Strontium	10	.1	anr							
Thallium	2.0	1.8	0.80	<2.0	0.0	<2.0	0.30	<2.0	-0.90	<2.0
Tin	10	1.1	anr							
Titanium	10	.5	anr							
Tungsten	50	1.9	anr							
Vanadium	50	.4	-0.30	<50	0.0	<50	-0.20	<50	-0.60	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time: / Sample ID:			23:45 CCB16		00:21 CCB17		00:53 CCB18		01:28 CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time:			01:40	
Sample ID:			CCB20	
Metal	RL	IDL	raw	final
Aluminum	200	16	anr	
Antimony	6.0	2.7	-0.80	<6.0
Arsenic	3.0	1.4	anr	
Barium	200	.5	anr	
Beryllium	1.0	.1	anr	
Bismuth	20	3.6	anr	
Boron	100	4.6	anr	
Cadmium	3.0	.4	anr	
Calcium	5000	45	anr	
Chromium	10	.5	-0.40	<10
Cobalt	50	.4	anr	
Copper	10	.5	anr	
Iron	100	2.8	anr	
Lead	3.0	1.2	anr	
Lithium	20	3.7	anr	
Magnesium	5000	21	anr	
Manganese	15	.1	anr	
Molybdenum	20	.4	anr	
Nickel	10	.6	-0.20	<10
Palladium	50	3		
Phosphorus	50		anr	
Potassium	10000	84	anr	
Selenium	10	3.2	anr	
Silicon	200	2.3	anr	
Silver	10	1	anr	
Sodium	10000	38	anr	
Sulfur	50	4.1	anr	
Strontium	10	.1	anr	
Thallium	2.0	1.8	0.90	<2.0
Tin	10	1.1	anr	
Titanium	10	.5	anr	
Tungsten	50	1.9	anr	
Vanadium	50	.4	-0.40	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41246 Units: ug/l

Time:			01:40	
Sample ID:			CCB20	
Metal	RL	IDL	raw	final
Zinc	20	1.8	anr	
Zirconium	10	.4	anr	

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:20	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	2000	1970	98.5
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth	anr		
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	2000	1990	99.5
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	2000	2010	100.5
Palladium			
Phosphorus	anr		
Potassium	anr		
Selenium	anr		
Silicon	anr		
Silver	anr		
Sodium	anr		
Sulfur	anr		
Strontium	anr		
Thallium	2000	2030	101.5
Tin	anr		
Titanium	anr		
Tungsten	anr		
Vanadium	2000	1980	99.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:20	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium	anr		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:01			14:00			14:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1990	99.5	2000	1950	97.5	2000	1980	99.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	1950	97.5	2000	1960	98.0	2000	2040	102.0
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	2040	102.0	2000	1990	99.5	2000	2010	100.5
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	2040	102.0	2000	2010	100.5	2000	2030	101.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	1940	97.0	2000	1940	97.0	2000	2030	101.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:01			14:00			14:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		15:08			15:41			16:30	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1900	95.0	2000	1940	97.0	2000	1910	95.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	2010	100.5	2000	1960	98.0	2000	1950	97.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	1940	97.0	2000	1970	98.5	2000	1920	96.0
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	1960	98.0	2000	2000	100.0	2000	1970	98.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	2000	100.0	2000	1950	97.5	2000	1940	97.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		15:08			15:41			16:30	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		17:11			17:46			18:27	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1940	97.0	2000	1950	97.5	2000	1860	93.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	1950	97.5	2000	2010	100.5	2000	1970	98.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	1960	98.0	2000	1980	99.0	2000	1880	94.0
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	1990	99.5	2000	2010	100.5	2000	1930	96.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	1930	96.5	2000	1990	99.5	2000	1950	97.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		17:11			17:46			18:27	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		18:54			19:29			20:03	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1900	95.0	2000	1960	98.0	2000	1940	97.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	1960	98.0	2000	2010	100.5	2000	2030	101.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	1920	96.0	2000	1980	99.0	2000	1970	98.5
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	1970	98.5	2000	2010	100.5	2000	2000	100.0
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	1950	97.5	2000	1980	99.0	2000	2000	100.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		18:54			19:29			20:03	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		20:32			20:45			21:29	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1960	98.0	2000	1950	97.5	2000	1970	98.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	2020	101.0	2000	2040	102.0	2000	2040	102.0
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	1980	99.0	2000	1970	98.5	2000	1980	99.0
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	2020	101.0	2000	2010	100.5	2000	2030	101.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	1990	99.5	2000	2020	101.0	2000	2020	101.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		20:32			20:45			21:29	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		23:42			00:18			00:50	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1940	97.0	2000	1940	97.0	2000	1900	95.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	2000	1990	99.5	2000	2010	100.5	2000	1960	98.0
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	2000	1940	97.0	2000	1950	97.5	2000	1910	95.5
Palladium									
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon	anr								
Silver	anr								
Sodium	anr								
Sulfur	anr								
Strontium	anr								
Thallium	2000	2000	100.0	2000	2010	100.5	2000	1970	98.5
Tin	anr								
Titanium	anr								
Tungsten	anr								
Vanadium	2000	2010	100.5	2000	2000	100.0	2000	1940	97.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		23:42			00:18			00:50	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		01:25			01:37	
Sample ID:	CCV	CCV18		CCV	CCV19	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	2000	1880	94.0	2000	1900	95.0
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth	anr					
Boron	anr					
Cadmium	anr					
Calcium	anr					
Chromium	2000	1960	98.0	2000	1980	99.0
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium	anr					
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	2000	1900	95.0	2000	1910	95.5
Palladium						
Phosphorus	anr					
Potassium	anr					
Selenium	anr					
Silicon	anr					
Silver	anr					
Sodium	anr					
Sulfur	anr					
Strontium	anr					
Thallium	2000	1960	98.0	2000	1970	98.5
Tin	anr					
Titanium	anr					
Tungsten	anr					
Vanadium	2000	1940	97.0	2000	1960	98.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41246 Units: ug/l

Time:		01:25			01:37	
Sample ID:	CCV	CCV18		CCV	CCV19	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium	anr					

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:44			13:47	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	5000	5110	102.2			
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth	anr					
Boron	anr					
Cadmium	anr					
Calcium						
Chromium	5000	5110	102.2			
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	5000	5230	104.6			
Palladium						
Phosphorus	anr					
Potassium						
Selenium	anr					
Silicon	anr					
Silver	anr					
Sodium						
Sulfur	anr					
Strontium	anr					
Thallium	5000	5190	103.8			
Tin	anr					
Titanium	anr					
Tungsten	anr					
Vanadium	5000	4980	99.6			

HIGH STANDARD CHECK SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41246 Units: ug/l

Time:		13:44			13:47	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium	anr					

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				13:31		13:34		15:34	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	7.0	116.7			5.4	90.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20			anr					
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	10.0	100.0			10.0	100.0
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	10.0	100.0	4.3	107.5	9.7	97.0
Palladium	50								
Phosphorus	50			anr					
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200			anr					
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50			anr					
Strontium	10			anr					
Thallium	10		2.0	9.8	98.0	2.2	110.0	9.8	98.0
Tin	10			anr					
Titanium	10			anr					
Tungsten	50			anr					
Vanadium	50		2.0	49.7	99.4	2.1	105.0	49.3	98.6

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				13:31		13:34		15:34	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10			anr					

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				15:37		18:44		18:47	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI3		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	3.0	100.0	6.3	105.0		
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	2.2	110.0	9.9	99.0	2.3	115.0
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	20								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	4.1	102.5	9.6	96.0	4.1	102.5
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50								
Strontium	10								
Thallium	10		2.0	1.6	80.0	8.7	87.0	1.8	90.0
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	1.9	95.0	48.8	97.6	2.0	100.0

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				15:37		18:44		18:47	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI3		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				18:50		01:31		01:34	
Sample ID:	CRI	CRIA	CRID	CRIA1		CRI4		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	16.6	83.0	5.6	93.3	14.6	73.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0						
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0						
Calcium	5000	2000	1000	anr					
Chromium	10		2.0			9.5	95.0		
Cobalt	50		3.0						
Copper	10		2.0						
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0						
Molybdenum	20								
Nickel	10		4.0			9.3	93.0		
Palladium	50								
Phosphorus	50								
Potassium	5000		2000						
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000						
Sulfur	50								
Strontium	10								
Thallium	10		2.0			8.9	89.0		
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0			46.7	93.4		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41246 Units: ug/l

Time:				18:50		01:31		01:34	
Sample ID:	CRI	CRIA	CRID	CRIA1		CRI4		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10						
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41246 Units: ug/l

Time:			13:37		13:41		20:38		20:41	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	498000	99.6	492000	98.4	485000	97.0	474000	94.8
Antimony		1000	1.5		1130	113.0	3.7		1110	111.0
Arsenic		1000	0.0		1050	105.0	-0.80		1030	103.0
Barium		500	1.6		512	102.4	1.4		490	98.0
Beryllium		500	0.10		499	99.8	0.10		484	96.8
Bismuth		500	7.2		504	100.8	7.9		491	98.2
Boron		500	-3.4		497	99.4	-2.6		486	97.2
Cadmium		1000	-0.60		1020	102.0	-0.60		1020	102.0
Calcium	400000	400000	374000	93.5	370000	92.5	374000	93.5	369000	92.3
Chromium		500	1.8		503	100.6	1.6		505	101.0
Cobalt		500	-0.20		493	98.6	-0.70		489	97.8
Copper		500	9.7		529	105.8	-0.50		528	105.6
Iron	200000	200000	189000	94.5	180000	90.0	180000	90.0	173000	86.5
Lead		1000	3.6		971	97.1	2.6		956	95.6
Lithium		500	-15		508	101.6	-8.4		496	99.2
Magnesium	500000	500000	494000	98.8	486000	97.2	484000	96.8	475000	95.0
Manganese		500	-0.80		504	100.8	-1.3		505	101.0
Molybdenum		500	1.5		503	100.6	1.4		509	101.8
Nickel		1000	-0.10		992	99.2	-0.50		968	96.8
Palladium		500	-12		-1.7	0.0*	-13		3.7	0.7*
Phosphorus		500	9.2		489	97.8	1.0		472	94.4
Potassium			-100		-76		283		184	
Selenium		1000	3.7		1040	104.0	2.7		1010	101.0
Silicon		500	-19		469	93.8	-22		466	93.2
Silver		1000	3.5		1060	106.0	1.8		1040	104.0
Sodium			5.7		20.2		478		432	
Sulfur		500	-6.2		484	96.8	-8.6		479	95.8
Strontium		500	1.3		520	104.0	0.60		506	101.2
Thallium		1000	-0.90		1010	101.0	1.1		1000	100.0
Tin		500	-6.4		468	93.6	-6.2		475	95.0
Titanium		500	-1.7		493	98.6	-2.0		486	97.2
Tungsten		500	0.10		495	99.0	2.3		487	97.4
Vanadium		500	1.8		490	98.0	0.60		489	97.8

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012617M1.ICP Date Analyzed: 01/26/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41246 Units: ug/l

Time:			13:37		13:41		20:38		20:41	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	3.1		975	97.5	3.2		985	98.5
Zirconium		500	7.3		502	100.4	6.1		497	99.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:31	MA41258-STD1	1		STDA
11:35	MA41258-STD2	1		STDB
11:38	ZZZZZZ	1		
11:41	ZZZZZZ	1		
11:45	MA41258-ICV1	1		
11:48	MA41258-ICB1	1		
11:52	MA41258-ICCV1	1		
11:55	MA41258-CCB1	1		
11:58	MA41258-CRI1	1		
12:02	MA41258-CRID1	1		
12:05	MA41258-CRIA1	1		
12:08	MA41258-ICSA1	1		
12:12	MA41258-ICSAB1	1		
12:15	MA41258-HSTD1	1		
12:19	MA41258-HSTD2	1		
12:24	MA41258-HSTD3	1		
12:28	ZZZZZZ	1		
12:31	MA41258-CCV1	1		
12:35	MA41258-CCB2	1		
12:38	ZZZZZZ	1		
12:42	ZZZZZZ	1		
12:45	ZZZZZZ	1		
12:48	ZZZZZZ	1		
12:52	MP98381-B1	1		
12:55	MP98381-MB1	1		
12:58	MP98381-LC1	1		
13:02	MP98381-LC2	1		
13:05	MA41258-CCV2	1		
13:08	MA41258-CCB3	1		
13:12	MP98381-S1	1		
13:15	MP98381-S2	1		
13:19	JC36204-17A	1		(sample used for QC only; not part of login JC36135A)
13:22	MP98381-SD1	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:25	ZZZZZZ	1		
13:29	ZZZZZZ	1		
13:32	MP98377-B1	1		
13:36	MP98377-MB1	1		
13:39	MA41258-CCV3	1		
13:42	MA41258-CCB4	1		
13:46	MP98377-S1	1		
13:49	MP98377-S2	1		
13:52	JC35801-2	1		(sample used for QC only; not part of login JC36135A)
13:56	MP98377-SD1	5		
13:59	MP98377-S3	1		
14:02	MP98377-S4	1		
14:06	JC35801-2F	1		(sample used for QC only; not part of login JC36135A)
14:09	MP98377-SD2	5		
14:13	JC36135-1A	1		
---------->	Last reportable sample/prep for job JC36135A			
14:17	MA41258-CCV4	1		
14:20	MA41258-CCB5	1		
14:23	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:30	ZZZZZZ	1		
14:34	ZZZZZZ	1		
14:37	ZZZZZZ	1		
14:40	MP98390-MB1	1		
14:44	MP98390-B1	1		
14:47	MP98390-S1	1		Not spiked
14:51	MP98390-S2	1		Not spiked
14:54	MA41258-CCV5	1		
14:57	MA41258-CCB6	1		
15:01	JC35862-3	1		(sample used for QC only; not part of login JC36135A)
15:04	MP98390-SD1	5		
15:07	ZZZZZZ	1		
15:11	MP98389-B1	1		
15:14	MP98389-MB1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:17	MP98389-S1	1		S high
15:21	MP98389-S2	1		S high
15:24	JC35980-1	1		(sample used for QC only; not part of login JC36135A)
15:28	MP98389-SD1	5		S high
15:31	MA41258-CCV6	1		
15:35	MA41258-CCB7	1		
15:38	ZZZZZZ	1		
15:41	ZZZZZZ	1		
15:45	ZZZZZZ	1		
15:48	ZZZZZZ	1		
15:51	ZZZZZZ	1		
15:55	ZZZZZZ	1		
15:58	ZZZZZZ	1		
16:02	ZZZZZZ	1		
16:05	ZZZZZZ	1		
16:09	MA41258-CCV7	1		
16:12	MA41258-CCB8	1		
16:19	MA41258-CRI2	1		
16:22	MA41258-CRID2	1		
16:25	MA41258-CRIA2	1		
16:29	MA41258-ICSA2	1		
16:32	MA41258-ICSAB2	1		
16:36	MA41258-CCV8	1		
16:39	MA41258-CCB9	1		
---------->	Last reportable CCB for job JC36135A			
16:42	MP98400-MB1	5		
16:46	MP98400-B1	5		
16:49	ZZZZZZ	1		
16:53	MP98400-S1	5		
16:56	MP98400-S2	5		
16:59	JC36124-1	5		(sample used for QC only; not part of login JC36135A)
17:03	MP98400-SD1	25		
17:06	ZZZZZZ	5		
17:10	ZZZZZZ	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:13	MA41258-CCV9	1		
17:17	MA41258-CCB10	1		
17:20	ZZZZZZ	5		
17:23	ZZZZZZ	1		
17:27	ZZZZZZ	2		
17:30	ZZZZZZ	5		
17:34	ZZZZZZ	5		
17:37	ZZZZZZ	2		
17:40	ZZZZZZ	5		
17:44	ZZZZZZ	5		
17:47	ZZZZZZ	5		
17:51	MA41258-CCV10	1		
17:54	MA41258-CCB11	1		
17:58	ZZZZZZ	5		
18:01	ZZZZZZ	1		
18:04	ZZZZZZ	1		
18:08	ZZZZZZ	1		
18:11	ZZZZZZ	1		
18:15	ZZZZZZ	1		
18:18	ZZZZZZ	1		
18:22	ZZZZZZ	1		
18:25	ZZZZZZ	1		
18:29	MA41258-CCV11	1		
18:32	MA41258-CCB12	1		
18:35	ZZZZZZ	1		
18:39	ZZZZZZ	1		
18:42	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:49	ZZZZZZ	1		
18:52	ZZZZZZ	1		
18:55	ZZZZZZ	1		
18:59	ZZZZZZ	1		
19:02	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:05	MA41258-CCV12	1		
19:09	MA41258-CCB13	1		
19:12	ZZZZZZ	1		
19:16	ZZZZZZ	1		
19:19	ZZZZZZ	1		
19:22	ZZZZZZ	1		
19:26	ZZZZZZ	1		
19:29	ZZZZZZ	1		
19:33	ZZZZZZ	1		
19:36	ZZZZZZ	1		
19:40	ZZZZZZ	1		
19:43	MA41258-CCV13	1		
19:47	MA41258-CCB14	1		
19:50	ZZZZZZ	1		
19:53	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:00	ZZZZZZ	1		
20:04	ZZZZZZ	1		
20:07	ZZZZZZ	1		
20:10	ZZZZZZ	1		
20:14	ZZZZZZ	1		
20:17	ZZZZZZ	1		
20:21	MA41258-CCV14	1		
20:24	MA41258-CCB15	1		
20:27	ZZZZZZ	1		
20:31	ZZZZZZ	1		
20:34	ZZZZZZ	1		
20:38	ZZZZZZ	1		
20:41	ZZZZZZ	1		
20:44	ZZZZZZ	1		
20:48	ZZZZZZ	1		
20:51	ZZZZZZ	1		
20:54	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:58	MA41258-CCV15	1		
21:01	MA41258-CCB16	1		
21:04	ZZZZZZ	1		
21:08	ZZZZZZ	1		
21:11	ZZZZZZ	1		
21:14	ZZZZZZ	1		
21:18	ZZZZZZ	1		
21:21	ZZZZZZ	5		
21:24	ZZZZZZ	5		
21:28	ZZZZZZ	5		
21:31	ZZZZZZ	5		
21:35	MA41258-CCV16	1		
21:38	MA41258-CCB17	1		
21:41	ZZZZZZ	5		
21:45	ZZZZZZ	5		
21:48	ZZZZZZ	5		
21:51	ZZZZZZ	5		
21:55	ZZZZZZ	5		
21:58	ZZZZZZ	5		
22:02	ZZZZZZ	5		
22:05	MA41258-CCV17	1		
22:08	MA41258-CCB18	1		
22:12	MA41258-CRI3	1		
22:15	MA41258-CRID3	1		
22:18	MA41258-CRIA3	1		
22:22	MA41258-CCV18	1		
22:25	MA41258-CCB19	1		
22:28	ZZZZZZ	1		
22:32	ZZZZZZ	1		
22:35	ZZZZZZ	1		
22:38	ZZZZZZ	1		
22:42	ZZZZZZ	1		
22:45	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
22:49	ZZZZZZ	1		
22:52	ZZZZZZ	1		
22:56	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:31	MA41258-STD1	7577 R	225500 R	17999 R	13294 R
11:35	MA41258-STD2	7338	212520	17635	12618
11:38	ZZZZZZ	7479	219400	17726	12880
11:41	ZZZZZZ	7582	225680	18164	13347
11:45	MA41258-ICV1	7444	218530	17598	12862
11:48	MA41258-ICB1	7567	225690	17980	13329
11:52	MA41258-ICCV1	7453	218720	17103	12862
11:55	MA41258-CCB1	7582	224870	18139	13375
11:58	MA41258-CRI1	7585	224790	17417	13356
12:02	MA41258-CRID1	7595	224660	17862	13393
12:05	MA41258-CRIA1	7556	225770	17879	13369
12:08	MA41258-ICSA1	7022	205780	16860	11980
12:12	MA41258-ICSAB1	7031	205830	16828	11991
12:15	MA41258-HSTD1	No results reported for the elements associated with this internal standard.			
12:19	MA41258-HSTD2	7191	208400	17539	12137
12:24	MA41258-HSTD3	7555	227740	18080	13377
12:28	ZZZZZZ	7560	223490	18038	13632
12:31	MA41258-CCV1	7423	219510	17595	12877
12:35	MA41258-CCB2	7629	228860	17281	13486
12:38	ZZZZZZ	7470	226460	18040	13427
12:42	ZZZZZZ	7615	229170	17883	13490
12:45	ZZZZZZ	7610	229870	18044	13479
12:48	ZZZZZZ	7655	231410	17903	13545
12:52	MP98381-B1	7544	222480	17718	13137
12:55	MP98381-MB1	7732	232220	18298	13618
12:58	MP98381-LC1	7807	232180	18640	13365
13:02	MP98381-LC2	7816	233370	18601	13407
13:05	MA41258-CCV2	7556	224830	17855	13099
13:08	MA41258-CCB3	7679	230300	18081	13595
13:12	MP98381-S1	7898	232070	18511	13125
13:15	MP98381-S2	7898	232230	18695	13163
13:19	JC36204-17A	8164	244330	19411	13540
13:22	MP98381-SD1	7820	234120	18876	13539

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:25	ZZZZZZ	7677	230310	18463	13847
13:29	ZZZZZZ	7721	232490	18139	13679
13:32	MP98377-B1	7622	227530	18183	13295
13:36	MP98377-MB1	7708	231230	18360	13633
13:39	MA41258-CCV3	7594	223200	17908	13165
13:42	MA41258-CCB4	7784	229680	18435	13769
13:46	MP98377-S1	7665	229500	18348	13301
13:49	MP98377-S2	7576	229170	18303	13177
13:52	JC35801-2	7720	231440	18363	13638
13:56	MP98377-SD1	7775	235810	18113	13789
13:59	MP98377-S3	7603	228480	18245	13213
14:02	MP98377-S4	7694	230200	18218	13361
14:06	JC35801-2F	7772	232370	18417	13708
14:09	MP98377-SD2	7789	233010	18378	13831
14:13	JC36135-1A	7774	234960	18447	13776
14:17	MA41258-CCV4	7592	227830	17858	13186
14:20	MA41258-CCB5	7788	233620	18195	13796
14:23	ZZZZZZ	8049	236370	18600	14220
14:27	ZZZZZZ	7861	236200	18472	13866
14:30	ZZZZZZ	8102	237080	19139	13699
14:34	ZZZZZZ	8202	243910	19392	13729
14:37	ZZZZZZ	8206	241650	19716	13829
14:40	MP98390-MB1	7934	238090	18747	13933
14:44	MP98390-B1	7769	229090	18235	13429
14:47	MP98390-S1	No results reported for the elements associated with this internal standard.			
14:51	MP98390-S2	No results reported for the elements associated with this internal standard.			
14:54	MA41258-CCV5	7732	229400	18143	13337
14:57	MA41258-CCB6	7878	233610	18550	13896
15:01	JC35862-3	8361	247130	19513	13858
15:04	MP98390-SD1	8059	240570	18841	13908
15:07	ZZZZZZ	8014	238740	18786	14004
15:11	MP98389-B1	7840	235620	18714	13590
15:14	MP98389-MB1	7970	240070	19041	14021

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:17	MP98389-S1	7539	219630	18350	12904
15:21	MP98389-S2	7570	224210	18149	12965
15:24	JC35980-1	7647	225560	18257	13235
15:28	MP98389-SD1	7869	234750	18639	13824
15:31	MA41258-CCV6	7824	230520	18451	13488
15:35	MA41258-CCB7	7945	236750	18700	13998
15:38	ZZZZZZ	7251	207600	17654	12125
15:41	ZZZZZZ	7871	232330	18697	13649
15:45	ZZZZZZ	7335	205510	18058	12267
15:48	ZZZZZZ	7163	203440	17835	11909
15:51	ZZZZZZ	7750	225680	18472	13293
15:55	ZZZZZZ	No results reported for the elements associated with this internal standard.			
15:58	ZZZZZZ	No results reported for the elements associated with this internal standard.			
16:02	ZZZZZZ	7206	201770	17804	11929
16:05	ZZZZZZ	8159	243890	19221	14381
16:09	MA41258-CCV7	7871	231530	18195	13546
16:12	MA41258-CCB8	8055	243690	18604	14181
16:19	MA41258-CRI2	8014	237200	18743	14037
16:22	MA41258-CRID2	8067	237240	18691	14154
16:25	MA41258-CRIA2	8037	237530	18686	14135
16:29	MA41258-ICSA2	7398	213100	17595	12520
16:32	MA41258-ICSAB2	7428	213900	17572	12589
16:36	MA41258-CCV8	7913	233740	18210	13624
16:39	MA41258-CCB9	8061	239710	18705	14169
16:42	MP98400-MB1	7790	225410	18436	13251
16:46	MP98400-B1	7855	224410	18417	13312
16:49	ZZZZZZ	7904	230820	18714	13653
16:53	MP98400-S1	7780	227310	18325	13201
16:56	MP98400-S2	7792	226200	18242	13224
16:59	JC36124-1	7787	223880	18353	13233
17:03	MP98400-SD1	7937	231620	18568	13809
17:06	ZZZZZZ	7771	221500	18242	13187
17:10	ZZZZZZ	8223	233210	18544	14008

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:13	MA41258-CCV9	7970	236310	18468	13721
17:17	MA41258-CCB10	8092	241890	18790	14242
17:20	ZZZZZZ	7979	228040	18659	13624
17:23	ZZZZZZ	8070	237190	19188	13944
17:27	ZZZZZZ	7717	213250	18298	12949
17:30	ZZZZZZ	7725	215380	18230	13000
17:34	ZZZZZZ	7703	215280	18164	12895
17:37	ZZZZZZ	8033	217530	18421	13405
17:40	ZZZZZZ	8074	230220	18765	13733
17:44	ZZZZZZ	8032	232310	18817	13658
17:47	ZZZZZZ	8009	228290	18615	13628
17:51	MA41258-CCV10	8077	236910	18733	13845
17:54	MA41258-CCB11	8192	242950	19192	14378
17:58	ZZZZZZ	8067	231890	18758	13700
18:01	ZZZZZZ	8456	247540	19653	14239
18:04	ZZZZZZ	8451	247000	19615	14265
18:08	ZZZZZZ	8552	248440	20043	14276
18:11	ZZZZZZ	8471	248760	19730	14241
18:15	ZZZZZZ	8505	247320	19738	14247
18:18	ZZZZZZ	8551	248070	19950	14196
18:22	ZZZZZZ	8449	249210	19581	14281
18:25	ZZZZZZ	8521	249110	19893	14236
18:29	MA41258-CCV11	8168	238090	18991	13972
18:32	MA41258-CCB12	8349	246520	19286	14599
18:35	ZZZZZZ	8511	250330	19899	14285
18:39	ZZZZZZ	8561	248270	19932	14311
18:42	ZZZZZZ	8550	249760	20111	14347
18:46	ZZZZZZ	8499	247390	19752	14340
18:49	ZZZZZZ	8555	248750	20091	14318
18:52	ZZZZZZ	8562	251050	19925	14392
18:55	ZZZZZZ	8653	253510	20263	14397
18:59	ZZZZZZ	8486	246870	19719	14775
19:02	ZZZZZZ	8406	244100	19514	14633

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:05	MA41258-CCV12	8240	239410	19214	14058
19:09	MA41258-CCB13	8345	249260	19460	14582
19:12	ZZZZZZ	8045	229080	19019	13648
19:16	ZZZZZZ	8225	235570	19272	14096
19:19	ZZZZZZ	8226	237690	19232	14094
19:22	ZZZZZZ	8055	229140	19004	13629
19:26	ZZZZZZ	8186	230370	19013	13838
19:29	ZZZZZZ	7987	218730	18801	13174
19:33	ZZZZZZ	8019	220460	18715	13285
19:36	ZZZZZZ	8160	231520	19056	13566
19:40	ZZZZZZ	8310	241160	19354	14322
19:43	MA41258-CCV13	8274	240370	19116	14136
19:47	MA41258-CCB14	8429	248150	19183	14703
19:50	ZZZZZZ	8587	250170	19904	14508
19:53	ZZZZZZ	8624	248430	19850	14541
19:57	ZZZZZZ	8636	252710	20036	14592
20:00	ZZZZZZ	9081	262040	20940	14555
20:04	ZZZZZZ	8721	252850	20230	14608
20:07	ZZZZZZ	8646	253320	20036	14658
20:10	ZZZZZZ	8601	249130	19729	14537
20:14	ZZZZZZ	8746	253750	20153	14636
20:17	ZZZZZZ	8693	255680	20316	14588
20:21	MA41258-CCV14	No results reported for the elements associated with this internal standard.			
20:24	MA41258-CCB15	No results reported for the elements associated with this internal standard.			
20:27	ZZZZZZ	8535	247110	19755	14506
20:31	ZZZZZZ	8691	251990	20057	14725
20:34	ZZZZZZ	8788	256430	20133	14700
20:38	ZZZZZZ	8480	248990	19915	14490
20:41	ZZZZZZ	8770	256700	20256	14543
20:44	ZZZZZZ	8393	243190	19489	14304
20:48	ZZZZZZ	8426	239600	19754	14083
20:51	ZZZZZZ	7806	238330	19271	13268
20:54	ZZZZZZ	6989	209300	16741	12219

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:58	MA41258-CCV15	No results reported for the elements associated with this internal standard.			
21:01	MA41258-CCB16	No results reported for the elements associated with this internal standard.			
21:04	ZZZZZZ	6959	207100	16776	11977
21:08	ZZZZZZ	7042	210000	16881	12252
21:11	ZZZZZZ	6897	207960	16623	12121
21:14	ZZZZZZ	6739	200310	16204	11706
21:18	ZZZZZZ	7216	217810	17176	12665
21:21	ZZZZZZ	6927	203530	16494	11878
21:24	ZZZZZZ	6888	201650	16332	11800
21:28	ZZZZZZ	6925	202090	16399	11855
21:31	ZZZZZZ	6945	202670	16503	11888
21:35	MA41258-CCV16	No results reported for the elements associated with this internal standard.			
21:38	MA41258-CCB17	No results reported for the elements associated with this internal standard.			
21:41	ZZZZZZ	6931	202850	16450	11877
21:45	ZZZZZZ	6912	200690	16429	11847
21:48	ZZZZZZ	6924	202100	16464	11862
21:51	ZZZZZZ	7020	202500	16373	12016
21:55	ZZZZZZ	6973	203930	16481	11948
21:58	ZZZZZZ	6891	202000	16496	11831
22:02	ZZZZZZ	6886	201690	16444	11801
22:05	MA41258-CCV17	6925	206800	16363	12020
22:08	MA41258-CCB18	7062	208840	16030	12508
22:12	MA41258-CRI3	6936	207540	16378	12278
22:15	MA41258-CRID3	7034	209160	16549	12460
22:18	MA41258-CRIA3	6943	209310	16427	12327
22:22	MA41258-CCV18	6975	208410	16255	12095
22:25	MA41258-CCB19	7003	209170	16541	12414
22:28	ZZZZZZ	7288	205910	16525	12073
22:32	ZZZZZZ	6674	198280	15953	11574
22:35	ZZZZZZ	6680	197770	15791	11452
22:38	ZZZZZZ	6990	210400	16537	12366
22:42	ZZZZZZ	7030	211200	16457	12532
22:45	ZZZZZZ	7052	211170	16596	12464

INTERNAL STANDARD SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
22:49	ZZZZZZ	7167	215510	16914	12669
22:52	ZZZZZZ	7202	216960	16981	12721
22:56	ZZZZZZ	7284	217380	17157	12903

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time: / Sample ID:			11:48 ICB1		11:55 CCB1		12:35 CCB2		13:08 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-0.70	<6.0	-0.10	<6.0	0.0	<6.0	0.70	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6								
Boron	100	4.6								
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.0	<10	0.30	<10	0.0	<10	-0.10	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4								
Nickel	10	.6	-0.10	<10	-0.10	<10	0.0	<10	0.0	<10
Palladium	50	3								
Phosphorus	50									
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3								
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1								
Strontium	10	.1								
Thallium	2.0	1.8	-0.90	<2.0	-0.70	<2.0	-0.30	<2.0	0.20	<2.0
Tin	10	1.1								
Titanium	10	.5								
Tungsten	50	1.9								
Vanadium	50	.4	0.0	<50	-0.20	<50	0.0	<50	0.0	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time: / Sample ID:			11:48 ICB1		11:55 CCB1		12:35 CCB2		13:08 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time:			13:42		14:20		14:57		15:35	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-0.20	<6.0	-0.60	<6.0	-0.20	<6.0	-1.2	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6								
Boron	100	4.6								
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.0	<10	0.0	<10	0.20	<10	0.20	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4								
Nickel	10	.6	-0.10	<10	0.10	<10	0.10	<10	0.10	<10
Palladium	50	3								
Phosphorus	50									
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3								
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1								
Strontium	10	.1								
Thallium	2.0	1.8	0.80	<2.0	0.0	<2.0	-0.50	<2.0	0.70	<2.0
Tin	10	1.1								
Titanium	10	.5								
Tungsten	50	1.9								
Vanadium	50	.4	-0.10	<50	0.0	<50	0.20	<50	0.30	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time: / Sample ID:			13:42 CCB4		14:20 CCB5		14:57 CCB6		15:35 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time: / Sample ID:			16:12 CCB8		16:39 CCB9	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	16	anr			
Antimony	6.0	2.7	0.40	<6.0	0.0	<6.0
Arsenic	3.0	1.4	anr			
Barium	200	.5	anr			
Beryllium	1.0	.1	anr			
Bismuth	20	3.6				
Boron	100	4.6				
Cadmium	3.0	.4	anr			
Calcium	5000	45	anr			
Chromium	10	.5	0.10	<10	0.10	<10
Cobalt	50	.4	anr			
Copper	10	.5	anr			
Iron	100	2.8	anr			
Lead	3.0	1.2	anr			
Lithium	20	3.7	anr			
Magnesium	5000	21	anr			
Manganese	15	.1	anr			
Molybdenum	20	.4				
Nickel	10	.6	-0.10	<10	0.30	<10
Palladium	50	3				
Phosphorus	50					
Potassium	10000	84	anr			
Selenium	10	3.2	anr			
Silicon	200	2.3				
Silver	10	1	anr			
Sodium	10000	38	anr			
Sulfur	50	4.1				
Strontium	10	.1				
Thallium	2.0	1.8	0.80	<2.0	0.20	<2.0
Tin	10	1.1				
Titanium	10	.5				
Tungsten	50	1.9				
Vanadium	50	.4	-0.10	<50	-0.10	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time:			16:12		16:39	
Sample ID:			CCB8		CCB9	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	1.8	anr			
Zirconium	10	.4				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		11:52	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	2000	2030	101.5
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	2000	2040	102.0
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	2000	2060	103.0
Palladium			
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Sulfur			
Strontium			
Thallium	2000	2060	103.0
Tin			
Titanium			
Tungsten			
Vanadium	2000	2030	101.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		11:52	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		11:45			12:31			13:05	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1960	98.0	2000	2050	102.5	2000	1980	99.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	1960	98.0	2000	2050	102.5	2000	1970	98.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	2000	1960	98.0	2000	2060	103.0	2000	2000	100.0
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium	2000	2000	100.0	2000	2070	103.5	2000	2010	100.5
Tin									
Titanium									
Tungsten									
Vanadium	2000	1930	96.5	2000	2030	101.5	2000	1940	97.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		11:45			12:31			13:05	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		13:39			14:17			14:54	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2000	100.0	2000	1970	98.5	2000	1920	96.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	2020	101.0	2000	1950	97.5	2000	1910	95.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	2000	2020	101.0	2000	1990	99.5	2000	1950	97.5
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium	2000	2030	101.5	2000	2000	100.0	2000	1960	98.0
Tin									
Titanium									
Tungsten									
Vanadium	2000	1990	99.5	2000	1920	96.0	2000	1890	94.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		13:39			14:17			14:54	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		15:31			16:09			16:36	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1920	96.0	2000	1870	93.5	2000	1900	95.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	1920	96.0	2000	1860	93.0	2000	1900	95.0
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	2000	1950	97.5	2000	1910	95.5	2000	1930	96.5
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium	2000	1960	98.0	2000	1910	95.5	2000	1930	96.5
Tin									
Titanium									
Tungsten									
Vanadium	2000	1900	95.0	2000	1840	92.0	2000	1880	94.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		15:31			16:09			16:36	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41258 Units: ug/l

Time:		12:19			12:24	
Sample ID:	HSTD	HSTD2		HSTD	HSTD3	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony				5000	5160	103.2
Arsenic						
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium	anr					
Chromium				5000	5290	105.8
Cobalt						
Copper						
Iron	anr					
Lead						
Lithium						
Magnesium	anr					
Manganese						
Molybdenum						
Nickel				5000	5290	105.8
Palladium						
Phosphorus						
Potassium	anr					
Selenium						
Silicon						
Silver						
Sodium	anr					
Sulfur						
Strontium						
Thallium				5000	5260	105.2
Tin						
Titanium						
Tungsten						
Vanadium				5000	5170	103.4

HIGH STANDARD CHECK SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41258 Units: ug/l

Time:		12:19			12:24	
Sample ID:	HSTD	HSTD2		HSTD	HSTD3	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc						
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41258 Units: ug/l

Time:				11:58		12:02		12:05	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	5.6	93.3	2.7	90.0	17.8	89.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	9.8	98.0	2.2	110.0		
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	10.1	101.0	4.4	110.0		
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50								
Strontium	10								
Thallium	10		2.0	8.8	88.0	1.5	75.0		
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	48.5	97.0	2.2	110.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41258 Units: ug/l

Time:				11:58		12:02		12:05	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41258 Units: ug/l

Time:				16:19		16:22		16:25	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	4.8	80.0	2.7	90.0	16.4	82.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	9.9	99.0	2.3	115.0		
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	9.6	96.0	4.1	102.5		
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50								
Strontium	10								
Thallium	10		2.0	9.3	93.0	2.0	100.0		
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	47.5	95.0	2.1	105.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41258 Units: ug/l

Time:				16:19		16:22		16:25	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41258 Units: ug/l

Time:			12:08		12:12		16:29		16:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	512000	102.4	510000	102.0	484000	96.8	459000	91.8
Antimony		1000	1.9		1160	116.0	2.9		1080	108.0
Arsenic		1000	-1.1		1090	109.0	0.80		1020	102.0
Barium		500	1.8		537	107.4	1.3		490	98.0
Beryllium		500	0.10		528	105.6	0.10		477	95.4
Bismuth		500	7.5		516	103.2	7.8		482	96.4
Boron		500	3.1		512	102.4	1.7		477	95.4
Cadmium		1000	0.10		1060	106.0	-0.10		985	98.5
Calcium	400000	400000	382000	95.5	390000	97.5	363000	90.8	350000	87.5
Chromium		500	2.2		504	100.8	1.7		476	95.2
Cobalt		500	-1.1		499	99.8	-1.1		469	93.8
Copper		500	6.5		536	107.2	5.3		500	100.0
Iron	200000	200000	192000	96.0	189000	94.5	181000	90.5	171000	85.5
Lead		1000	5.1		985	98.5	3.6		928	92.8
Lithium		500	-14		535	107.0	-9.5		490	98.0
Magnesium	500000	500000	506000	101.2	509000	101.8	480000	96.0	461000	92.2
Manganese		500	0.50		512	102.4	-0.20		481	96.2
Molybdenum		500	1.7		500	100.0	1.4		468	93.6
Nickel		1000	-0.40		1010	101.0	-0.40		948	94.8
Palladium		500	-14		6.9	1.4*	-14		6.9	1.4*
Phosphorus		500	10.6		497	99.4	9.8		470	94.0
Potassium			-180		-140		258		263	
Selenium		1000	2.6		1060	106.0	3.5		990	99.0
Silicon		500	-21		476	95.2	-20		447	89.4
Silver		1000	5.0		1090	109.0	1.7		1020	102.0
Sodium			8.8		11.1		1090		1120	
Sulfur		500	-3.8		497	99.4	-4.5		465	93.0
Strontium		500	0.80		537	107.4	0.90		490	98.0
Thallium		1000	0.90		1040	104.0	0.60		981	98.1
Tin		500	-6.2		480	96.0	-5.5		448	89.6
Titanium		500	-1.9		496	99.2	-2.0		466	93.2
Tungsten		500	3.7		509	101.8	3.7		479	95.8
Vanadium		500	-0.40		488	97.6	-0.60		459	91.8

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41258 Units: ug/l

Time:			12:08		12:12		16:29		16:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.6		997	99.7	2.4		937	93.7
Zirconium		500	8.2		503	100.6	7.5		471	94.2

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.6	1.9		
Antimony	2.0	.27	.29	-0.020	<2.0
Arsenic	2.0	.14	.21		
Barium	20	.05	.08		
Beryllium	0.20	.0099	.022		
Bismuth	2.0	.36	.23		
Boron	9.9	.46	.44		
Cadmium	0.50	.04	.05		
Calcium	500	4.5	1.9		
Chromium	0.99	.05	.12	0.089	<0.99
Cobalt	5.0	.04	.058		
Copper	2.5	.05	.21		
Iron	50	.28	.79		
Lead	2.0	.12	.22		
Lithium	2.0	.37	.44		
Magnesium	500	2.1	5.8		
Manganese	1.5	.0099	.036		
Molybdenum	2.0	.04	.08		
Nickel	4.0	.059	.075	0.089	<4.0
Palladium	5.0	.3	.46		
Phosphorus	9.9		.46		
Potassium	990	8.3	18		
Selenium	2.0	.32	.46		
Silicon	20	.23	3.7		
Silver	0.50	.099	.098		
Sodium	990	3.7	3.8		
Strontium	0.99	.0099	.024		
Sulfur	5.0	.41	.58		
Thallium	0.99	.18	.4	-0.050	<0.99
Tin	5.0	.11	.52		
Titanium	0.99	.05	.13		
Tungsten	5.0	.19	.33		
Vanadium	5.0	.04	.082	-0.0099	<5.0

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/26/17

Metal	RL	IDL	MDL	MB raw	final
Zinc	5.0	.18	.22		
Zirconium	2.0	.04	.13		

Associated samples MP98355: JC36135-26A, JC36135-27A, JC36135-28A, JC36135-29A, JC36135-30A, JC36135-31A, JC36135-32A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	JC36135-29A Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	0.0	168	228	73.6N(a)	75-125
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	14.6	236	228	97.0	75-125
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	8.7	227	228	95.7	75-125
Palladium					
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	0.0	224	228	98.2	75-125
Tin					
Titanium					
Tungsten					
Vanadium	21.4	245	228	98.0	75-125

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/26/17

Metal	JC36135-29A Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP98355: JC36135-26A, JC36135-27A, JC36135-28A, JC36135-29A, JC36135-30A, JC36135-31A, JC36135-32A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	JC36135-29A Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	0.0	149	224	66.6N(a)	12.0	20
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	14.6	221	224	92.3	6.6	20
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	8.7	212	224	90.9	6.8	20
Palladium						
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	0.0	209	224	93.4	6.9	20
Tin						
Titanium						
Tungsten						
Vanadium	21.4	230	224	93.2	6.3	20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/26/17

Metal	JC36135-29A Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr				
Zirconium					

Associated samples MP98355: JC36135-26A, JC36135-27A, JC36135-28A, JC36135-29A, JC36135-30A, JC36135-31A, JC36135-32A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	187	200	93.5	80-120
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	193	200	96.5	80-120
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	187	200	93.5	80-120
Palladium				
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	194	200	97.0	80-120
Tin				
Titanium				
Tungsten				
Vanadium	193	200	96.5	80-120

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/26/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP98355: JC36135-26A, JC36135-27A, JC36135-28A, JC36135-29A, JC36135-30A, JC36135-31A, JC36135-32A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/26/17

Metal	JC36135-29A Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	0.00	0.00	NC	0-10
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	129	129	0.3	0-10
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	77.3	78.2	1.2	0-10
Palladium				
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Tungsten				
Vanadium	190	188	0.7	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98355 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date: 01/26/17

	JC36135-29A		QC
Metal	Original SDL 1:5	%DIF	Limits
Zinc	anr		
Zirconium			

Associated samples MP98355: JC36135-26A, JC36135-27A, JC36135-28A, JC36135-29A, JC36135-30A, JC36135-31A, JC36135-32A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	21		
Antimony	6.0	2.7	3.3	-0.10	<6.0
Arsenic	3.0	1.4	2.2		
Barium	200	.5	.44		
Beryllium	1.0	.1	.25		
Bismuth	20	3.6	2.9		
Boron	100	4.6	3.9		
Cadmium	3.0	.4	.4		
Calcium	5000	45	33		
Chromium	10	.5	.81	0.0	<10
Cobalt	50	.4	.69		
Copper	10	.5	2.4		
Iron	100	2.8	12		
Lead	3.0	1.2	2.3		
Lithium	20	3.7	4		
Magnesium	5000	21	85		
Manganese	15	.1	.39		
Molybdenum	20	.4	.88		
Nickel	10	.6	.76	-0.10	<10
Palladium	50	3	3.7		
Phosphorus	50		3.7		
Potassium	10000	84	120		
Selenium	10	3.2	4.1		
Silicon	200	2.3	29		
Silver	10	1	.88		
Sodium	10000	38	24		
Sulfur	50	4.1	6.9		
Strontium	10	.1	.22		
Thallium	2.0	1.8	1.9	-1.5	<2.0
Tin	10	1.1	2.3		
Titanium	10	.5	.99		
Tungsten	50	1.9	3.2		
Vanadium	50	.4	.66	0.20	<50

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	1.8	1.3		
Zirconium	10	.4	.94		

Associated samples MP98377: JC36135-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	JC35801-2 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony	0.0	2040	2000	102.0	75-125
Arsenic					
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Chromium	6.5	2020	2000	100.7	75-125
Cobalt					
Copper					
Iron	anr				
Lead	anr				
Lithium					
Magnesium					
Manganese	anr				
Molybdenum					
Nickel	5.6	2050	2000	102.2	75-125
Palladium					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	anr				
Sulfur					
Strontium					
Thallium	0.0	2050	2000	102.5	75-125
Tin					
Titanium					
Tungsten					
Vanadium	0.40	2000	2000	100.0	75-125

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/27/17

Metal	JC35801-2 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP98377: JC36135-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	JC35801-2 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	0.0	2060	2000	103.0	1.0	20
Arsenic						
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	6.5	2000	2000	99.7	1.0	20
Cobalt						
Copper						
Iron	anr					
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	5.6	2050	2000	102.2	0.0	20
Palladium						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	anr					
Sulfur						
Strontium						
Thallium	0.0	2050	2000	102.5	0.0	20
Tin						
Titanium						
Tungsten						
Vanadium	0.40	1980	2000	99.0	1.0	20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/27/17

Metal	JC35801-2 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc					
Zirconium					

Associated samples MP98377: JC36135-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony	2060	2000	103.0	80-120
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	2040	2000	102.0	80-120
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	2060	2000	103.0	80-120
Palladium				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	anr			
Sulfur				
Strontium				
Thallium	2070	2000	103.5	80-120
Tin				
Titanium				
Tungsten				
Vanadium	2020	2000	101.0	80-120

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP98377: JC36135-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:			01/27/17				01/27/17	
Metal	JC35801-2 Original	SDL 1:5	%DIF	QC Limits	JC35801-2F Original	SDL 1:5	%DIF	QC Limits
Aluminum								
Antimony	0.00	0.00	NC	0-10	0.00	0.00	NC	0-10
Arsenic								
Barium								
Beryllium								
Bismuth								
Boron								
Cadmium	anr							
Calcium								
Chromium	6.50	5.80	10.8 (a)	0-10	3.30	3.80	15.2 (a)	0-10
Cobalt								
Copper								
Iron	anr							
Lead	anr							
Lithium								
Magnesium								
Manganese	anr							
Molybdenum								
Nickel	5.60	6.20	10.7 (a)	0-10	5.10	4.80	5.9	0-10
Palladium								
Phosphorus								
Potassium								
Selenium								
Silicon								
Silver								
Sodium	anr							
Sulfur								
Strontium								
Thallium	0.00	0.00	NC	0-10	0.00	0.00	NC	0-10
Tin								
Titanium								
Tungsten								
Vanadium	0.400	0.00	100.0(a)	0-10	0.00	0.00	NC	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36135A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98377 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date:		01/27/17			01/27/17	
Metal	JC35801-2 Original SDL 1:5	%DIF	QC Limits	JC35801-2F Original SDL 1:5	%DIF	QC Limits
Zinc						
Zirconium						

Associated samples MP98377: JC36135-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: JC36135A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36135-26 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-13.5-14.0

Wet Weight (Total)	29.58	g
Tare Weight	23.54	g
Dry Weight (Total)	28.63	g
Solids, Percent	84.3	%

Sample: JC36135-27 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-13.5-14.0X

Wet Weight (Total)	27.9	g
Tare Weight	19.78	g
Dry Weight (Total)	26.49	g
Solids, Percent	82.6	%

Sample: JC36135-28 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-14.5-15.0

Wet Weight (Total)	34.42	g
Tare Weight	27.47	g
Dry Weight (Total)	32.58	g
Solids, Percent	73.5	%

Sample: JC36135-29 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-17.5-18.0

Wet Weight (Total)	30.99	g
Tare Weight	24.65	g
Dry Weight (Total)	30.15	g
Solids, Percent	86.8	%

Sample: JC36135-30 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-4.5-5.0

Wet Weight (Total)	33.32	g
Tare Weight	26.07	g
Dry Weight (Total)	32.12	g
Solids, Percent	83.4	%

Sample: JC36135-31 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-6.0-6.5

Wet Weight (Total)	27.65	g
Tare Weight	18.58	g
Dry Weight (Total)	26.23	g
Solids, Percent	84.3	%

Percent Solids Raw Data Summary

Job Number: JC36135A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36135-32 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-9.5-10.0

Wet Weight (Total)	30.75	g
Tare Weight	22.91	g
Dry Weight (Total)	29.43	g
Solids, Percent	83.2	%

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

PPG Garfield Avenue, Jersey City, NJ

60279183.GA.RI.RPT.HDS.FIELD PO # 85111ACM

SGS Accutest Job Number: JC36135R

Sampling Date: 01/25/17

Report to:

AECOM, INC.
30 Knightsbridge Road Suite 520
Piscataway, NJ 08854
NJlabdata@aecom.com; Christine.DeAmbrogio@aecom.com

ATTN: Mary O'Connell Kozik

Total number of pages in report: **91**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4 5 6 7

Table of Contents

Sample Summary

AECOM, INC.

Job No: JC36135R

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD PO # 85111ACM

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC36135-26R	01/25/17	09:05	BT	01/25/17	SO	Soil	MW7D-O-13.5-14.0
JC36135-27R	01/25/17	09:10	BT	01/25/17	SO	Soil	MW7D-O-13.5-14.0X
JC36135-28R	01/25/17	09:15	BT	01/25/17	SO	Soil	MW7D-O-14.5-15.0
JC36135-29R	01/25/17	09:20	BT	01/25/17	SO	Soil	MW7D-O-17.5-18.0
JC36135-30R	01/25/17	08:50	BT	01/25/17	SO	Soil	MW7D-O-4.5-5.0
JC36135-31R	01/25/17	08:55	BT	01/25/17	SO	Soil	MW7D-O-6.0-6.5
JC36135-32R	01/25/17	09:00	BT	01/25/17	SO	Soil	MW7D-O-9.5-10.0

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: AECOM, INC. **Job No** JC36135R

Site: PPG Garfield Avenue, Jersey City, NJ **Report Date** 2/6/2017 12:47:24 PM

On 01/25/2017, 7 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 4.8 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC36135R was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Wet Chemistry By Method ASTM D3872-86

Matrix: SO **Batch ID:** GN58913

- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36135-29RDUP, JC36135-29RMS were used as the QC samples for Iron, Ferrous.
- The following samples were run outside of holding time for method ASTM D3872-86: JC36135-29R 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.

Wet Chemistry By Method LLOYD KAHN 1988 MOD

Matrix: SO **Batch ID:** GP2935

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC35821-2MS, JC35821-2DUP were used as the QC samples for Total Organic Carbon.

Wet Chemistry By Method SM4500S2- A-11

Matrix: SO **Batch ID:** GN58914

- All method blanks for this batch meet method specific criteria.
- The following samples were run outside of holding time for method SM4500S2- A-11: JC36135-29R 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.

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO **Batch ID:** GP3023

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36135-29RMS, JC36135-29RDUP, JC36135-29RMS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Soluble XCR matrix spike recovery indicates possible matrix interference. Low post spike recovery (75_%) on this sample. Good pH adjusted post spike (90%). Good agreement between the sample and 1:5 dilution.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP3023-D1. High RPD due to possible sample nonhomogeneity.
- GP3023-S2 for Chromium, Hexavalent: Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC36135R
Account: AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Collected: 01/25/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC36135-26R	**MW7D-O-13.5-14.0**					
Chromium, Hexavalent		0.65	0.47	0.33	mg/kg	SW846 3060A/7196A
JC36135-27R	**MW7D-O-13.5-14.0X**					
Chromium, Hexavalent		0.36 B	0.48	0.34	mg/kg	SW846 3060A/7196A
JC36135-28R	**MW7D-O-14.5-15.0**					
Chromium, Hexavalent		0.47 B	0.54	0.38	mg/kg	SW846 3060A/7196A
JC36135-29R	**MW7D-O-17.5-18.0**					
Iron, Ferrous [a]		0.45	0.20		%	ASTM D3872-86
Total Organic Carbon		857	120	55	mg/kg	LLOYD KAHN 1988 MOD
JC36135-30R	**MW7D-O-4.5-5.0**					
Chromium, Hexavalent		2.1	0.48	0.34	mg/kg	SW846 3060A/7196A
JC36135-31R	**MW7D-O-6.0-6.5**					
No hits reported in this sample.						
JC36135-32R	**MW7D-O-9.5-10.0**					
Chromium, Hexavalent		0.59	0.48	0.34	mg/kg	SW846 3060A/7196A

(a) 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.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW7D-O-13.5-14.0		
Lab Sample ID:	JC36135-26R	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	84.3
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.65	0.47	0.33	mg/kg	1	02/03/17 10:41	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW7D-O-13.5-14.0X		
Lab Sample ID:	JC36135-27R	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	82.6
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.36 B	0.48	0.34	mg/kg	1	02/03/17 10:41	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW7D-O-14.5-15.0		
Lab Sample ID:	JC36135-28R	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	73.5
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.47 B	0.54	0.38	mg/kg	1	02/03/17 10:41	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW7D-O-17.5-18.0		
Lab Sample ID:	JC36135-29R	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	86.8
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.32 U	0.46	0.32	mg/kg	1	02/03/17 10:34	RI	SW846 3060A/7196A
Iron, Ferrous [a]	0.45	0.20		%	1	02/03/17 12:50	MP	ASTM D3872-86
Sulfide Screen [b]	NEGATIVE				1	02/03/17 12:30	MP	SM4500S2- A-11
Total Organic Carbon	857	120	55	mg/kg	1	02/02/17 14:27	CD	LLOYD KAHN 1988 MOD

(a) 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.
(b) 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.

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW7D-O-4.5-5.0		
Lab Sample ID:	JC36135-30R	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	83.4
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	2.1	0.48	0.34	mg/kg	1	02/03/17 10:41	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW7D-O-6.0-6.5		
Lab Sample ID:	JC36135-31R	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	84.3
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.33 U	0.47	0.33	mg/kg	1	02/03/17 10:41	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW7D-O-9.5-10.0		
Lab Sample ID:	JC36135-32R	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	83.2
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.59	0.48	0.34	mg/kg	1	02/03/17 10:41	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC36135R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Iron, Ferrous		**ASTM D3872-86**	SO	Accutest is not certified for this parameter. [a]
Sulfide Screen		**SM4500S2- A-11**	SO	Accutest is not certified for this parameter. [a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

AECOM

SO, FB

E

COC ID:	2017-01-25-RI-HDS-COC	TURNAROUND TIME:	See Special Instructions	RUSH:	JC36135

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	3.4C0 FP
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	FIL	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)		
HDS-FB20170125	1	WQ	2017/01/25	14:00	G	2	field blank			X	X	X	1	A17
MW7D-5E-12.0-12.5	2	SO	2017/01/25	09:50	G	1	1 (8oz) jar			H	H	H	2	
MW7D-5E-14.5-15.0	3	SO	2017/01/25	09:55	G	1	1 (8oz) jar			H	H	H	3	B5
MW7D-5E-17.5-18.0	4	SO	2017/01/25	10:00	G	1	1 (8oz) jar			H	H	H	4	
MW7D-5E-4.5-5.0	5	SO	2017/01/25	09:35	G	1	1 (8oz) jar			H	H	H	5	
MW7D-5E-6.5-7.0	6	SO	2017/01/25	09:40	G	1	1 (8oz) jar			H	H	H	6	
MW7D-5E-9.5-10.0	7	SO	2017/01/25	09:45	G	1	1 (8oz) jar			H	H	H	7	
MW7D-5N-13.5-14.0	8	SO	2017/01/25	10:40	G	1	1 (8oz) jar			H	H	H	8	
MW7D-5N-14.5-15.0	9	SO	2017/01/25	10:45	G	1	1 (8oz) jar			H	H	H	9	
MW7D-5N-17.5-18.0	10	SO	2017/01/25	10:50	G	1	1 (8oz) jar			H	H	H	10	

INITIAL ASESSMENT 1BJK

LABEL VERIFICATION JK

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM / 1565	1/25/17 15:15	/ 1565	1/25/17 15:15
		1/25/17 17:28	SGS	1/25/17 1728

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tate	Mobile #	732 546 0068
Sampler's Signature		Date/Time	1/25/17 1430

1143

AECOM

COC ID:	2017-01-25-RI-HDS-COC	TURNAROUND TIME:	See Special Instructions	RUSH:	JC36135

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	3.4c0 IP
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	PRES:	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)	
MW7D-5N-4.5-5.0	11	SO	2017/01/25	10:25	G	1	1 (8oz) jar		H	H	H	11
MW7D-5N-6.0-6.5	12	SO	2017/01/25	10:30	G	1	1 (8oz) jar		H	H	H	12
MW7D-5N-9.5-10.0	13	SO	2017/01/25	10:35	G	1	1 (8oz) jar		H	H	H	13
MW7D-5S-12.0-12.5	14	SO	2017/01/25	12:15	G	1	1 (8oz) jar		H	H	H	14
MW7D-5S-15.0-15.5	15	SO	2017/01/25	12:20	G	1	1 (8oz) jar		H	H	H	15
MW7D-5S-17.5-18.0	16	SO	2017/01/25	12:25	G	1	1 (8oz) jar		H	H	H	16
MW7D-5S-4.5-5.0	17	SO	2017/01/25	12:00	G	1	1 (8oz) jar		H	H	H	17
MW7D-5S-7.0-7.5	18	SO	2017/01/25	12:05	G	1	1 (8oz) jar		H	H	H	18
MW7D-5S-9.5-10.0	19	SO	2017/01/25	12:10	G	1	1 (8oz) jar		H	H	H	19
MW7D-5W-12.0-12.5	20	SO	2017/01/25	11:35	G	1	1 (8oz) jar		H	H	H	20

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM	1/25/17 15:15	SGS	1/25/17 15:15
	SGS	1/25/17 17:28		

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	Brian Tate	Mobile #	735 546 0068
Sampler's Signature		Date/Time	1/25/17 1430

Page 2 of 4

AECOM

COC ID:	2017-01-25-RI-HDS-COC	TURNAROUND TIME:	See Special Instructions	RUSH:	JC36135

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	3,4c DT P
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS								ANALYSIS REQUESTED													Filtered - F: Field, L: Lab, FL: Field & Lab, N: None
								FIL													
								PRESERV.													
Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	ANALYSIS	HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)										
MW7D-5W-15.0-15.5	21	SO	2017/01/25	11:40	G	1	1 (8oz) jar		H	H	H	21									
MW7D-5W-17.5-18.0	22	SO	2017/01/25	11:45	G	1	1 (8oz) jar		H	H	H	22									
MW7D-5W-4.5-5.0	23	SO	2017/01/25	11:05	G	1	1 (8oz) jar		H	H	H	23									
MW7D-5W-7.0-7.5	24	SO	2017/01/25	11:25	G	1	1 (8oz) jar		H	H	H	24									
MW7D-5W-9.5-10.0	25	SO	2017/01/25	11:30	G	1	1 (8oz) jar		H	H	H	25									
MW7D-O-13.5-14.0	26	SO	2017/01/25	09:05	G	1	1 (8oz) jar		X	X	X	26									
MW7D-O-13.5-14.0X	27	SO	2017/01/25	09:10	G	1	1 (8oz) jar		X	X	X	27									
MW7D-O-14.5-15.0	28	SO	2017/01/25	09:15	G	1	1 (8oz) jar		X	X	X	28									
MW7D-O-17.5-18.0	29	SO	2017/01/25	09:20	G	2	2 (8oz) jars MS/MSD		X	X	X	29									
MW7D-O-4.5-5.0	30	SO	2017/01/25	08:50	G	1	1 (8oz) jar		X	X	X	30									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM SGS	1/25/17 15:15 1/25/17 17:28	SGS	1/25/17 15:15

NB OF BOTTLES RETURNED/DESCRIPTION				
	Sampler's Name	Brian Tatu	Mobile #	732 546 0008
	Sampler's Signature		Date/Time	1/25/17 1430

AECOM

COC ID:	2017-01-25-RI-HDS-COC	TURNAROUND TIME:	See Special Instructions	RUSH:	JC36135

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	3,400 IP
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS								ANALYSIS REQUESTED												Filtered - F: Field, L: Lab, FL: Field & Lab, N: None
Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	Filt.												
								PRESERV.												
								ANALYSIS	HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)									
MW7D-O-6.0-6.5	31	SO	2017/01/25	08:55	G	1	1 (8oz) jar		X	X	X	31								
MW7D-O-9.5-10.0	32	SO	2017/01/25	09:00	G	1	1 (8oz) jar		X	X	X	32								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	SGS	1/25/17 15:15	SGS	1/25/17 15:15
		1/25/17 17:28		

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Brian Tate	Mobile #	732 546 0068
	Sampler's Signature		Date/Time	1/25/17 1430

SGS Accutest Sample Receipt Summary

Job Number: JC36135 **Client:** _____ **Project:** _____

Date / Time Received: 1/25/2017 5:28:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (4.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

Job Change Order: JC36135

Requested Date:	1/31/2017	**Received Date:**	1/25/2017
Account Name:	AECOM, INC.	**Due Date:**	1/30/2017
Project Description:	PPG Garfield Avenue, Jersey City, NJ	**Deliverable:**	FULT1
CSR:	malay.parekh	**TAT (Days):**	3

==========

Sample #: JC36135-26 to 32 **Change:**
Due to XCR spike Log in XXCRAR

Dept:

TAT: 3

==========

==========

Sample #: JC36135-26 **Change:**
Due to XCR spike Log in FE2/7, SULFS, TOCLK.

Dept:

TAT: 3

MW7D-O-13.5-14.0

==========

Above Changes Per: AECOM **Date/Time:** 1/31/2017 8:19:17 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

JC36135R: Chain of Custody
Page 6 of 7

Job Change Order: JC36135

Requested Date:	1/31/2017	**Received Date:**	1/25/2017
Account Name:	AECOM, INC.	**Due Date:**	1/30/2017
Project Description:	PPG Garfield Avenue, Jersey City, NJ	**Deliverable:**	FULT1
CSR:	malay.parekh	**TAT (Days):**	3

==========

Sample #: JC36135-26 to 32
Dept:
TAT: 3

Change:
Due to XCR spike Log in XXCRAR

==========

==========

Sample #: JC36135-29
Dept:
TAT: 3

MW7D-O-17.5-18.0

Change:
Due to XCR spike Log in FE2/7, SULFS, TOCLK.

==========

Above Changes Per: AECOM

Date/Time: 1/31/2017 5:27:19 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

JC36135R: Chain of Custody
Page 7 of 7

Internal Sample Tracking Chronicle

AECOM, INC.

Job No: JC36135R

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS.FIELD PO # 85111ACM

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC36135-26R	Collected: 25-JAN-17 09:05 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-13.5-14.0						
JC36135-26R	SW846 3060A/7196A	03-FEB-17 10:41	RI	01-FEB-17	SP	XCRA
JC36135-27R	Collected: 25-JAN-17 09:10 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-13.5-14.0X						
JC36135-27R	SW846 3060A/7196A	03-FEB-17 10:41	RI	01-FEB-17	SP	XCRA
JC36135-28R	Collected: 25-JAN-17 09:15 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-14.5-15.0						
JC36135-28R	SW846 3060A/7196A	03-FEB-17 10:41	RI	01-FEB-17	SP	XCRA
JC36135-29R	Collected: 25-JAN-17 09:20 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-17.5-18.0						
JC36135-29R	LLOYD KAHN 1988 M02.2	02-FEB-17 14:27	CD	02-FEB-17	YZ	TOCLK
JC36135-29R	SW846 3060A/7196A	03-FEB-17 10:34	RI	01-FEB-17	SP	XCRA
JC36135-29R	SM4500S2- A-11	03-FEB-17 12:30	MP			SULFS
JC36135-29R	ASTM D3872-86	03-FEB-17 12:50	MP			FE2/7
JC36135-30R	Collected: 25-JAN-17 08:50 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-4.5-5.0						
JC36135-30R	SW846 3060A/7196A	03-FEB-17 10:41	RI	01-FEB-17	SP	XCRA
JC36135-31R	Collected: 25-JAN-17 08:55 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-6.0-6.5						
JC36135-31R	SW846 3060A/7196A	03-FEB-17 10:41	RI	01-FEB-17	SP	XCRA
JC36135-32R	Collected: 25-JAN-17 09:00 By: BT			Received: 25-JAN-17	By:	AS
MW7D-O-9.5-10.0						
JC36135-32R	SW846 3060A/7196A	03-FEB-17 10:41	RI	01-FEB-17	SP	XCRA

SGS Accutest Internal Chain of Custody

Job Number: JC36135R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36135-26.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-26.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-26.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-26.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-26.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-26.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-26.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-26.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-26.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-26.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-26.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-26.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-26.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-26.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-26.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-26.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-26.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-26.1
JC36135-26.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-26.1
JC36135-26.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-27.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-27.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-27.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-27.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-27.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-27.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-27.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-27.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-27.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-27.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-27.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-27.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-27.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-27.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-27.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-27.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-27.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-27.1
JC36135-27.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-27.1
JC36135-27.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-28.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-28.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36135R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36135-28.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-28.1	Secured Storage	Luis Villanueva	01/26/17 12:00	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36135-28.1	Luis Villanueva	Secured Storage	01/26/17 13:24	Return to Storage
JC36135-28.1	Secured Storage	Edwin Gonzalez	01/26/17 15:11	Retrieve from Storage
JC36135-28.1	Edwin Gonzalez	Secured Staging Area	01/26/17 15:11	Return to Storage
JC36135-28.1	Secured Staging Area	Deval Patel	01/26/17 15:11	Retrieve from Storage
JC36135-28.1	Deval Patel	Radhika Mistry	01/26/17 16:03	Custody Transfer
JC36135-28.1	Radhika Mistry	Deval Patel	01/26/17 16:08	Custody Transfer
JC36135-28.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-28.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-28.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-28.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-28.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-28.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-28.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-28.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-28.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-28.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-28.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-28.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-28.1
JC36135-28.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-28.1
JC36135-28.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-29.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-29.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-29.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-29.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-29.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-29.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-29.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-29.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-29.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-29.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-29.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-29.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-29.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-29.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-29.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-29.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-29.1	Secured Storage	Edwin Gonzalez	02/01/17 19:56	Retrieve from Storage
JC36135-29.1	Edwin Gonzalez	Secured Staging Area	02/01/17 19:56	Return to Storage
JC36135-29.1	Secured Staging Area	Courtney Dringus	02/02/17 07:15	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36135R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36135-29.1	Courtney Dringus	Secured Storage	02/02/17 14:13	Return to Storage
JC36135-29.2	Secured Storage	Luis Villanueva	01/26/17 12:00	Retrieve from Storage
JC36135-29.2	Luis Villanueva	Secured Storage	01/26/17 13:24	Return to Storage
JC36135-29.2	Secured Storage	Edwin Gonzalez	01/26/17 15:11	Retrieve from Storage
JC36135-29.2	Edwin Gonzalez	Secured Staging Area	01/26/17 15:11	Return to Storage
JC36135-29.2	Secured Staging Area	Deval Patel	01/26/17 15:11	Retrieve from Storage
JC36135-29.2	Deval Patel	Radhika Mistry	01/26/17 16:03	Custody Transfer
JC36135-29.2	Radhika Mistry	Deval Patel	01/26/17 16:08	Custody Transfer
JC36135-29.2	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-29.2	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-29.2	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-29.2	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-29.2	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-29.2	Secured Storage	Mahendra Patel	02/03/17 08:17	Retrieve from Storage
JC36135-29.2	Mahendra Patel	Secured Storage	02/03/17 13:18	Return to Storage
JC36135-29.2.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-29.2
JC36135-29.2.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-29.2
JC36135-29.2.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-30.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-30.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-30.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-30.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-30.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-30.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-30.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-30.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-30.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-30.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-30.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-30.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-30.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-30.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-30.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-30.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-30.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-30.1
JC36135-30.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-30.1
JC36135-30.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-31.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-31.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36135R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36135-31.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-31.1	Paul Ojugo	Secured Storage	01/26/17 16:58	Return to Storage
JC36135-31.1	Secured Storage	Deval Patel	01/26/17 17:36	Retrieve from Storage
JC36135-31.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-31.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-31.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-31.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-31.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-31.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-31.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-31.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-31.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-31.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-31.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-31.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-31.1
JC36135-31.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-31.1
JC36135-31.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage
JC36135-32.1	Secured Storage	Alfredo Crespo	01/26/17 09:40	Retrieve from Storage
JC36135-32.1	Alfredo Crespo	Secured Staging Area	01/26/17 09:48	Return to Storage
JC36135-32.1	Secured Staging Area	Paul Ojugo	01/26/17 10:51	Retrieve from Storage
JC36135-32.1	Secured Storage	Luis Villanueva	01/26/17 12:00	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC36135-32.1	Luis Villanueva	Secured Storage	01/26/17 13:24	Return to Storage
JC36135-32.1	Secured Storage	Edwin Gonzalez	01/26/17 15:11	Retrieve from Storage
JC36135-32.1	Edwin Gonzalez	Secured Staging Area	01/26/17 15:11	Return to Storage
JC36135-32.1	Secured Staging Area	Deval Patel	01/26/17 15:11	Retrieve from Storage
JC36135-32.1	Deval Patel	Radhika Mistry	01/26/17 16:03	Custody Transfer
JC36135-32.1	Radhika Mistry	Deval Patel	01/26/17 16:08	Custody Transfer
JC36135-32.1	Deval Patel	Secured Storage	01/26/17 17:45	Return to Storage
JC36135-32.1	Secured Storage	Alfredo Crespo	01/27/17 08:08	Retrieve from Storage
JC36135-32.1	Alfredo Crespo	Secured Staging Area	01/27/17 08:09	Return to Storage
JC36135-32.1	Secured Staging Area	Sanchita Patel	01/27/17 08:35	Retrieve from Storage
JC36135-32.1	Sanchita Patel	Secured Storage	01/27/17 10:39	Return to Storage
JC36135-32.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36135-32.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36135-32.1	Secured Storage	Dawan Currie	01/31/17 20:22	Retrieve from Storage
JC36135-32.1	Dawan Currie	Secured Staging Area	01/31/17 20:22	Return to Storage
JC36135-32.1	Secured Staging Area	Sanchita Patel	02/01/17 08:49	Retrieve from Storage
JC36135-32.1	Sanchita Patel	Secured Storage	02/01/17 09:48	Return to Storage
JC36135-32.1.1	Deval Patel	Metals Digestion	01/26/17 17:37	Digestate from JC36135-32.1
JC36135-32.1.1	Metals Digestion	Deval Patel	01/26/17 17:38	Digestate from JC36135-32.1

SGS Accutest Internal Chain of Custody

Job Number: JC36135R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/25/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36135-32.1.1	Deval Patel	Metals Digestate Storage	01/26/17 17:38	Return to Storage

General Chemistry

6

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC
- Percent Solids Raw Data Summary

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36135R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP3023/GN58924	0.40	0.0	mg/kg	40	36.7	91.8	80-120%
Chromium, Hexavalent	GP3023/GN58924			mg/kg	778.713	791	101.6	80-120%
Iron, Ferrous	GN58913	0.20	<0.20	%				
Sulfide Screen	GN58914		NEGATIVE					
Total Organic Carbon	GP2935/GN58865	100	0.00	mg/kg	2000	1930	96.5	80-120%
Total Organic Carbon	GP2935/GN58865	100	0.0	mg/kg				
Total Organic Carbon	GP2935/GN58865	100	0.00	mg/kg				
Total Organic Carbon	GP2935/GN58865	100	0.00	mg/kg				

Associated Samples:
Batch GP2935: JC36135-29R
Batch GP3023: JC36135-26R, JC36135-27R, JC36135-28R, JC36135-29R, JC36135-30R, JC36135-31R, JC36135-32R
Batch GN58913: JC36135-29R
Batch GN58914: JC36135-29R
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36135R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP3023/GN58924	JC36135-29R	mg/kg	0.32 U	0.69	200.0*(a)	0-20%
Iron, Ferrous	GN58913	JC36135-29R	%	0.45	0.45	0.0	0-26%
Sulfide Screen	GN58914	JC36135-29R		NEGATIVE	NEGATIVE		0-%
Total Organic Carbon	GP2935/GN58627	JC35821-2	mg/kg	484	549	12.6	0-50.8%

Associated Samples:
Batch GP2935: JC36135-29R
Batch GP3023: JC36135-26R, JC36135-27R, JC36135-28R, JC36135-29R, JC36135-30R, JC36135-31R, JC36135-32R
Batch GN58913: JC36135-29R
Batch GN58914: JC36135-29R
(*) Outside of QC limits
(a) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36135R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP3023/GN58924	JC36135-29R	mg/kg	0.32 U	44.3	16.2	36.6N(a)	75-125%
Chromium, Hexavalent	GP3023/GN58924	JC36135-29R	mg/kg	0.32 U	1050	854	81.2(b)	75-125%
Iron, Ferrous	GN58913	JC36135-29R	%	0.45	51.4	48.6	93.6	62-130%
Total Organic Carbon	GP2935/GN58627	JC35821-2	mg/kg	484	3930	4540	103.3	39.6-124.8%

Associated Samples:
Batch GP2935: JC36135-29R
Batch GP3023: JC36135-26R, JC36135-27R, JC36135-28R, JC36135-29R, JC36135-30R, JC36135-31R, JC36135-32R
Batch GN58913: JC36135-29R
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Soluble XCR matrix spike recovery indicates possible matrix interference. Low post spike recovery (75_%) on this sample. Good pH adjusted post spike (90%). Good agreement between the sample and 1:5 dilution.
(b) Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: D70127S2.TXT Date Analyzed: 01/27/17 Methods: LLOYD KAHN 1988 MOD
Analyst: YZ Run ID: GN58627
Parameters: Total Organic Carbon

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:08	GN58627-STD1	1		STDA
11:30	GN58627-STD2	1		STDB
11:54	GN58627-STD3	1		STDC
12:20	GN58627-STD4	1		STDD
13:37	GN58627-STD5	1		STDE
14:08	GN58627-STD6	1		STDF
14:36	GN58627-STD7	1		STDG
07:49	GN58627-CRI1	1		
08:14	GN58627-HSTD1	1		
09:29	GN58627-ICV1	1		
09:59	GN58627-CCV1	1		
10:26	GP2935-MB1	1		
10:52	GP2935-B1	1		
14:10	GN58627-CCV2	1		
14:42	JC35821-2	1		(sample used for QC only; not part of login JC36135R)
15:04	ZZZZZZ	1		
15:19	ZZZZZZ	1		
15:34	ZZZZZZ	1		
15:49	GP2935-D1	1		Multiple injections indicate possible sample non-homogeneity.
16:20	GP2935-S1	1		
16:38	GN58627-CCV3	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC36135R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: D70127S2.TXT Date Analyzed: 01/27/17 Methods: LLOYD KAHN 1988 MOD
Run ID: GN58627 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN58627-CRI1	Total Organic Carbon	101	100	48	100	101.0	70-130
GN58627-HSTD1	Total Organic Carbon	5070	100	48	5000	101.4	90-110
GN58627-ICV1	Total Organic Carbon	2000	100	48	2000	100.0	90-110
GN58627-CCV1	Total Organic Carbon	2530	100	48	2500	101.2	90-110
GN58627-CCV2	Total Organic Carbon	2530	100	48	2500	101.2	90-110
GN58627-CCV3	Total Organic Carbon	2660	100	48	2500	106.4	90-110

(!) Outside of QC limits

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36135R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: E70202S1.TXT Date Analyzed: 02/02/17 Methods: LLOYD KAHN 1988 MOD
Analyst: CD Run ID: GN58865
Parameters: Total Organic Carbon

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:47	GN58865-STD1	1		STDA
08:09	GN58865-STD2	1		STDB
08:35	GN58865-STD3	1		STDC
09:07	GN58865-STD4	1		STDD
09:38	GN58865-STD5	1		STDE
10:08	GN58865-STD6	1		STDF
10:42	GN58865-STD7	1		STDG
07:56	GN58865-CRI1	1		
08:12	GN58865-HSTD1	1		
08:31	GN58865-ICV1	1		
08:51	GN58865-CCV1	1		
09:06	GP2935-MB3	1		
09:22	GP2935-B3	1		
09:37	GP2935-MB4	1		
09:47	GP2935-MB5	1		
10:02	GP2935-MB6	1		
10:42	ZZZZZZ	1		
10:58	ZZZZZZ	1		
11:11	ZZZZZZ	1		
11:54	JC36135-29R	1		under range;reran at 1.0g
12:01	ZZZZZZ	1		
12:16	GN58865-CCV2	1		
13:36	ZZZZZZ	1		
13:52	ZZZZZZ	1		
14:09	ZZZZZZ	1		
14:27	JC36135-29R	1		
14:41	GN58865-CCV3	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC36135R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: E70202S1.TXT Date Analyzed: 02/02/17 Methods: LLOYD KAHN 1988 MOD
Run ID: GN58865 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN58865-CRI1	Total Organic Carbon	92.1	100	48	100	92.1	70-130
GN58865-HSTD1	Total Organic Carbon	4940	100	48	5000	98.8	90-110
GN58865-ICV1	Total Organic Carbon	2010	100	48	2000	100.5	90-110
GN58865-CCV1	Total Organic Carbon	2460	100	48	2500	98.4	90-110
GN58865-CCV2	Total Organic Carbon	2460	100	48	2500	98.4	90-110
GN58865-CCV3	Total Organic Carbon	2320	100	48	2500	92.8	90-110

(!) Outside of QC limits

Report of Analysis

Client Sample ID:	MW7D-O-17.5-18.0		
Lab Sample ID:	JC36135-29R	**Date Sampled:**	01/25/17
Matrix:	SO - Soil	**Date Received:**	01/25/17
		Percent Solids:	86.8
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.32 U	0.46	0.32	mg/kg	1	02/03/17 10:34	RI	SW846 3060A/7196A
Iron, Ferrous [a]	0.45	0.20		%	1	02/03/17 12:50	MP	ASTM D3872-86
Sulfide Screen [b]	NEGATIVE				1	02/03/17 12:30	MP	SM4500S2- A-11
Total Organic Carbon	857	120	55	mg/kg	1	02/02/17 14:27	CD	LLOYD KAHN 1988 MOD

(a) 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.

(b) 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.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Percent Solids Raw Data Summary

Job Number: JC36135R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36135-26 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-13.5-14.0

Wet Weight (Total)	29.58	g
Tare Weight	23.54	g
Dry Weight (Total)	28.63	g
Solids, Percent	84.3	%

Sample: JC36135-27 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-13.5-14.0X

Wet Weight (Total)	27.9	g
Tare Weight	19.78	g
Dry Weight (Total)	26.49	g
Solids, Percent	82.6	%

Sample: JC36135-28 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-14.5-15.0

Wet Weight (Total)	34.42	g
Tare Weight	27.47	g
Dry Weight (Total)	32.58	g
Solids, Percent	73.5	%

Sample: JC36135-29 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-17.5-18.0

Wet Weight (Total)	30.99	g
Tare Weight	24.65	g
Dry Weight (Total)	30.15	g
Solids, Percent	86.8	%

Sample: JC36135-30 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-4.5-5.0

Wet Weight (Total)	33.32	g
Tare Weight	26.07	g
Dry Weight (Total)	32.12	g
Solids, Percent	83.4	%

Sample: JC36135-31 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-6.0-6.5

Wet Weight (Total)	27.65	g
Tare Weight	18.58	g
Dry Weight (Total)	26.23	g
Solids, Percent	84.3	%

Percent Solids Raw Data Summary

Job Number: JC36135R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36135-32 **Analyzed:** 26-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW7D-O-9.5-10.0

Wet Weight (Total)	30.75	g
Tare Weight	22.91	g
Dry Weight (Total)	29.43	g
Solids, Percent	83.2	%

General Chemistry

Raw Data

LABORATORY REVIEW SIGNATURE FORM
(To be stored with the raw data)

File ID: D70127S2.TXT Date Analyzed: 01/27/17 Methods: LLOYD KAHN 1988 MOD
Analyst: YZ Run ID: GN58627

The following analyst(s) have reviewd this run and attest that, to the best of their knowledge, this documentation is complete and correct:

Analyst: YZ Date 1/27/17

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

The following supervisor or their designee has reviewed this run and attests that, to the best of their knowledge, this documentation is complete and correct:

Supervisor (or designee): _____ Date 1/30/17

C:\TOC-L\Data\d70127s2.toc.tlx

	Type	Sample Name	Sample ID	Origin	Manual	Result	Comment
1	Unknown	CRI		TOCSMCALSW846	1.000	SSM-TC:0.1008mg/L	
2	Unknown	HSTD		TOCSMCALSW846	1.000	SSM-TC:5.074mg/L	
3	Unknown	ICV		TOCSMCALSW846	1.000	SSM-TC:2.002mg/L	
4	Unknown	CCV		TOCSMCALSW846	1.000	SSM-TC:2.530mg/L	
5	Unknown	GP2935-MB1	TOCLK	TOCSSMSW846.m	1.000	SSM-TC:0.00568mg/L	
6	Unknown	GP2935-B1		TOCSSMSW846.m	1.000	SSM-TC:2.019mg/L	
7	Unknown	CCV		TOCSMCALSW846	1.000	SSM-TC:2.530mg/L	
8	Unknown	JC35821-2		TOCSSM.met	1.000	SSM-TC:0.04119mg/L	
9	Unknown	JC36019-1		TOCSSM.met	1.000	SSM-TC:7.125mg/L	
10	Unknown	JC34922-4A		TOCSSM.met	1.000	SSM-TC:0.00927mg/L	
11	Unknown	JC34922-5A		TOCSSM.met	1.000	SSM-TC:0.00983mg/L	
12	Unknown	GP2935-D1	JC35821-2	TOCSSM.met	1.000	SSM-TC:0.04675mg/L	multiple injections
13	Unknown	GP2935-S1	JC35821-2	TOCSSM.met	1.000	SSM-TC:0.3863mg/L	
14	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.664mg/L	

7.1

7

1/27/2017 5:38:36 PM

ACCUTEST.

d 7012752

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-35

GN Batch ID GN58627
Date 1/27/17
Analyst YZ

Sample ID	Sample Weight	Bottle #	Sample Description & comments
CRI			
HSTD			
ICV			
CCV			
GP2935-MB1	1.000		
	1.000		
GP2935-B1	1.000		
	1.000		
JC35821-2	1.0419	3	
	1.0388		
	1.0244		
	1.0814		
JC36019-1	0.0517	1	
	0.0501		
	0.0534		
	0.0522		
JC34922-4A	1.000		x2 boats
JC34922-5A	1.000		x2 boats
GP2935-D1	1.0244	3	JC35821-2
	②1.0814		
	③1.0258		
	1.0742		

Analyst: YZ Date: 1/27/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments: 100ML ~~2000 mg/kg~~ 1.0g silica sand. TV=20.00 mg/kg

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST

d7012752

Test: **Total Organic Carbon** Units = mg/kg
Product: **TOC** Balance ID: B-33
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

GN Batch ID GN58627
Date 1/27/17
Analyst YZ

Sample ID	Sample Weight	Bottle #	Sample Description & comments
GP2935-S1	0.5903	3	JC35824-2
	0.6070		TV= 3340.85
	0.5879		
	0.6012		
CCV			

Analyst: YZ Date: 1/27/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments:

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST LABORATORIES

Day 2

MDL Schedule Log

Product: TOCLK

Matrix: Soil

Instrument: TOC-D

Sample #: JC34922-4A→5A (MDL) or MDLVER x

Concentration: 100 mg/L or (mg/kg) or

Prep: 0.5mL 200000mg/kg ↑ 100mL with DI

100ML → 1.0g silica sand.

Sample #: MDL or MDLVER x

Concentration: mg/L or mg/kg or

Prep:

Date: 1/27/17

Analyst: YZ

Batch #: GN58627

Form: GN278-02 Revised: 10/16/12

7.1

7

ACCUTEST LABORATORIES

GN

Reagent Information Log - TOC - Soil

Reagent	Reagent # or Manufacturer/Lot	Exp. Date
Sucrose Stock Solution, 200000 mg/L	GNE12-49520-TOC	1/28/17
Glucose Stock Solution, 50000 ug/L	GNE12-49521-TOC	1/28/17
Glucose Check Solution, 25000 ug/L	GNE12-49529-TOC	1/28/17
Nitric Acid, Reagent Grade	Fisher 111506	7/3/17
Glucose Check Solution, 20000 ug/L	GNE12-49528-TOC	1/28/17

All standards and stocks were made as described in the SOP for this method (circle one): Y or N
If no (N), see attached page for standards prep.

Form: GN087A-66
Rev. Date:11/9/15

ACCUTEST

Balance : B-39
glass pipet : class A.

GENERAL CHEMISTRY STANDARD PREPARATION LOG

Product: TOC

GN or GP Number: _____

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume or weight used with units	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
GNE12-49520-TOC	fisher #155362 exp 7/8/21	Sucrose	47.59	B-39	DI H_2O	100mL	200,000	1/28/17	YZ	12/31/16
GNE12-49521-TOC	fisher 120314 exp 7/10/17	Glucose	12.59	B-39	DI H_2O	100mL	50,000	↓	↓	↓

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Standard (mg/l)	Expiration Date	Analyst	Date
Sucrose STDs										
GNE12-49522-TOC	GNE12-49520-TOC	200,000	0.5	autopipet 41	DI H_2O	100mL	1000	1/28/17	YZ	12/31/16
GNE12-49523-TOC	↓	↓	2.5	↓	↓	↓	5000	↓	↓	↓
GNE12-49524-TOC			5.0	class A pipet			10000			
GNE12-49525-TOC			12.5				25000			
GNE12-49526-TOC			20.0				40000			
GNE12-49527-TOC	↓	↓	25.0	↓	↓	↓	50000	↓	↓	↓
Glucose STDs										
GNE12-49528-TOC	GNE12-49521-TOC	50,000	40.0	class A pipet	DI H_2O	100mL	20,000	1/28/17	YZ	12/31/16
GNE12-49529-TOC	↓	↓	50.0	↓	↓	↓	25,000	↓	↓	↓

* If Class A glass pipets are used, enter an A. For balances or autopipets, then enter the appropriate Accutest ID number.

Form: GN121-01
Rev. Date: 1/13/09

TOC-Control L Report

d61231s1.toc.tlx

Instr.Information

Instrument Options	TOC/SSM/Sparge Kit/
Catalyst	Regular Sensitivity

Cal. Curve

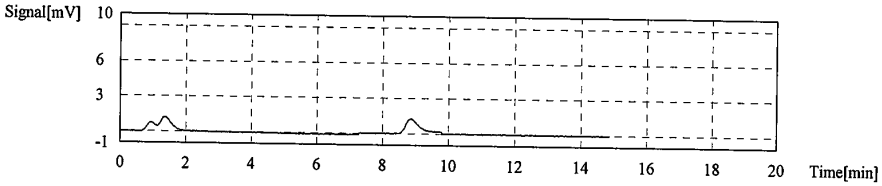
Sample Name:	Untitled
Sample ID:	Untitled
Cal. Curve:	d61231s1.2016_12_31_11_04_49.cal
Status	Completed

Type	Auto
Standard	SSM-TC

AbsC: 0.000ug

No.	Area	CNV	AbsC	Weight	Rem.	Ex.	Date/Time
1	4.216	4.216	0.000ug	100.0mg	*******		12/31/2016 11:08:38 AM
2	0.000	0.000	0.000ug	100.0mg	*******		12/31/2016 11:14:52 AM
3	3.250	3.250	0.000ug	100.0mg	*******		12/31/2016 11:19:29 AM
4	0.000	0.000	0.000ug	100.0mg	*******		12/31/2016 11:25:18 AM

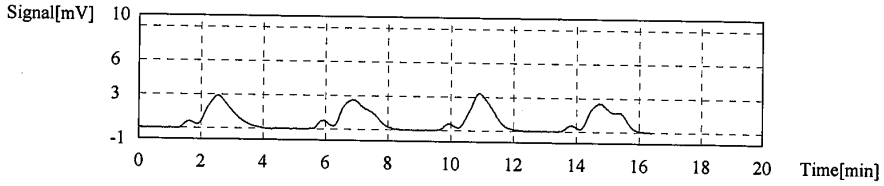
Mean Area 1.867
Mean CNV 1.867



AbsC: 0.01000ug

No.	Area	CNV	AbsC	Weight	Rem.	Ex.	Date/Time
1	18.09	18.09	0.01000ug	100.0mg	*******		12/31/2016 11:30:51 AM
2	17.93	17.93	0.01000ug	100.0mg	*******		12/31/2016 11:36:35 AM
3	17.27	17.27	0.01000ug	100.0mg	*******		12/31/2016 11:41:46 AM
4	17.36	17.36	0.01000ug	100.0mg	*******		12/31/2016 11:47:22 AM

Mean Area 17.66
Mean CNV 17.66



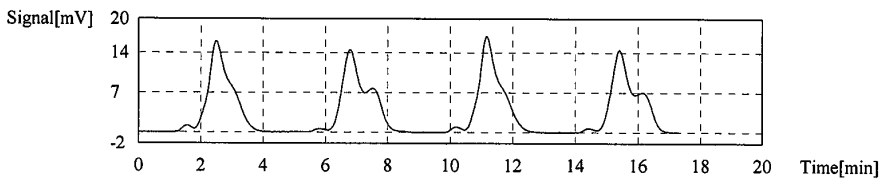
AbsC: 0.05000ug

No.	Area	CNV	AbsC	Weight	Rem.	Ex.	Date/Time
1	81.58	81.58	0.05000ug	100.0mg	*******		12/31/2016 11:54:15 AM
2	82.10	82.10	0.05000ug	100.0mg	*******		12/31/2016 12:00:07 PM
3	81.85	81.85	0.05000ug	100.0mg	*******		12/31/2016 12:06:44 PM
4	81.50	81.50	0.05000ug	100.0mg	*******		12/31/2016 12:12:56 PM

TOC-Control L Report

d61231s1.toc.tlx

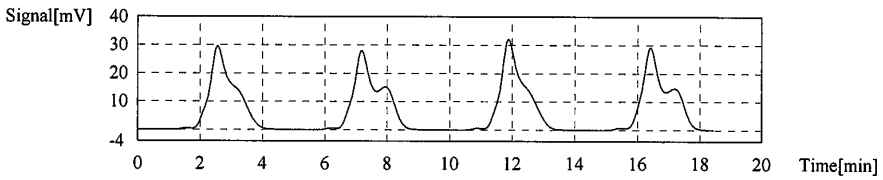
Mean Area 81.76
Mean CNV 81.76



AbsC: 0.1000ug

No	Area	CNV	Abs.C	Weight	Rem	Ex	Date / Time
1	161.3	161.3	0.1000ug	100.0mg	*******		12/31/2016 12:20:37 PM
2	164.9	164.9	0.1000ug	100.0mg	*******		12/31/2016 12:26:54 PM
3	166.6	166.6	0.1000ug	100.0mg	*******		12/31/2016 12:32:41 PM
4	167.1	167.1	0.1000ug	100.0mg	*******		12/31/2016 12:38:33 PM

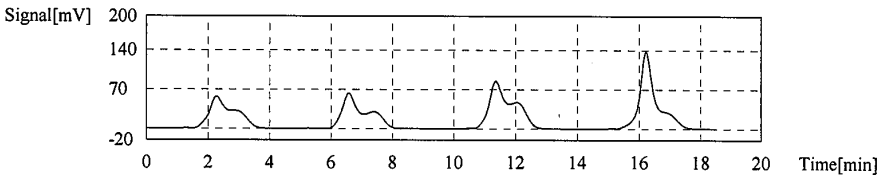
Mean Area 165.0
Mean CNV 165.0



AbsC: 0.2500ug

No	Area	CNV	Abs.C	Weight	Rem	Ex	Date / Time
1	318.7	318.7	0.2500ug	100.0mg	*******		12/31/2016 1:37:39 PM
2	335.6	335.6	0.2500ug	100.0mg	*******		12/31/2016 1:45:00 PM
3	456.9	456.9	0.2500ug	100.0mg	*******		12/31/2016 1:52:55 PM
4	507.0	507.0	0.2500ug	100.0mg	*******		12/31/2016 2:01:48 PM

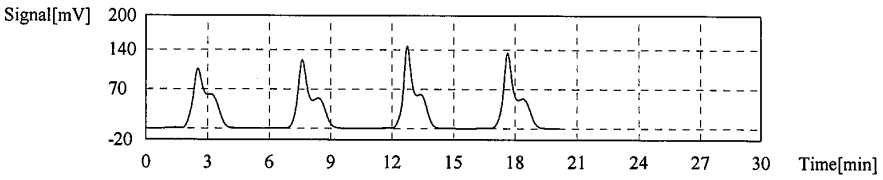
Mean Area 404.6
Mean CNV 404.5



AbsC: 0.4000ug

No	Area	CNV	Abs.C	Weight	Rem	Ex	Date / Time
1	617.4	617.4	0.4000ug	100.0mg	*******		12/31/2016 2:08:59 PM
2	637.9	637.9	0.4000ug	100.0mg	*******		12/31/2016 2:15:55 PM
3	649.5	649.5	0.4000ug	100.0mg	*******		12/31/2016 2:22:17 PM
4	649.4	649.4	0.4000ug	100.0mg	*******		12/31/2016 2:30:02 PM

Mean Area 638.5
Mean CNV 638.5



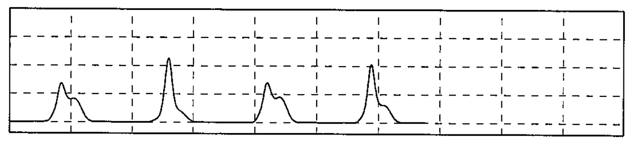
AbsC: 0.5000ug

TOC-Control L Report

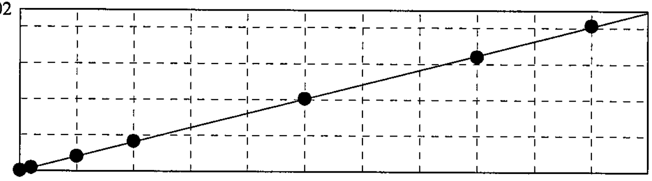
d61231s1.toc.tlx

No.	Area	CNV	Abs C	Weight	Rem	Ex.	Date/Time
1	800.7	800.7	0.5000ug	100.0mg	*******		12/31/2016 2:36:47 PM
2	796.5	796.5	0.5000ug	100.0mg	*******		12/31/2016 2:43:32 PM
3	814.5	814.5	0.5000ug	100.0mg	*******		12/31/2016 2:49:57 PM
4	841.4	841.4	0.5000ug	100.0mg	*******		12/31/2016 2:57:43 PM

Mean Area 813.3
Mean CNV 813.3



Slope: 1612
Intercept 1.612
r^2 0.9998
r 0.9999
Zero Shift No



TOC-Control L Report

d70127s2.toc.tlx

Instr.Information

Instrument Options TOC/SSM/Sparge Kit/
Catalyst Regular Sensitivity

Sample

Sample Name: CRI
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

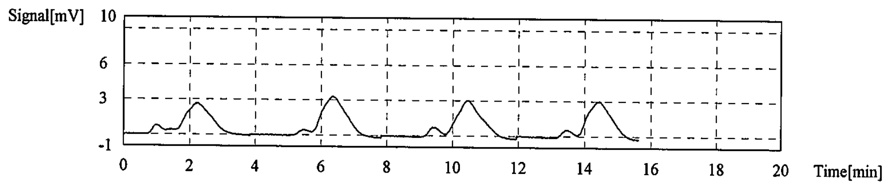
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.1008mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc	Weight	Volume	Ex	Cal Curve	Date/Time
1	16.45	16.45	0.09206mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 7:49:43 AM
2	18.46	18.46	0.1045mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 7:55:30 AM
3	19.02	19.02	0.1080mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:02:01 AM
4	17.52	17.52	0.09870mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:07:34 AM

Mean Conc. 0.1008mg/L
CV Conc 6.93%



Sample

Sample Name: HSTD
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:5.074mg/L

1. Det

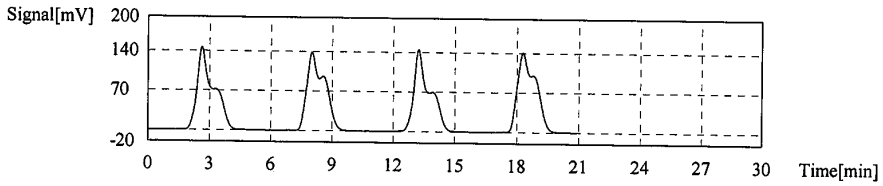
Anal.: SSM-TC

No.	Area	CNV	Conc	Weight	Volume	Ex	Cal Curve	Date/Time
1	819.7	819.7	5.076mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:14:45 AM
2	826.6	826.6	5.119mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:25:20 AM
3	771.5	771.5	4.777mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:32:34 AM
4	859.8	859.8	5.325mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:41:36 AM

TOC-Control L Report

d70127s2.toc.tlx

Mean Conc. 5.074mg/L
CV Conc 4.45%



Sample

Sample Name: ICV
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

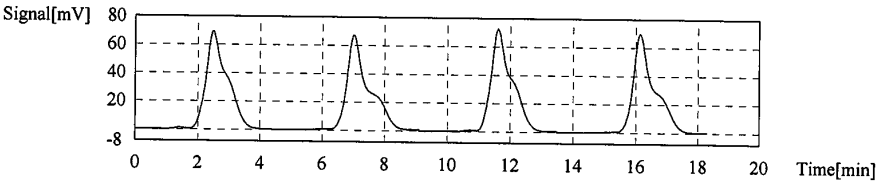
Type	Name	Dilution Factor	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.002mg/L

1. Det

Anal.: SSM-TC

No.	Area	ONV	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	322.5	322.5	1.991mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:29:27 AM
2	319.2	319.2	1.970mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:36:26 AM
3	329.2	329.2	2.033mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:45:58 AM
4	326.1	326.1	2.013mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:52:32 AM

Mean Conc. 2.002mg/L
CV Conc 1.34%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

Type	Name	Dilution Factor	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.530mg/L

1. Det

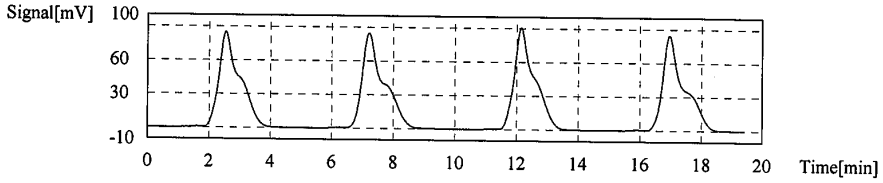
Anal.: SSM-TC

TOC-Control L Report

d70127s2.toc.tlx

No.	Area	NV	Conc.	Weight	Volume	Cal.Curve	Date/Time
1	401.8	401.8	2.483mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:59:38 AM
2	414.8	414.8	2.564mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:07:04 AM
3	414.9	414.9	2.564mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:14:27 AM
4	405.9	405.9	2.508mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:22:24 AM

Mean Conc. 2.530mg/L
CV Conc 1.61%



Sample

Sample Name: GP2935-MB1
Sample ID: TOCLK
Origin: TOCSSMSW846.met
Status Completed
Chk. Result

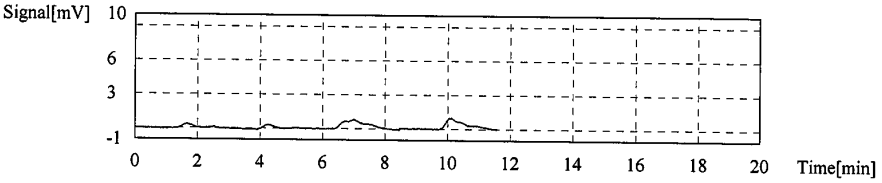
Type	Anal.	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00568mg/L

1. Det

Anal.: SSM-TC

No.	Area	NV	Conc.	Weight	Volume	Cal.Curve	Date/Time
1	0.7594	0.7594	-0.00529mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:26:22 AM
2	0.8808	0.8808	-0.00454mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:34:08 AM
3	4.528	4.528	0.01809mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:40:06 AM
4	3.940	3.940	0.01445mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:46:42 AM

Mean Conc. 0.00568mg/L
CV Conc 217.03%



Sample

Sample Name: GP2935-B1
Sample ID:
Origin: TOCSSMSW846.met
Status Completed
Chk. Result

Type	Anal.	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.019mg/L

TOC-Control L Report

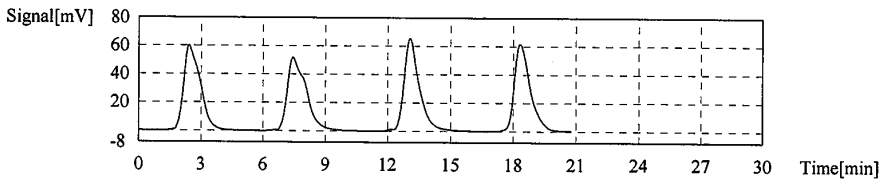
d70127s2.toc.tlx

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Conc.	Weight	Volume	Dil.	Cal. Curve	Date / Time
1	332.9	332.9	2.055mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:52:38 AM
2	324.1	324.1	2.001mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:59:35 AM
3	329.8	329.8	2.036mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 11:06:06 AM
4	321.5	321.5	1.985mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 11:24:11 AM

Mean Conc. 2.019mg/L
CV Conc 1.60%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

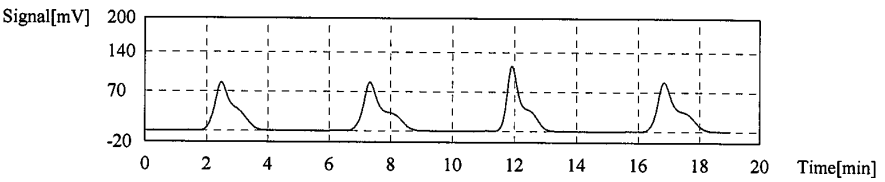
Type	Anal.	Weight / Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.530mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Conc.	Weight	Volume	Dil.	Cal. Curve	Date / Time
1	389.5	389.5	2.407mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:10:51 PM
2	411.7	411.7	2.544mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:18:34 PM
3	415.9	415.9	2.570mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:27:31 PM
4	420.4	420.4	2.598mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:34:26 PM

Mean Conc. 2.530mg/L
CV Conc 3.36%



Sample

Sample Name: JC35821-2
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

TOC-Control L Report

d70127s2.toc.tlx

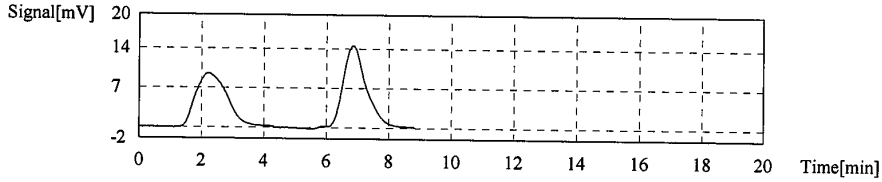
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.04119mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	64.78	64.78	0.03762mg/L	1042mg	1041uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:42:43 PM
2	76.57	76.80	0.04477mg/L	1039mg	1038uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:50:08 PM

Mean Conc. 0.04119mg/L
CV Conc 12.28%



Sample

Sample Name: JC36019-1
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

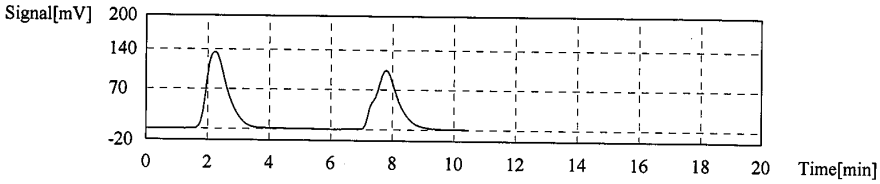
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:7.125mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	630.8	630.8	7.551mg/L	51.70mg	51uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:04:51 PM
2	542.6	559.9	6.700mg/L	50.10mg	50uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:13:25 PM

Mean Conc. 7.125mg/L
CV Conc 8.45%



Sample

Sample Name: JC34922-4A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

TOC-Control L Report

d70127s2.toc.tlx

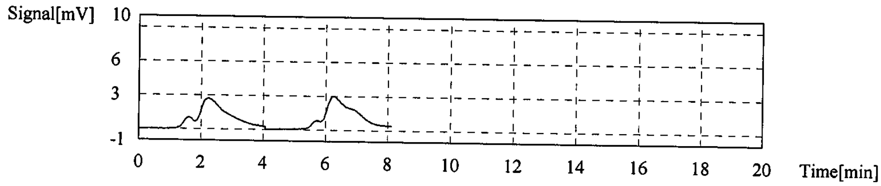
Type	Anal.	Manual dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00927mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	16.17	16.17	0.00903mg/L	1000mg	1000uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:19:36 PM
2	16.94	16.94	0.00951mg/L	1000mg	1000uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:28:51 PM

Mean Conc. 0.00927mg/L
CV Conc 3.64%



Sample

Sample Name: JC34922-5A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

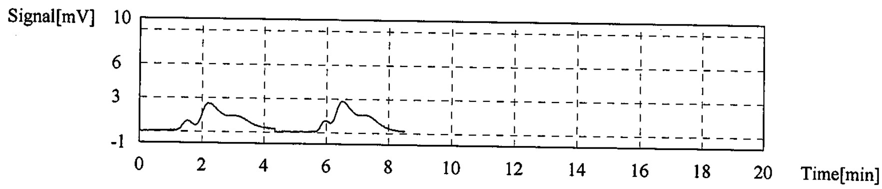
Type	Anal.	Manual dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00983mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	16.92	16.92	0.00950mg/L	1000mg	1000uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:34:15 PM
2	17.99	17.99	0.01016mg/L	1000mg	1000uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:42:11 PM

Mean Conc. 0.00983mg/L
CV Conc 4.78%



Sample

Sample Name: GP2935-D1
Sample ID: JC35821-2
Origin: TOCSSM.met
Status Completed
Chk. Result

TOC-Control L Report

d70127s2.toc.tlx

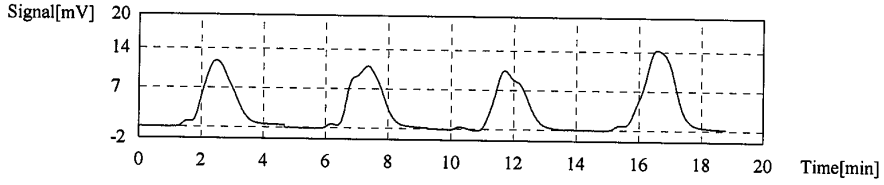
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.04675mg/L

1. Det

Anal.: SSM-TC

No.	Area	Corr. Area	Conc.	Weight	Volume	Dil.	Cal. Curve	Date/Time
1	75.96	75.96	0.04503mg/L	1024mg	1024uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:49:07 PM
2	77.94	77.83	0.04617mg/L	1026mg	1025uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:54:55 PM
3	69.70	66.03	0.03907mg/L	1081mg	1081uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:06:34 PM
4	99.84	95.21	0.05674mg/L	1074mg	1074uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:14:04 PM

Mean Conc. 0.04675mg/L
CV Conc 15.72%



Sample

Sample Name: GP2935-S1
Sample ID: JC35821-2
Origin: TOCSSM.met
Status Completed
Chk. Result

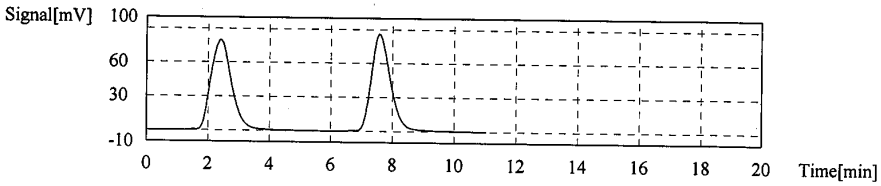
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.3863mg/L

1. Det

Anal.: SSM-TC

No.	Area	Corr. Area	Conc.	Weight	Volume	Dil.	Cal. Curve	Date/Time
1	373.2	373.2	0.3906mg/L	590.3mg	590uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:20:33 PM
2	375.4	365.1	0.3821mg/L	607.0mg	607uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:30:52 PM

Mean Conc. 0.3863mg/L
CV Conc 1.56%



Sample

TOC-Control L Report

d70127s2.toc.tlx

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

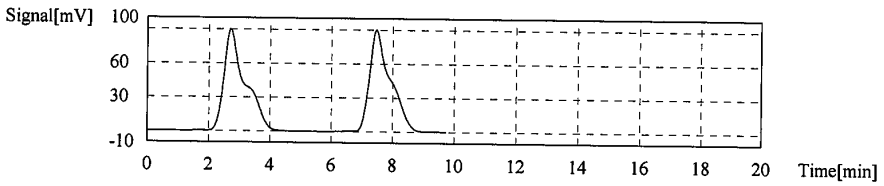
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.664mg/L

1. Det

Anal.: SSM-TC

No.	Area	Adj. Area	Conc.	Weight	Volume	Dil.	Data Name	Date Time
1	432.9	432.9	2.676mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:38:29 PM
2	429.0	429.0	2.652mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:46:22 PM

Mean Conc. 2.664mg/L
CV Conc 0.64%



LABORATORY REVIEW SIGNATURE FORM
(To be stored with the raw data)

File ID: E70202S1.TXT Date Analyzed: 02/02/17 Methods: LLOYD KAHN 1988 MOD
Analyst: CD Run ID: GN58865

The following analyst(s) have reviewd this run and attest that, to the best of their knowledge, this documentation is complete and correct:

Analyst: CD Date 2/2/17

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

The following supervisor or their designee has reviewed this run and attests that, to the best of their knowledge, this documentation is complete and correct:

Supervisor (or designee): _____ Date 2/03/

C:\TOC-L\Data\e70202s1.toc.tlx

	Type	Sample Name	Sample ID	Origin	Manual Diluti	Result	Comment
1	Unknown	CRI		TOCSSMCAL.met	1.000	SSM-TC:0.09214mg/L	
2	Unknown	HSTD		TOCSSMCAL.met	1.000	SSM-TC:4.943mg/L	
3	Unknown	ICV		TOCSSMCAL.met	1.000	SSM-TC:2.005mg/L	
4	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.463mg/L	
5	Unknown	GP2935-MB3	LK	TOCSSM.met	1.000	SSM-TC:0.00124mg/L	
6	Unknown	GP29358-B3		TOCSSM.met	1.000	SSM-TC:0.1928mg/L	
7	Unknown	GP2935-MB4	LK	TOCSSM.met	1.000	SSM-TC:-0.00001mg/	
8	Unknown	GP2935-MB5	LK	TOCSSM.met	1.000	SSM-TC:0.00270mg/L	
9	Unknown	GP2935-MB6	LK	TOCSSM.met	1.000	SSM-TC:0.00201mg/L	
10	Unknown	JC36049-1R (A)		TOCSSM.met	1.000	SSM-TC:1.053mg/L	
11	Unknown	JC36204-17R (2)		TOCSSM.met	1.000	SSM-TC:0.1947mg/L	rerun 1.0g
12	Unknown	JC35528-21T (A)		TOCSSM.met	1.000	SSM-TC:4.276mg/L	multiple injections
13	Unknown	JC36135-29R (2)		TOCSSM.met	1.000	SSM-TC:0.09220mg/L	rerun 1.0g
14	Unknown	JC34923-1A		TOCSSM.met	1.000	SSM-TC:0.01171mg/L	
15	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.458mg/L	
16	Unknown	JC34923-2A (A)		TOCSSM.met	1.000	SSM-TC:0.01163mg/L	
17	Unknown	JC34923-3A		TOCSSM.met	1.000	SSM-TC:0.01124mg/L	
18	Unknown	JC36204-17R		TOCSSM.met	1.000	SSM-TC:0.2980mg/L	
19	Unknown	JC36135-29R		TOCSSM.met	1.000	SSM-TC:0.07437mg/L	
20	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.317mg/L	

GN58865

e70202s1.toc
CZD 2/2/17

7.2
7

ACCUTEST.

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-39

GN Batch ID GN58865
Date 2/2/17
Analyst CZD

Sample ID	Sample Weight	Bottle #	Sample Description & comments
CRI			
HSTD			
ICV			
CCV			
GP2935-MB3	1.0000		
	1.0000		
GP2935-B3	1.0000		
	1.0000		
GP2935-MB4	1.0000		
	1.0000		
GP2935-MB5	1.0000		
	1.0000		
GP2935-MB6	1.0000		
	1.0000		
JC36049-1R	0.1017	2	
	0.1007		
	0.1043		
	0.1061		
JC36264-17R	0.1000	2	Under range rerun at 1.0g
	0.1063		
	0.1011		
	0.1040		

Analyst: CZD Date: 2/2/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments:
BSP: 100ul of 2000 mg/kg c/l → 1.0g silica Sand TV=2000 mg/kg

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST.

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-39

GN Batch ID GN58865
Date 2/2/17
Analyst CZD

Sample ID	Sample Weight	Bottle #	Sample Description & comments
JC35528-21T	0.1070	1	multiple boats
	0.1008		
	0.1051		
	0.1017		
JC36135-29R	0.1075	1	under range rerun at 1.0g
	0.1043		
	0.1053		
	0.1026		
JC34923-1A	1.0000		
CCV	1.0000		
JC34923-2A	1.0000		
	1.0000		
JC34923-3A	1.0000		
	1.0000		
JC36204-17R	1.0067	2	
	1.0039		
	1.0021		
	1.0072		
JC36135-29R	1.0016	1	
	1.0005		
	1.0087		
	1.0037		
CCV			

Analyst: CZD Date: 2/2/17 QCReviewer:_____ Date:_____
Manager Review:_____ Date:_____
Comments:

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST LABORATORIES

Day 1

MDL Schedule Log

Product: TOCLK

Matrix: Soil

Instrument: TOC E

3 MB's

Sample #: JC34923-1A→3A (MDL) or MDLVER x

Concentration: 100 mg/L or (mg/kg) or

Prep:

Sample #: MDL or MDLVER x

Concentration: mg/L or mg/kg or

Prep:

Date: 2/2/17

Analyst: CLD

Batch #: GN58865

Form: GN278-02 Revised: 10/16/12

ACCUTEST LABORATORIES

GN58865

Reagent Information Log - TOC - Soil

LK

Reagent	Reagent # or Manufacturer/Lot	Exp. Date
Sucrose Stock Solution, 200000 mg/L	GNE1-49821-TOC	2/25/17
Glucose Stock Solution, 50000 ug/L	GNE1-49828-TOC	2/25/17
Glucose Check Solution, 25000 ug/L	GNE1-49830-TOC	2/25/17
Nitric Acid, Reagent Grade	Fisher 1115060	7/3/17
Glucose Check Solution, 20000 ug/L	GNE1-49829-TOC	2/25/17

All standards and stocks were made as described in the SOP for this method (circle one): Y or N
If no (N), see attached page for standards prep.

Form: GN087A-66
Rev. Date:11/9/15

ACCUTEST

Balance : B-39
glass pipet : class A.

GENERAL CHEMISTRY STANDARD PREPARATION LOG

Product: TOCLK

(GN) or GP Number: GN58865

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume or weight used with units	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
GNE1-49821-TOC	fisher #155362 exp 7/8/21	Sucrose	47.59	B-39	DI H_2O	100mL	200,000	2/25/17	YZ	1/28/17
GNE1-49828-TOC	fisher 120314 exp 7/10/17	Glucose	12.59	B-39	DI H_2O	100mL	50,000	↓	↓	↓

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Standard (mg/l)	Expiration Date	Analyst	Date
Sucrose STDs										
GNE1-49822-TOC	GNE1-49821-TOC	200,000	0.5	autopipet 41	DI H_2O	100mL	1000	2/25/17	YZ	1/28/17
GNE1-49823-TOC	↓	↓	2.5	↓	↓	↓	5000	↓	↓	↓
GNE1-49824-TOC			5.0	class A pipet			10000			
GNE1-49825-TOC			12.5	↓			25000			
GNE1-49826-TOC			20.0				40000			
GNE1-49827-TOC	↓	↓	25.0	↓	↓	↓	50000	↓	↓	↓
Glucose STDs										
GNE1-49829-TOC	GNE1-49828-TOC	50,000	40.0	class A pipet	DI H_2O	100mL	20,000	2/25/17	YZ	1/28/17
GNE1-49830-TOC	↓	↓	50.0	↓	↓	↓	25,000	↓	↓	↓

* If Class A glass pipets are used, enter an A. For balances or autopipets, then enter the appropriate Accutest ID number.

Form: GN121-01
Rev. Date: 1/13/09

TOC-Control L Report

e70130s1.toc.tlx

Instr.Information

Instrument Options	TOC/SSM/Sparge Kit/
Catalyst	Regular Sensitivity

Cal. Curve

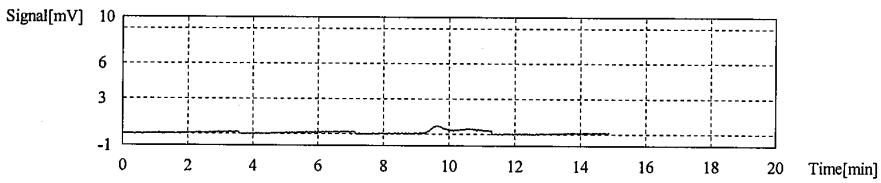
Sample Name:	Untitled
Sample ID:	Untitled
Cal. Curve:	e70130s1.2017_01_30_07_42_21.cal
Status	Completed

Type	Analyte
Standard	SSM-TC

AbsC: 0.000ug

NO.	Area	CNV	AbsC	Weight	Rem	F.F.	Date / Time
1	0.000	0.000	0.000ug	100.0mg	*******		1/30/2017 7:47:03 AM
2	0.000	0.000	0.000ug	100.0mg	*******		1/30/2017 7:51:27 AM
3	2.842	2.842	0.000ug	100.0mg	*******		1/30/2017 7:56:51 AM
4	0.000	0.000	0.000ug	100.0mg	*******		1/30/2017 8:01:46 AM

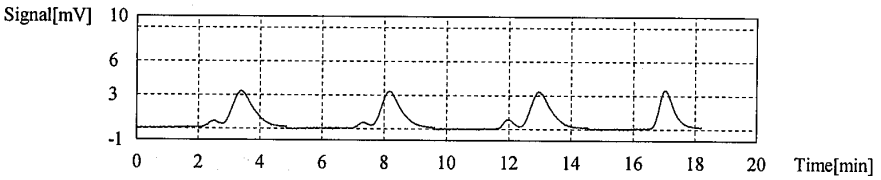
Mean Area 0.7105
Mean CNV 0.7105



AbsC: 0.01000ug

NO.	Area	CNV	AbsC	Weight	Rem	F.F.	Date / Time
1	16.03	16.03	0.01000ug	100.0mg	*******		1/30/2017 8:09:01 AM
2	15.36	15.36	0.01000ug	100.0mg	*******		1/30/2017 8:15:39 AM
3	16.04	16.04	0.01000ug	100.0mg	*******		1/30/2017 8:21:57 AM
4	11.10	11.10	0.01000ug	100.0mg	*******		1/30/2017 8:28:08 AM

Mean Area 14.63
Mean CNV 14.63



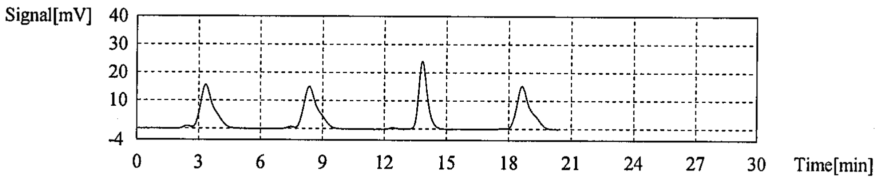
AbsC: 0.05000ug

NO.	Area	CNV	AbsC	Weight	Rem	F.F.	Date / Time
1	72.78	72.78	0.05000ug	100.0mg	*******		1/30/2017 8:35:30 AM
2	72.56	72.56	0.05000ug	100.0mg	*******		1/30/2017 8:44:47 AM
3	72.45	72.45	0.05000ug	100.0mg	*******		1/30/2017 8:51:57 AM
4	71.06	71.06	0.05000ug	100.0mg	*******		1/30/2017 8:59:39 AM

TOC-Control L Report

e70130s1.toc.tlx

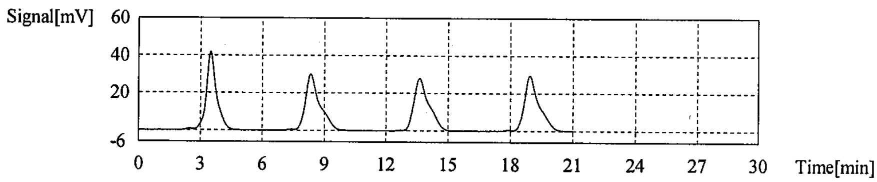
Mean Area 72.21
Mean CNV 72.21



AbsC: 0.1000ug

No.	Area	CNV	AbsC	Weight	Rem	Exc	Date/Time
1	144.2	144.2	0.1000ug	100.0mg	*******		1/30/2017 9:07:53 AM
2	143.0	143.0	0.1000ug	100.0mg	*******		1/30/2017 9:14:52 AM
3	141.5	141.5	0.1000ug	100.0mg	*******		1/30/2017 9:22:33 AM
4	143.5	143.5	0.1000ug	100.0mg	*******		1/30/2017 9:30:38 AM

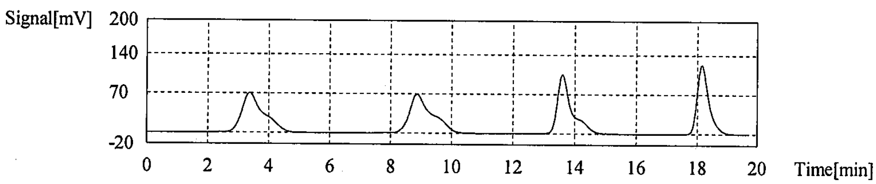
Mean Area 143.1
Mean CNV 143.1



AbsC: 0.2500ug

No.	Area	CNV	AbsC	Weight	Rem	Exc	Date/Time
1	355.6	355.6	0.2500ug	100.0mg	*******		1/30/2017 9:38:24 AM
2	358.9	358.9	0.2500ug	100.0mg	*******		1/30/2017 9:49:09 AM
3	342.1	342.1	0.2500ug	100.0mg	*******		1/30/2017 9:55:40 AM
4	332.3	332.3	0.2500ug	100.0mg	*******		1/30/2017 10:01:26 AM

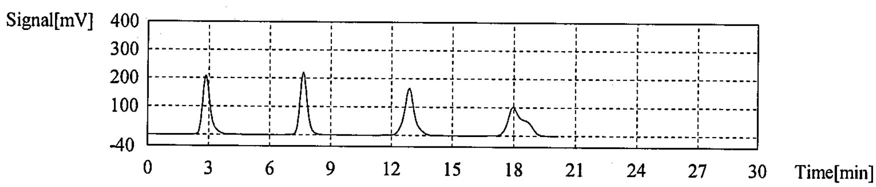
Mean Area 347.2
Mean CNV 347.2



AbsC: 0.4000ug

No.	Area	CNV	AbsC	Weight	Rem	Exc	Date/Time
1	546.7	546.7	0.4000ug	100.0mg	*******		1/30/2017 10:08:24 AM
2	552.5	552.5	0.4000ug	100.0mg	*******		1/30/2017 10:15:19 AM
3	582.1	582.1	0.4000ug	100.0mg	*******		1/30/2017 10:24:17 AM
4	564.4	564.4	0.4000ug	100.0mg	*******		1/30/2017 10:33:28 AM

Mean Area 561.4
Mean CNV 561.4



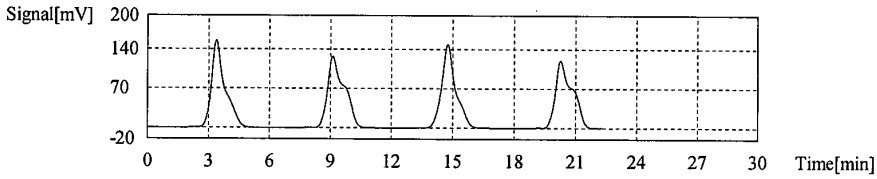
AbsC: 0.5000ug

TOC-Control L Report

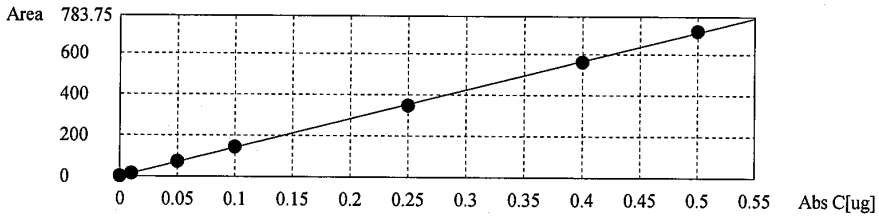
e70130s1.toc.tlx

1	723.2	723.2	0.5000ug	100.0mg	*******	1/30/2017 10:42:00 AM
2	726.5	726.5	0.5000ug	100.0mg	*******	1/30/2017 10:49:33 AM
3	708.1	708.1	0.5000ug	100.0mg	*******	1/30/2017 10:58:31 AM
4	692.2	692.2	0.5000ug	100.0mg	*******	1/30/2017 11:05:43 AM

Mean Area 712.5
Mean CNV 712.5



Slope: 1413
Intercept 0.02087
r^2 0.9998
r 0.9999
Zero Shift No



TOC-Control L Report

e70202s1.toc.tlx

Instr.Information

Instrument Options: TOC/SSM/Sparge Kit/
Catalyst: Regular Sensitivity

Sample

Sample Name: CRI
Sample ID:
Origin: TOCSSMCAL.met
Status: Completed
Chk. Result:

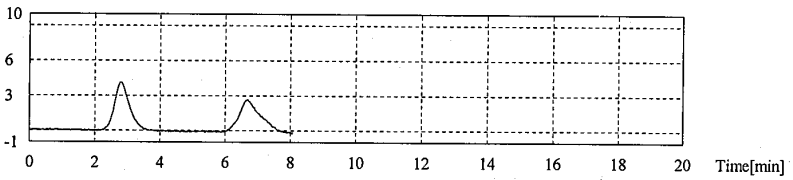
Type	Anal.	Injection	Dilution	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.09214mg/L

1. Det

Anal.: SSM-TC

No.	Area	CMV	Conc.	Weight	Volume	Rack	Cal. Curve	Date/Time
1	13.12	13.12	0.09268mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 7:56:12 AM
2	12.97	12.97	0.09161mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:03:10 AM

Mean Conc. 0.09214mg/L
CV Conc 0.81%



Sample

Sample Name: HSTD
Sample ID:
Origin: TOCSSMCAL.met
Status: Completed
Chk. Result:

Type	Anal.	Injection	Dilution	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:4.943mg/L

1. Det

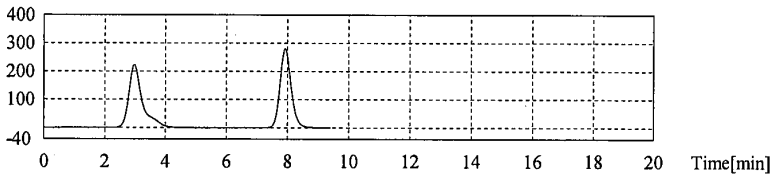
Anal.: SSM-TC

No.	Area	CMV	Conc.	Weight	Volume	Rack	Cal. Curve	Date/Time
1	688.3	688.3	4.870mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:12:40 AM
2	709.1	709.1	5.017mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:22:30 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 4.943mg/L
CV Conc 2.11%



Sample

Sample Name: ICV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

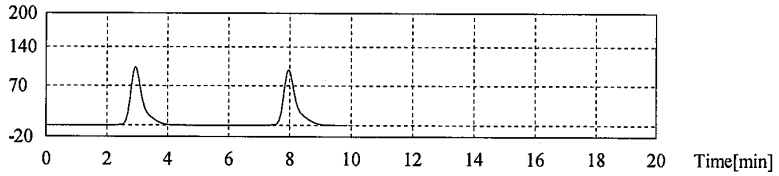
Type	Anal.	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.005mg/L

1. Det

Anal.: SSM-TC

No.	Area	ONV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	286.3	286.3	2.025mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:31:43 AM
2	280.6	280.6	1.985mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:41:14 AM

Mean Conc. 2.005mg/L
CV Conc 1.42%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

Type	Anal.	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.463mg/L

1. Det

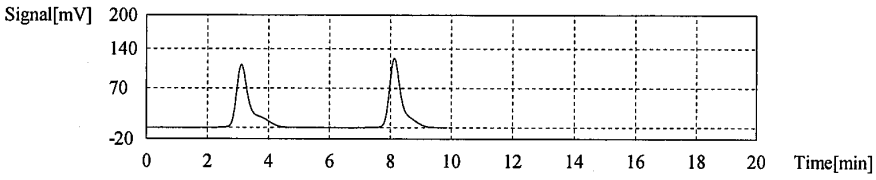
Anal.: SSM-TC

No.	Area	ONV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	347.8	347.8	2.461mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:51:10 AM
2	348.6	348.6	2.466mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:00:44 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 2.463mg/L
CV Conc 0.16%



Sample

Sample Name: GP2935-MB3
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

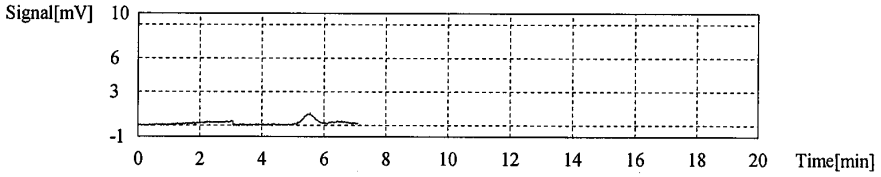
Type	Anal	Mean Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00124mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	0.000	0.000	-0.00001mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:06:40 AM
2	3.561	3.561	0.00250mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:13:37 AM

Mean Conc. 0.00124mg/L
CV Conc 143.10%



Sample

Sample Name: GP29358-B3
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal	Mean Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.1928mg/L

1. Det

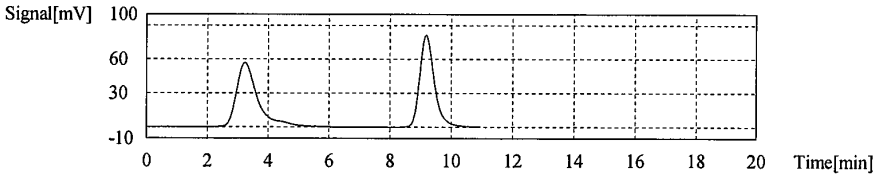
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	274.7	274.7	0.1943mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:22:26 AM
2	270.3	270.3	0.1912mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:30:49 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.1928mg/L
CV Conc 1.14%



Sample

Sample Name: GP2935-MB4
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

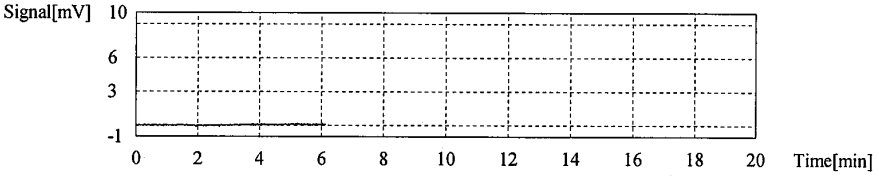
Type	Anal.	Inj.Vol	Dilution	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:-0.00001mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal.Curve	Date/Time
1	0.000	0.000	-0.00001mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:37:03 AM
2	0.000	0.000	-0.00001mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:41:08 AM

Mean Conc. -0.00001mg/L
CV Conc 0.00%



Sample

Sample Name: GP2935-MB5
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Inj.Vol	Dilution	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00270mg/L

1. Det

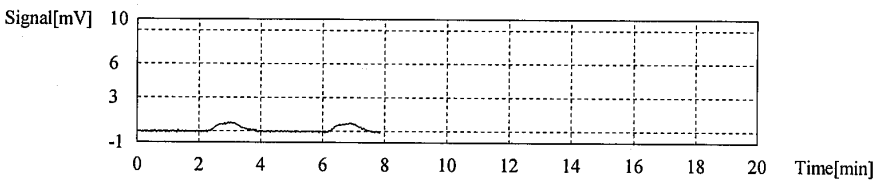
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal.Curve	Date/Time
1	3.492	3.492	0.00246mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:47:07 AM
2	4.178	4.178	0.00294mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:53:53 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.00270mg/L
CV Conc 12.72%



Sample

Sample Name: GP2935-MB6
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

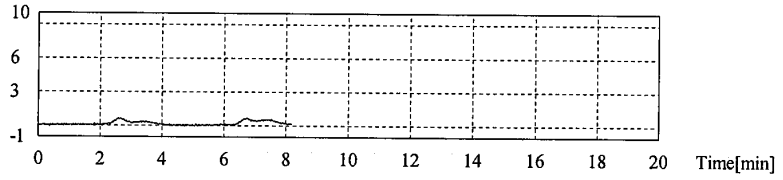
Type	Analyte	Weight/Volume	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00201mg/L

1. Det

Anal.: SSM-TC

NO	Area	CNV	Conc	Weight	Volume	Rf	Cal Curve	Date/Time
1	1.868	1.868	0.00131mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:02:55 AM
2	3.858	3.858	0.00271mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:31:55 AM

Mean Conc. 0.00201mg/L
CV Conc 49.51%



Sample

Sample Name: JC36049-1R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Analyte	Weight/Volume	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:1.053mg/L

1. Det

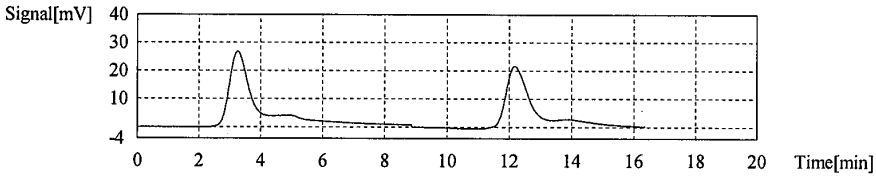
Anal.: SSM-TC

NO	Area	CNV	Conc	Weight	Volume	Rf	Cal Curve	Date/Time
1	163.3	163.3	1.136mg/L	101.7mg	101uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:42:42 AM
2	138.2	139.6	0.9708mg/L	100.7mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:52:09 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 1.053mg/L
CV Conc 11.08%



Sample

Sample Name: JC36204-17R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

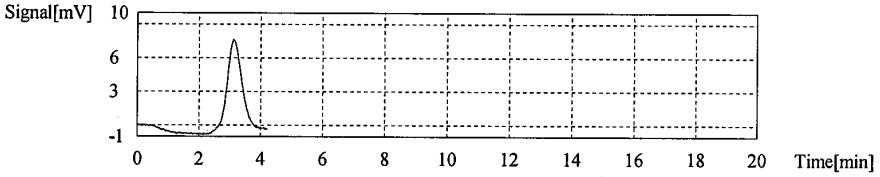
Type	Anal	Weight/Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.1947mg/L

1. Det

Anal.: SSM-TC

No	Area	CNV	Conc	Weight	Volume	ES	Cal Curve	Date/Time
1	27.54	27.54	0.1947mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:58:20 AM

Mean Conc. 0.1947mg/L
CV Conc 0.00%



Sample

Sample Name: JC35528-21T
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal	Weight/Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:4.276mg/L

1. Det

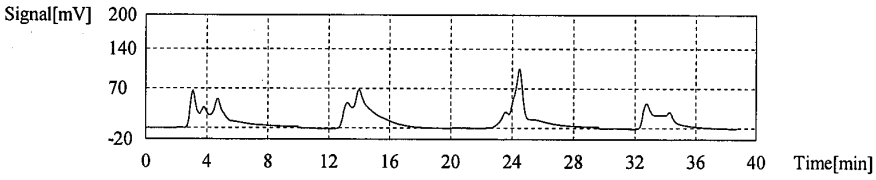
Anal.: SSM-TC

No	Area	CNV	Conc	Weight	Volume	ES	Cal Curve	Date/Time
1	644.3	644.3	4.260mg/L	107.0mg	107uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:11:20 AM
2	758.0	804.6	5.320mg/L	100.8mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:24:04 AM
3	653.3	665.1	4.398mg/L	105.1mg	105uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:35:16 AM
4	449.5	472.9	3.127mg/L	101.7mg	101uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:48:23 AM

TOC-Control L Report

e70202s1.toc.tix

Mean Conc. 4.276mg/L
CV Conc 21.03%



Sample

Sample Name: JC36135-29R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

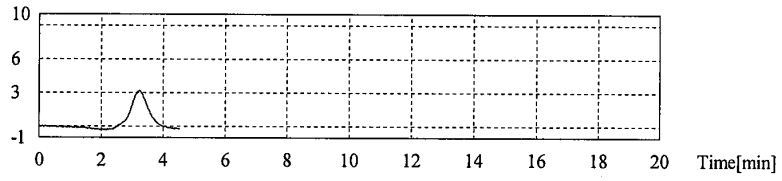
Type	Name	Multiplication	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.09220mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	14.03	14.03	0.09220mg/L	107.5mg	107uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:54:03 AM

Mean Conc. 0.09220mg/L
CV Conc 0.00%



Sample

Sample Name: JC34923-1A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Name	Multiplication	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.01171mg/L

1. Det

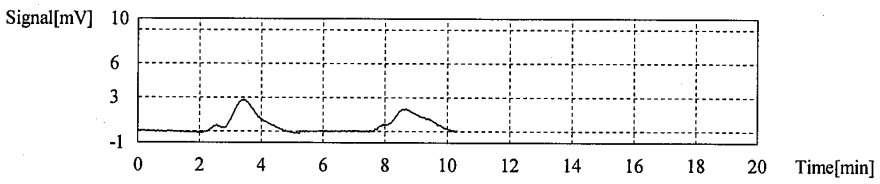
Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	18.40	18.40	0.01300mg/L	1000mg	1000uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:01:55 PM
2	14.74	14.74	0.01041mg/L	1000mg	1000uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:08:53 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.01171mg/L
CV Conc 15.64%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

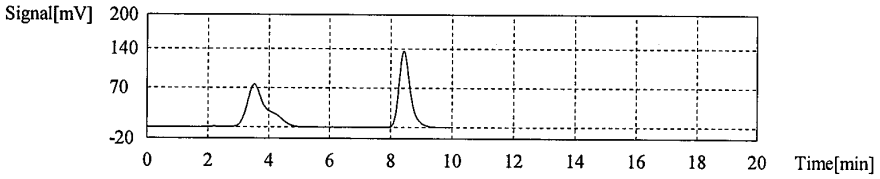
Type	Anal.	Dilution Factor	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.458mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Rx	Cal. Curve	Injection Time
1	346.8	346.8	2.453mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:16:22 PM
2	348.1	348.1	2.463mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:22:22 PM

Mean Conc. 2.458mg/L
CV Conc 0.26%



Sample

Sample Name: JC34923-2A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Dilution Factor	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.01163mg/L

1. Det

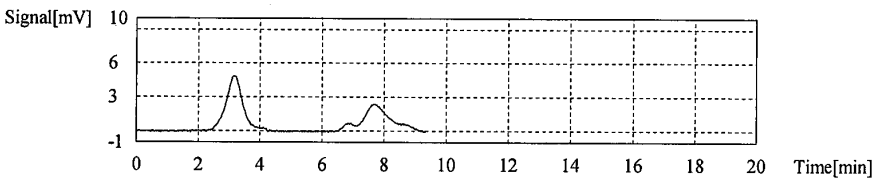
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Rx	Cal. Curve	Injection Time
1	17.26	17.26	0.01220mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:36:11 PM
2	15.66	15.66	0.01106mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:43:30 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.01163mg/L
CV Conc 6.88%



Sample

Sample Name: JC34923-3A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

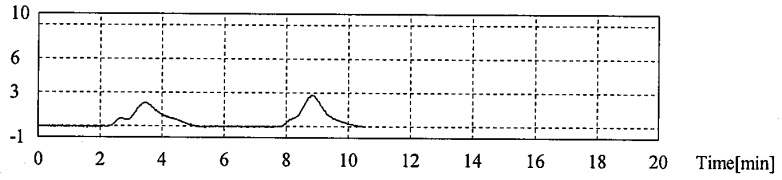
Type	Name	Multiplier	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.01124mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	15.48	15.48	0.01094mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:52:03 PM
2	16.34	16.34	0.01155mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:59:03 PM

Mean Conc. 0.01124mg/L
CV Conc 3.83%



Sample

Sample Name: JC36204-17R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Name	Multiplier	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.2980mg/L

1. Det

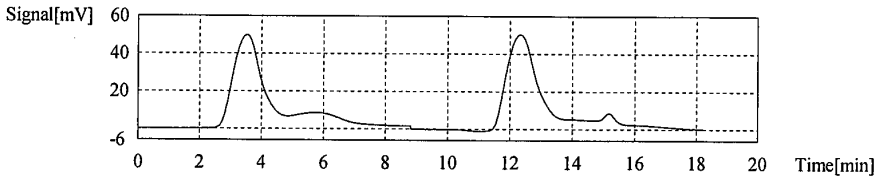
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	405.9	405.9	0.2870mg/L	1001mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:09:12 PM
2	438.6	437.2	0.3091mg/L	1004mg	1003uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:20:16 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.2980mg/L
CV Conc 5.25%



Sample

Sample Name: JC36135-29R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

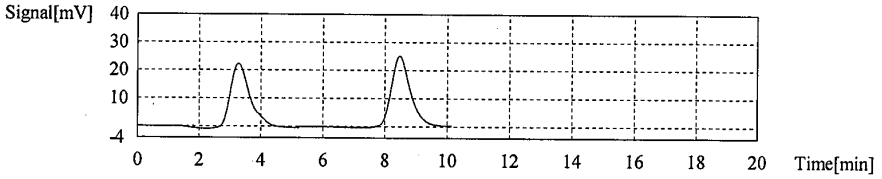
Type	Anal.	Mean Conc.	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.07437mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conv.	Conc.	Weight	Volume	IS	Cal. Curve	Date Time
1	103.1	103.1	0.07281mg/L	1002mg	1001uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:27:23 PM
2	107.4	107.5	0.07593mg/L	1001mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:33:24 PM

Mean Conc. 0.07437mg/L
CV Conc 2.97%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

Type	Anal.	Mean Conc.	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.317mg/L

1. Det

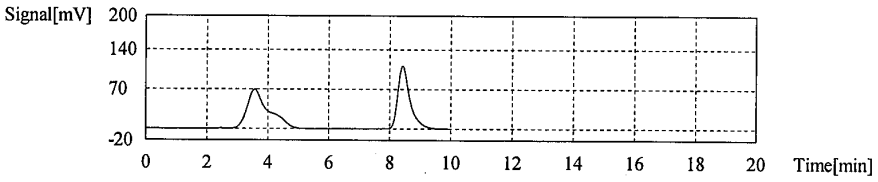
Anal.: SSM-TC

No.	Area	Conv.	Conc.	Weight	Volume	IS	Cal. Curve	Date Time
1	345.8	345.8	2.446mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:41:14 PM
2	309.1	309.1	2.187mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:47:03 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc.	2.317mg/L
CV Conc	7.93%



TEST: Ferrous Iron (FE2/7)
METHOD: ASTM D3872-86
RDL: 0.20 %

ANALYST: MRP
DATE: 2/3/2017

GN BATCH: GN58913
REAGENT ID's: See attached page

F = Weight of Iron in g / Vol. Of Dichomate in mL = 0.0062

%Fe2/7 = ml Dichromate x F x 100 / sample wt in g x (%sol/100)

QC Summary							Units	Within limits? (Y/N)
Dup. Sample ID:	JC36135-29R	original- 0.45		Duplicate:	0.45	RPD 0.00		
MS Sample ID:	JC36135-29R	original 0.45	Amt.Spiked 51.43	MS	48.60	REC 93.62		
MB ID and prep date:	2/3/2017	Result:	<02	RDL:	0.2	<RDL? Y		
SB ID and prep date:	2/3/2017	Amt. Spiked:		Result:		REC:		
External ID:		Known:		Result:		REC:		

Spike prep: 0.25 gms Iron sample+ 0.56gm sample taken

Bottle #	Sample Description	Sample Weight in g	Start Time/End Time	Titrant Start in ml	Titrant End in ml	Titrant Total (ml)	Result in mg/l	Final Result in mg/l	RDL	Units
	MB		12.30 /12.50	0.00	0.05	0.05	0.062	<02	0.2	%
	B1	0.25		0.00	40.55	40.55	for std.only		0.2	%
2	JC36135-29R MS	0.56		0.00	38.10	38.10	48.5969	48.60	0.2	%
2	JC36135-29R DUP	0.56		0.00	0.35	0.35	0.4464	0.45	0.2	%
2	JC36135-29R	0.56		0.00	0.35	0.35	0.4464	0.45	0.2	%
3	JC36371-7R	0.54		0.00	0.50	0.50	0.7533	0.75	0.2	%
3	JC35968-2R	0.62		0.00	0.60	0.60	0.7380	0.74	0.2	%
										%
										%
										%
										%
										%
										%
										%
										%
	Description	**% SOLIDS**			MS =	0.25 x 100				%
2	JC36135-29R	86.8				sample wt in g x (%sol/100)				%
3	JC36371-7R	76.20								%
3	JC35968-2R	81.3			=	25				%
						0.56 / 0.868				%
										%
					=	51.43				%
										%
										%

Reason codes for data corrections : 1 - reviewer error correction; 2 - transcription error; 3-computer error; 4- analyst error

ANAL mrp 2/3/2017

COMMENTS:

2/03

Form: GN198-01
Rev. Date: 6/16/06

SGS ACCUTEST

gn 58913

Reagent Information Log
Test Name: FE2/7

Reagent	Reagent # or Manufacturer/Lot
Iron Wire Std	Fisher # 135597 09/27/2018
HCL(1:1)	GNE12-56408-FE2/7 XP6/12/2017
60% Sulfuric Acid/Phosphoric Acid	GNE22-49866-fe2/7 8/1/17
Potassium Dichromate Solution	GNE2-49867-FE2/7 08/1/2017
Diphenyl Amine Indicator	GNE12-49429-FE2/7 XP 6/9/2017

All standards and stocks were made as described in the SOP for this method (circle one): Y or N
If no (N), see attached page for standards prep.

Form: GN087-01
Rev. Date:2/3/2017

ACCUTEST.

Analyst mrp

Method sulf

Prep Da 2/3/2017

GN GN58914

TIME ; 9.00 / 12.30

Balance #____B-43_____

Sample Prep Log

Sample ID	Sample Size	FINAL VOLUME	
GN58917-MB1	10 ML DI / H20	NEGATIVE	B.NO
JC36135-29R DUP	10.15GM	NEGATIVE	2
JC36135-29R	10.10 GM	NEGATIVE	2
JC36371-7R	10.12GM	NEGATIVE	3
JC35968-2R	10.10 GM	NEGATIVE	3

Form : GN166-03
Rev. Date: 11/19/15

Hexavalent Chromium

Test Title:	XCRA
GN Batch:	GN58924
Analyst:	RI
Prep Date:	2/1/2017
Analysis Date:	2/3/2017
Instrument ID:	P

Method: SW846 3060A, 7196A

Note: All results below shown on a wet weight basis.

Corr. Coef: 0.99985

Slope: 0.8043

Y intercept: 0.0019

Bottle #	Sample #	Sample Absorbance	BKGRD Abs	Analysis Times	Y Values Corr Sample Absorbance	X Values Conc(mg/l)	Final Vol. (ml)	Sam. Wt. (g)	Dilution	Final Conc.	Units	MDL	RDL
	Cal. Blk.	0.000	NA	9:25	0.000	0.0000							
	STD 1	0.010	NA	9:29	0.010	0.0100							
	STD 2	0.045	NA	9:29	0.045	0.0500							
	STD 3	0.088	NA	9:29	0.088	0.1000							
	STD 4	0.236	NA	9:29	0.236	0.3000							
	STD 5	0.405	NA	9:29	0.405	0.5000							
	STD 6	0.638	NA	9:29	0.638	0.8000							
	STD 7	0.813	NA	9:29	0.813	1.0000							
	CCV	0.394	NA	10:29	0.394	0.4875	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.000	NA	10:29	0.000	-0.0024	NA	NA	NA	NA	mg/l	0.007	0.010
	GP3023-MB1	0.000	0.000	10:34	0.000	-0.0024	100.0	2.5000	1	-0.094	mg/kg	0.280	0.400
	GP3023-B1	0.740	0.000	10:34	0.740	0.9177	100.0	2.5000	1	36.709	mg/kg	0.280	0.400
	GP3023-S1	0.307	0.011	10:34	0.296	0.3657	100.0	2.6000	1	14.064	mg/kg	0.280	0.385
	GP3023-D1	0.027	0.013	10:34	0.014	0.0150	100.0	2.5300	1	0.595	mg/kg	0.280	0.395
	JC36135-29R	0.016	0.012	10:34	0.004	0.0026	100.0	2.5700	1	0.102	mg/kg	0.280	0.389
	JC36135-29RPSCON	0.317	0.004	10:34	0.313	0.3868	100.0	2.5700	2	30.102	mg/kg	0.280	0.778
	GP3023-B2	>3	OVR	10:34		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	GP3023-S2	>3	OVR	10:34		#VALUE!	100.0	2.4500	1	#VALUE!	mg/kg	0.280	0.408
	GP3023-B2	0.320	0.000	10:34	0.320	0.3955	100.0	2.5000	50	791.022	mg/kg	0.280	20.000
	GP3023-S2	0.294	0.000	10:34	0.294	0.3632	100.0	2.4500	50	741.192	mg/kg	0.280	20.408
	CCV	0.394	NA	10:34	0.394	0.4875	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.000	NA	10:34	0.000	-0.0024	NA	NA	NA	NA	mg/l	0.007	0.010
	JC36135-26R	0.023	0.010	10:41	0.013	0.0138	100.0	2.5000	1	0.552	mg/kg	0.280	0.400
	JC36135-27R	0.029	0.021	10:41	0.008	0.0076	100.0	2.5700	1	0.295	mg/kg	0.280	0.389
	JC36135-28R	0.054	0.045	10:41	0.009	0.0088	100.0	2.5400	1	0.348	mg/kg	0.280	0.394
	JC36135-30R	0.067	0.030	10:41	0.037	0.0436	100.0	2.5500	1	1.712	mg/kg	0.280	0.392
	JC36135-31R	0.024	0.023	10:41	0.001	-0.0011	100.0	2.5300	1	-0.044	mg/kg	0.280	0.395
	JC36135-32R	0.048	0.036	10:41	0.012	0.0126	100.0	2.5500	1	0.493	mg/kg	0.280	0.392
	JC36135-29Rconf	0.019	0.015	10:41	0.004	0.0026	100.0	2.5800	5	0.507	mg/kg	0.280	1.938
	36135-29RphadjPSC(	0.399	0.022	10:41	0.377	0.4664	100.0	2.5800	2	36.154	mg/kg	0.280	0.775
	GP3023-MB1FCONF	0.000	0.000	10:41	0.000	-0.0024	100.0	2.5000	1	-0.094	mg/kg	0.280	0.400
	GP3023-B1FCONF	0.712	0.000	10:41	0.712	0.8829	100.0	2.5000	1	35.316	mg/kg	0.280	0.400
	CCV	0.390	NA	10:41	0.390	0.4825	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.000	NA	10:42	0.000	-0.0024	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400

VR 2/3/17

7.5

7

SGS ACCUTEST - Dayton

3060A/7196A POST-DIGEST SPIKE LEVEL CALCULATION SPREADSHEET

GP Batch: GP3023

NOTE: Always dilute post-spike first, then take a 45 ml aliquot of the diluted post-spike and add the spike amount.

Sample ID	PS Aliquot Weight in g Digested in 100 ml	Weight in 45 ml	Results in mg/kg.	Amount in ml to add of 100 ppm solution	Dilution needed	Suggested Dilution to use	Actual Dilution to be used	Suggested ml of 100 ppm to spike on dilution of sample.	Actual ml of 100 ppm to spike on dilution of sample.	Est. Read-back on curve in mg/l	Calculated Spike Amount in mg/kg	Use calculated or default spike?
JC36135-29R	2.57	1.1565	0	0.463	yes	0	2	0.232	0.232	0.516	40.121	efault (40 mg/kg) spike
JC36135-29R	2.58	1.161	0	0.464	yes	0	2	0.233	0.233	0.518	40.138	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike

3060A/7196A INSOLUBLE SPIKE CALCULATION

Weight of PbCrO4	Weight of Sample	Amount Spiked
0.0121	2.5	778.713
0.0139	2.45	912.811
		#DIV/0!
		#DIV/0!
		#DIV/0!

Validated By: JJY

Doc. Control #: AGN-XCRAPSCALC-01

Date Validated: 2/26/13

ACCUTEST

Test: **Hexavalent Chromium** MDL = 0.28 mg/kg GNBatch ID: GN58924
Product: **XCr** RDL = 0.4 mg/kg Date: 2-3-2017
Method: **SW846 3060A/7196A**

Digestion Batch QC Summary Units = mg/kg

Method Blank ID: GP3023-MB1 Date: 2-3-17 Result: <RDL RDL: 0.40 <RDL: Ye
Sol. Spike Blank ID: B1 Date: | Result: 36.709 Spike: 40.00 %Rec.: 91.77
Insol. Spike Blank ID: B2 Date: | Result: 791.022 Spike: 779.73 %Rec.: 101.5
Duplicate ID: D1 Samp. Result: <DL Dup. Result: 0.595 %RPD: 200
Sol. MS ID: S1 Samp. Result: | MS Result: 14.064 Spike: 38.46 %Rec: 36.57
Insol. MS ID: S2 Samp. Result: | MS Result: 741.192 Spike: 912.41 %Rec: 81.20
Post Spike ID: JC36135-2PR Samp. Result: | PS Result: 30.102 Spike: 40.12 %Rec: 75.03
Diluted Sample ID: | Samp. Result: | Dil. Result: <DL %RPD: 0
pH adj. PS ID: | Samp. Result: | MS Result: ~~35.776~~ 36.154 Spike: 40.12 %Rec: ~~89.19~~ 90.07

Analysis Batch QC Summary Units = mg/l

CCV: 2-3-2017 Result: 0.4995 TV: 0.500 %Rec.: 99.90
CCV: | Result: | TV: 0.500 %Rec.: |
CCV: | Result: 0.4924 TV: 0.500 %Rec.: 96.50
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:

CCB: 2-3-2017 Result: <RDL RDL: 0.010 <RDL: Ye
CCB: | Result: | RDL: 0.010 <RDL: |
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:

Reagent Reference Information - refer to attached reagent reference information page(s).

Insoluble spike = $PbCrO_4$ Molecular weight = 323.2 g/mol Cr = 52.0 g/mol

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount

Analyst: Date: 2-3-2017

Comments:

Form: GN066-04
Rev. Date: 16-Mar-2016

ACCUTEST

Hexavalent Chromium pH Adjustment Log
Method Sw846 3060A/7196A

pH adj. start time: 9:55 10:19
pH adj. end time: 10:05 10:23

pH Meter ID: 62
Digestion Date: 2/11/17
pH adj. Date: 2-3-2017
GN Batch ID: GN58924

Sample ID	Sample Weight in g	pH after HNO3 (7.0 to 8.0)	Final Volume (ml)	pH after H2SO4 (1.5 to 2.5)	bkg pH after H2SO4	Spike Amounts	Spike Solution	Digestate Description/Comments
GP 3023 (30HIC NO #)								
CCV		7.41	100	1.87	—	5.0 ml	10 ppm ultra	
CCV								
CCV								
CCV								
CCB		7.37	100	1.90	—			
CCB								
CCB								
CCB								
MS (Sol) JC 36135-29R 2.60		7.50	100	1.90	1.74	1.0ml	100ppm LGC	
MS (Insol.)	2.45	7.26		1.84	OR	0.01399	PbCrO4	
DUP	2.53	7.36		1.92	1.69			
SB (Sol)	2.50g	7.41		1.81	1.72	1.0ml	100ppm LGC	
SB (Insol)	2.50g	7.50		1.90	OR	0.01219	PbCrO4	
MB	2.50g	7.32		1.86	1.71			
1 JC 36135-29R	2.57	7.40		1.90	1.64			Pale yellow
2 -26R	2.50	7.31		1.87	1.69			yellow
3 -27R	2.57	7.62		1.90	1.72			↓
4 -28R	2.54	7.31		1.84	1.60			Black
5 -30R	2.55	7.43		1.81	1.73			yellow
6 -31R	2.53	7.50		1.92	1.81			↓
7 -32R	2.55	7.92		1.82	1.64			
8								
9								
10								
11								
12		* filtered thru 0.45um filter after pH adj. step						
13								
14								
15								
16								
17								
18								
19								
20								
SB (Insol)	2.50g	7.50	100	1.82	1.59			
MS (Insol.)	2.45	7.26		1.90	1.74			dilution 1:50 1ml to 50ml
PS	2.57	7.40		1.84	1.62	0.233ml	100ppm LGC	dilution 1:50 1ml to 50ml
pH adjusted PS	2.57	7.32		1.90	1.72	0.233ml	100ppm LGC	2.57g 1:50 ph= 4.5
1:5 dil.	2.57	7.32		1.86	1.59			10ml to 50ml with DI
JC 36135-29R	2.58	7.72		—	—			

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Digestion analyst & date: SP 2/11/17
Analysis analyst & date: 2-3-2017
Spike Witness: MH

Form: GN067-02b

ACCUTEST

GN/GP Batch ID: GP 3023 GN 58924

Reagent Information Log - XCRA (soil 3060A/7196)

Reagent	Exp. Date	Reagent # or Manufacturer/Lot
Calibration Source: Hexavalent Chromium, 1000 mg/L Stock	6/30/2018	VHG Labs 84971-9
Calibration Checks: Hexavalent Chromium, 1000 mg/L Stock	12/31/2020	Ultra Lot : R01215
10.0ppm Ultra CCV Spike	6/17/2017	GNE12-49422-XCRA
Spiking Solution Source 100 PPM LGC VHG	7/12/2017	GNE1-49648-XCRA
Lead Chromate (Insoluble Hexavalent Chromium Spike)	11/16/2020	Sigma Aldrich Lot #BCBP0031V
Magnesium Chloride, Anhydrous	8/14/2018	Alfa Aesar Lot #F19Z033
1N NaOH	7/13/2017	GNE1-49667-XCR
Digestion Solution	3/2/2017	GNE1-49617-XCR
Phosphate Buffer Solution	5/5/2017	GNE8-49027-XCRA
5.0 M Nitric Acid	7/11/2017	GNE1-49638-XCRA
Diphenylcarbazide Solution	2/22/2017	GNE1-49814-XCR
Sulfuric Acid, 10%	7/10/2017	GNE1-49627-XCR
Filter	NA	LOT# 150130034
Teflon Chips	NA	919120
0.45um syringe filter	NA	151221062

Form: GN087A-21B
Rev. Date: 2/18/10

7.5
7

SGS ACCUTEST

HEXAVALENT CHROMIUM TEMPERATURE & TIME DIGESTON LOG (METHOD SW846 3060A)

Digest batches for a minimum of 1 hour.

Record temperatures at the start, middle and end of each digestion.

Corrected temperatures must be from 90-95 deg. C.

Digestion Date: 2/1/17		Hot Plate ID: 9 Thermometer ID: 453 Correction Factor: -1		Hot Plate ID: 8 Thermometer ID: 463 Correction Factor: -1		Hot Plate ID: 11 Thermometer ID: 3124165 Correction Factor: -2		Hot Plate ID: 6 Thermometer ID: 462 Correction Factor: 0		Hot Plate ID: 10 Thermometer ID: 31069 14 Correction Factor: -1			
		Temperatures		Temperatures		Temperatures		Temperatures		Temperatures			
GP Batch ID(s)	Time	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Analyst Check	2nd Analyst Check
GP3017 GP3018 GP3020	Start time 10:00	93	92	94	93	92	90	91	91	93	92	MH	SP
	Half time 10:30	93	92	94	93	92	90	91	91	93	92	SP	MH
	End time 11:00	93	92	94	93	92	90	91	91	93	92	SP	MH
GP 3021	Start time 11:10	92	91	93	92 (MW) 91	93	91	90	90	95	94	SP	MH
GP 3022	Half time 11:40	92	91	93	92	93	91	90	90	95	94	SP	MH
GP 3023	End time 12:10	92	91	93	92	93	91	90	90	95	94	SP	MH
	Start time												
	Half time												
	End time												

Data Reviewed: _____

Form: GN074-03
Revised: 28-Nov-16

ACCUTEST.

Hexavalent Chromium pH Adjustment Log
Method: SW846 3060A/7196A

pH adj. start time: 9-03 9-13
pH adj. end time: 9-09 9-17

pH adjustment Date: 2-3-2017
GN Batch ID: GN 58924

Sample ID	Sample Weight in g	pH after HNO3	Final Volume (ml)	pH after H2SO4	Comments	Spike Info.
Calibration Blank	NA	9.14	100	1.84		
0.010 mg/l standard	NA	9.26	100	1.78	10ppm LGC VHG	0.10 ml of 10 mg/l
0.050 mg/l standard	NA	9.12	100	1.64	10ppm LGC VHG	0.50 ml of 10 mg/l
0.100 mg/l standard	NA	9.31	100	1.81	10ppm LGC VHG	1.00 ml of 10 mg/l
0.300 mg/l standard	NA	9.41	100	1.86	10ppm LGC VHG	3.00 ml of 10 mg/l
0.500 mg/l standard	NA	9.12	100	1.91	10ppm LGC VHG	5.00 ml of 10 mg/l
0.800 mg/l standard	NA	9.20	100	1.84	10ppm LGC VHG	8.00 ml of 10 mg/l
1.00 mg/l standard	NA	9.21	100	1.90	10ppm LGC VHG	10.0 ml of 10 mg/l

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Anayst: [signature]
Date: 2-3-2017

Form: GN068-01
Rev. Date:5/22/06

ACCUTEST

HEXAVALENT CHROMIUM STANDARD PREPARATION LOG

Product: XCRA

GN or GP Number: GN 58924

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume used in ml	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
10 ppm	Lot # 84971-4	1000 ppm	1.0 ml	DI	100 mls	10 mg/l	2/1/2018	[illegible]	2-3-2017
100 ppm	Lot # 84971-4	1000 ppm	10 ml	DI	100 mls	100 mg/l	2/1/2018		
5 ppm		1000 ppm	1.0 ml	DI	200 mg/l	5 mg/l			
7.5 ppm		1000 ppm	1.5 ml	DI	200 mg/l	7.5 mg/l			
10 ppm	ULTRALOT#R01215	1000 ppm	1.0 ml	DI	100 mg/l	10 mg/l	12/31/2020		

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Diluent	Final Volume	Final Conc. Of Standard (mg/l)	Expiration Date	Analyst	Date
.010 ppm	10.0 ppm	10.0 ppm	0.1 ppm	DI	100 mls	0.01 mg/l	2-4-2017	[illegible]	2-3-2017
.050 ppm	10.0 ppm	10.0 ppm	0.5 ppm	DI	100 mls	0.05 mg/l			
.10 ppm	10.0 ppm	10.0 ppm	1.0 ppm	DI	100 mls	0.10 mg/l			
.03 ppm	10.0 ppm	10.0 ppm	3.0 ppm	DI	100 mls	0.30 mg/l			
.50 ppm	10.0 ppm	10.0 ppm	5.0 ppm	DI	100 mls	0.50 mg/l			
.80 ppm	10.0 ppm	10.0 ppm	8.0 ppm	DI	100 mls	0.80 mg/l			
1.00 ppm	10.0 ppm	10.0 ppm	10.0 ppm	DI	100 mls	1.0 mg/l			

Form: GN205-01
Rev. Date:9/10/07

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

PPG Garfield Avenue, Jersey City, NJ

60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

SGS Accutest Job Number: JC36204

Sampling Date: 01/26/17

Report to:

AECOM, INC.
30 Knightsbridge Road Suite 520
Piscataway, NJ 08854
NJlabdata@aecom.com; Christine.DeAmbrogio@aecom.com

ATTN: Mary O'Connell Kozik

Total number of pages in report: 55

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Table of Contents

Sample Summary

AECOM, INC.

Job No: JC36204

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC36204-1	01/26/17	12:00	AK	01/26/17	AQ	Field Blank Soil	HDS-FB20170126
JC36204-2	01/26/17	10:15	AK	01/26/17	SO	Soil	MW8D-5E-11.0-11.5
JC36204-3	01/26/17	10:05	AK	01/26/17	SO	Soil	MW8D-5E-4.0-4.5
JC36204-4	01/26/17	10:10	AK	01/26/17	SO	Soil	MW8D-5E-7.0-7.5
JC36204-5	01/26/17	10:50	AK	01/26/17	SO	Soil	MW8D-5N-11.0-11.5
JC36204-6	01/26/17	10:40	AK	01/26/17	SO	Soil	MW8D-5N-4.0-4.5
JC36204-7	01/26/17	10:45	AK	01/26/17	SO	Soil	MW8D-5N-7.0-7.5
JC36204-8	01/26/17	11:25	AK	01/26/17	SO	Soil	MW8D-5S-11.0-11.5
JC36204-9	01/26/17	11:15	AK	01/26/17	SO	Soil	MW8D-5S-4.0-4.5
JC36204-10	01/26/17	11:20	AK	01/26/17	SO	Soil	MW8D-5S-7.0-7.5
JC36204-11	01/26/17	08:50	AK	01/26/17	SO	Soil	MW8D-5W-11.0-11.5
JC36204-12	01/26/17	08:40	AK	01/26/17	SO	Soil	MW8D-5W-4.5-5.0
JC36204-13	01/26/17	08:45	AK	01/26/17	SO	Soil	MW8D-5W-8.0-8.5

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

AECOM, INC.

Job No: JC36204

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC36204-14	01/26/17	09:45	AK	01/26/17	SO	Soil	MW8D-O-11.0-11.5
JC36204-15	01/26/17	09:30	AK	01/26/17	SO	Soil	MW8D-O-4.0-4.5
JC36204-16	01/26/17	09:35	AK	01/26/17	SO	Soil	MW8D-O-4.0-4.5X
JC36204-17	01/26/17	09:40	AK	01/26/17	SO	Soil	MW8D-O-7.0-7.5
JC36204-17D	01/26/17	09:40	AK	01/26/17	SO	Soil Dup/MSD	MW8D-O-7.0-7.5
JC36204-17S	01/26/17	09:40	AK	01/26/17	SO	Soil Matrix Spike	MW8D-O-7.0-7.5

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: AECOM, INC. **Job No** JC36204

Site: PPG Garfield Avenue, Jersey City, NJ **Report Date** 2/7/2017 11:33:26 AM

On 01/26/2017, 4 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 3.3 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC36204 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Wet Chemistry By Method ASTM D1498-76

Matrix: AQ **Batch ID:** GN58683

- Sample(s) JC36208-1DUP were used as the QC samples for Redox Potential Vs H2.

Wet Chemistry By Method ASTM D1498-76M

Matrix: SO **Batch ID:** GN58707

- Sample(s) JC36204-17DUP were used as the QC samples for Redox Potential Vs H2.

Wet Chemistry By Method SM2540 G-97

Matrix: SO **Batch ID:** GN58596

- The data for SM2540 G-97 meets quality control requirements.

Wet Chemistry By Method SM4500H+ B-11

Matrix: AQ **Batch ID:** R160872

- The data for SM4500H+ B-11 meets quality control requirements.
- JC36204-1 for pH: Sample received out of holding time for pH analysis.

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO **Batch ID:** GP2942

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36204-17DUP, JC36204-17MS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (97_%) on this sample.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP2942-D1. High RPD due to possible sample nonhomogeneity.
- GP2942-S2 for Chromium, Hexavalent: Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.

Wet Chemistry By Method SW846 7196A

Matrix:	AQ	Batch ID:	GN58583

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36208-1DUP, JC36208-1MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 9045D

Matrix:	SO	Batch ID:	GN58706

- Sample(s) JC36204-17DUP were used as the QC samples for pH.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC36204
Account: AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Collected: 01/26/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC36204-1	**HDS-FB20170126**					
Redox Potential Vs H2		482			mv	ASTM D1498-76
pH [a]		5.66			su	SM4500H+ B-11
JC36204-14	**MW8D-O-11.0-11.5**					
Redox Potential Vs H2		196			mv	ASTM D1498-76M
pH		6.85			su	SW846 9045D
JC36204-15	**MW8D-O-4.0-4.5**					
Redox Potential Vs H2		240			mv	ASTM D1498-76M
pH		6.77			su	SW846 9045D
JC36204-16	**MW8D-O-4.0-4.5X**					
Redox Potential Vs H2		235			mv	ASTM D1498-76M
pH		6.78			su	SW846 9045D
JC36204-17	**MW8D-O-7.0-7.5**					
Redox Potential Vs H2		216			mv	ASTM D1498-76M
pH		6.84			su	SW846 9045D

(a) Sample received out of holding time for pH analysis.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	HDS-FB20170126		
Lab Sample ID:	JC36204-1	**Date Sampled:**	01/26/17
Matrix:	AQ - Field Blank Soil	**Date Received:**	01/26/17
		Percent Solids:	n/a
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.0039 U	0.010	0.0039	mg/l	1	01/26/17 20:34	AT	SW846 7196A
Redox Potential Vs H2	482			mv	1	01/30/17 11:18	PO	ASTM D1498-76
pH [a]	5.66			su	1	01/26/17 17:28	SUB	SM4500H+ B-11

(a) Sample received out of holding time for pH analysis.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW8D-O-11.0-11.5
Lab Sample ID: JC36204-14
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/26/17
Date Received: 01/26/17
Percent Solids: 82.9

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.34 U	0.48	0.34	mg/kg	1	01/31/17 11:52	RI	SW846 3060A/7196A
Redox Potential Vs H2	196			mv	1	01/30/17 16:39	PO	ASTM D1498-76M
Solids, Percent	82.9			%	1	01/27/17 10:50	RI	SM2540 G-97
pH	6.85			su	1	01/30/17 16:00	PO	SW846 9045D

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW8D-O-4.0-4.5
Lab Sample ID: JC36204-15
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/26/17
Date Received: 01/26/17
Percent Solids: 81.6

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.34 U	0.49	0.34	mg/kg	1	01/31/17 11:52	RI	SW846 3060A/7196A
Redox Potential Vs H2	240			mv	1	01/30/17 16:39	PO	ASTM D1498-76M
Solids, Percent	81.6			%	1	01/27/17 10:50	RI	SM2540 G-97
pH	6.77			su	1	01/30/17 16:00	PO	SW846 9045D

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW8D-O-4.0-4.5X
Lab Sample ID: JC36204-16
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/26/17
Date Received: 01/26/17
Percent Solids: 84.4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.33 U	0.47	0.33	mg/kg	1	01/31/17 11:52	RI	SW846 3060A/7196A
Redox Potential Vs H2	235			mv	1	01/30/17 16:39	PO	ASTM D1498-76M
Solids, Percent	84.4			%	1	01/27/17 10:50	RI	SM2540 G-97
pH	6.78			su	1	01/30/17 16:00	PO	SW846 9045D

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW8D-O-7.0-7.5
Lab Sample ID: JC36204-17
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/26/17
Date Received: 01/26/17
Percent Solids: 84.4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.33 U	0.47	0.33	mg/kg	1	01/31/17 11:50	RI	SW846 3060A/7196A
Redox Potential Vs H2	216			mv	1	01/30/17 16:39	PO	ASTM D1498-76M
Solids, Percent	84.4			%	1	01/27/17 10:50	RI	SM2540 G-97
pH	6.84			su	1	01/30/17 16:00	PO	SW846 9045D

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC36204
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Redox Potential Vs H2		**ASTM D1498-76M**	SO	Accutest is not certified for this parameter. [a]
Redox Potential Vs H2		**ASTM D1498-76**	AQ	Accutest is not certified for this parameter. [a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

AECOM

COC ID: 401 ACCUTEST 2017-01-26-RI-HDS-COC

TURNAROUND TIME: See Special Instructions

RUSH:

JC36204

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Shipping Company	
Postal Code	07304	Country		Postal Code	08810	Country		Tracking Number	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Count	
PM Phone Number	732-564-3917			Lab Quote #				Cooler Description	CS 401 ACCUTEST
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 2	
								Sampler 3	

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	FIL.	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)	
HDS-FB20170126	1	WQ	2017/01/26	12:00	G	2	FIELD BLANK			X	X	X	1
MW8D-5E-11.0-11.5	2	SO	2017/01/26	10:15	G	1	(1) 8oz-HOLD			H	H	H	2
MW8D-5E-4.0-4.5	3	SO	2017/01/26	10:05	G	1	(1) 8oz-HOLD			H	H	H	3
MW8D-5E-7.0-7.5	4	SO	2017/01/26	10:10	G	1	(1) 8oz-HOLD			H	H	H	4
MW8D-5N-11.0-11.5	5	SO	2017/01/26	10:50	G	1	(1) 8oz-HOLD			H	H	H	5
MW8D-5N-4.0-4.5	6	SO	2017/01/26	10:40	G	1	(1) 8oz-HOLD			H	H	H	6
MW8D-5N-7.0-7.5	7	SO	2017/01/26	10:45	G	1	(1) 8oz-HOLD			H	H	H	7
MW8D-5S-11.0-11.5	8	SO	2017/01/26	11:25	G	1	(1) 8oz-HOLD			H	H	H	8
MW8D-5S-4.0-4.5	9	SO	2017/01/26	11:15	G	1	(1) 8oz-HOLD			H	H	H	9
MW8D-5S-7.0-7.5	10	SO	2017/01/26	11:20	G	1	(1) 8oz-HOLD			H	H	H	10

A18
C27
C6

INITIAL ASESSMENT 30 Jan

LABEL VERIFICATION DG

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	ECM / AECOM ACCUTEST	1/26/17 1440 1/26/17 1710	ACCUTEST SGS	1/26/17 1710 1/26/17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

ALL SAMPLES RECEIVED
[illegible]VED AS APPLICABLE

Sampler's Name	ERIC ROS	Mobile #	732 343 0374
Sampler's Signature		Date/Time	1/26/17 13:55

TEMP 11 IVC

JC36204: Chain of Custody
Page 1 of 4

AECOM

COC ID: 401 ACCUTEST 2017-01-26-RI-HDS-COC

TURNAROUND TIME: See Special Instructions

RUSH:

JC36204

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	05401 AACU TEST
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	FIL	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)	
MW8D-5W-11.0-11.5	11	SO	2017/01/26	08:50	G	1	(1) 8oz - HOLD			H	H	H	11
MW8D-5W-4.5-5.0	12	SO	2017/01/26	08:40	G	1	(1) 8oz - HOLD			H	H	H	12
MW8D-5W-8.0-8.5	13	SO	2017/01/26	08:45	G	1	(1) 8oz - HOLD			H	H	H	13
MW8D-O-11.0-11.5	14	SO	2017/01/26	09:45	G	1	(1) 8oz			X	X	X	14
MW8D-O-4.0-4.5	15	SO	2017/01/26	09:30	G	1	(1) 8oz			X	X	X	15
MW8D-O-4.0-4.5X	16	SO	2017/01/26	09:35	G	1	(1) 8oz			X	X	X	16
MW8D-O-7.0-7.5	17	SO	2017/01/26	09:40	G	2	(2) 8oz-MS/MSD			X	X	X	17

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM ACCUTEST	1/26/17 1450 1/26/17 1710	ACCUTEST SGS	1/26/17 1400 1/26/17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	ERIC ACS	Mobile #	732 343 0374
Sampler's Signature		Date/Time	1/26/17 1545

TEMP 4.1°C

JC36204: Chain of Custody
Page 2 of 4

SGS Accutest Sample Receipt Summary

Job Number: JC36204 **Client:** _____ **Project:** _____

Date / Time Received: 1/26/2017 5:10:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (4.1);

Cooler Temps (Corrected) °C: Cooler 1: (3.3);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

Job Change Order: JC36204

Requested Date:	1/31/2017	**Received Date:**	1/26/2017
Account Name:	AECOM, INC.	**Due Date:**	1/31/2017
Project Description:	PPG Garfield Avenue, Jersey City, NJ	**Deliverable:**	FULT1
CSR:	malay.parekh	**TAT (Days):**	3

Sample #: JC36204-14 to 17
Dept:
TAT: 3

Change:
Due to XCR spike log in XXCRAR

Sample #: JC36204-17
Dept:
TAT: 3

MW8D-O-7.0-7.5

Change:
Due to XCR spike log in FE2/7, SULFS, TOCLK.

Above Changes Per: AECOM

Date/Time: 1/31/2017 3:57:23 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

Page 1 of 1

Internal Sample Tracking Chronicle

AECOM, INC.

Job No: JC36204

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC36204-1 Collected: 26-JAN-17 12:00 By: AK Received: 26-JAN-17 By: AS HDS-FB20170126						
JC36204-1	SM4500H+ B-11	26-JAN-17 17:28	SUB			PH
JC36204-1	SW846 7196A	26-JAN-17 20:34	AT			XCR
JC36204-1	ASTM D1498-76	30-JAN-17 11:18	PO			EH
JC36204-14 Collected: 26-JAN-17 09:45 By: AK Received: 26-JAN-17 By: AS MW8D-O-11.0-11.5						
JC36204-14	SM2540 G-97	27-JAN-17 10:50	RI			SOL104
JC36204-14	SW846 9045D	30-JAN-17 16:00	PO			PH
JC36204-14	ASTM D1498-76M	30-JAN-17 16:39	PO			EH
JC36204-14	SW846 3060A/7196A	31-JAN-17 11:52	RI	28-JAN-17	KP	XCRA
JC36204-15 Collected: 26-JAN-17 09:30 By: AK Received: 26-JAN-17 By: AS MW8D-O-4.0-4.5						
JC36204-15	SM2540 G-97	27-JAN-17 10:50	RI			SOL104
JC36204-15	SW846 9045D	30-JAN-17 16:00	PO			PH
JC36204-15	ASTM D1498-76M	30-JAN-17 16:39	PO			EH
JC36204-15	SW846 3060A/7196A	31-JAN-17 11:52	RI	28-JAN-17	KP	XCRA
JC36204-16 Collected: 26-JAN-17 09:35 By: AK Received: 26-JAN-17 By: AS MW8D-O-4.0-4.5X						
JC36204-16	SM2540 G-97	27-JAN-17 10:50	RI			SOL104
JC36204-16	SW846 9045D	30-JAN-17 16:00	PO			PH
JC36204-16	ASTM D1498-76M	30-JAN-17 16:39	PO			EH
JC36204-16	SW846 3060A/7196A	31-JAN-17 11:52	RI	28-JAN-17	KP	XCRA
JC36204-17 Collected: 26-JAN-17 09:40 By: AK Received: 26-JAN-17 By: AS MW8D-O-7.0-7.5						
JC36204-17	SM2540 G-97	27-JAN-17 10:50	RI			SOL104
JC36204-17	SW846 9045D	30-JAN-17 16:00	PO			PH
JC36204-17	ASTM D1498-76M	30-JAN-17 16:39	PO			EH
JC36204-17	SW846 3060A/7196A	31-JAN-17 11:50	RI	28-JAN-17	KP	XCRA

SGS Accutest Internal Chain of Custody

Job Number: JC36204
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/26/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36204-1.1	Secured Storage	Sahara Feliciano	01/27/17 12:57	Retrieve from Storage
JC36204-1.1	Sahara Feliciano	Secured Staging Area	01/27/17 12:57	Return to Storage
JC36204-1.1	Secured Staging Area	Radhika Mistry	01/27/17 14:28	Retrieve from Storage
JC36204-1.1	Radhika Mistry	Secured Storage	01/27/17 16:12	Return to Storage
JC36204-1.1.1	Radhika Mistry	Metals Digestion	01/27/17 16:09	Digestate from JC36204-1.1
JC36204-1.1.1	Metals Digestion	Radhika Mistry	01/27/17 16:09	Digestate from JC36204-1.1
JC36204-1.1.1	Radhika Mistry	Metals Digestate Storage	01/27/17 16:09	Return to Storage
JC36204-1.2	Secured Storage	Dawan Currie	01/26/17 18:51	Retrieve from Storage
JC36204-1.2	Dawan Currie	Secured Staging Area	01/26/17 18:51	Return to Storage
JC36204-1.2	Secured Staging Area	Andray Tandacharry	01/26/17 19:59	Retrieve from Storage
JC36204-1.2	Andray Tandacharry	Secured Storage	01/26/17 23:24	Return to Storage
JC36204-1.2	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-1.2	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-14.1	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-14.1	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-14.1	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-14.1	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-14.1	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-14.1	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-14.1	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-14.1	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-14.1	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-14.1	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-14.1	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-14.1	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-14.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-14.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-14.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-14.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-14.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-14.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-14.1.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-14.1
JC36204-14.1.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-14.1
JC36204-14.1.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage
JC36204-15.1	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-15.1	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-15.1	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-15.1	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-15.1	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36204
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/26/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36204-15.1	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-15.1	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-15.1	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-15.1	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-15.1	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-15.1	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-15.1	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-15.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-15.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-15.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-15.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-15.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-15.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-15.1.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-15.1
JC36204-15.1.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-15.1
JC36204-15.1.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage
JC36204-16.1	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-16.1	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-16.1	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-16.1	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-16.1	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-16.1	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-16.1	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-16.1	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-16.1	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-16.1	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-16.1	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-16.1	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-16.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-16.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-16.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-16.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-16.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-16.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-16.1.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-16.1
JC36204-16.1.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-16.1
JC36204-16.1.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage
JC36204-17.1	Secured Storage	Mahendra Patel	02/01/17 08:36	Retrieve from Storage
JC36204-17.1	Mahendra Patel	Secured Storage	02/01/17 12:16	Return to Storage
JC36204-17.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36204
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/26/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36204-17.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-17.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-17.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-17.2	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-17.2	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-17.2	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-17.2	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-17.2	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-17.2	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-17.2	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-17.2	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-17.2	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-17.2	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-17.2	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-17.2	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-17.2	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-17.2	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-17.2	Secured Storage	Paul Ojugo	01/31/17 08:50	Retrieve from Storage
JC36204-17.2	Paul Ojugo	Secured Storage	01/31/17 17:10	Return to Storage
JC36204-17.2	Secured Storage	Gage Donahue	02/01/17 08:33	Retrieve from Storage
JC36204-17.2	Gage Donahue	Secured Staging Area	02/01/17 08:33	Return to Storage
JC36204-17.2	Secured Staging Area	Courtney Dringus	02/01/17 10:21	Retrieve from Storage
JC36204-17.2	Courtney Dringus	Secured Storage	02/01/17 18:33	Return to Storage
JC36204-17.2.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-17.2
JC36204-17.2.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-17.2
JC36204-17.2.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage

General Chemistry

6

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Percent Solids Raw Data Summary

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36204
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN58583	0.010	0.0	mg/l	.15	0.16	106.7	90-110%
Chromium, Hexavalent	GP2942/GN58739			mg/kg	40	38.1	95.3	80-120%
Chromium, Hexavalent	GP2942/GN58739	0.40	0.0	mg/kg	823.762	760	92.3	80-120%

Associated Samples:
Batch GP2942: JC36204-14, JC36204-15, JC36204-16, JC36204-17
Batch GN58583: JC36204-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36204
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN58583	JC36208-1	mg/l	41.3	41.5	0.5	0-20%
Chromium, Hexavalent	GP2942/GN58739	JC36204-17	mg/kg	0.33 U	0.64	200.0*(a)	0-20%
Redox Potential Vs H2	GN58683	JC36208-1	mv	294	286	2.8	0-15%
Redox Potential Vs H2	GN58707	JC36204-17	mv	216	223	3.2	0-18%
pH	GN58706	JC36204-17	su	6.84	6.82	0.3	0-5%

Associated Samples:
Batch GP2942: JC36204-14, JC36204-15, JC36204-16, JC36204-17
Batch GN58583: JC36204-1
Batch GN58683: JC36204-1
Batch GN58706: JC36204-14, JC36204-15, JC36204-16, JC36204-17
Batch GN58707: JC36204-14, JC36204-15, JC36204-16, JC36204-17
(*) Outside of QC limits
(a) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36204
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN58583	JC36208-1	mg/l	41.3	82.6	124	100.1	85-115%
Chromium, Hexavalent	GP2942/GN58739	JC36204-17	mg/kg	0.33 U	961	759	79.0(a)	75-125%
Chromium, Hexavalent	GP2942/GN58739	JC36204-17	mg/kg	0.33 U	46.5	2.2	4.7N(b)	75-125%

Associated Samples:
Batch GP2942: JC36204-14, JC36204-15, JC36204-16, JC36204-17
Batch GN58583: JC36204-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.
(b) Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (97_%) on this sample.

Percent Solids Raw Data Summary

Job Number: JC36204
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36204-14 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-11.0-11.5

Wet Weight (Total)	28.13	g
Tare Weight	21.76	g
Dry Weight (Total)	27.04	g
Solids, Percent	82.9	%

Sample: JC36204-15 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-4.0-4.5

Wet Weight (Total)	31.7	g
Tare Weight	22.25	g
Dry Weight (Total)	29.96	g
Solids, Percent	81.6	%

Sample: JC36204-16 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-4.0-4.5X

Wet Weight (Total)	34.03	g
Tare Weight	26.35	g
Dry Weight (Total)	32.83	g
Solids, Percent	84.4	%

Sample: JC36204-17 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-7.0-7.5

Wet Weight (Total)	29.89	g
Tare Weight	22.51	g
Dry Weight (Total)	28.74	g
Solids, Percent	84.4	%

General Chemistry

Raw Data

Hexavalent Chromium

Test Title:	XCr
GN Batch:	GN58583
Analyst:	AT
Prep Date:	NA
Analysis Date:	1/26/2017
Instrument ID:	P

1

Method: SW846 7196A

Note: Use 4 for CLP list pointer, 1 for reg. List pointer.

Corr. Coef: 0.99942

Slope: 0.9322

Y intercept: 0.0071

Bottle ID	Sample #	Sample Absorbance	BKGRD Abs	Analyzed Times	Y Values Corr Sample Absorbance	X Values Conc(mg/l)	Final Vol. (ml)	Sam Vol. (ml)	Dilution	Final Conc.	Units	MDL
	Cal. Blk.	0	NA	20:20	0.000	0.0000						
	STD1	0.011	NA	20:23	0.011	0.0100						
	STD2	0.052	NA	20:23	0.052	0.0500						
	STD3	0.105	NA	20:23	0.105	0.1000						
	STD4	0.285	NA	20:23	0.285	0.3000						
	STD5	0.501	NA	20:23	0.501	0.5000						
	STD6	0.740	NA	20:23	0.740	0.8000						
	STD7	0.936	NA	20:23	0.936	1.0000						
	CCV	0.496	NA	20:24	0.496	0.5244	NA	NA	NA	NA	mg/l	0.0039
	CCB	0.000	NA	20:24	0.000	-0.0077	NA	NA	NA	NA	mg/l	0.0039
	GN58583-MB1	0.000	0.000	20:34	0.000	-0.0077	50.0	50.0	1	-0.008	mg/l	0.0039
	GN58583-B1	0.153	0.000	20:34	0.153	0.1565	50.0	50.0	1	0.156	mg/l	0.0039
2	GN58583-S1	>3.098	0.015	20:34	#VALUE!		50.0	50.0	1	#VALUE!	mg/l	0.0039
2	GN58583-D1	>3.085	0.015	20:34	#VALUE!		50.0	50.0	1	#VALUE!	mg/l	0.0039
2	JC36208-1	>3.256	0.015	20:34	#VALUE!		50.0	50.0	1	#VALUE!	mg/l	0.0039
2	JC36208-1	0.405	0.013	20:34	0.392	0.4129	50.0	50.0	100	41.285	mg/l	0.3900
2	GN58583-S1	0.482	0.014	20:34	0.468	0.4944	50.0	50.0	250	123.594	mg/l	0.9750
2	GN58583-D1	0.408	0.014	20:34	0.394	0.4150	50.0	50.0	100	41.500	mg/l	0.3900
2	JC36204-1	0.008	0.008	20:34	0.000	-0.0077	50.0	50.0	1	-0.008	mg/l	0.0039
				20:34			50.0	50.0	1	#VALUE!		0.0039
	CCV	0.494	NA	20:34	0.494	0.5223	NA	NA	NA	NA	mg/l	0.0039
	CCB	0.000	NA	20:34	0.000	-0.0077	NA	NA	NA	NA	mg/l	0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
	CCV		NA				NA	NA	NA	NA	mg/l	0.0039
	CCB		NA				NA	NA	NA	NA	mg/l	0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
	CCV		NA				NA	NA	NA	NA	mg/l	0.0039
	CCB		NA				NA	NA	NA	NA	mg/l	0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
	CCV		NA				NA	NA	NA	NA	mg/l	0.0039
	CCB		NA				NA	NA	NA	NA	mg/l	0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039
							50.0	50.0	1	#VALUE!		0.0039

7.1

7

ACCUTEST.

Test: **Hexavalent Chromium** MDL = 0.0024 mg/l GNBatch ID: GN58583
Product: **XCr** RDL = 0.010 mg/l Date: 1/26/17
Method: **SW846 7196A**

Digestion Batch QC Summary Units = mg/l

Method Blank ID: GN58583-MB1 Date: 1/26/17 Result: < RDL RDL: 0.010 <RDL: yes
Spike Blank ID: -B1 Date: ↓ Result: 0.156 Spike: 0.150 %Rec.: 104
Duplicate ID: -D1 Samp. Result: 41.285 Dup. Result: 41.500 %RPD: 0.52
MS ID: -S1 Samp. Result: ↓ MS Result: 123.594 Spike: 82.57 %Rec: 99.68
Diluted Sample ID: Samp. Result: Dil. Result: %RPD:
pH adj. PS ID: Samp. Result: MS Result: Spike: %Rec:

Analysis Batch QC Summary Units = mg/l

CCV: 1/26/17 Result: 0.5244 TV: 0.5002 %Rec.: 104.88
CCV: ↓ Result: 0.5223 TV: ↓ %Rec.: 104.46
CCV: Result: TV: %Rec.:
CCV: Result: TV: %Rec.:
CCV: Result: TV: %Rec.:
CCV: Result: TV: %Rec.:

CCB: 1/26/17 Result: < RDL RDL: 0.010 <RDL: yes
CCB: ↓ Result: ↓ RDL: ↓ <RDL: ↓
CCB: Result: RDL: <RDL:
CCB: Result: RDL: <RDL:
CCB: Result: RDL: <RDL:
CCB: Result: RDL: <RDL:

Reagent Reference Numbers:

Initial Calibration Source:
Continuing Calibration Source:

Analyst: AT Date: 1/26/17

Comments:

Form: GN076-02
Rev. Date: 06/24/13

7.1
7

Spike Calc

Lot = 41.285

2x Lot = 82.570

3x Lot = 123.855

Dilution: $\frac{123.855}{0.5} = 247.71$

1:250

0.2ml / 50ml

Spike: $\frac{82.570 \times 50}{7.5 \times 250} = 2.202$ ml

7.1

7

ACCUTEST.

Hexavalent Chromium pH Adjustment Log

Method: SW846 7196A

pH adj. start time: 20:10 ____________ pH Adjust: 1/26/17

pH adj. end time: 20:16 ____________ GN Batch ID: GN58583

Sample ID	Initial Sample Volume (ml)	Final Volume (ml)	pH after H2SO4	bkg pH after H2SO4	Spike Info	Comments
CCV	45	50	1.92	NA	5ML	5PPM ULTRA
CCV						
CCV						
CCV						
CCB	45	50	1.93	NA		
CCB						
CCB						
CCB						
MS JC36208-1	45	50	1.79	1.71	~~1ML~~ AT(1) 2.202 ml	~~7.5PPM LGC.~~ 7.5PPM AT(1) 1:250 0.2ml/ 50ml
DUP ↓	45	50	1.73	1.70		1:100 0.5ml/ 50ml
SB	45	50	1.96	1.82	1ML	7.5PPM LGC.
MB	45	50	1.97	1.73		
1 JC36208-1	45	50	1.89	1.76		
2 JC36204-1	45	50	1.91	1.86		
3 JC36208-1	45	50	1.76	1.72		1:100 0.5ml/ 50ml/
4	45	50				
5	45	50				
6	45	50				
7	45	50				
8	45	50				
9	45	50				
10	45	50				
11	45	50				
12	45	50				
13	45	50				
14	45	50				
15	45	50				
16	45	50				
17	45	50				
18	45	50				
19	45	50				
PS	45	50				
PS	45	50				
DIL	45	50				
DIL	45	50				

Reagent Information:

Analyst: AT Date: 1/26/17 QC Reviewer: ____________ Date: ____________

Form: GN077-01
Rev. Date:1/10/11

7.1

7

ACCUTEST

Hexavalent Chromium pH Adjustment Log
Method: SW846 7196A

pH adj. start time: 20:05 _____ pH Adjust. Date: 1/26/17

pH adj. end time: 20:09 _____ GN Batch ID: GN58583

Sample ID	Initial Sample Volume (ml)	Final Volume (ml)	pH after H2SO4	Comments	Spike Info.
Calibration Blank	45	50	2.02	0	
0.010 mg/l standard	45	50	2.01	5ppm LGC	0.10 ml of 5 mg/l to 50 ml FV
0.050 mg/l standard	45	50	2.03	5ppm LGC	0.50 ml of 5 mg/l to 50 mL FV
0.100 mg/l standard	45	50	2 (Adj) 1.95	5ppm LGC	1.00 ml of 5 mg/l to 50 mL FV
0.300 mg/l standard	45	50	1.97	5ppm LGC	3.00 ml of 5 mg/l to 50 mL FV
0.500 mg/l standard	45	50	1.98	5ppm LGC	5.00 ml of 5 mg/l to 50 mL FV
0.800 mg/l standard	45	50	1.97	5ppm LGC	8.00 ml of 5 mg/l to 50 mL FV
1.00 mg/l standard	45	50	1.99	5ppm LGC	10.0 ml of 5 mg/l to 50 mL FV

Reagent Information:

Analyst: AT Date: 1/26/17

Form: GN078-01
Rev. Date: 1/10/11

SGS ACCUTEST JC36204

ACCUTEST

HEXAVALENT CHROMIUM STANDARD PREPARATION LOG

Product: XCR7196

GN or GP Number: GN58583

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume used in ml	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
10 ppm		1000 ppm	1.0 ml	DI	100 mls	10 mg/l			
100 ppm		1000 ppm	10 ml	DI	100 mls	100 mg/l			
5 ppm ULTRA	ULTRA R01215	1000 ppm	1.0 ml	DI	200 mg/l	5 mg/l	12/31/2020	RP	11/19/2016
7.5 ppm	LGC 84971-9	1000 ppm	1.5 ml	DI	200 mg/l	7.5 mg/l	6/30/2018	RP	11/19/2016
5 ppm LGC	LGC 84971-9	1000 ppm	1.0 ml	DI	100 mg/l	10 mg/l	6/30/2018	RP	12/7/2016
Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Diluent	Final Volume	Final Conc. Of Standard (mg/l)	Expiration Date	Analyst	Date
.010 ppm	5.0 ppm LGC	5.0 ppm	0.1 ppm	DI	50 mls	0.01 mg/l	1/27/2017	AT	1/26/2017
.050 ppm	5.0 ppm LGC	5.0 ppm	0.5 ppm	DI	50 mls	0.05 mg/l	1/27/2017	AT	1/26/2017
.10 ppm	5.0 ppm LGC	5.0 ppm	1.0 ppm	DI	50 mls	0.10 mg/l	1/27/2017	AT	1/26/2017
.30 ppm	5.0 ppm LGC	5.0 ppm	3.0 ppm	DI	50 mls	0.30 mg/l	1/27/2017	AT	1/26/2017
.50 ppm	5.0 ppm LGC	5.0 ppm	5.0 ppm	DI	50 mls	0.50 mg/l	1/27/2017	AT	1/26/2017
.80 ppm	5.0 ppm LGC	5.0 ppm	8.0 ppm	DI	50 mls	0.80 mg/l	1/27/2017	AT	1/26/2017
1.00 ppm	5.0 ppm LGC	5.0 ppm	10.0 ppm	DI	50 mls	1.0 mg/l	1/27/2017	AT	1/26/2017

Form: GN205-02
Rev. Date:10/16/09

ACCUTEST

Reagent Information Log - XCR - water - 7196A

Reagent	Exp. Date	Reagent # or Manufacturer/Lot
Calibration Source: Hexavalent Chromium, 1000 mg/L Stock	2/1/2018	LGC VHG Lot : 84971-4
Calibration Checks: Hexavalent Chromium, 1000 mg/L Stock	12/31/2020	Ultra lot # R01215
External Check (5PPM ULTRA)	5/19/2017	GNE11-49165-XCR
Spiking Solution (7.5 PPM)	5/19/2017	GNE11-49164-XCRA
Diphenyl carbazide Solution	2/3/2017	GNE1-49540-XCR
Sulfuric Acid, 10%	5/29/2017	GNE11-49230-XCR
Filter 0.45um	na	140604154
1N NaOH	1/22/2017	GNE7-47992-XCR
5PPM LGC (CURVE)	6/7/2017	GNE12-49327-XCR

Form: GN087A-23
Rev. Date: 10/3/05

ACCUTEST LABORATORIES

Test: Redox Potential | **Test Code: REDOX** | **Analyst:** PO

Matrix: Aqueous (◉) | Method: ASTM D1498-76 | **Date:** 01/30/17

Matrix: Solid (○) | Method: ASTM D1498-76 Mod. | **GN Batch ID:** GN58683

Temp (Deg C): 23

Quality Control Summary

Sample ID: GN58683-D1 Results: 293.90% Dup: 285.90% % RPD: **2.76%**

Ferrous-Ferric True: 675	Found	**675**	% Rec	**100.00%**
pH 4 Quinhydrone True: 462	Found	**488.9**	% Rec	**105.82%**
pH 4 Quinhydrone True: 462	Found	**486.3**	% Rec	**105.26%**
pH 4 Quinhydrone True: 462	Found		% Rec	
pH 7 Quinhydrone True: 285	Found	**281.5**	% Rec	**98.77%**
pH 7 Quinhydrone True: 285	Found	**278.3**	% Rec	**97.65%**
pH 7 Quinhydrone True: 285	Found		% Rec	

Sample #:	mv vs. Ag/AgCl Electrode	Corrected results (mv vs. Hydrogen electrode) ***	Analysis Time
Ferrous-Ferric Solution	475.2	675	10:39
pH 4 Quinhydrone	289.1	488.9	
pH 7 Quinhydrone	81.7	281.5	
Dup GN58683-D1	86.1	285.9	11:18
1. JC36204-1	282.6	482.3	11:18
2. JC36208-1	94.1	293.9	11:18
3.			11:18
4.			11:18
5.			11:18
6.			11:18
7.			11:18
8.			11:18
9.			11:18
pH 4 Quinhydrone	285.2	486.3	11:18
pH 7 Quinhydrone	78.1	278.3	11:18
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
pH 4 Quinhydrone			
pH 7 Quinhydrone			

*** Note: Results vs Ag/AgCl electrode are converted to corrected results automatically at the instrument by changing to the relative mv scale. This conversion is done by adding about 200 mV to the Ag/AgCl reading.

Reagent Numbers: GNE10-48853-ORP XP: 4/24/2017

Comments:

Validated By: **Nancy Cole** Validated Date: **8/11/2012**

Document Control #: **AGN-REDOX-AQ-01**

ACCUTEST LABORATORIES

Test: Redox Potential
Matrix: Aqueous ◉
Matrix: Solid ○

Test Code: REDOX
Method: ASTM D1498-76
Method: ASTM D1498-76 Mod.

Analyst: PO
Date: 01/30/17
GN Batch ID: GN58683
Temp (Deg C): 23

Quality Control Summary

Sample ID: GN58683-D1 Results: 293.90% Dup: 285.90% % RPD: **2.76%**

Ferrous-Ferric True: 675	Found	**675**	% Rec **100.00%**
pH 4 Quinhydrone True: 462	Found	**488.9**	% Rec **105.82%**
pH 4 Quinhydrone True: 462	Found	**486.3**	% Rec **105.26%**
pH 4 Quinhydrone True: 462	Found		% Rec
pH 7 Quinhydrone True: 285	Found	**281.5**	% Rec **98.77%**
pH 7 Quinhydrone True: 285	Found	**278.3**	% Rec **97.65%**
pH 7 Quinhydrone True: 285	Found		% Rec

Sample #:	mv vs. Ag/AgCl Electrode	Corrected results (mv vs. Hydrogen electrode) ***	Analysis Time
Ferrous-Ferric Solution	475.2	675	10:39
pH 4 Quinhydrone	289.1	488.9	
pH 7 Quinhydrone	81.7	281.5	
Dup GN58683-D1	86.1	285.9	11:18
1. JC36204-1	282.6	482.3	11:18
2. JC36208-1	94.1	293.9	11:18
3.			11:18
4.			11:18
5.			11:18
6.			11:18
7.			11:18
8.			11:18
9.			11:18
pH 4 Quinhydrone	285.2	486.3	11:18
pH 7 Quinhydrone	78.1	278.3	11:18
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
pH 4 Quinhydrone			
pH 7 Quinhydrone			

*** Note: Results vs Ag/AgCl electrode are converted to corrected results automatically at the instrument by changing to the relative mv scale. This conversion is done by adding about 200 mV to the Ag/AgCl reading.

Reagent Numbers: GNE10-48853-ORP XP: 4/24/2017

Comments:

Validated By: **Nancy Cole** Validated Date: **8/11/2012**

Document Control #: **AGN-REDOX-AQ-01**

SGS ACCUTEST

Preparation Log for PH and CORR Soils and Solid Wastes

Method SW846 9045D

Batch: GN58683-EH

Analyst: PO

Date: 1/30/17

Balance ID: B-36

	Sample ID	Sample mass (g)	Volume of water added (mL)	Spun for 5 min	Settled for 1 h	
					Start	End
1	JC36204-1		60 mL			
2	JC36208-1		60 mL			
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	DUP JC36208-1		60mL			

Reviewer & Date:

Form: AGN_PH9045_01
Revised: 26-Aug-2015

Reagent Information Log
Test Name:_____EH_____

GN58683

Reagent

Redox Standand	GNE7-48853-ORP 04/24/2017
Quinhydrone, 98%	LOT#A0318649 EXP 2/17/19
pH 4 Buffer Solution	FISHER LOT#164668 EXP 7/18
pH 7 Buffer Solution	FISHER LOT #155866 EXP 9/17

Form: GN087-01
Rev. Date:12/30/2016

SGS ACCUTEST

Test: **pH, Corrosivity**
Method: **SW846 9040B or SW846 9045C**
SM4500H+ B-11
Thermometer ID: 303655
Correction Factor: -0.7

Product: **PH, CORR**
Analyst: PO
GN Batch ID: GN58706
Analysis Date: 1/30/2017
pH Meter ID: 50

QC Summary
Duplicate ID: GN58706-D1
Dup Result: 6.82
Sample ID: JC36204-17
% RPD: 0.29%
✓ MB 02/01

Sample ID	Wt./Vol. used for soilds	Uncorrected/ Corrected Temp in Deg C.	Result	Corrosivity	Read time
Buffer Check: 4		25	4		14:00
Buffer Check: 7		25	7.01		16:00
Buffer Check: 10		25	9.99		16:00
GN58706-D1		25	6.82		16:00
JC35862-1		25	7.00		16:00
JC36123-1		25	8.62		16:00
JC36124-1		25	11.98		16:00
JC36125-1		25	6.43		16:00
JC36127-1		25	5.93		16:00
JC36135-26		25	6.90		16:00
JC36135-27		25	7.02		16:00
JC36135-28		25	6.86		16:00
JC36204-14		25	6.85		16:00
Buffer Check: 4		25	4.01		16:00
Buffer Check: 13		25	12.99		16:00
JC36204-15		25	6.77		16:00
JC36204-16		25	6.78		16:00
JC36204-17		25	6.84		16:00
JC36206-1		25	7.68		16:00
					16:00
					16:00
					16:00
					16:00
					16:00
					16:00
Buffer Check: 4			4.00		16:00
Buffer Check: 10			9.99		16:00
Buffer Check:					
Buffer Check:					

Comments: _____

Validated By: Nancy Cole
Validated Date: 6/5/13 (metho
Document Control #: **AGN-PH CORR-AQ-03**

7.3
7

SGS ACCUTEST

Preparation Log for PH and CORR Soils and Solid Wastes

Method SW846 9045D

Batch: GN58706-PH GN58707-EH

Analyst: PO

Date: 11/30/17

Balance ID: B-36

	Sample ID	Sample mass (g)	Volume of water added (mL)	Spun for 5 min	Settled for 1 h Start	Settled for 1 h End
1	JC36135-26	50.46	50M	✓	1301.00	1320
2	JC36135-27	50.50		✓		
3	JC36135-28	50.58		✓		
4	JC36123-1	50.70		✓		
5	JC36124-1	50.19		✓		
6	JC36125-1	50.13		✓		
7	JC36127-1	50.00		✓		
8	JC36204-14	50.36		✓		
9	-15	50.22		✓		
10	-16	50.21		✓		
11	-17	50.02		✓		
12	JC36206-1	50.31		✓		
13	JC35862-1	50.57	✓			
14						
15						
16						
17						
18						
19						
20						
21	DUP JC36204-13	50.24	50M	✓		

Reviewer & Date:

Form: AGN_PH9045_01
Revised: 26-Aug-2015

Reagent Information Log
Test Name:_____pH_____

GN58706

Reagent	
pH 2 Buffer Solution	FICHER LOT#111107 EXP 3/13
pH 4 Buffer Solution	FISCHER LOT#115547 EXP 10/13
pH 7 Buffer Solution	RICCA LOT#2111388 EXP 10/13
pH 10 Buffer Solution	FISCHER LOT#110749 EXP 03/13
pH 13 Buffer Solution	AQUA SOL. LOT#1080516 EXP 08/12

7.3

7

Form: GN087-01
Rev. Date:1/26/2017

ACCUTEST LABORATORIES

Test: Redox Potential | **Test Code: REDOX**

Matrix: Aqueous (◉) | Method: ASTM D1498-76

Matrix: Solid (○) | Method: ASTM D1498-76 Mod.

Analyst: PO
Date: 01/30/17
GN Batch ID: GN58707
Temp (Deg C): 23

Quality Control Summary

Sample ID: JC36204-17 Results: 216.30% Dup: 222.80% % RPD: 2.96%

Ferrous-Ferric True: 675	Found **675.4**	% Rec **100.06%**
pH 4 Quinhydrone True: 462	Found **470.5**	% Rec **101.84%**
pH 4 Quinhydrone True: 462	Found **469.7**	% Rec **101.67%**
pH 4 Quinhydrone True: 462	Found	% Rec
pH 7 Quinhydrone True: 285	Found **278.1**	% Rec **97.58%**
pH 7 Quinhydrone True: 285	Found **279.2**	% Rec **97.96%**
pH 7 Quinhydrone True: 285	Found	% Rec

Sample #:	mv vs. Ag/AgCl Electrode	Corrected results (mv vs. Hydrogen electrode) ***	Analysis Time
Ferrous-Ferric Solution	426.1	675.4	14:44
pH 4 Quinhydrone	270.7	470.5	
pH 7 Quinhydrone	78.3	278.1	
Dup GN58707-D1	22.9	222.8	16:39
1. JC35862-1	78.5	278.1	16:39
2. JC36135-26	32.7	232.7	16:39
3. JC36135-27	28.9	228.7	16:39
4. JC36135-28	16	215.9	16:39
5. JC36204-14	-3.7	196.1	16:39
6. JC36204-15	40	239.8	16:39
7. JC36204-16	35.2	235.1	16:39
8. JC36204-17	16.2	216.3	16:39
9. JC36206-1	81.3	280.9	16:39
pH 4 Quinhydrone	269.9	469.7	16:39
pH 7 Quinhydrone	79.4	279.2	16:39
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
pH 4 Quinhydrone			
pH 7 Quinhydrone			

*** Note: Results vs Ag/AgCl electrode are converted to corrected results automatically at the instrument by changing to the relative mv scale. This conversion is done by adding about 200 mV to the Ag/AgCl reading.

Reagent Numbers: GNE10-48853-ORP XP: 4/24/2017

Comments:

Validated By: **Nancy Cole** Validated Date: **8/11/2012**

Document Control #: **AGN-REDOX-AQ-01**

SGS ACCUTEST

Preparation Log for PH and CORR Soils and Solid Wastes

Method SW846 9045D

Batch: GN58706-PH GN58707-EH

Analyst: PO

Date: 1/30/17

Balance ID: B-36

	Sample ID	Sample mass (g)	Volume of water added (mL)	Spun for 5 min	Settled for 1 h	
					Start	End
1	JC36135-26	50.46	50M	✓	1311:00	1320
2	JC36135-27	50.56		✓		
3	JC36135-28	50.58		✓		
4	JC36123-1	50.20		✓		
5	JC36124-1	50.19		✓		
6	JC36125-1	50.13		✓		
7	JC36127-1	50.00		✓		
8	JC36204-14	50.36		✓		
9	-15	50.11		✓		
10	-16	50.11		✓		
11	-17	50.02		✓		
12	JC36206-1	50.31		✓		
13	JC35862-1	50.57	✓			
14						
15						
16						
17						
18						
19						
20					✓	✓
21	DUP JC36204-17	50.24	50M	✓		

Reviewer & Date:

Form: AGN_PH9045_01
Revised: 26-Aug-2015

Reagent Information Log
Test Name:_____EH_____

GN58707

Reagent

Redox Standand	GNE7-48853-ORP 04/24/2017
Quinhydrone, 98%	LOT#A0318649 EXP 2/17/19
pH 4 Buffer Solution	FISHER LOT#164668 EXP 7/18
pH 7 Buffer Solution	FISHER LOT #155866 EXP 9/17

7.4

7

Form: GN087-01
Rev. Date:12/30/2016

Hexavalent Chromium

Test Title:	XCRA
GN Batch:	GN58739
Analyst:	RI
Prep Date:	1/28/2017
Analysis Date:	1/31/2017
Instrument ID:	P

Method: SW846 3060A, 7196A

Note: All results below shown on a wet weight basis.

Corr. Coef: 0.99969

Slope: 0.7979

Y intercept: 0.0036

Bottle #	Sample #	Sample Absorbance	BKGRD Abs	Analysis Times	Y Values Corr Sample Absorbance	X Values Conc(mg/l)	Final Vol. (ml)	Sam. Wt. (g)	Dilution	Final Conc.	Units	MDL	RDL
	Cal. Blk.	0.000	NA	9:04	0.000	0.0000							
	STD 1	0.010	NA	9:09	0.010	0.0100							
	STD 2	0.045	NA	9:09	0.045	0.0500							
	STD 3	0.085	NA	9:09	0.085	0.1000							
	STD 4	0.249	NA	9:09	0.249	0.3000							
	STD 5	0.405	NA	9:09	0.405	0.5000							
	STD 6	0.626	NA	9:09	0.626	0.8000							
	STD 7	0.811	NA	9:09	0.811	1.0000							
	CCV	0.388	NA	11:45	0.388	0.4818	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.000	NA	11:45	0.000	-0.0045	NA	NA	NA	NA	mg/l	0.007	0.010
	GP2942-MB1	0.000	0.000	11:50	0.000	-0.0045	100.0	2.5000	1	-0.180	mg/kg	0.280	0.400
	GP2942-B1	0.764	0.000	11:50	0.764	0.9530	100.0	2.5000	1	38.120	mg/kg	0.280	0.400
	GP2942-S1	0.048	0.007	11:50	0.041	0.0469	100.0	2.5500	1	1.838	mg/kg	0.280	0.392
	GP2942-D1	0.019	0.005	11:50	0.014	0.0130	100.0	2.4100	1	0.541	mg/kg	0.280	0.415
	JC36204-17	0.011	0.004	11:50	0.007	0.0043	100.0	2.4300	1	0.176	mg/kg	0.280	0.412
	JC36204-17PSCONF	0.379	0.000	11:50	0.379	0.4705	100.0	2.4300	2	38.723	mg/kg	0.280	0.823
	GP2942-B2	>3	OVR	11:50		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	GP2942-S2	>3	OVR	11:50		#VALUE!	100.0	2.4800	1	#VALUE!	mg/kg	0.280	0.403
	GP2942-B2	0.307	0.000	11:50	0.307	0.3802	100.0	2.5000	50	760.496	mg/kg	0.280	20.000
	GP2942-S2	0.257	0.000	11:50	0.257	0.3176	100.0	2.4800	50	640.292	mg/kg	0.280	20.161
	CCV	0.388	NA	11:50	0.388	0.4818	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.000	NA	11:50	0.000	-0.0045	NA	NA	NA	NA	mg/l	0.007	0.010
	JC36204-14	0.019	0.012	11:52	0.007	0.0043	100.0	2.4800	1	0.172	mg/kg	0.280	0.403
	JC36204-15	0.027	0.028	11:52	0.000	-0.0045	100.0	2.4600	1	-0.183	mg/kg	0.280	0.407
	JC36204-16	0.115	0.113	11:52	0.002	-0.0020	100.0	2.4300	1	-0.082	mg/kg	0.280	0.412
				11:52		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				11:52		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				11:52		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				11:52		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				11:52		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				11:52		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				11:52		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV	0.388	NA	11:52	0.388	0.4818	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.000	NA	11:52	0.000	-0.0045	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	5	#VALUE!	mg/kg	0.280	2.000
						#VALUE!	100.0	2.5000	2	#VALUE!	mg/kg	0.280	0.800
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400

7.5

7

SGS ACCUTEST - Dayton

3060A/7196A POST-DIGEST SPIKE LEVEL CALCULATION SPREADSHEET

GP Batch: GP22942

NOTE: Always dilute post-spike first, then take a 45 ml aliquot of the diluted post-spike and add the spike amount.

Sample ID	PS Aliquot Weight in g Digested in 100 ml	Weight in 45 ml	Results in mg/kg.	Amount in ml to add of 100 ppm solution	Dilution needed	Suggested Dilution to use	Actual Dilution to be used	Suggested ml of 100 ppm to spike on dilution of sample.	Actual ml of 100 ppm to spike on dilution of sample.	Est. Read-back on curve in mg/l	Calculated Spike Amount in mg/kg	Use calculated or default spike?
JC36204-17	2.43	1.0935	0	0.437	no	0	2	0.219	0.219	0.487	40.055	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike

3060A/7196A INSOLUBLE SPIKE CALCULATION

Weight of PbCrO4	Weight of Sample	Amount Spiked
0.0128	2.5	823.762
0.0125	2.48	810.943
		#DIV/0!
		#DIV/0!
		#DIV/0!

Validated By: JJY
Doc. Control #: AGN-XCRAPSCALC-01

Date Validated: 2/26/13

ACCUTEST

Test: **Hexavalent Chromium** MDL = 0.28 mg/kg GNBatch ID: GN 58739
Product: **XCr** RDL = 0.4 mg/kg Date: 1-31-2017
Method: **SW846 3060A/7196A**

Digestion Batch QC Summary Units = mg/kg

Method Blank ID: GP2942-MB1 Date: 1-31-2017 Result: <RDL RDL: 0.40 <RDL: Yes
Sol. Spike Blank ID: B1 Date: " Result: 38.12 Spike: 40.03 %Rec.: 95.30
Insol. Spike Blank ID: B2 Date: " Result: 760.496 Spike: 823.962 %Rec.: 92.32
Duplicate ID: B1 Samp. Result: <RDL Dup. Result: 0.541 %RPD: 200
Sol. MS ID: " Samp. Result: " MS Result: 1.838 Spike: 39.22 %Rec: 4.69
Insol. MS ID: " Samp. Result: " MS Result: 840.292 Spike: 810.943 %Rec: 97.96
Post Spike ID: JC36204-17 Samp. Result: " PS Result: 38.123 Spike: 40.055 %Rec: 96.67
Diluted Sample ID: _____ Samp. Result: _____ Dil. Result: _____ %RPD: _____
pH adj. PS ID: _____ Samp. Result: _____ MS Result: _____ Spike: _____ %Rec: _____

Analysis Batch QC Summary Units = mg/l

CCV: 1-31-2017 Result: 0.481 TV: 0.500 %Rec.: 96.36
CCV: " Result: " TV: 0.500 %Rec.: "
CCV: " Result: " TV: 0.500 %Rec.: "
CCV: _____ Result: _____ TV: 0.500 %Rec.: _____
CCV: _____ Result: _____ TV: 0.500 %Rec.: _____
CCV: _____ Result: _____ TV: 0.500 %Rec.: _____
CCV: _____ Result: _____ TV: 0.500 %Rec.: _____
CCV: _____ Result: _____ TV: 0.500 %Rec.: _____
CCV: _____ Result: _____ TV: 0.500 %Rec.: _____

CCB: 1-31-2017 Result: <RDL RDL: 0.010 <RDL: Yes
CCB: " Result: " RDL: 0.010 <RDL: "
CCB: _____ Result: _____ RDL: 0.010 <RDL: _____
CCB: _____ Result: _____ RDL: 0.010 <RDL: _____
CCB: _____ Result: _____ RDL: 0.010 <RDL: _____
CCB: _____ Result: _____ RDL: 0.010 <RDL: _____
CCB: _____ Result: _____ RDL: 0.010 <RDL: _____
CCB: _____ Result: _____ RDL: 0.010 <RDL: _____
CCB: _____ Result: _____ RDL: 0.010 <RDL: _____

Reagent Reference Information - refer to attached reagent reference information page(s).

Insoluble spike = $PbCrO_4$ Molecular weight = 323.2 g/mol Cr = 52.0 g/mol

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount

Analyst: _____ Date: 1-31-2017

Comments: _____

Form: GN066-04
Rev. Date: 16-Mar-2016

ACCUTEST.

Hexavalent Chromium pH Adjustment Log
Method Sw846 3060A/7196A

pH Meter ID: 62
Digestion Date: 1/28/2017
pH adj. Date: 1-31-2017
GN Batch ID: GN58739

pH adj. start time: 11:14 11:35
pH adj. end time: 11:21 11:40

GP2942

Sample ID	Sample Weight in g	pH after HNO3 (7.0 to 8.0)	Final Volume (ml)	pH after H2SO4 (1.5 to 2.5)	bkg pH after H2SO4	Spike Amounts	Spike Solution	Digestate Description/Comments
CCV		7.41	100	1.96	—	5.0 ml	10 ppm ultra	
CCV								
CCV								
CCV								
CCB		7.32	100	1.92	—			
CCB								
CCB								
CCB								
MS (Sol) JC36204-17	2.55	7.51	100	1.84	1.72	1.0ml	100ppm LGC	
MS (Insol.)	2.48	7.50		1.82	OVR	0.01259	PbCrO4	
DUP	2.41	7.42		1.90	1.64			
SB (Sol)	2.50g	7.32		1.92	1.81	1.0ml	100ppm LGC	
SB (Insol)	2.50g	7.47		1.82	OVR	0.01289	PbCrO4	
MB	2.50g	7.61		1.90	1.64			
1 JC36204-17	2.43	7.42		1.88	1.72			light yellow
2 -14	2.48	7.25		1.90	1.64			light Brown
3 -15	2.46	7.36		1.82	1.59			↓
4 -16	2.43	7.81		1.90	1.62			Brown
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
SB (Insol)	2.50g	7.40	100	1.82	1.62			dilution1:50 1ml to 50ml
MS (Insol.)	2.48	7.50		1.91	1.72			dilution 1:50 1ml to 50ml
PS	2.43	7.42		1.81	1.72	0.2192	100ppm LGC	1:2 25ml to 50ml
pH adjusted PS							100ppm LGC	ph=
1:5 dil.								10ml to 50ml
JC36204-17	2.51							

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Digestion analyst & date: 1/28/17 KP
Analysis analyst & date: 1-31-2017
Spike Witness: YP

Form: GN067-02b

ACCUTEST

GN/GP Batch ID: GP82942 GN58739

Reagent Information Log - XCRA (soil 3060A/7196)

Reagent	Exp. Date	Reagent # or Manufacturer/Lot
Calibration Source: Hexavalent Chromium, 1000 mg/L Stock	6/30/2018	VHG Labs 84971-9
Calibration Checks: Hexavalent Chromium, 1000 mg/L Stock	12/31/2020	Ultra Lot : R01215
10.0ppm Ultra CCV Spike	6/17/2017	GNE12-49422-XCRA
Spiking Solution Source 100 PPM LGC VHG	7/12/2017	GNE1-49648-XCRA
Lead Chromate (Insoluble Hexavalent Chromium Spike)	11/16/2020	Sigma Aldrich Lot #BCBP0031V
Magnesium Chloride, Anhydrous	8/14/2018	Alfa Aesar Lot #F19Z033
1N NaOH	7/13/2017	GNE1-49667-XCR
Digestion Solution	2/8/2017	GNE1-49617-XCR
Phosphate Buffer Solution	5/5/2017	GNE8-49027-XCRA
5.0 M Nitric Acid	7/11/2017	GNE1-49638-XCRA
Diphenylcarbazide Solution	2/15/2017	GNE1-49678-XCR
Sulfuric Acid, 10%	7/10/2017	GNE1-49627-XCR
Filter	NA	LOT# 150130034
Teflon Chips	NA	919120
0.45um syringe filter	NA	151221062

Form: GN087A-21B
Rev. Date: 2/18/10

SGS ACCUTEST

HEXAVALENT CHROMIUM TEMPERATURE & TIME DIGESTON LOG (METHOD SW846 3060A)

Digest batches for a minimum of 1 hour.

Record temperatures at the start, middle and end of each digestion.

Corrected temperatures must be from 90-95 deg. C.

Digestion Date: 1/28/2017		Hot Plate ID: #9 Thermometer ID: 453 Correction Factor: -1		Hot Plate ID: #8 Thermometer ID: 463 Correction Factor: -1		Hot Plate ID: #11 Thermometer ID: 3124165 Correction Factor: -2		Hot Plate ID: #6 Thermometer ID: 462 Correction Factor: 0		Hot Plate ID: #10 Thermometer ID: 3106914 Correction Factor: -1			
		Temperatures		Temperatures		Temperatures		Temperatures		Temperatures			
GP Batch ID(s)	Time	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Analyst Check	2nd Analyst Check
82941 82942	Start time 11:00	93	92	94	93	92	90	91	91	92	91	KP	YR
	Half time 11:30	93	92	94	93	92	90	91	91	92	91	KP	YR
	End time 12:00	93	92	94	93	92	90	91	91	92	91	KP	YR
82943 82945	Start time 1:00	93	92	94	93	92	90	92	92	92	91	KP	YR
	Half time 1:30	93	92	94	93	92	90	92	92	92	91	KP	YR
	End time 2:00	93	92	94	93	92	90	92	92	92	91	KP	YR
	Start time												
	Half time												
	End time												

Data Reviewed: _____

Form: GN074-03
Revised: 28-Nov-16

ACCUTEST.

Hexavalent Chromium pH Adjustment Log
Method: SW846 3060A/7196A

pH adj. start time: 8:41 8:53
pH adj. end time: 8:48 8:56

pH adjustment Date: 1-31-2016
GN Batch ID: GN 58739

Sample ID	Sample Weight in g	pH after HNO3	Final Volume (ml)	pH after H2SO4	Comments	Spike Info.
Calibration Blank	NA	9.96	100	1.96		
0.010 mg/l standard	NA	9.32	100	1.84	10ppm LGC VHG	0.10 ml of 10 mg/l
0.050 mg/l standard	NA	9.50	100	1.81	10ppm LGC VHG	0.50 ml of 10 mg/l
0.100 mg/l standard	NA	9.61	100	1.92	10ppm LGC VHG	1.00 ml of 10 mg/l
0.300 mg/l standard	NA	9.42	100	1.90	10ppm LGC VHG	3.00 ml of 10 mg/l
0.500 mg/l standard	NA	9.36	100	1.89	10ppm LGC VHG	5.00 ml of 10 mg/l
0.800 mg/l standard	NA	9.29	100	1.86	10ppm LGC VHG	8.00 ml of 10 mg/l
1.00 mg/l standard	NA	9.21	100	1.91	10ppm LGC VHG	10.0 ml of 10 mg/l

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Anayst: [signature]
Date: 1-31-2017

Form: GN068-01
Rev. Date:5/22/06

ACCUTEST.

HEXAVALENT CHROMIUM STANDARD PREPARATION LOG

Product: XCRA

GN or GP Number: GN 58739

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume used in ml	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
10 ppm	Lot # 84971-4	1000 ppm	1.0 ml	DI	100 mls	10 mg/l	2/1/2018	RZ	1-3-2017
100 ppm	Lot # 84971-4	1000 ppm	10 ml	DI	100 mls	100 mg/l	2/1/2018		
5 ppm		1000 ppm	1.0 ml	DI	200 mg/l	5 mg/l			
7.5 ppm		1000 ppm	1.5 ml	DI	200 mg/l	7.5 mg/l			
10 ppm	ULTRALOT#R01215	1000 ppm	1.0 ml	DI	100 mg/l	10 mg/l	12/31/2020		

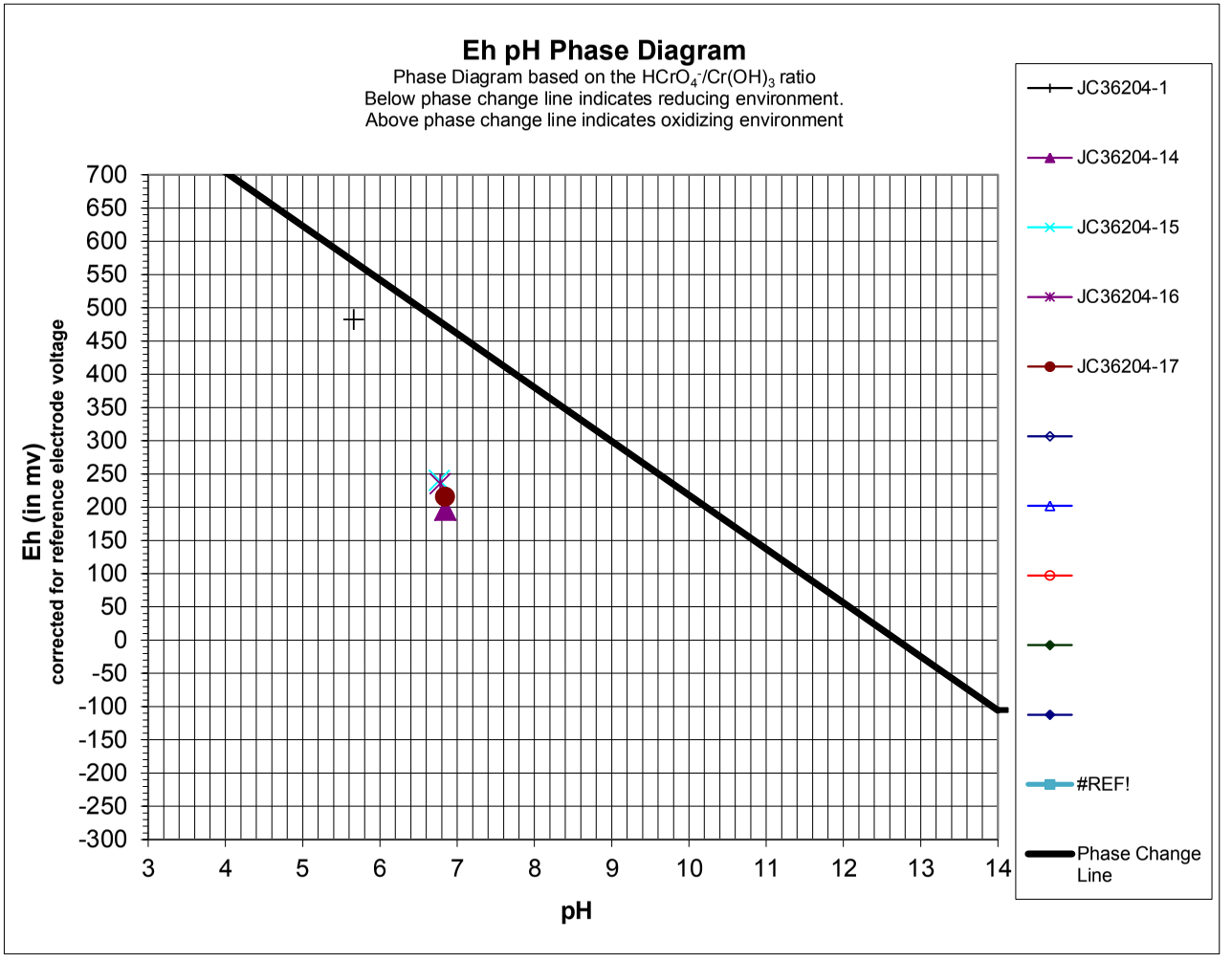
Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Diluent	Final Volume	Final Conc. Of Standard (mg/l)	Expiration Date	Analyst	Date
.010 ppm	10.0 ppm	10.0 ppm	0.1 ppm	DI	100 mls	0.01 mg/l	2-1-2017	RZ	1-3-2017
.050 ppm	10.0 ppm	10.0 ppm	0.5 ppm	DI	100 mls	0.05 mg/l			
.10 ppm	10.0 ppm	10.0 ppm	1.0 ppm	DI	100 mls	0.10 mg/l			
.03 ppm	10.0 ppm	10.0 ppm	3.0 ppm	DI	100 mls	0.30 mg/l			
.50 ppm	10.0 ppm	10.0 ppm	5.0 ppm	DI	100 mls	0.50 mg/l			
.80 ppm	10.0 ppm	10.0 ppm	8.0 ppm	DI	100 mls	0.80 mg/l			
1.00 ppm	10.0 ppm	10.0 ppm	10.0 ppm	DI	100 mls	1.0 mg/l			

Form: GN205-01
Rev. Date:9/10/07

SGS ACCUTEST

	pH	eH (MV)
Phase Change Line	0	1027.7
	14	-105.6

Sample Number	pH	eH (mv)
JC36204-1	5.66	482
JC36204-14	6.85	196
JC36204-15	6.77	240
JC36204-16	6.78	235
JC36204-17	6.84	216



Note that the Eh values plotted on this diagram are corrected for the reference electrode voltage and the values shown are versus the standard hydrogen electrode

Reference for graph: SW846 method 3060A

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

PPG Garfield Avenue, Jersey City, NJ

60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

SGS Accutest Job Number: JC36204A

Sampling Date: 01/26/17

Report to:

AECOM, INC.

sharon.mckechnie@aecom.com

ATTN: Sharon Mckechnie

Total number of pages in report: **119**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4 5 6 7

Table of Contents

Sample Summary

AECOM, INC.

Job No: JC36204A

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC36204-1A	01/26/17	12:00	AK	01/26/17	AQ	Field Blank Soil	HDS-FB20170126
JC36204-14A	01/26/17	09:45	AK	01/26/17	SO	Soil	MW8D-O-11.0-11.5
JC36204-15A	01/26/17	09:30	AK	01/26/17	SO	Soil	MW8D-O-4.0-4.5
JC36204-16A	01/26/17	09:35	AK	01/26/17	SO	Soil	MW8D-O-4.0-4.5X
JC36204-17A	01/26/17	09:40	AK	01/26/17	SO	Soil	MW8D-O-7.0-7.5
JC36204-17AD	01/26/17	09:40	AK	01/26/17	SO	Soil Dup/MSD	MW8D-O-7.0-7.5
JC36204-17AS	01/26/17	09:40	AK	01/26/17	SO	Soil Matrix Spike	MW8D-O-7.0-7.5

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	AECOM, INC.	**Job No**	JC36204A
Site:	PPG Garfield Avenue, Jersey City, NJ	**Report Date**	2/2/2017 12:10:39 PM

On 01/26/2017, 4 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 3.3 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC36204A was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Metals By Method SW846 6010C

Matrix: AQ **Batch ID:** MP98389

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC35980-1MS, JC35980-1MSD, JC35980-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Chromium, Nickel are outside control limits. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: SO **Batch ID:** MP98381

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36204-17AMS, JC36204-17AMSD, JC36204-17ASDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Antimony are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike Duplicate Recovery(s) for Antimony are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC36204A
Account: AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Collected: 01/26/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC36204-1A	**HDS-FB20170126**					
Thallium		2.4 B	10	1.9	ug/l	SW846 6010C
JC36204-14A	**MW8D-O-11.0-11.5**					
Chromium		19.0	0.94	0.11	mg/kg	SW846 6010C
Nickel		14.0	3.7	0.071	mg/kg	SW846 6010C
Vanadium		31.7	4.7	0.078	mg/kg	SW846 6010C
JC36204-15A	**MW8D-O-4.0-4.5**					
Antimony		0.60 B	2.3	0.34	mg/kg	SW846 6010C
Chromium		25.3	1.2	0.14	mg/kg	SW846 6010C
Nickel		17.1	4.7	0.089	mg/kg	SW846 6010C
Vanadium		29.8	5.8	0.097	mg/kg	SW846 6010C
JC36204-16A	**MW8D-O-4.0-4.5X**					
Antimony		1.1 B	2.3	0.33	mg/kg	SW846 6010C
Chromium		19.1	1.1	0.13	mg/kg	SW846 6010C
Nickel		15.1	4.5	0.086	mg/kg	SW846 6010C
Vanadium		27.1	5.6	0.094	mg/kg	SW846 6010C
JC36204-17A	**MW8D-O-7.0-7.5**					
Chromium		17.6	1.2	0.14	mg/kg	SW846 6010C
Nickel		15.7	4.6	0.088	mg/kg	SW846 6010C
Vanadium		26.7	5.8	0.096	mg/kg	SW846 6010C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: HDS-FB20170126
Lab Sample ID: JC36204-1A
Matrix: AQ - Field Blank Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/26/17
Date Received: 01/26/17
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	3.3 U	6.0	3.3	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]
Chromium	0.81 U	10	0.81	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]
Nickel	0.76 U	10	0.76	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]
Thallium	2.4 B	10	1.9	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]
Vanadium	0.66 U	50	0.66	ug/l	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA41258
(2) Prep QC Batch: MP98389

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW8D-O-11.0-11.5
Lab Sample ID: JC36204-14A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/26/17
Date Received: 01/26/17
Percent Solids: 82.9

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.27 U	1.9	0.27	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Chromium	19.0	0.94	0.11	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Nickel	14.0	3.7	0.071	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.37 U	0.94	0.37	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Vanadium	31.7	4.7	0.078	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41258
(2) Prep QC Batch: MP98381

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW8D-O-4.0-4.5
Lab Sample ID: JC36204-15A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/26/17
Date Received: 01/26/17
Percent Solids: 81.6

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.60 B	2.3	0.34	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Chromium	25.3	1.2	0.14	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Nickel	17.1	4.7	0.089	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.47 U	1.2	0.47	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Vanadium	29.8	5.8	0.097	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41258
(2) Prep QC Batch: MP98381

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW8D-O-4.0-4.5X		
Lab Sample ID:	JC36204-16A	**Date Sampled:**	01/26/17
Matrix:	SO - Soil	**Date Received:**	01/26/17
		Percent Solids:	84.4
Project:	PPG Garfield Avenue, Jersey City, NJ		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	1.1 B	2.3	0.33	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Chromium	19.1	1.1	0.13	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Nickel	15.1	4.5	0.086	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.45 U	1.1	0.45	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Vanadium	27.1	5.6	0.094	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41258
(2) Prep QC Batch: MP98381

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW8D-O-7.0-7.5
Lab Sample ID: JC36204-17A
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/26/17
Date Received: 01/26/17
Percent Solids: 84.4

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.34 U	2.3	0.34	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Chromium	17.6	1.2	0.14	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Nickel	15.7	4.6	0.088	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Thallium	0.46 U	1.2	0.46	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]
Vanadium	26.7	5.8	0.096	mg/kg	1	01/27/17	01/28/17	DE	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA41258
(2) Prep QC Batch: MP98381

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

AECOM

COC ID: 401 ACCUTEST 2017-01-26-RI-HDS-COC

TURNAROUND TIME: See Special Instructions

RUSH:

JC36204

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Shipping Company	
Postal Code	07304	Country		Postal Code	08810	Country		Tracking Number	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Count	
PM Phone Number	732-564-3917			Lab Quote #				Cooler Description	CS 401 ACCUTEST
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 2	
								Sampler 3	

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	FIL.	PRESERV.	ANALYSIS: HexChrom	ANALYSIS: pH-ORP	ANALYSIS: TAL-Metals (Thallium, Sb, Ni, Cr and V only)	
HDS-FB20170126	1	WQ	2017/01/26	12:00	G	2	FIELD BLANK			X	X	X	1
MW8D-5E-11.0-11.5	2	SO	2017/01/26	10:15	G	1	(1) 8oz-HOLD			H	H	H	2
MW8D-5E-4.0-4.5	3	SO	2017/01/26	10:05	G	1	(1) 8oz-HOLD			H	H	H	3
MW8D-5E-7.0-7.5	4	SO	2017/01/26	10:10	G	1	(1) 8oz-HOLD			H	H	H	4
MW8D-5N-11.0-11.5	5	SO	2017/01/26	10:50	G	1	(1) 8oz-HOLD			H	H	H	5
MW8D-5N-4.0-4.5	6	SO	2017/01/26	10:40	G	1	(1) 8oz-HOLD			H	H	H	6
MW8D-5N-7.0-7.5	7	SO	2017/01/26	10:45	G	1	(1) 8oz-HOLD			H	H	H	7
MW8D-5S-11.0-11.5	8	SO	2017/01/26	11:25	G	1	(1) 8oz-HOLD			H	H	H	8
MW8D-5S-4.0-4.5	9	SO	2017/01/26	11:15	G	1	(1) 8oz-HOLD			H	H	H	9
MW8D-5S-7.0-7.5	10	SO	2017/01/26	11:20	G	1	(1) 8oz-HOLD			H	H	H	10

A18
C27
C6

INITIAL ASESSMENT 30 Dam

LABEL VERIFICATION DG

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	Aecom ACCUTEST	1/26/17 1440 1/26/17 1710	ACCUTEST SGS	1/26/17 1710 1/26/17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

ALL SAMPLES RECEIVED
[illegible]RVED AS APPLICABLE

Sampler's Name	ERIC ROS	Mobile #	732 343 0374
Sampler's Signature		Date/Time	1/26/17 13:55

TEMP 11 IVC

JC36204A: Chain of Custody
Page 1 of 4

AECOM

COC ID: 401 ACCUTEST 2017-01-26-RI-HDS-COC

JC36204

TURNAROUND TIME: See Special Instructions

RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	05401 AACU TEST
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	Filt.	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)	
MW8D-5W-11.0-11.5	11	SO	2017/01/26	08:50	G	1	(1) 8oz - HOLD			H	H	H	11
MW8D-5W-4.5-5.0	12	SO	2017/01/26	08:40	G	1	(1) 8oz - HOLD			H	H	H	12
MW8D-5W-8.0-8.5	13	SO	2017/01/26	08:45	G	1	(1) 8oz - HOLD			H	H	H	13
MW8D-O-11.0-11.5	14	SO	2017/01/26	09:45	G	1	(1) 8oz			X	X	X	14
MW8D-O-4.0-4.5	15	SO	2017/01/26	09:30	G	1	(1) 8oz			X	X	X	15
MW8D-O-4.0-4.5X	16	SO	2017/01/26	09:35	G	1	(1) 8oz			X	X	X	16
MW8D-O-7.0-7.5	17	SO	2017/01/26	09:40	G	2	(2) 8oz-MS/MSD			X	X	X	17

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM ACCUTEST	1/26/17 1450 1/26/17 1710	ACCUTEST SGS	1/26/17 1400 1/26/17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	ERIC ACS	Mobile #	732 343 0374
Sampler's Signature		Date/Time	1/26/17 1545

TAT no 4.1

5.1 5

JC36204A: Chain of Custody
Page 2 of 4

SGS Accutest Sample Receipt Summary

Job Number: JC36204 **Client:** _____ **Project:** _____

Date / Time Received: 1/26/2017 5:10:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (4.1);

Cooler Temps (Corrected) °C: Cooler 1: (3.3);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC36204A: Chain of Custody
Page 3 of 4

Job Change Order: JC36204

Requested Date:	1/31/2017	**Received Date:**	1/26/2017
Account Name:	AECOM, INC.	**Due Date:**	1/31/2017
Project Description:	PPG Garfield Avenue, Jersey City, NJ	**Deliverable:**	FULT1
CSR:	malay.parekh	**TAT (Days):**	3

Sample #: JC36204-14 to 17
Dept:
TAT: 3

Change:
Due to XCR spike log in XXCRAR

Sample #: JC36204-17
Dept:
TAT: 3

MW8D-O-7.0-7.5

Change:
Due to XCR spike log in FE2/7, SULFS, TOCLK.

Above Changes Per: AECOM

Date/Time: 1/31/2017 3:57:23 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

Page 1 of 1

5.1

5

JC36204A: Chain of Custody
Page 4 of 4

Internal Sample Tracking Chronicle

AECOM, INC.

Job No: JC36204A

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC36204-1A	Collected: 26-JAN-17 12:00 By: AK HDS-FB20170126			Received: 26-JAN-17	By: AS	
JC36204-1A	SW846 6010C	28-JAN-17 16:05	DE	27-JAN-17	RM	CR,NI,SB,TL,V
JC36204-14A	Collected: 26-JAN-17 09:45 By: AK MW8D-O-11.0-11.5			Received: 26-JAN-17	By: AS	
JC36204-14A	SW846 6010C	28-JAN-17 14:30	DE	27-JAN-17	DP	CR,NI,SB,TL,V
JC36204-15A	Collected: 26-JAN-17 09:30 By: AK MW8D-O-4.0-4.5			Received: 26-JAN-17	By: AS	
JC36204-15A	SW846 6010C	28-JAN-17 14:34	DE	27-JAN-17	DP	CR,NI,SB,TL,V
JC36204-16A	Collected: 26-JAN-17 09:35 By: AK MW8D-O-4.0-4.5X			Received: 26-JAN-17	By: AS	
JC36204-16A	SW846 6010C	28-JAN-17 14:37	DE	27-JAN-17	DP	CR,NI,SB,TL,V
JC36204-17A	Collected: 26-JAN-17 09:40 By: AK MW8D-O-7.0-7.5			Received: 26-JAN-17	By: AS	
JC36204-17A	SW846 6010C	28-JAN-17 13:19	DE	27-JAN-17	DP	CR,NI,SB,TL,V

SGS Accutest Internal Chain of Custody

Job Number: JC36204A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/26/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36204-1.1	Secured Storage	Sahara Feliciano	01/27/17 12:57	Retrieve from Storage
JC36204-1.1	Sahara Feliciano	Secured Staging Area	01/27/17 12:57	Return to Storage
JC36204-1.1	Secured Staging Area	Radhika Mistry	01/27/17 14:28	Retrieve from Storage
JC36204-1.1	Radhika Mistry	Secured Storage	01/27/17 16:12	Return to Storage
JC36204-1.1.1	Radhika Mistry	Metals Digestion	01/27/17 16:09	Digestate from JC36204-1.1
JC36204-1.1.1	Metals Digestion	Radhika Mistry	01/27/17 16:09	Digestate from JC36204-1.1
JC36204-1.1.1	Radhika Mistry	Metals Digestate Storage	01/27/17 16:09	Return to Storage
JC36204-1.2	Secured Storage	Dawan Currie	01/26/17 18:51	Retrieve from Storage
JC36204-1.2	Dawan Currie	Secured Staging Area	01/26/17 18:51	Return to Storage
JC36204-1.2	Secured Staging Area	Andray Tandacharry	01/26/17 19:59	Retrieve from Storage
JC36204-1.2	Andray Tandacharry	Secured Storage	01/26/17 23:24	Return to Storage
JC36204-1.2	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-1.2	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-14.1	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-14.1	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-14.1	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-14.1	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-14.1	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-14.1	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-14.1	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-14.1	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-14.1	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-14.1	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-14.1	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-14.1	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-14.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-14.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-14.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-14.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-14.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-14.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-14.1.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-14.1
JC36204-14.1.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-14.1
JC36204-14.1.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage
JC36204-15.1	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-15.1	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-15.1	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-15.1	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-15.1	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36204A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/26/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36204-15.1	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-15.1	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-15.1	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-15.1	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-15.1	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-15.1	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-15.1	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-15.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-15.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-15.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-15.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-15.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-15.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-15.1.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-15.1
JC36204-15.1.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-15.1
JC36204-15.1.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage
JC36204-16.1	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-16.1	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-16.1	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-16.1	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-16.1	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-16.1	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-16.1	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-16.1	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-16.1	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-16.1	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-16.1	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-16.1	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-16.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-16.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-16.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-16.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-16.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-16.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-16.1.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-16.1
JC36204-16.1.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-16.1
JC36204-16.1.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage
JC36204-17.1	Secured Storage	Mahendra Patel	02/01/17 08:36	Retrieve from Storage
JC36204-17.1	Mahendra Patel	Secured Storage	02/01/17 12:16	Return to Storage
JC36204-17.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36204A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/26/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36204-17.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-17.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-17.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-17.2	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-17.2	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-17.2	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-17.2	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-17.2	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-17.2	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-17.2	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-17.2	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-17.2	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-17.2	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-17.2	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-17.2	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-17.2	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-17.2	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-17.2	Secured Storage	Paul Ojugo	01/31/17 08:50	Retrieve from Storage
JC36204-17.2	Paul Ojugo	Secured Storage	01/31/17 17:10	Return to Storage
JC36204-17.2	Secured Storage	Gage Donahue	02/01/17 08:33	Retrieve from Storage
JC36204-17.2	Gage Donahue	Secured Staging Area	02/01/17 08:33	Return to Storage
JC36204-17.2	Secured Staging Area	Courtney Dringus	02/01/17 10:21	Retrieve from Storage
JC36204-17.2	Courtney Dringus	Secured Storage	02/01/17 18:33	Return to Storage
JC36204-17.2.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-17.2
JC36204-17.2.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-17.2
JC36204-17.2.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:31	MA41258-STD1	1		STDA
11:35	MA41258-STD2	1		STDB
11:38	ZZZZZZ	1		
11:41	ZZZZZZ	1		
11:45	MA41258-ICV1	1		
11:48	MA41258-ICB1	1		
11:52	MA41258-ICCV1	1		
11:55	MA41258-CCB1	1		
11:58	MA41258-CRI1	1		
12:02	MA41258-CRID1	1		
12:05	MA41258-CRIA1	1		
12:08	MA41258-ICSA1	1		
12:12	MA41258-ICSAB1	1		
12:15	MA41258-HSTD1	1		
12:19	MA41258-HSTD2	1		
12:24	MA41258-HSTD3	1		
12:28	ZZZZZZ	1		
12:31	MA41258-CCV1	1		
12:35	MA41258-CCB2	1		
12:38	ZZZZZZ	1		
12:42	ZZZZZZ	1		
12:45	ZZZZZZ	1		
12:48	ZZZZZZ	1		
12:52	MP98381-B1	1		
12:55	MP98381-MB1	1		
12:58	MP98381-LC1	1		
13:02	MP98381-LC2	1		
13:05	MA41258-CCV2	1		
13:08	MA41258-CCB3	1		
13:12	MP98381-S1	1		
13:15	MP98381-S2	1		
13:19	JC36204-17A	1		
13:22	MP98381-SD1	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:25	ZZZZZZ	1		
13:29	ZZZZZZ	1		
13:32	MP98377-B1	1		
13:36	MP98377-MB1	1		
13:39	MA41258-CCV3	1		
13:42	MA41258-CCB4	1		
13:46	MP98377-S1	1		
13:49	MP98377-S2	1		
13:52	JC35801-2	1		(sample used for QC only; not part of login JC36204A)
13:56	MP98377-SD1	5		
13:59	MP98377-S3	1		
14:02	MP98377-S4	1		
14:06	JC35801-2F	1		(sample used for QC only; not part of login JC36204A)
14:09	MP98377-SD2	5		
14:13	ZZZZZZ	1		
14:17	MA41258-CCV4	1		
14:20	MA41258-CCB5	1		
14:23	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:30	JC36204-14A	1		
14:34	JC36204-15A	1		
14:37	JC36204-16A	1		
14:40	MP98390-MB1	1		
14:44	MP98390-B1	1		
14:47	MP98390-S1	1		Not spiked
14:51	MP98390-S2	1		Not spiked
14:54	MA41258-CCV5	1		
14:57	MA41258-CCB6	1		
15:01	JC35862-3	1		(sample used for QC only; not part of login JC36204A)
15:04	MP98390-SD1	5		
15:07	ZZZZZZ	1		
15:11	MP98389-B1	1		
15:14	MP98389-MB1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:17	MP98389-S1	1		S high
15:21	MP98389-S2	1		S high
15:24	JC35980-1	1		(sample used for QC only; not part of login JC36204A)
15:28	MP98389-SD1	5		S high
15:31	MA41258-CCV6	1		
15:35	MA41258-CCB7	1		
15:38	ZZZZZZ	1		
15:41	ZZZZZZ	1		
15:45	ZZZZZZ	1		
15:48	ZZZZZZ	1		
15:51	ZZZZZZ	1		
15:55	ZZZZZZ	1		
15:58	ZZZZZZ	1		
16:02	ZZZZZZ	1		
16:05	JC36204-1A	1		Tl hit
---------->	Last reportable sample/prep for job JC36204A			
16:09	MA41258-CCV7	1		
16:12	MA41258-CCB8	1		
16:19	MA41258-CRI2	1		
16:22	MA41258-CRID2	1		
16:25	MA41258-CRIA2	1		
16:29	MA41258-ICSA2	1		
16:32	MA41258-ICSAB2	1		
16:36	MA41258-CCV8	1		
16:39	MA41258-CCB9	1		
---------->	Last reportable CCB for job JC36204A			
16:42	MP98400-MB1	5		
16:46	MP98400-B1	5		
16:49	ZZZZZZ	1		
16:53	MP98400-S1	5		
16:56	MP98400-S2	5		
16:59	JC36124-1	5		(sample used for QC only; not part of login JC36204A)
17:03	MP98400-SD1	25		
17:06	ZZZZZZ	5		
17:10	ZZZZZZ	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:13	MA41258-CCV9	1		
17:17	MA41258-CCB10	1		
17:20	ZZZZZZ	5		
17:23	ZZZZZZ	1		
17:27	ZZZZZZ	2		
17:30	ZZZZZZ	5		
17:34	ZZZZZZ	5		
17:37	ZZZZZZ	2		
17:40	ZZZZZZ	5		
17:44	ZZZZZZ	5		
17:47	ZZZZZZ	5		
17:51	MA41258-CCV10	1		
17:54	MA41258-CCB11	1		
17:58	ZZZZZZ	5		
18:01	ZZZZZZ	1		
18:04	ZZZZZZ	1		
18:08	ZZZZZZ	1		
18:11	ZZZZZZ	1		
18:15	ZZZZZZ	1		
18:18	ZZZZZZ	1		
18:22	ZZZZZZ	1		
18:25	ZZZZZZ	1		
18:29	MA41258-CCV11	1		
18:32	MA41258-CCB12	1		
18:35	ZZZZZZ	1		
18:39	ZZZZZZ	1		
18:42	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:49	ZZZZZZ	1		
18:52	ZZZZZZ	1		
18:55	ZZZZZZ	1		
18:59	ZZZZZZ	1		
19:02	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:05	MA41258-CCV12	1		
19:09	MA41258-CCB13	1		
19:12	ZZZZZZ	1		
19:16	ZZZZZZ	1		
19:19	ZZZZZZ	1		
19:22	ZZZZZZ	1		
19:26	ZZZZZZ	1		
19:29	ZZZZZZ	1		
19:33	ZZZZZZ	1		
19:36	ZZZZZZ	1		
19:40	ZZZZZZ	1		
19:43	MA41258-CCV13	1		
19:47	MA41258-CCB14	1		
19:50	ZZZZZZ	1		
19:53	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:00	ZZZZZZ	1		
20:04	ZZZZZZ	1		
20:07	ZZZZZZ	1		
20:10	ZZZZZZ	1		
20:14	ZZZZZZ	1		
20:17	ZZZZZZ	1		
20:21	MA41258-CCV14	1		
20:24	MA41258-CCB15	1		
20:27	ZZZZZZ	1		
20:31	ZZZZZZ	1		
20:34	ZZZZZZ	1		
20:38	ZZZZZZ	1		
20:41	ZZZZZZ	1		
20:44	ZZZZZZ	1		
20:48	ZZZZZZ	1		
20:51	ZZZZZZ	1		
20:54	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:58	MA41258-CCV15	1		
21:01	MA41258-CCB16	1		
21:04	ZZZZZZ	1		
21:08	ZZZZZZ	1		
21:11	ZZZZZZ	1		
21:14	ZZZZZZ	1		
21:18	ZZZZZZ	1		
21:21	ZZZZZZ	5		
21:24	ZZZZZZ	5		
21:28	ZZZZZZ	5		
21:31	ZZZZZZ	5		
21:35	MA41258-CCV16	1		
21:38	MA41258-CCB17	1		
21:41	ZZZZZZ	5		
21:45	ZZZZZZ	5		
21:48	ZZZZZZ	5		
21:51	ZZZZZZ	5		
21:55	ZZZZZZ	5		
21:58	ZZZZZZ	5		
22:02	ZZZZZZ	5		
22:05	MA41258-CCV17	1		
22:08	MA41258-CCB18	1		
22:12	MA41258-CRI3	1		
22:15	MA41258-CRID3	1		
22:18	MA41258-CRIA3	1		
22:22	MA41258-CCV18	1		
22:25	MA41258-CCB19	1		
22:28	ZZZZZZ	1		
22:32	ZZZZZZ	1		
22:35	ZZZZZZ	1		
22:38	ZZZZZZ	1		
22:42	ZZZZZZ	1		
22:45	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
22:49	ZZZZZZ	1		
22:52	ZZZZZZ	1		
22:56	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:31	MA41258-STD1	7577 R	225500 R	17999 R	13294 R
11:35	MA41258-STD2	7338	212520	17635	12618
11:38	ZZZZZZ	7479	219400	17726	12880
11:41	ZZZZZZ	7582	225680	18164	13347
11:45	MA41258-ICV1	7444	218530	17598	12862
11:48	MA41258-ICB1	7567	225690	17980	13329
11:52	MA41258-ICCV1	7453	218720	17103	12862
11:55	MA41258-CCB1	7582	224870	18139	13375
11:58	MA41258-CRI1	7585	224790	17417	13356
12:02	MA41258-CRID1	7595	224660	17862	13393
12:05	MA41258-CRIA1	7556	225770	17879	13369
12:08	MA41258-ICSA1	7022	205780	16860	11980
12:12	MA41258-ICSAB1	7031	205830	16828	11991
12:15	MA41258-HSTD1	No results reported for the elements associated with this internal standard.			
12:19	MA41258-HSTD2	7191	208400	17539	12137
12:24	MA41258-HSTD3	7555	227740	18080	13377
12:28	ZZZZZZ	7560	223490	18038	13632
12:31	MA41258-CCV1	7423	219510	17595	12877
12:35	MA41258-CCB2	7629	228860	17281	13486
12:38	ZZZZZZ	7470	226460	18040	13427
12:42	ZZZZZZ	7615	229170	17883	13490
12:45	ZZZZZZ	7610	229870	18044	13479
12:48	ZZZZZZ	7655	231410	17903	13545
12:52	MP98381-B1	7544	222480	17718	13137
12:55	MP98381-MB1	7732	232220	18298	13618
12:58	MP98381-LC1	7807	232180	18640	13365
13:02	MP98381-LC2	7816	233370	18601	13407
13:05	MA41258-CCV2	7556	224830	17855	13099
13:08	MA41258-CCB3	7679	230300	18081	13595
13:12	MP98381-S1	7898	232070	18511	13125
13:15	MP98381-S2	7898	232230	18695	13163
13:19	JC36204-17A	8164	244330	19411	13540
13:22	MP98381-SD1	7820	234120	18876	13539

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:25	ZZZZZZ	7677	230310	18463	13847
13:29	ZZZZZZ	7721	232490	18139	13679
13:32	MP98377-B1	7622	227530	18183	13295
13:36	MP98377-MB1	7708	231230	18360	13633
13:39	MA41258-CCV3	7594	223200	17908	13165
13:42	MA41258-CCB4	7784	229680	18435	13769
13:46	MP98377-S1	7665	229500	18348	13301
13:49	MP98377-S2	7576	229170	18303	13177
13:52	JC35801-2	7720	231440	18363	13638
13:56	MP98377-SD1	7775	235810	18113	13789
13:59	MP98377-S3	7603	228480	18245	13213
14:02	MP98377-S4	7694	230200	18218	13361
14:06	JC35801-2F	7772	232370	18417	13708
14:09	MP98377-SD2	7789	233010	18378	13831
14:13	ZZZZZZ	7774	234960	18447	13776
14:17	MA41258-CCV4	7592	227830	17858	13186
14:20	MA41258-CCB5	7788	233620	18195	13796
14:23	ZZZZZZ	8049	236370	18600	14220
14:27	ZZZZZZ	7861	236200	18472	13866
14:30	JC36204-14A	8102	237080	19139	13699
14:34	JC36204-15A	8202	243910	19392	13729
14:37	JC36204-16A	8206	241650	19716	13829
14:40	MP98390-MB1	7934	238090	18747	13933
14:44	MP98390-B1	7769	229090	18235	13429
14:47	MP98390-S1	No results reported for the elements associated with this internal standard.			
14:51	MP98390-S2	No results reported for the elements associated with this internal standard.			
14:54	MA41258-CCV5	7732	229400	18143	13337
14:57	MA41258-CCB6	7878	233610	18550	13896
15:01	JC35862-3	8361	247130	19513	13858
15:04	MP98390-SD1	8059	240570	18841	13908
15:07	ZZZZZZ	8014	238740	18786	14004
15:11	MP98389-B1	7840	235620	18714	13590
15:14	MP98389-MB1	7970	240070	19041	14021

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:17	MP98389-S1	7539	219630	18350	12904
15:21	MP98389-S2	7570	224210	18149	12965
15:24	JC35980-1	7647	225560	18257	13235
15:28	MP98389-SD1	7869	234750	18639	13824
15:31	MA41258-CCV6	7824	230520	18451	13488
15:35	MA41258-CCB7	7945	236750	18700	13998
15:38	ZZZZZZ	7251	207600	17654	12125
15:41	ZZZZZZ	7871	232330	18697	13649
15:45	ZZZZZZ	7335	205510	18058	12267
15:48	ZZZZZZ	7163	203440	17835	11909
15:51	ZZZZZZ	7750	225680	18472	13293
15:55	ZZZZZZ	No results reported for the elements associated with this internal standard.			
15:58	ZZZZZZ	No results reported for the elements associated with this internal standard.			
16:02	ZZZZZZ	7206	201770	17804	11929
16:05	JC36204-1A	8159	243890	19221	14381
16:09	MA41258-CCV7	7871	231530	18195	13546
16:12	MA41258-CCB8	8055	243690	18604	14181
16:19	MA41258-CRI2	8014	237200	18743	14037
16:22	MA41258-CRID2	8067	237240	18691	14154
16:25	MA41258-CRIA2	8037	237530	18686	14135
16:29	MA41258-ICSA2	7398	213100	17595	12520
16:32	MA41258-ICSAB2	7428	213900	17572	12589
16:36	MA41258-CCV8	7913	233740	18210	13624
16:39	MA41258-CCB9	8061	239710	18705	14169
16:42	MP98400-MB1	7790	225410	18436	13251
16:46	MP98400-B1	7855	224410	18417	13312
16:49	ZZZZZZ	7904	230820	18714	13653
16:53	MP98400-S1	7780	227310	18325	13201
16:56	MP98400-S2	7792	226200	18242	13224
16:59	JC36124-1	7787	223880	18353	13233
17:03	MP98400-SD1	7937	231620	18568	13809
17:06	ZZZZZZ	7771	221500	18242	13187
17:10	ZZZZZZ	8223	233210	18544	14008

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:13	MA41258-CCV9	7970	236310	18468	13721
17:17	MA41258-CCB10	8092	241890	18790	14242
17:20	ZZZZZZ	7979	228040	18659	13624
17:23	ZZZZZZ	8070	237190	19188	13944
17:27	ZZZZZZ	7717	213250	18298	12949
17:30	ZZZZZZ	7725	215380	18230	13000
17:34	ZZZZZZ	7703	215280	18164	12895
17:37	ZZZZZZ	8033	217530	18421	13405
17:40	ZZZZZZ	8074	230220	18765	13733
17:44	ZZZZZZ	8032	232310	18817	13658
17:47	ZZZZZZ	8009	228290	18615	13628
17:51	MA41258-CCV10	8077	236910	18733	13845
17:54	MA41258-CCB11	8192	242950	19192	14378
17:58	ZZZZZZ	8067	231890	18758	13700
18:01	ZZZZZZ	8456	247540	19653	14239
18:04	ZZZZZZ	8451	247000	19615	14265
18:08	ZZZZZZ	8552	248440	20043	14276
18:11	ZZZZZZ	8471	248760	19730	14241
18:15	ZZZZZZ	8505	247320	19738	14247
18:18	ZZZZZZ	8551	248070	19950	14196
18:22	ZZZZZZ	8449	249210	19581	14281
18:25	ZZZZZZ	8521	249110	19893	14236
18:29	MA41258-CCV11	8168	238090	18991	13972
18:32	MA41258-CCB12	8349	246520	19286	14599
18:35	ZZZZZZ	8511	250330	19899	14285
18:39	ZZZZZZ	8561	248270	19932	14311
18:42	ZZZZZZ	8550	249760	20111	14347
18:46	ZZZZZZ	8499	247390	19752	14340
18:49	ZZZZZZ	8555	248750	20091	14318
18:52	ZZZZZZ	8562	251050	19925	14392
18:55	ZZZZZZ	8653	253510	20263	14397
18:59	ZZZZZZ	8486	246870	19719	14775
19:02	ZZZZZZ	8406	244100	19514	14633

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:05	MA41258-CCV12	8240	239410	19214	14058
19:09	MA41258-CCB13	8345	249260	19460	14582
19:12	ZZZZZZ	8045	229080	19019	13648
19:16	ZZZZZZ	8225	235570	19272	14096
19:19	ZZZZZZ	8226	237690	19232	14094
19:22	ZZZZZZ	8055	229140	19004	13629
19:26	ZZZZZZ	8186	230370	19013	13838
19:29	ZZZZZZ	7987	218730	18801	13174
19:33	ZZZZZZ	8019	220460	18715	13285
19:36	ZZZZZZ	8160	231520	19056	13566
19:40	ZZZZZZ	8310	241160	19354	14322
19:43	MA41258-CCV13	8274	240370	19116	14136
19:47	MA41258-CCB14	8429	248150	19183	14703
19:50	ZZZZZZ	8587	250170	19904	14508
19:53	ZZZZZZ	8624	248430	19850	14541
19:57	ZZZZZZ	8636	252710	20036	14592
20:00	ZZZZZZ	9081	262040	20940	14555
20:04	ZZZZZZ	8721	252850	20230	14608
20:07	ZZZZZZ	8646	253320	20036	14658
20:10	ZZZZZZ	8601	249130	19729	14537
20:14	ZZZZZZ	8746	253750	20153	14636
20:17	ZZZZZZ	8693	255680	20316	14588
20:21	MA41258-CCV14	No results reported for the elements associated with this internal standard.			
20:24	MA41258-CCB15	No results reported for the elements associated with this internal standard.			
20:27	ZZZZZZ	8535	247110	19755	14506
20:31	ZZZZZZ	8691	251990	20057	14725
20:34	ZZZZZZ	8788	256430	20133	14700
20:38	ZZZZZZ	8480	248990	19915	14490
20:41	ZZZZZZ	8770	256700	20256	14543
20:44	ZZZZZZ	8393	243190	19489	14304
20:48	ZZZZZZ	8426	239600	19754	14083
20:51	ZZZZZZ	7806	238330	19271	13268
20:54	ZZZZZZ	6989	209300	16741	12219

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:58	MA41258-CCV15	No results reported for the elements associated with this internal standard.			
21:01	MA41258-CCB16	No results reported for the elements associated with this internal standard.			
21:04	ZZZZZZ	6959	207100	16776	11977
21:08	ZZZZZZ	7042	210000	16881	12252
21:11	ZZZZZZ	6897	207960	16623	12121
21:14	ZZZZZZ	6739	200310	16204	11706
21:18	ZZZZZZ	7216	217810	17176	12665
21:21	ZZZZZZ	6927	203530	16494	11878
21:24	ZZZZZZ	6888	201650	16332	11800
21:28	ZZZZZZ	6925	202090	16399	11855
21:31	ZZZZZZ	6945	202670	16503	11888
21:35	MA41258-CCV16	No results reported for the elements associated with this internal standard.			
21:38	MA41258-CCB17	No results reported for the elements associated with this internal standard.			
21:41	ZZZZZZ	6931	202850	16450	11877
21:45	ZZZZZZ	6912	200690	16429	11847
21:48	ZZZZZZ	6924	202100	16464	11862
21:51	ZZZZZZ	7020	202500	16373	12016
21:55	ZZZZZZ	6973	203930	16481	11948
21:58	ZZZZZZ	6891	202000	16496	11831
22:02	ZZZZZZ	6886	201690	16444	11801
22:05	MA41258-CCV17	6925	206800	16363	12020
22:08	MA41258-CCB18	7062	208840	16030	12508
22:12	MA41258-CRI3	6936	207540	16378	12278
22:15	MA41258-CRID3	7034	209160	16549	12460
22:18	MA41258-CRIA3	6943	209310	16427	12327
22:22	MA41258-CCV18	6975	208410	16255	12095
22:25	MA41258-CCB19	7003	209170	16541	12414
22:28	ZZZZZZ	7288	205910	16525	12073
22:32	ZZZZZZ	6674	198280	15953	11574
22:35	ZZZZZZ	6680	197770	15791	11452
22:38	ZZZZZZ	6990	210400	16537	12366
22:42	ZZZZZZ	7030	211200	16457	12532
22:45	ZZZZZZ	7052	211170	16596	12464

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
Analyst: DE Run ID: MA41258
Parameters: Sb,Cr,Ni,Tl,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
22:49	ZZZZZZ	7167	215510	16914	12669
22:52	ZZZZZZ	7202	216960	16981	12721
22:56	ZZZZZZ	7284	217380	17157	12903

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time:			11:48		11:55		12:35		13:08	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-0.70	<6.0	-0.10	<6.0	0.0	<6.0	0.70	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6								
Boron	100	4.6								
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.0	<10	0.30	<10	0.0	<10	-0.10	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4								
Nickel	10	.6	-0.10	<10	-0.10	<10	0.0	<10	0.0	<10
Palladium	50	3								
Phosphorus	50									
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3								
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1								
Strontium	10	.1								
Thallium	2.0	1.8	-0.90	<2.0	-0.70	<2.0	-0.30	<2.0	0.20	<2.0
Tin	10	1.1								
Titanium	10	.5								
Tungsten	50	1.9								
Vanadium	50	.4	0.0	<50	-0.20	<50	0.0	<50	0.0	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time: / Sample ID:			11:48 ICB1		11:55 CCB1		12:35 CCB2		13:08 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time: / Sample ID:			13:42 CCB4		14:20 CCB5		14:57 CCB6		15:35 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.7	-0.20	<6.0	-0.60	<6.0	-0.20	<6.0	-1.2	<6.0
Arsenic	3.0	1.4	anr							
Barium	200	.5	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6								
Boron	100	4.6								
Cadmium	3.0	.4	anr							
Calcium	5000	45	anr							
Chromium	10	.5	0.0	<10	0.0	<10	0.20	<10	0.20	<10
Cobalt	50	.4	anr							
Copper	10	.5	anr							
Iron	100	2.8	anr							
Lead	3.0	1.2	anr							
Lithium	20	3.7	anr							
Magnesium	5000	21	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4								
Nickel	10	.6	-0.10	<10	0.10	<10	0.10	<10	0.10	<10
Palladium	50	3								
Phosphorus	50									
Potassium	10000	84	anr							
Selenium	10	3.2	anr							
Silicon	200	2.3								
Silver	10	1	anr							
Sodium	10000	38	anr							
Sulfur	50	4.1								
Strontium	10	.1								
Thallium	2.0	1.8	0.80	<2.0	0.0	<2.0	-0.50	<2.0	0.70	<2.0
Tin	10	1.1								
Titanium	10	.5								
Tungsten	50	1.9								
Vanadium	50	.4	-0.10	<50	0.0	<50	0.20	<50	0.30	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time: / Sample ID:			13:42 CCB4		14:20 CCB5		14:57 CCB6		15:35 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	1.8	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

Time: / Sample ID:			16:12 CCB8		16:39 CCB9	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	16	anr			
Antimony	6.0	2.7	0.40	<6.0	0.0	<6.0
Arsenic	3.0	1.4	anr			
Barium	200	.5	anr			
Beryllium	1.0	.1	anr			
Bismuth	20	3.6				
Boron	100	4.6				
Cadmium	3.0	.4	anr			
Calcium	5000	45	anr			
Chromium	10	.5	0.10	<10	0.10	<10
Cobalt	50	.4	anr			
Copper	10	.5	anr			
Iron	100	2.8	anr			
Lead	3.0	1.2	anr			
Lithium	20	3.7	anr			
Magnesium	5000	21	anr			
Manganese	15	.1	anr			
Molybdenum	20	.4				
Nickel	10	.6	-0.10	<10	0.30	<10
Palladium	50	3				
Phosphorus	50					
Potassium	10000	84	anr			
Selenium	10	3.2	anr			
Silicon	200	2.3				
Silver	10	1	anr			
Sodium	10000	38	anr			
Sulfur	50	4.1				
Strontium	10	.1				
Thallium	2.0	1.8	0.80	<2.0	0.20	<2.0
Tin	10	1.1				
Titanium	10	.5				
Tungsten	50	1.9				
Vanadium	50	.4	-0.10	<50	-0.10	<50

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41258 Units: ug/l

			16:12		16:39	
Time:						
Sample ID:			CCB8		CCB9	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	1.8	anr			
Zirconium	10	.4				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		11:52	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	2000	2030	101.5
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	2000	2040	102.0
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	2000	2060	103.0
Palladium			
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Sulfur			
Strontium			
Thallium	2000	2060	103.0
Tin			
Titanium			
Tungsten			
Vanadium	2000	2030	101.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		11:52	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		11:45			12:31			13:05	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1960	98.0	2000	2050	102.5	2000	1980	99.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	1960	98.0	2000	2050	102.5	2000	1970	98.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	2000	1960	98.0	2000	2060	103.0	2000	2000	100.0
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium	2000	2000	100.0	2000	2070	103.5	2000	2010	100.5
Tin									
Titanium									
Tungsten									
Vanadium	2000	1930	96.5	2000	2030	101.5	2000	1940	97.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		11:45			12:31			13:05	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		13:39			14:17			14:54	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2000	100.0	2000	1970	98.5	2000	1920	96.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	2020	101.0	2000	1950	97.5	2000	1910	95.5
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	2000	2020	101.0	2000	1990	99.5	2000	1950	97.5
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium	2000	2030	101.5	2000	2000	100.0	2000	1960	98.0
Tin									
Titanium									
Tungsten									
Vanadium	2000	1990	99.5	2000	1920	96.0	2000	1890	94.5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		13:39			14:17			14:54	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		15:31			16:09			16:36	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1920	96.0	2000	1870	93.5	2000	1900	95.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	2000	1920	96.0	2000	1860	93.0	2000	1900	95.0
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	2000	1950	97.5	2000	1910	95.5	2000	1930	96.5
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium	2000	1960	98.0	2000	1910	95.5	2000	1930	96.5
Tin									
Titanium									
Tungsten									
Vanadium	2000	1900	95.0	2000	1840	92.0	2000	1880	94.0

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41258 Units: ug/l

Time:		15:31			16:09			16:36	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41258 Units: ug/l

Time:		12:19			12:24	
Sample ID:	HSTD	HSTD2		HSTD	HSTD3	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony				5000	5160	103.2
Arsenic						
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium	anr					
Chromium				5000	5290	105.8
Cobalt						
Copper						
Iron	anr					
Lead						
Lithium						
Magnesium	anr					
Manganese						
Molybdenum						
Nickel				5000	5290	105.8
Palladium						
Phosphorus						
Potassium	anr					
Selenium						
Silicon						
Silver						
Sodium	anr					
Sulfur						
Strontium						
Thallium				5000	5260	105.2
Tin						
Titanium						
Tungsten						
Vanadium				5000	5170	103.4

HIGH STANDARD CHECK SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41258 Units: ug/l

Time:		12:19			12:24	
Sample ID:	HSTD	HSTD2		HSTD	HSTD3	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc						
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41258 Units: ug/l

Time:				11:58		12:02		12:05	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	5.6	93.3	2.7	90.0	17.8	89.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	9.8	98.0	2.2	110.0		
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	10.1	101.0	4.4	110.0		
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50								
Strontium	10								
Thallium	10		2.0	8.8	88.0	1.5	75.0		
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	48.5	97.0	2.2	110.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41258 Units: ug/l

Time:				11:58		12:02		12:05	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41258 Units: ug/l

Time:				16:19		16:22		16:25	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	4.8	80.0	2.7	90.0	16.4	82.0
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	9.9	99.0	2.3	115.0		
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20			anr					
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	9.6	96.0	4.1	102.5		
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50								
Strontium	10								
Thallium	10		2.0	9.3	93.0	2.0	100.0		
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	47.5	95.0	2.1	105.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41258 Units: ug/l

Time:				16:19		16:22		16:25	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41258 Units: ug/l

Time:			12:08		12:12		16:29		16:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	512000	102.4	510000	102.0	484000	96.8	459000	91.8
Antimony		1000	1.9		1160	116.0	2.9		1080	108.0
Arsenic		1000	-1.1		1090	109.0	0.80		1020	102.0
Barium		500	1.8		537	107.4	1.3		490	98.0
Beryllium		500	0.10		528	105.6	0.10		477	95.4
Bismuth		500	7.5		516	103.2	7.8		482	96.4
Boron		500	3.1		512	102.4	1.7		477	95.4
Cadmium		1000	0.10		1060	106.0	-0.10		985	98.5
Calcium	400000	400000	382000	95.5	390000	97.5	363000	90.8	350000	87.5
Chromium		500	2.2		504	100.8	1.7		476	95.2
Cobalt		500	-1.1		499	99.8	-1.1		469	93.8
Copper		500	6.5		536	107.2	5.3		500	100.0
Iron	200000	200000	192000	96.0	189000	94.5	181000	90.5	171000	85.5
Lead		1000	5.1		985	98.5	3.6		928	92.8
Lithium		500	-14		535	107.0	-9.5		490	98.0
Magnesium	500000	500000	506000	101.2	509000	101.8	480000	96.0	461000	92.2
Manganese		500	0.50		512	102.4	-0.20		481	96.2
Molybdenum		500	1.7		500	100.0	1.4		468	93.6
Nickel		1000	-0.40		1010	101.0	-0.40		948	94.8
Palladium		500	-14		6.9	1.4*	-14		6.9	1.4*
Phosphorus		500	10.6		497	99.4	9.8		470	94.0
Potassium			-180		-140		258		263	
Selenium		1000	2.6		1060	106.0	3.5		990	99.0
Silicon		500	-21		476	95.2	-20		447	89.4
Silver		1000	5.0		1090	109.0	1.7		1020	102.0
Sodium			8.8		11.1		1090		1120	
Sulfur		500	-3.8		497	99.4	-4.5		465	93.0
Strontium		500	0.80		537	107.4	0.90		490	98.0
Thallium		1000	0.90		1040	104.0	0.60		981	98.1
Tin		500	-6.2		480	96.0	-5.5		448	89.6
Titanium		500	-1.9		496	99.2	-2.0		466	93.2
Tungsten		500	3.7		509	101.8	3.7		479	95.8
Vanadium		500	-0.40		488	97.6	-0.60		459	91.8

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SC012817M1.ICP Date Analyzed: 01/28/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41258 Units: ug/l

Time:			12:08		12:12		16:29		16:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.6		997	99.7	2.4		937	93.7
Zirconium		500	8.2		503	100.6	7.5		471	94.2

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:39	MA41267-STD1	1		STDA
12:43	MA41267-STD2	1		STDB
12:48	ZZZZZZ	1		
12:52	ZZZZZZ	1		
12:58	ZZZZZZ	1		
13:03	MA41267-ICV1	1		
13:07	MA41267-ICB1	1		
13:11	MA41267-ICCV1	1		
13:15	MA41267-CCB1	1		
13:20	MA41267-CRI1	1		
13:24	MA41267-CRID1	1		
13:28	MA41267-CRIA1	1		
13:33	MA41267-ICSA1	1		
13:37	MA41267-ICSAB1	1		
13:41	MA41267-HSTD1	1		
13:46	MA41267-HSTD2	1		
13:50	ZZZZZZ	1		
13:55	ZZZZZZ	1		
13:59	ZZZZZZ	1		
14:04	MA41267-CCV1	1		
14:08	MA41267-CCB2	1		
14:12	ZZZZZZ	1		
14:17	ZZZZZZ	1		
14:21	ZZZZZZ	1		
14:25	ZZZZZZ	1		
14:30	ZZZZZZ	1		
14:34	MP98389-S1	2		
14:38	MP98389-S2	2		
14:42	JC35980-1	2		(sample used for QC only; not part of login JC36204A)
14:46	MP98389-SD1	10		
---------->	Last reportable sample/prep for job JC36204A			
14:50	MA41267-CCV2	1		
14:54	MA41267-CCB3	1		
14:59	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:03	ZZZZZZ	1		
15:08	ZZZZZZ	1		
15:12	ZZZZZZ	1		
15:16	ZZZZZZ	1		
15:21	ZZZZZZ	1		
15:25	ZZZZZZ	1		
15:29	ZZZZZZ	1		
15:34	ZZZZZZ	1		
15:38	MA41267-CCV3	1		
15:42	MA41267-CCB4	1		
15:48	MP98369-MB2	1		
15:52	MP98369-B2	1		
15:56	ZZZZZZ	1		
16:00	ZZZZZZ	1		
16:05	MP98370-B1	1		
16:09	MP98370-MB1	1		
16:13	MP98370-S1	1		IN out. Ca and Na high
16:17	MP98370-S2	1		IN out. Ca and Na high
16:22	JC35810-1F	1		(sample used for QC only; not part of login JC36204A)
16:32	MA41267-CCV4	1		
16:37	MA41267-CCB5	1		
16:41	MP98370-SD1	5		IN out. Ca and Na high
16:46	ZZZZZZ	1		
16:50	ZZZZZZ	1		
16:55	ZZZZZZ	1		
16:59	ZZZZZZ	1		
17:04	ZZZZZZ	1		
17:08	ZZZZZZ	1		
17:13	ZZZZZZ	1		
17:17	ZZZZZZ	1		
17:22	MA41267-CCV5	1		
17:27	MA41267-CCB6	1		
17:31	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:36	ZZZZZZ	1		
17:40	ZZZZZZ	1		
17:45	ZZZZZZ	1		
17:49	ZZZZZZ	1		
17:53	ZZZZZZ	1		
17:58	ZZZZZZ	1		
18:02	ZZZZZZ	1		
18:06	ZZZZZZ	1		
18:10	MA41267-CCV6	1		
18:16	MA41267-CCB7	1		
18:20	ZZZZZZ	1		
18:24	ZZZZZZ	5		
18:28	MP98405-MB1	5		
18:33	MP98405-S1	5		
18:37	MP98405-S2	5		
18:42	JC36199-1A	5		(sample used for QC only; not part of login JC36204A)
18:46	MP98405-SD1	25		
18:50	ZZZZZZ	5		
18:55	ZZZZZZ	5		
18:59	MA41267-CCV7	1		
19:03	MA41267-CCB8	1		
19:08	ZZZZZZ	5		
19:12	ZZZZZZ	5		
19:16	ZZZZZZ	5		
19:21	ZZZZZZ	5		
19:25	ZZZZZZ	5		
19:30	MP98405-B1	5		
19:34	MP98396-B1	1		
19:38	MP98396-MB1	1		
19:42	MA41267-CCV8	1		
19:46	MA41267-CCB9	1		
19:51	MA41267-CRI2	1		
19:59	MA41267-CRID2	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:04	MA41267-CRIA2	1		
20:08	MA41267-CRID3	1		
20:12	MA41267-ICSA2	1		
20:17	MA41267-ICSAB2	1		
20:21	MA41267-CCV9	1		
20:25	MA41267-CCB10	1		
---------->	Last reportable CCB for job JC36204A			
20:30	MP98396-S1	1		Fe high
20:34	MP98396-S2	1		Fe high
20:38	MP98396-LC1	1		
20:42	MP98396-LC2	1		
20:46	JC35842-33	1		(sample used for QC only; not part of login JC36204A)
20:50	MP98396-SD1	5		FE high
20:54	ZZZZZZ	1		
20:59	ZZZZZZ	1		
21:03	ZZZZZZ	1		
21:07	MA41267-CCV10	1		
21:11	MA41267-CCB11	1		
21:16	ZZZZZZ	1		
21:20	ZZZZZZ	1		
21:24	ZZZZZZ	1		
21:28	ZZZZZZ	1		
21:32	ZZZZZZ	1		
21:37	ZZZZZZ	1		
21:41	ZZZZZZ	1		
21:45	ZZZZZZ	1		
21:49	ZZZZZZ	1		
21:54	MA41267-CCV11	1		
21:58	MA41267-CCB12	1		
22:02	ZZZZZZ	1		
22:06	ZZZZZZ	1		
22:10	ZZZZZZ	1		
22:15	ZZZZZZ	1		
22:19	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
22:23	MP98412-B1	1		
22:27	MP98412-MB1	1		
22:32	MP98412-S1	1		
22:36	MP98412-S2	1		
22:40	MA41267-CCV12	1		
22:44	MA41267-CCB13	1		
22:49	JC35982-7	1		(sample used for QC only; not part of login JC36204A)
22:53	MP98412-SD1	5		
22:57	MP98412-S3	1		
23:02	MP98412-S4	1		
23:06	JC35982-7F	1		(sample used for QC only; not part of login JC36204A)
23:10	MP98412-SD2	5		
23:14	ZZZZZZ	1		
23:19	ZZZZZZ	1		
23:23	ZZZZZZ	1		
23:28	MA41267-CCV13	1		
23:32	MA41267-CCB14	1		
23:36	ZZZZZZ	1		
23:41	ZZZZZZ	1		
23:45	ZZZZZZ	1		
23:49	ZZZZZZ	1		
23:54	ZZZZZZ	1		
23:59	ZZZZZZ	1		
00:03	ZZZZZZ	1		
00:07	ZZZZZZ	1		
00:12	ZZZZZZ	1		
00:16	MA41267-CCV14	1		
00:20	MA41267-CCB15	1		
00:24	ZZZZZZ	1		
00:29	ZZZZZZ	1		
00:33	ZZZZZZ	1		
00:38	ZZZZZZ	1		
00:42	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:46	ZZZZZZ	1		
00:51	MA41267-CCV15	1		
00:55	MA41267-CCB16	1		
00:59	MA41267-CRI3	1		
01:04	MA41267-CRID4	1		
01:08	MA41267-CRIA3	1		
01:12	MA41267-CCV16	1		
01:17	MA41267-CCB17	1		
01:21	ZZZZZZ	1		
01:25	ZZZZZZ	1		
01:30	ZZZZZZ	1		
01:34	ZZZZZZ	1		
01:38	ZZZZZZ	1		
01:43	ZZZZZZ	1		
01:47	ZZZZZZ	1		
01:52	ZZZZZZ	1		
01:56	ZZZZZZ	1		
02:00	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:39	MA41267-STD1	2876 R	85701 R	27541 R	7094 R
12:43	MA41267-STD2	2703	80789	27221	6047
12:48	ZZZZZZ	2763	82800	27724	6296
12:52	ZZZZZZ	2865	85913	27921	7093
12:58	ZZZZZZ	7481 !	202230 !	39783 !	17769 !
13:03	MA41267-ICV1	2819	82939	26735	6397
13:07	MA41267-ICB1	2937	86331	27039	7201
13:11	MA41267-ICCV1	2844	83507	27097	6436
13:15	MA41267-CCB1	2896	87158	28275	7178
13:20	MA41267-CRI1	2842	86526	28602	6965
13:24	MA41267-CRID1	2850	86156	28451	7055
13:28	MA41267-CRIA1	2845	86133	28617	7061
13:33	MA41267-ICSA1	2558	77527	27839	5526
13:37	MA41267-ICSAB1	2495	78074	27741	5401
13:41	MA41267-HSTD1	2731	83690	28007	6731
13:46	MA41267-HSTD2	2607	79016	28078	5595
13:50	ZZZZZZ	2838	85164	27498	7028
13:55	ZZZZZZ	2830	86741	28162	7101
13:59	ZZZZZZ	2868	86787	28273	7131
14:04	MA41267-CCV1	2772	83036	28361	6332
14:08	MA41267-CCB2	2871	87017	28737	7132
14:12	ZZZZZZ	2937	88158	28540	7261
14:17	ZZZZZZ	2835	85815	28530	6560
14:21	ZZZZZZ	2405	73138	27008	5126
14:25	ZZZZZZ	2911	88022	29110	7219
14:30	ZZZZZZ	2776	83707	28216	6454
14:34	MP98389-S1	2717	81868	27707	6254
14:38	MP98389-S2	2717	82544	28001	6250
14:42	JC35980-1	2706	83551	28435	6384
14:46	MP98389-SD1	2855	85494	28610	6917
14:50	MA41267-CCV2	2743	83150	28469	6298
14:54	MA41267-CCB3	2835	86132	28963	7102
14:59	ZZZZZZ	2749	82882	28692	6329

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	
15:03	ZZZZZZ	2752	83127	28791	6144	
15:08	ZZZZZZ	2663	81646	28811	6055	
15:12	ZZZZZZ	2734	83813	28783	6455	
15:16	ZZZZZZ	2701	83262	28531	6178	
15:21	ZZZZZZ	2736	86738	28906	6402	
15:25	ZZZZZZ	2716	83628	28678	6424	
15:29	ZZZZZZ	2581	79914	28346	6033	
15:34	ZZZZZZ	2762	83964	27683	6759	
15:38	MA41267-CCV3	2780	82373	28201	6369	
15:42	MA41267-CCB4	2888	87632	28667	7185	
15:48	MP98369-MB2	2857	87228	29210	7154	
15:52	MP98369-B2	2825	85594	29225	6604	
15:56	ZZZZZZ	2843	87654	29632	7024	
16:00	ZZZZZZ	2836	87567	29477	7035	
16:05	MP98370-B1	2793	84560	28839	6519	
16:09	MP98370-MB1	2850	87914	29942	7133	
16:13	MP98370-S1	2245	67901	26590	4567	!a
16:17	MP98370-S2	2237	67194	26462	4547	!a
16:22	JC35810-1F	2173	65140	25955	4512	!a
16:32	MA41267-CCV4	2890	83787	27928	6491	
16:37	MA41267-CCB5	2920	86250	28286	7181	
16:41	MP98370-SD1	2623	77103	27597	5721	
16:46	ZZZZZZ	2184	65613	25741	4570	!a
16:50	ZZZZZZ	2404	72025	26924	5083	
16:55	ZZZZZZ	2739	81687	27472	6126	
16:59	ZZZZZZ	2536	76990	27625	5509	
17:04	ZZZZZZ	2939	87933	28930	7236	
17:08	ZZZZZZ	2375	69805	26951	5029	
17:13	ZZZZZZ	2519	75003	27046	5408	
17:17	ZZZZZZ	2347	71632	27296	5010	
17:22	MA41267-CCV5	2846	83512	27939	6428	
17:27	MA41267-CCB6	2943	88207	28233	7256	
17:31	ZZZZZZ	2645	79386	27627	5875	

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:36	ZZZZZZ	2596	78944	27865	5817
17:40	ZZZZZZ	2480	76157	27800	5458
17:45	ZZZZZZ	2780	83901	27668	6409
17:49	ZZZZZZ	2803	85502	28139	6611
17:53	ZZZZZZ	2923	89281	29309	7243
17:58	ZZZZZZ	2769	84255	28125	6421
18:02	ZZZZZZ	2817	85435	27891	6666
18:06	ZZZZZZ	2964	89103	28265	7301
18:10	MA41267-CCV6	2840	84713	28024	6436
18:16	MA41267-CCB7	2900	88378	28693	7195
18:20	ZZZZZZ	2921	87393	28630	6921
18:24	ZZZZZZ	2766	81614	27598	6170
18:28	MP98405-MB1	2739	81537	27334	6213
18:33	MP98405-S1	2658	80188	27177	5922
18:37	MP98405-S2	2668	80966	26977	5944
18:42	JC36199-1A	2643	80236	27845	5956
18:46	MP98405-SD1	2804	84646	28106	6618
18:50	ZZZZZZ	2725	81144	28154	6212
18:55	ZZZZZZ	2756	82444	27668	6229
18:59	MA41267-CCV7	2863	85069	28029	6460
19:03	MA41267-CCB8	2958	88278	27782	7256
19:08	ZZZZZZ	2773	82627	27605	6255
19:12	ZZZZZZ	2742	81932	27768	6217
19:16	ZZZZZZ	2728	82016	28414	6156
19:21	ZZZZZZ	2653	80937	28161	6020
19:25	ZZZZZZ	2685	81353	27896	6105
19:30	MP98405-B1	2781	82516	28191	6203
19:34	MP98396-B1	2854	84480	27814	6593
19:38	MP98396-MB1	2955	88319	28530	7264
19:42	MA41267-CCV8	2884	84729	27917	6479
19:46	MA41267-CCB9	2970	89578	29083	7301
19:51	MA41267-CRI2	2913	88123	28796	7067
19:59	MA41267-CRID2	2935	87797	27280	7162

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:04	MA41267-CRIA2	2953	87673	27902	7226
20:08	MA41267-CRID3	2907	88171	29016	7157
20:12	MA41267-ICSA2	2620	78898	27206	5604
20:17	MA41267-ICSAB2	2620	78697	27494	5604
20:21	MA41267-CCV9	2824	84738	28098	6390
20:25	MA41267-CCB10	2912	87076	27491	7176
20:30	MP98396-S1	3359	99629	32866	6506
20:34	MP98396-S2	3468	99848	33370	6715
20:38	MP98396-LC1	3034	89244	28489	6784
20:42	MP98396-LC2	2950	87626	28982	6677
20:46	JC35842-33	3524	102740	34295	6884
20:50	MP98396-SD1	3126	92033	29220	7071
20:54	ZZZZZZ	3486	103060	33773	6771
20:59	ZZZZZZ	3122	91517	29993	6709
21:03	ZZZZZZ	3060	88396	29317	6568
21:07	MA41267-CCV10	2865	85174	27543	6454
21:11	MA41267-CCB11	2996	88305	27330	7326
21:16	ZZZZZZ	3284	92936	28744	6847
21:20	ZZZZZZ	2998	88724	28795	6607
21:24	ZZZZZZ	3031	88756	28943	6778
21:28	ZZZZZZ	3000	88057	28808	6754
21:32	ZZZZZZ	3010	88824	28973	6733
21:37	ZZZZZZ	2957	87281	28350	6731
21:41	ZZZZZZ	2970	87793	28405	6699
21:45	ZZZZZZ	3039	88605	28133	6638
21:49	ZZZZZZ	3016	88978	28338	6683
21:54	MA41267-CCV11	2866	84803	26970	6460
21:58	MA41267-CCB12	2976	88713	27258	7288
22:02	ZZZZZZ	2996	88233	27970	6607
22:06	ZZZZZZ	2990	87808	27551	6643
22:10	ZZZZZZ	3058	90309	28243	6883
22:15	ZZZZZZ	3059	89518	27851	6664
22:19	ZZZZZZ	3036	88614	27100	6818

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
22:23	MP98412-B1	2931	86212	26819	6705
22:27	MP98412-MB1	2956	87937	27703	7258
22:32	MP98412-S1	2756	81794	26751	6021
22:36	MP98412-S2	2747	82010	26561	6011
22:40	MA41267-CCV12	2848	85144	27459	6444
22:44	MA41267-CCB13	2990	88462	27265	7312
22:49	JC35982-7	2741	81774	26507	6103
22:53	MP98412-SD1	2852	85594	26873	6636
22:57	MP98412-S3	2731	80951	26387	5970
23:02	MP98412-S4	2747	80586	25995	5998
23:06	JC35982-7F	2735	81187	26565	6112
23:10	MP98412-SD2	2884	85856	27135	6762
23:14	ZZZZZZ	2998	87924	27079	7334
23:19	ZZZZZZ	No results reported for the elements associated with this internal standard.			
23:23	ZZZZZZ	No results reported for the elements associated with this internal standard.			
23:28	MA41267-CCV13	2889	84421	26525	6490
23:32	MA41267-CCB14	2995	87929	26562	7300
23:36	ZZZZZZ	2800	84071	26115	6446
23:41	ZZZZZZ	2773	82671	26230	6323
23:45	ZZZZZZ	2972	87866	26528	7285
23:49	ZZZZZZ	No results reported for the elements associated with this internal standard.			
23:54	ZZZZZZ	No results reported for the elements associated with this internal standard.			
23:59	ZZZZZZ	2802	83674	26579	6509
00:03	ZZZZZZ	2758	82175	25989	6315
00:07	ZZZZZZ	2696	80578	26020	6066
00:12	ZZZZZZ	2727	81399	26200	6133
00:16	MA41267-CCV14	2884	84861	26562	6484
00:20	MA41267-CCB15	2982	87904	26408	7299
00:24	ZZZZZZ	2782	83281	26400	6374
00:29	ZZZZZZ	2704	80934	25861	6075
00:33	ZZZZZZ	2696	81467	26356	6100
00:38	ZZZZZZ	2713	81383	26369	6133
00:42	ZZZZZZ	2751	82628	26461	6288

INTERNAL STANDARD SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
Analyst: AB Run ID: MA41267
Parameters: Tl

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
00:46	ZZZZZZ	2687	80259	25899	5995
00:51	MA41267-CCV15	2893	84465	26333	6496
00:55	MA41267-CCB16	2978	88055	26875	7295
00:59	MA41267-CRI3	2947	86450	26481	7101
01:04	MA41267-CRID4	2960	88161	27201	7245
01:08	MA41267-CRIA3	2974	86819	26299	7250
01:12	MA41267-CCV16	2888	84076	25934	6494
01:17	MA41267-CCB17	2996	88740	26782	7341
01:21	ZZZZZZ	2974	88737	27188	7288
01:25	ZZZZZZ	2958	88122	26905	7284
01:30	ZZZZZZ	2969	88767	27187	7276
01:34	ZZZZZZ	2707	81514	26098	6201
01:38	ZZZZZZ	3122	86952	28068	6448
01:43	ZZZZZZ	2680	81750	26444	6188
01:47	ZZZZZZ	2993	89030	27336	7350
01:52	ZZZZZZ	3039	88992	26880	7417
01:56	ZZZZZZ	2999	88775	26754	7313
02:00	ZZZZZZ	3023	89893	26811	7378

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41267 Units: ug/l

Time:			13:07		13:15		14:08		14:54	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	anr							
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2								
Boron	100	1.2								
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8								
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4								
Nickel	10	.8	anr							
Palladium	50	2.2								
Phosphorus	50									
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1								
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4								
Strontium	10	.22								
Thallium	2.0	1.7	0.50	<2.0	0.10	<2.0	1.0	<2.0	-0.10	<2.0
Tin	10	1.1								
Titanium	10	.7								
Tungsten	50	1.8								
Vanadium	50	.7	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41267 Units: ug/l

Time: / Sample ID:			13:07 ICB1		13:15 CCB1		14:08 CCB2		14:54 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41267 Units: ug/l

Time: / Sample ID:			15:42 CCB4		16:37 CCB5		17:27 CCB6		18:16 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	20	anr							
Antimony	6.0	1.8	anr							
Arsenic	3.0	1.3	anr							
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	2								
Boron	100	1.2								
Cadmium	3.0	.4	anr							
Calcium	5000	27	anr							
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	1.7	anr							
Iron	100	8.6	anr							
Lead	3.0	1.6	anr							
Lithium	20	2.8								
Magnesium	5000	33	anr							
Manganese	15	.1	anr							
Molybdenum	20	.4								
Nickel	10	.8	anr							
Palladium	50	2.2								
Phosphorus	50									
Potassium	10000	39	anr							
Selenium	10	3	anr							
Silicon	200	3.1								
Silver	10	.9	anr							
Sodium	10000	11	anr							
Sulfur	50	4.4								
Strontium	10	.22								
Thallium	2.0	1.7	-0.60	<2.0	-0.30	<2.0	1.3	<2.0	0.0	<2.0
Tin	10	1.1								
Titanium	10	.7								
Tungsten	50	1.8								
Vanadium	50	.7	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41267 Units: ug/l

Time: / Sample ID:			15:42 CCB4		16:37 CCB5		17:27 CCB6		18:16 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	2.6	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41267 Units: ug/l

Time:			19:03		19:46		20:25	
Sample ID:			CCB8		CCB9		CCB10	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	20	anr					
Antimony	6.0	1.8	anr					
Arsenic	3.0	1.3	anr					
Barium	200	.4	anr					
Beryllium	1.0	.1	anr					
Bismuth	20	2						
Boron	100	1.2						
Cadmium	3.0	.4	anr					
Calcium	5000	27	anr					
Chromium	10	.7	anr					
Cobalt	50	.6	anr					
Copper	10	1.7	anr					
Iron	100	8.6	anr					
Lead	3.0	1.6	anr					
Lithium	20	2.8						
Magnesium	5000	33	anr					
Manganese	15	.1	anr					
Molybdenum	20	.4						
Nickel	10	.8	anr					
Palladium	50	2.2						
Phosphorus	50							
Potassium	10000	39	anr					
Selenium	10	3	anr					
Silicon	200	3.1						
Silver	10	.9	anr					
Sodium	10000	11	anr					
Sulfur	50	4.4						
Strontium	10	.22						
Thallium	2.0	1.7	0.70	<2.0	0.40	<2.0	0.30	<2.0
Tin	10	1.1						
Titanium	10	.7						
Tungsten	50	1.8						
Vanadium	50	.7	anr					

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: result < RL Run ID: MA41267 Units: ug/l

Time:			19:03		19:46		20:25	
Sample ID:			CCB8		CCB9		CCB10	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	2.6	anr					
Zirconium	10	.5						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		13:11	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Palladium			
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Sulfur			
Strontium			
Thallium	2000	2070	103.5
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		13:11	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		13:03			14:04			14:50	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium	2000	2020	101.0	2000	2070	103.5	2000	2060	103.0
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		13:03			14:04			14:50	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		15:38			16:32			17:22	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium	2000	2080	104.0	2000	2080	104.0	2000	2090	104.5
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		15:38			16:32			17:22	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		18:10			18:59			19:42	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Palladium									
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Sulfur									
Strontium									
Thallium	2000	2060	103.0	2000	2050	102.5	2000	2060	103.0
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		18:10			18:59			19:42	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		20:21	
Sample ID:	CCV	CCV9	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Palladium			
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Sulfur			
Strontium			
Thallium	2000	2060	103.0
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA41267 Units: ug/l

Time:		20:21	
Sample ID:	CCV	CCV9	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41267 Units: ug/l

Time:		13:41			13:46	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Palladium						
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Sulfur						
Strontium						
Thallium	5000	5290	105.8			
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA41267 Units: ug/l

Time:		13:41			13:46	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41267 Units: ug/l

Time:				13:20		13:24		13:28	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50								
Strontium	10								
Thallium	10		2.0	10.7	107.0	2.4	120.0		
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41267 Units: ug/l

Time:				13:20		13:24		13:28	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRIA1	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41267 Units: ug/l

Time:				19:51		19:59		20:04	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	20								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Palladium	50								
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Sulfur	50								
Strontium	10								
Thallium	10		2.0	10.6	106.0	2.4	120.0		
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41267 Units: ug/l

Time:				19:51		19:59		20:04	
Sample ID:	CRI	CRIA	CRID	CRI2		CRID2		CRIA2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41267 Units: ug/l

Time:				20:08	
Sample ID:	CRI	CRIA	CRID	CRID3	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	anr	
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0		
Calcium	5000	2000	1000	anr	
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0		
Iron	100	500			
Lead	3.0	20	2.5	anr	
Lithium	20				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Palladium	50				
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Sulfur	50				
Strontium	10				
Thallium	10		2.0	1.5	75.0
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 70 to 130 % Recovery Run ID: MA41267 Units: ug/l

Time:				20:08	
Sample ID:	CRI	CRIA	CRID	CRID3	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41267 Units: ug/l

Time:			13:33		13:37		20:12		20:17	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	478000	95.6	466000	93.2	477000	95.4	469000	93.8
Antimony		1000	2.0		1140	114.0	2.7		1100	110.0
Arsenic		1000	1.9		1050	105.0	-1.9		1010	101.0
Barium		500	-0.30		493	98.6	-0.20		496	99.2
Beryllium		500	-0.10		472	94.4	-0.10		462	92.4
Bismuth		500	9.0		521	104.2	9.3		496	99.2
Boron		500	-4.7		487	97.4	-5.1		470	94.0
Cadmium		1000	0.40		1040	104.0	0.80		996	99.6
Calcium	400000	400000	349000	87.3	349000	87.3	344000	86.0	343000	85.8
Chromium		500	2.6		480	96.0	2.5		483	96.6
Cobalt		500	0.80		488	97.6	0.60		474	94.8
Copper		500	4.5		513	102.6	3.1		519	103.8
Iron	200000	200000	177000	88.5	172000	86.0	169000	84.5	164000	82.0
Lead		1000	5.5		965	96.5	3.9		944	94.4
Lithium		500	-0.20		512	102.4	1.5		520	104.0
Magnesium	500000	500000	466000	93.2	462000	92.4	452000	90.4	446000	89.2
Manganese		500	-2.0		473	94.6	-2.9		475	95.0
Molybdenum		500	-0.90		496	99.2	-1.1		479	95.8
Nickel		1000	-0.70		992	99.2	0.30		965	96.5
Palladium		500	-2.4		-65	0.0*	-1.8		-63	0.0*
Phosphorus		500	15.0		498	99.6	13.2		485	97.0
Potassium			-410		-400		-380		-360	
Selenium		1000	2.6		1040	104.0	2.8		1010	101.0
Silicon		500	-14		472	94.4	-16		453	90.6
Silver		1000	2.9		1030	103.0	0.40		1040	104.0
Sodium			26.5		39.3		301		319	
Sulfur		500	-15		489	97.8	-8.3		469	93.8
Strontium		500	0.60		497	99.4	1.1		498	99.6
Thallium		1000	-0.70		984	98.4	-1.5		961	96.1
Tin		500	-0.90		457	91.4	-0.50		437	87.4
Titanium		500	-0.70		486	97.2	-0.30		475	95.0
Tungsten		500	9.3		504	100.8	10.6		482	96.4
Vanadium		500	-0.30		471	94.2	0.30		474	94.8

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: SE013017M1.ICP Date Analyzed: 01/30/17 Methods: EPA 200.7, SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA41267 Units: ug/l

Time:			13:33		13:37		20:12		20:17	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.5		950	95.0	2.9		919	91.9
Zirconium		500	-2.0		467	93.4	-2.4		472	94.4

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/27/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.6	2		
Antimony	2.0	.27	.29	0.0	<2.0
Arsenic	2.0	.14	.21		
Barium	20	.05	.081		
Beryllium	0.20	.01	.022		
Bismuth	2.0	.36	.24		
Boron	10	.46	.45		
Cadmium	0.50	.04	.05		
Calcium	500	4.5	1.9		
Chromium	1.0	.05	.12	0.15	<1.0
Cobalt	5.0	.04	.059		
Copper	2.5	.05	.22		
Iron	50	.28	.79		
Lead	2.0	.12	.22		
Lithium	2.0	.37	.45		
Magnesium	500	2.1	5.9		
Manganese	1.5	.01	.036		
Molybdenum	2.0	.04	.081		
Nickel	4.0	.06	.076	0.13	<4.0
Palladium	5.0	.3	.47		
Phosphorus	10		.47		
Potassium	1000	8.4	18		
Selenium	2.0	.32	.46		
Silicon	20	.23	3.7		
Silver	0.50	.1	.099		
Sodium	1000	3.8	3.9		
Strontium	1.0	.01	.024		
Sulfur	5.0	.41	.59		
Thallium	1.0	.18	.4	-0.020	<1.0
Tin	5.0	.11	.53		
Titanium	1.0	.05	.13		
Tungsten	5.0	.19	.33		
Vanadium	5.0	.04	.083	0.010	<5.0

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/27/17

Metal	RL	IDL	MDL	MB raw	final
Zinc	5.0	.18	.22		
Zirconium	2.0	.04	.13		

Associated samples MP98381: JC36204-14A, JC36204-15A, JC36204-16A, JC36204-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/27/17

Metal	JC36204-17A Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony	0.0	144	235	61.4N(a)	75-125
Arsenic	anr				
Barium	anr				
Beryllium					
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Chromium	17.6	239	235	94.4	75-125
Cobalt					
Copper					
Iron	anr				
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	15.7	242	235	96.5	75-125
Palladium					
Phosphorus					
Potassium					
Selenium	anr				
Silicon					
Silver	anr				
Sodium					
Strontium					
Sulfur					
Thallium	0.0	229	235	97.6	75-125
Tin					
Titanium					
Tungsten					
Vanadium	26.7	249	235	94.7	75-125

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/27/17

Metal	JC36204-17A Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP98381: JC36204-14A, JC36204-15A, JC36204-16A, JC36204-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/27/17

Metal	JC36204-17A Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	0.0	136	232	58.5N(a)	5.7	20
Arsenic	anr					
Barium	anr					
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	17.6	226	232	89.7	5.6	20
Cobalt						
Copper						
Iron	anr					
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	15.7	232	232	93.1	4.2	20
Palladium						
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	0.0	220	232	94.7	4.0	20
Tin						
Titanium						
Tungsten						
Vanadium	26.7	235	232	89.7	5.8	20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/27/17

Metal	JC36204-17A Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc					
Zirconium					

Associated samples MP98381: JC36204-14A, JC36204-15A, JC36204-16A, JC36204-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:			01/27/17				01/27/17	
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	LCS Result	Spikelot MPLC54085	% Rec	QC Limits
Aluminum								
Antimony	199	200	99.5	80-120	70.0	94	74.5	2-214
Arsenic	anr							
Barium	anr							
Beryllium								
Bismuth								
Boron								
Cadmium	anr							
Calcium								
Chromium	202	200	101.0	80-120	172	164	104.9	79-121
Cobalt								
Copper								
Iron	anr							
Lead	anr							
Lithium								
Magnesium								
Manganese								
Molybdenum								
Nickel	202	200	101.0	80-120	96.2	89.3	107.7	82-118
Palladium								
Phosphorus								
Potassium								
Selenium	anr							
Silicon								
Silver	anr							
Sodium								
Strontium								
Sulfur								
Thallium	203	200	101.5	80-120	128	116	110.3	79-121
Tin								
Titanium								
Tungsten								
Vanadium	200	200	100.0	80-120	77.4	73	106.0	77-123

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:				01/27/17				01/27/17
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	LCS Result	Spikelot MPLC54085	% Rec	QC Limits
Zinc								
Zirconium								

Associated samples MP98381: JC36204-14A, JC36204-15A, JC36204-16A, JC36204-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/27/17

Metal	LCS Result	Spikelot MPLC54085% Rec	QC Limits
Aluminum			
Antimony	71.4	94	76.0	2-214
Arsenic	anr		
Barium	anr		
Beryllium			
Bismuth			
Boron			
Cadmium	anr		
Calcium			
Chromium	166	164	101.2	79-121
Cobalt			
Copper			
Iron	anr		
Lead	anr		
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel	93.5	89.3	104.7	82-118
Palladium			
Phosphorus			
Potassium			
Selenium	anr		
Silicon			
Silver	anr		
Sodium			
Strontium			
Sulfur			
Thallium	126	116	108.6	79-121
Tin			
Titanium			
Tungsten			
Vanadium	75.8	73	103.8	77-123

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/27/17

Metal	LCS Result	Spikelot MPLC54085% Rec	QC Limits
Zinc			
Zirconium			

Associated samples MP98381: JC36204-14A, JC36204-15A, JC36204-16A, JC36204-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	JC36204-17A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	0.00	0.00	NC	0-10
Arsenic	anr			
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	151	162	7.1	0-10
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	135	138	2.0	0-10
Palladium				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Sulfur				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Tungsten				
Vanadium	230	239	4.0	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98381 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date: 01/27/17

	JC36204-17A		QC
Metal	Original SDL 1:5	%DIF	Limits
Zinc			
Zirconium			

Associated samples MP98381: JC36204-14A, JC36204-15A, JC36204-16A, JC36204-17A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	21		
Antimony	6.0	2.7	3.3	-0.30	<6.0
Arsenic	3.0	1.4	2.2		
Barium	200	.5	.44		
Beryllium	1.0	.1	.25		
Bismuth	20	3.6	2.9		
Boron	100	4.6	3.9		
Cadmium	3.0	.4	.4		
Calcium	5000	45	33		
Chromium	10	.5	.81	0.20	<10
Cobalt	50	.4	.69		
Copper	10	.5	2.4		
Iron	100	2.8	12		
Lead	3.0	1.2	2.3		
Lithium	20	3.7	4		
Magnesium	5000	21	85		
Manganese	15	.1	.39		
Molybdenum	20	.4	.88		
Nickel	10	.6	.76	0.40	<10
Palladium	50	3	3.7		
Phosphorus	50		3.7		
Potassium	10000	84	120		
Selenium	10	3.2	4.1		
Silicon	200	2.3	29		
Silver	10	1	.88		
Sodium	10000	38	24		
Sulfur	50	4.1	6.9		
Strontium	10	.1	.22		
Thallium	2.0	1.8	1.9	-1.4	<2.0
Tin	10	1.1	2.3		
Titanium	10	.5	.99		
Tungsten	50	1.9	3.2		
Vanadium	50	.4	.66	0.0	<50

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	1.8	1.3		
Zirconium	10	.4	.94		

Associated samples MP98389: JC36204-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	JC35980-1 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony	0.0	2040	2000	102.0	75-125
Arsenic	anr				
Barium	anr				
Beryllium					
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Chromium	8.7	2000	2000	99.6	75-125
Cobalt					
Copper					
Iron	anr				
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	2.0	2010	2000	100.4	75-125
Palladium					
Phosphorus					
Potassium					
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Sulfur					
Strontium					
Thallium	0.0	2110	2000	105.5	75-125
Tin					
Titanium					
Tungsten					
Vanadium	9.4	2020	2000	100.5	75-125

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/27/17

Metal	JC35980-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP98389: JC36204-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/27/17

Metal	JC35980-1 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	0.0	2020	2000	101.0	1.0	20
Arsenic	anr					
Barium	anr					
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	8.7	1880	2000	93.6	6.2	20
Cobalt						
Copper						
Iron	anr					
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	2.0	1970	2000	98.4	2.0	20
Palladium						
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Sulfur						
Strontium						
Thallium	0.0	2100	2000	105.0	0.5	20
Tin						
Titanium						
Tungsten						
Vanadium	9.4	1900	2000	94.5	6.1	20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/27/17

Metal	JC35980-1 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc					
Zirconium					

Associated samples MP98389: JC36204-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony	1980	2000	99.0	80-120
Arsenic	anr			
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	1930	2000	96.5	80-120
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel	1980	2000	99.0	80-120
Palladium				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Sulfur				
Strontium				
Thallium	1990	2000	99.5	80-120
Tin				
Titanium				
Tungsten				
Vanadium	1900	2000	95.0	80-120

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/27/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP98389: JC36204-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/27/17

Metal	JC35980-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	0.00	0.00	NC	0-10
Arsenic	anr			
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	8.70	10.7	23.0 (a)	0-10
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel	2.00	0.00	100.0(a)	0-10
Palladium				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Sulfur				
Strontium				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Tungsten				
Vanadium	9.40	10.0	6.4	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC36204A
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

QC Batch ID: MP98389 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 01/27/17

Metal	JC35980-1 Original SDL 1:5	%DIF	QC Limits
Zinc			
Zirconium			

Associated samples MP98389: JC36204-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: JC36204A
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36204-14 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-11.0-11.5

Wet Weight (Total)	28.13	g
Tare Weight	21.76	g
Dry Weight (Total)	27.04	g
Solids, Percent	82.9	%

Sample: JC36204-15 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-4.0-4.5

Wet Weight (Total)	31.7	g
Tare Weight	22.25	g
Dry Weight (Total)	29.96	g
Solids, Percent	81.6	%

Sample: JC36204-16 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-4.0-4.5X

Wet Weight (Total)	34.03	g
Tare Weight	26.35	g
Dry Weight (Total)	32.83	g
Solids, Percent	84.4	%

Sample: JC36204-17 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-7.0-7.5

Wet Weight (Total)	29.89	g
Tare Weight	22.51	g
Dry Weight (Total)	28.74	g
Solids, Percent	84.4	%

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

PPG Garfield Avenue, Jersey City, NJ

60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

SGS Accutest Job Number: JC36204R

Sampling Date: 01/26/17

Report to:

AECOM, INC.
30 Knightsbridge Road Suite 520
Piscataway, NJ 08854
NJlabdata@aecom.com; Christine.DeAmbrogio@aecom.com

ATTN: Mary O'Connell Kozik

Total number of pages in report: **82**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4 5 6 7

Table of Contents

Sample Summary

AECOM, INC.

Job No: JC36204R

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC36204-14R	01/26/17	09:45	AK	01/26/17	SO	Soil	MW8D-O-11.0-11.5
JC36204-15R	01/26/17	09:30	AK	01/26/17	SO	Soil	MW8D-O-4.0-4.5
JC36204-16R	01/26/17	09:35	AK	01/26/17	SO	Soil	MW8D-O-4.0-4.5X
JC36204-17R	01/26/17	09:40	AK	01/26/17	SO	Soil	MW8D-O-7.0-7.5

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	AECOM, INC.	**Job No**	JC36204R
Site:	PPG Garfield Avenue, Jersey City, NJ	**Report Date**	2/6/2017 3:19:48 PM

On 01/26/2017, 4 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 3.3 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC36204R was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Wet Chemistry By Method ASTM D3872-86

Matrix: SO **Batch ID:** GN58793

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36017-1RDUP, JC36017-1RMS were used as the QC samples for Iron, Ferrous.

Wet Chemistry By Method LLOYD KAHN 1988 MOD

Matrix: SO **Batch ID:** GP2935

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC35821-2MS, JC35821-2DUP were used as the QC samples for Total Organic Carbon.

Wet Chemistry By Method SM4500S2- A-11

Matrix: SO **Batch ID:** GN58794

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO **Batch ID:** GP3044

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC36204-17RDUP, JC36204-17RMS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Insoluble XCR matrix spike recovery indicates possible matrix interference. See additional comments on soluble matrix spike recovery.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits. High RPD due to possible sample nonhomogeneity.
- GP3044-S1 for Chromium, Hexavalent: Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (92_%) on this sample.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC36204R
Account: AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Collected: 01/26/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC36204-14R	**MW8D-O-11.0-11.5**					
No hits reported in this sample.						
JC36204-15R	**MW8D-O-4.0-4.5**					
No hits reported in this sample.						
JC36204-16R	**MW8D-O-4.0-4.5X**					
No hits reported in this sample.						
JC36204-17R	**MW8D-O-7.0-7.5**					
Chromium, Hexavalent		0.75	0.47	0.33	mg/kg	SW846 3060A/7196A
Iron, Ferrous		1.1	0.20		%	ASTM D3872-86
Total Organic Carbon		3530	120	57	mg/kg	LLOYD KAHN 1988 MOD

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW8D-O-11.0-11.5		
Lab Sample ID:	JC36204-14R	**Date Sampled:**	01/26/17
Matrix:	SO - Soil	**Date Received:**	01/26/17
		Percent Solids:	82.9
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.34 U	0.48	0.34	mg/kg	1	02/03/17 16:54	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW8D-O-4.0-4.5		
Lab Sample ID:	JC36204-15R	**Date Sampled:**	01/26/17
Matrix:	SO - Soil	**Date Received:**	01/26/17
		Percent Solids:	81.6
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.34 U	0.49	0.34	mg/kg	1	02/03/17 16:54	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW8D-O-4.0-4.5X		
Lab Sample ID:	JC36204-16R	**Date Sampled:**	01/26/17
Matrix:	SO - Soil	**Date Received:**	01/26/17
		Percent Solids:	84.4
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.33 U	0.47	0.33	mg/kg	1	02/03/17 16:54	RI	SW846 3060A/7196A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: MW8D-O-7.0-7.5
Lab Sample ID: JC36204-17R
Matrix: SO - Soil
Project: PPG Garfield Avenue, Jersey City, NJ

Date Sampled: 01/26/17
Date Received: 01/26/17
Percent Solids: 84.4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.75	0.47	0.33	mg/kg	1	02/03/17 16:51	RI	SW846 3060A/7196A
Iron, Ferrous	1.1	0.20		%	1	02/01/17 11:30	MP	ASTM D3872-86
Sulfide Screen	NEGATIVE				1	02/01/17	MP	SM4500S2- A-11
Total Organic Carbon	3530	120	57	mg/kg	1	02/02/17 14:09	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC36204R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Iron, Ferrous		**ASTM D3872-86**	SO	Accutest is not certified for this parameter. [a]
Sulfide Screen		**SM4500S2- A-11**	SO	Accutest is not certified for this parameter. [a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

AECOM

COC ID: 401 ACCUTEST 2017-01-26-RI-HDS-COC

TURNAROUND TIME: See Special Instructions

RUSH:

JC36204

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnellKozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	CS 401 ACCUTEST
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	FIL.	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)	
HDS-FB20170126	1	WQ	2017/01/26	12:00	G	2	FIELD BLANK			X	X	X	1
MW8D-5E-11.0-11.5	2	SO	2017/01/26	10:15	G	1	(1) 8oz-HOLD			H	H	H	2
MW8D-5E-4.0-4.5	3	SO	2017/01/26	10:05	G	1	(1) 8oz-HOLD			H	H	H	3
MW8D-5E-7.0-7.5	4	SO	2017/01/26	10:10	G	1	(1) 8oz-HOLD			H	H	H	4
MW8D-5N-11.0-11.5	5	SO	2017/01/26	10:50	G	1	(1) 8oz-HOLD			H	H	H	5
MW8D-5N-4.0-4.5	6	SO	2017/01/26	10:40	G	1	(1) 8oz-HOLD			H	H	H	6
MW8D-5N-7.0-7.5	7	SO	2017/01/26	10:45	G	1	(1) 8oz-HOLD			H	H	H	7
MW8D-5S-11.0-11.5	8	SO	2017/01/26	11:25	G	1	(1) 8oz-HOLD			H	H	H	8
MW8D-5S-4.0-4.5	9	SO	2017/01/26	11:15	G	1	(1) 8oz-HOLD			H	H	H	9
MW8D-5S-7.0-7.5	10	SO	2017/01/26	11:20	G	1	(1) 8oz-HOLD			H	H	H	10

A18 C27 C6

INITIAL ASESSMENT 30 Jan

LABEL VERIFICATION DG

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM / ACCUTEST	1/26/17 1440 1/26/17 1710	ACCUTEST SGS	1/26/17 1710 1/26/17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

ALL SAMPLES RECEIVED [illegible] AS APPLICABLE

Sampler's Name	ERIC ROS	Mobile #	732 343 0374
Sampler's Signature		Date/Time	1/26/17 13:55

TEMP 11 IVC

JC36204R: Chain of Custody

Page 1 of 4

AECOM

COC ID: 401 ACCUTEST 2017-01-26-RI-HDS-COC

JC36204

TURNAROUND TIME: See Special Instructions

RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Site ID #	PPG Garfield Ave			Lab Name	Accutest, Dayton, NJ			Email Invoice To	Mary.OConnell Kozik@aecom.com
Project Number	60279183			Lab Contact	Matt Cordova			Invoice Reports	
Task	GA.RI.RPT.HDS-field			Email				Send EDD To	NJLABDATA@aecom.com
Site Address	70 Carteret Avenue			Address	2235 Route 130			Email Reports	
								Shipping Company	
City	Jersey City	State	NJ	City	Dayton	State	NJ	Tracking Number	05401 AACCUTEST
Postal Code	07304	Country		Postal Code	08810	Country		Cooler Count	
Project Manager Name	Bill Spronz			Phone Number	732-329-0200			Cooler Description	
PM Phone Number	732-564-3917			Lab Quote #				Sampler 2	
PM Email Address	Bill.Spronz@AECOM.com			PO #	85111ACM			Sampler 3	

SAMPLE DETAILS / ANALYSIS REQUESTED (Filtered - F: Field, L: Lab, FL: Field & Lab, N: None)

Field Sample No./Identification	Item #	Matrix Code	Sample Date	Sample Time (24hr)	G=Grab C=Comp	# Of Cont.	Comment	Filt.	PRESERV.	ANALYSIS: HexChrom	pH-ORP	TAL-Metals (Thallium, Sb, Ni, Cr and V only)	
MW8D-5W-11.0-11.5	11	SO	2017/01/26	08:50	G	1	(1) 8oz - HOLD			H	H	H	11
MW8D-5W-4.5-5.0	12	SO	2017/01/26	08:40	G	1	(1) 8oz - HOLD			H	H	H	12
MW8D-5W-8.0-8.5	13	SO	2017/01/26	08:45	G	1	(1) 8oz - HOLD			H	H	H	13
MW8D-O-11.0-11.5	14	SO	2017/01/26	09:45	G	1	(1) 8oz			X	X	X	14
MW8D-O-4.0-4.5	15	SO	2017/01/26	09:30	G	1	(1) 8oz			X	X	X	15
MW8D-O-4.0-4.5X	16	SO	2017/01/26	09:35	G	1	(1) 8oz			X	X	X	16
MW8D-O-7.0-7.5	17	SO	2017/01/26	09:40	G	2	(2) 8oz-MS/MSD			X	X	X	17

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
3 Day TAT Cr+6 INSTRUCTIONS: Run samples by Method 7196A, analyze re-runs per AECOM instructions in the PO. Call Mary Kozik for instructions. Reporting: Reduced Tier II Deliverables; NJ Hazsite, Equis 4-file H=HOLD (Extract/freeze and hold as necessary)	AECOM ACCUTEST	1/26/17 1450 1/26/17 1710	ACCUTEST SGS	1/26/17 1400 1/26/17 1710

NB OF BOTTLES RETURNED/DESCRIPTION

Sampler's Name	ERIC ACS	Mobile #	732 343 0374
Sampler's Signature		Date/Time	1/26/17 1545

TEMP 4.1°C

JC36204R: Chain of Custody
Page 2 of 4

SGS Accutest Sample Receipt Summary

Job Number: JC36204 **Client:** _____ **Project:** _____

Date / Time Received: 1/26/2017 5:10:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (4.1);

Cooler Temps (Corrected) °C: Cooler 1: (3.3);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

Job Change Order: JC36204

Requested Date:	1/31/2017	**Received Date:**	1/26/2017
Account Name:	AECOM, INC.	**Due Date:**	1/31/2017
Project Description:	PPG Garfield Avenue, Jersey City, NJ	**Deliverable:**	FULT1
CSR:	malay.parekh	**TAT (Days):**	3

Sample #: JC36204-14 to 17
Dept:
TAT: 3

Change:
Due to XCR spike log in XXCRAR

Sample #: JC36204-17
Dept:
TAT: 3

Change:
Due to XCR spike log in FE2/7, SULFS, TOCLK.

MW8D-O-7.0-7.5

Above Changes Per: AECOM

Date/Time: 1/31/2017 3:57:23 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

Page 1 of 1

JC36204R: Chain of Custody
Page 4 of 4

Internal Sample Tracking Chronicle

AECOM, INC.

Job No: JC36204R

PPG Garfield Avenue, Jersey City, NJ
Project No: 60279183.GA.RI.RPT.HDS-FIELD PO # 85111ACM

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC36204-14R	Collected: 26-JAN-17 09:45 By: AK		Received: 26-JAN-17 By: AS			
MW8D-O-11.0-11.5						
JC36204-14R	SW846 3060A/7196A	03-FEB-17 16:54	RI	02-FEB-17	SP	XCRA
JC36204-15R	Collected: 26-JAN-17 09:30 By: AK		Received: 26-JAN-17 By: AS			
MW8D-O-4.0-4.5						
JC36204-15R	SW846 3060A/7196A	03-FEB-17 16:54	RI	02-FEB-17	SP	XCRA
JC36204-16R	Collected: 26-JAN-17 09:35 By: AK		Received: 26-JAN-17 By: AS			
MW8D-O-4.0-4.5X						
JC36204-16R	SW846 3060A/7196A	03-FEB-17 16:54	RI	02-FEB-17	SP	XCRA
JC36204-17R	Collected: 26-JAN-17 09:40 By: AK		Received: 26-JAN-17 By: AS			
MW8D-O-7.0-7.5						
JC36204-17R	SM4500S2- A-11	01-FEB-17	MP			SULFS
JC36204-17R	ASTM D3872-86	01-FEB-17 11:30	MP			FE2/7
JC36204-17R	LLOYD KAHN 1988 MOD	02-FEB-17 14:09	CD	02-FEB-17	YZ	TOCLK
JC36204-17R	SW846 3060A/7196A	03-FEB-17 16:51	RI	02-FEB-17	SP	XCRA

SGS Accutest Internal Chain of Custody

Job Number: JC36204R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/26/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36204-14.1	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-14.1	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-14.1	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-14.1	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-14.1	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-14.1	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-14.1	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-14.1	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-14.1	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-14.1	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-14.1	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-14.1	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-14.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-14.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-14.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-14.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-14.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-14.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-14.1.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-14.1
JC36204-14.1.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-14.1
JC36204-14.1.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage
JC36204-15.1	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-15.1	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-15.1	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-15.1	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-15.1	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-15.1	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-15.1	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-15.1	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-15.1	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-15.1	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-15.1	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-15.1	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-15.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-15.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-15.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-15.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-15.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-15.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-15.1.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-15.1
JC36204-15.1.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-15.1

SGS Accutest Internal Chain of Custody

Job Number: JC36204R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/26/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36204-15.1.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage
JC36204-16.1	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-16.1	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-16.1	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-16.1	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-16.1	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-16.1	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-16.1	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-16.1	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-16.1	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-16.1	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-16.1	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-16.1	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage
JC36204-16.1	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-16.1	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-16.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-16.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-16.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-16.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-16.1.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-16.1
JC36204-16.1.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-16.1
JC36204-16.1.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage
JC36204-17.1	Secured Storage	Mahendra Patel	02/01/17 08:36	Retrieve from Storage
JC36204-17.1	Mahendra Patel	Secured Storage	02/01/17 12:16	Return to Storage
JC36204-17.1	Secured Storage	Dawan Currie	02/01/17 17:39	Retrieve from Storage
JC36204-17.1	Dawan Currie	Secured Staging Area	02/01/17 17:39	Return to Storage
JC36204-17.1	Secured Staging Area	Sanchita Patel	02/02/17 08:19	Retrieve from Storage
JC36204-17.1	Sanchita Patel	Secured Storage	02/02/17 12:06	Return to Storage
JC36204-17.2	Secured Storage	Alfredo Crespo	01/27/17 09:45	Retrieve from Storage
JC36204-17.2	Alfredo Crespo	Secured Staging Area	01/27/17 09:45	Return to Storage
JC36204-17.2	Secured Staging Area	Luis Villanueva	01/27/17 10:17	Retrieve from Storage
JC36204-17.2	Luis Villanueva	Secured Storage	01/27/17 10:51	Return to Storage
JC36204-17.2	Secured Storage	Dwayne Johnson	01/27/17 13:05	Retrieve from Storage
JC36204-17.2	Dwayne Johnson	Secured Staging Area	01/27/17 13:05	Return to Storage
JC36204-17.2	Secured Staging Area	Deval Patel	01/27/17 14:54	Retrieve from Storage
JC36204-17.2	Deval Patel	Secured Storage	01/27/17 18:40	Return to Storage
JC36204-17.2	Secured Storage	Sahara Feliciano	01/28/17 07:58	Retrieve from Storage
JC36204-17.2	Sahara Feliciano	Secured Staging Area	01/28/17 07:58	Return to Storage
JC36204-17.2	Secured Staging Area	Kruti Patel	01/28/17 18:00	Retrieve from Storage
JC36204-17.2	Kruti Patel	Secured Storage	01/28/17 18:00	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC36204R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ
Received: 01/26/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC36204-17.2	Secured Storage	Paul Ojugo	01/30/17 08:30	Retrieve from Storage
JC36204-17.2	Paul Ojugo	Secured Storage	01/30/17 17:10	Return to Storage
JC36204-17.2	Secured Storage	Paul Ojugo	01/31/17 08:50	Retrieve from Storage
JC36204-17.2	Paul Ojugo	Secured Storage	01/31/17 17:10	Return to Storage
JC36204-17.2	Secured Storage	Gage Donahue	02/01/17 08:33	Retrieve from Storage
JC36204-17.2	Gage Donahue	Secured Staging Area	02/01/17 08:33	Return to Storage
JC36204-17.2	Secured Staging Area	Courtney Dringus	02/01/17 10:21	Retrieve from Storage
JC36204-17.2	Courtney Dringus	Secured Storage	02/01/17 18:33	Return to Storage
JC36204-17.2.1	Deval Patel	Metals Digestion	01/27/17 18:34	Digestate from JC36204-17.2
JC36204-17.2.1	Metals Digestion	Deval Patel	01/27/17 18:35	Digestate from JC36204-17.2
JC36204-17.2.1	Deval Patel	Metals Digestate Storage	01/27/17 18:35	Return to Storage

General Chemistry

6

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC
- Percent Solids Raw Data Summary

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36204R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP3044/GN58956			mg/kg	778.713	766	98.4	80-120%
Chromium, Hexavalent	GP3044/GN58956	0.40	0.0	mg/kg	40	36.3	90.8	80-120%
Iron, Ferrous	GN58793	0.20	<0.20	%				
Sulfide Screen	GN58794		NEGATIVE					
Total Organic Carbon	GP2935/GN58865	100	0.00	mg/kg	2000	1930	96.5	80-120%
Total Organic Carbon	GP2935/GN58865	100	0.0	mg/kg				
Total Organic Carbon	GP2935/GN58865	100	0.00	mg/kg				
Total Organic Carbon	GP2935/GN58865	100	0.00	mg/kg				

Associated Samples:
Batch GP2935: JC36204-17R
Batch GP3044: JC36204-14R, JC36204-15R, JC36204-16R, JC36204-17R
Batch GN58793: JC36204-17R
Batch GN58794: JC36204-17R
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36204R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP3044/GN58956	JC36204-17R	mg/kg	0.75	1.4	60.5*(a)	0-20%
Iron, Ferrous	GN58793	JC36017-1R	%	0.63	0.63	0.0	0-26%
Sulfide Screen	GN58794	JC36017-1R		NEGATIVE	NEGATIVE		0-%
Total Organic Carbon	GP2935/GN58627	JC35821-2	mg/kg	484	549	12.6	0-50.8%

Associated Samples:
Batch GP2935: JC36204-17R
Batch GP3044: JC36204-14R, JC36204-15R, JC36204-16R, JC36204-17R
Batch GN58793: JC36204-17R
Batch GN58794: JC36204-17R
(*) Outside of QC limits
(a) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC36204R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP3044/GN58956	JC36204-17R	mg/kg	0.75	46.6	3.0	4.8N(a)	75-125%
Chromium, Hexavalent	GP3044/GN58956	JC36204-17R	mg/kg	0.75	957	588	61.4N(b)	75-125%
Iron, Ferrous	GN58793	JC36017-1R	%	0.63	41.82	40.0	94.2	62-130%
Total Organic Carbon	GP2935/GN58627	JC35821-2	mg/kg	484	3930	4540	103.3	39.6-124.8%

Associated Samples:
Batch GP2935: JC36204-17R
Batch GP3044: JC36204-14R, JC36204-15R, JC36204-16R, JC36204-17R
Batch GN58793: JC36204-17R
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (92_%) on this sample.
(b) Insoluble XCR matrix spike recovery indicates possible matrix interference. See additional comments on soluble matrix spike recovery.

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: D70127S2.TXT Date Analyzed: 01/27/17 Methods: LLOYD KAHN 1988 MOD
Analyst: YZ Run ID: GN58627
Parameters: Total Organic Carbon

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:08	GN58627-STD1	1		STDA
11:30	GN58627-STD2	1		STDB
11:54	GN58627-STD3	1		STDC
12:20	GN58627-STD4	1		STDD
13:37	GN58627-STD5	1		STDE
14:08	GN58627-STD6	1		STDF
14:36	GN58627-STD7	1		STDG
07:49	GN58627-CRI1	1		
08:14	GN58627-HSTD1	1		
09:29	GN58627-ICV1	1		
09:59	GN58627-CCV1	1		
10:26	GP2935-MB1	1		
10:52	GP2935-B1	1		
14:10	GN58627-CCV2	1		
14:42	JC35821-2	1		(sample used for QC only; not part of login JC36204R)
15:04	ZZZZZZ	1		
15:19	ZZZZZZ	1		
15:34	ZZZZZZ	1		
15:49	GP2935-D1	1		Multiple injections indicate possible sample non-homogeneity.
16:20	GP2935-S1	1		
16:38	GN58627-CCV3	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC36204R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: D70127S2.TXT Date Analyzed: 01/27/17 Methods: LLOYD KAHN 1988 MOD
Run ID: GN58627 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN58627-CRI1	Total Organic Carbon	101	100	48	100	101.0	70-130
GN58627-HSTD1	Total Organic Carbon	5070	100	48	5000	101.4	90-110
GN58627-ICV1	Total Organic Carbon	2000	100	48	2000	100.0	90-110
GN58627-CCV1	Total Organic Carbon	2530	100	48	2500	101.2	90-110
GN58627-CCV2	Total Organic Carbon	2530	100	48	2500	101.2	90-110
GN58627-CCV3	Total Organic Carbon	2660	100	48	2500	106.4	90-110

(!) Outside of QC limits

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: JC36204R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: E70202S1.TXT Date Analyzed: 02/02/17 Methods: LLOYD KAHN 1988 MOD
Analyst: CD Run ID: GN58865
Parameters: Total Organic Carbon

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:47	GN58865-STD1	1		STDA
08:09	GN58865-STD2	1		STDB
08:35	GN58865-STD3	1		STDC
09:07	GN58865-STD4	1		STDD
09:38	GN58865-STD5	1		STDE
10:08	GN58865-STD6	1		STDF
10:42	GN58865-STD7	1		STDG
07:56	GN58865-CRI1	1		
08:12	GN58865-HSTD1	1		
08:31	GN58865-ICV1	1		
08:51	GN58865-CCV1	1		
09:06	GP2935-MB3	1		
09:22	GP2935-B3	1		
09:37	GP2935-MB4	1		
09:47	GP2935-MB5	1		
10:02	GP2935-MB6	1		
10:42	ZZZZZZ	1		
10:58	JC36204-17R	1		under range;reran at 1.0g
11:11	ZZZZZZ	1		
11:54	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:16	GN58865-CCV2	1		
13:36	ZZZZZZ	1		
13:52	ZZZZZZ	1		
14:09	JC36204-17R	1		
14:27	ZZZZZZ	1		
14:41	GN58865-CCV3	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC36204R
Account: ENSRNJ - AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

File ID: E70202S1.TXT Date Analyzed: 02/02/17 Methods: LLOYD KAHN 1988 MOD
Run ID: GN58865 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN58865-CRI1	Total Organic Carbon	92.1	100	48	100	92.1	70-130
GN58865-HSTD1	Total Organic Carbon	4940	100	48	5000	98.8	90-110
GN58865-ICV1	Total Organic Carbon	2010	100	48	2000	100.5	90-110
GN58865-CCV1	Total Organic Carbon	2460	100	48	2500	98.4	90-110
GN58865-CCV2	Total Organic Carbon	2460	100	48	2500	98.4	90-110
GN58865-CCV3	Total Organic Carbon	2320	100	48	2500	92.8	90-110

(!) Outside of QC limits

Report of Analysis

Client Sample ID:	MW8D-O-7.0-7.5		
Lab Sample ID:	JC36204-17R	**Date Sampled:**	01/26/17
Matrix:	SO - Soil	**Date Received:**	01/26/17
		Percent Solids:	84.4
Project:	PPG Garfield Avenue, Jersey City, NJ		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.75	0.47	0.33	mg/kg	1	02/03/17 16:51	RI	SW846 3060A/7196A
Iron, Ferrous	1.1	0.20		%	1	02/01/17 11:30	MP	ASTM D3872-86
Sulfide Screen	NEGATIVE				1	02/01/17	MP	SM4500S2- A-11
Total Organic Carbon	3530	120	57	mg/kg	1	02/02/17 14:09	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Percent Solids Raw Data Summary

Job Number: JC36204R
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue, Jersey City, NJ

Sample: JC36204-14 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-11.0-11.5

Wet Weight (Total)	28.13	g
Tare Weight	21.76	g
Dry Weight (Total)	27.04	g
Solids, Percent	82.9	%

Sample: JC36204-15 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-4.0-4.5

Wet Weight (Total)	31.7	g
Tare Weight	22.25	g
Dry Weight (Total)	29.96	g
Solids, Percent	81.6	%

Sample: JC36204-16 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-4.0-4.5X

Wet Weight (Total)	34.03	g
Tare Weight	26.35	g
Dry Weight (Total)	32.83	g
Solids, Percent	84.4	%

Sample: JC36204-17 **Analyzed:** 27-JAN-17 by RI **Method:** SM2540 G-97
ClientID: MW8D-O-7.0-7.5

Wet Weight (Total)	29.89	g
Tare Weight	22.51	g
Dry Weight (Total)	28.74	g
Solids, Percent	84.4	%

General Chemistry

Raw Data

LABORATORY REVIEW SIGNATURE FORM
(To be stored with the raw data)

File ID: D70127S2.TXT Date Analyzed: 01/27/17 Methods: LLOYD KAHN 1988 MOD
Analyst: YZ Run ID: GN58627

The following analyst(s) have reviewd this run and attest that, to the best of their knowledge, this documentation is complete and correct:

Analyst: YZ Date 1/27/17

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

The following supervisor or their designee has reviewed this run and attests that, to the best of their knowledge, this documentation is complete and correct:

Supervisor (or designee): _____ Date 1/30/17

C:\TOC-L\Data\d70127s2.toc.tlx

	Type	Sample Name	Sample ID	Origin	Manual	Result	Comment
1	Unknown	CRI		TOCSMCALSW846	1.000	SSM-TC:0.1008mg/L	
2	Unknown	HSTD		TOCSMCALSW846	1.000	SSM-TC:5.074mg/L	
3	Unknown	ICV		TOCSMCALSW846	1.000	SSM-TC:2.002mg/L	
4	Unknown	CCV		TOCSMCALSW846	1.000	SSM-TC:2.530mg/L	
5	Unknown	GP2935-MB1	TOCLK	TOCSSMSW846.m	1.000	SSM-TC:0.00568mg/L	
6	Unknown	GP2935-B1		TOCSSMSW846.m	1.000	SSM-TC:2.019mg/L	
7	Unknown	CCV		TOCSMCALSW846	1.000	SSM-TC:2.530mg/L	
8	Unknown	JC35821-2		TOCSSM.met	1.000	SSM-TC:0.04119mg/L	
9	Unknown	JC36019-1		TOCSSM.met	1.000	SSM-TC:7.125mg/L	
10	Unknown	JC34922-4A		TOCSSM.met	1.000	SSM-TC:0.00927mg/L	
11	Unknown	JC34922-5A		TOCSSM.met	1.000	SSM-TC:0.00983mg/L	
12	Unknown	GP2935-D1	JC35821-2	TOCSSM.met	1.000	SSM-TC:0.04675mg/L	multiple injections
13	Unknown	GP2935-S1	JC35821-2	TOCSSM.met	1.000	SSM-TC:0.3863mg/L	
14	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.664mg/L	

7.1

7

1/27/2017 5:38:36 PM

ACCUTEST.

d 7012752

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-35

GN Batch ID GN58627
Date 1/27/17
Analyst YZ

Sample ID	Sample Weight	Bottle #	Sample Description & comments
CRI			
HSTD			
ICV			
CCV			
GP2935-MB1	1.000		
	1.000		
GP2935-B1	1.000		
	1.000		
JC35821-2	1.0419	3	
	1.0388		
	1.0244		
	1.0814		
JC36019-1	0.0517	1	
	0.0501		
	0.0534		
	0.0522		
JC34922-4A	1.000		x2 boats
JC34922-5A	1.000		x2 boats
GP2935-D1	1.0244	2	JC35821-2
	②1.0814		
	③1.0258		
	1.0742		

Analyst: YZ Date: 1/27/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments: 100ML ~~2000 mg/kg~~ 10g silica sand. TV=20.00 mg/kg

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST

d7012752

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-38

GN Batch ID GN58627
Date 1/27/17
Analyst YZ

Sample ID	Sample Weight	Bottle #	Sample Description & comments
GP29355-S1	0.5903	3	JC35824-2
	0.6070		TV= 3340.85
	0.5879		
	0.6012		
CCV			

Analyst: YZ Date: 1/27/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments:

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST LABORATORIES

Day 2

MDL Schedule Log

Product: TOCLK

Matrix: Soil

Instrument: TOC-D

Sample #: JC34922-4A→5A (MDL) or MDLVER x

Concentration: 100 mg/L or (mg/kg) or

Prep: 0.5mL 200000mg/kg ↑ 100mL with DI

100ML → 1.0g silica sand.

Sample #: MDL or MDLVER x

Concentration: mg/L or mg/kg or

Prep:

Date: 1/27/17

Analyst: YZ

Batch #: GN58627

Form: GN278-02 Revised: 10/16/12

7.1

7

ACCUTEST LABORATORIES

GN

Reagent Information Log - TOC - Soil

Reagent	Reagent # or Manufacturer/Lot	Exp. Date
Sucrose Stock Solution, 200000 mg/L	GNE12-49520-TOC	1/28/17
Glucose Stock Solution, 50000 ug/L	GNE12-49521-TOC	1/28/17
Glucose Check Solution, 25000 ug/L	GNE12-49529-TOC	1/28/17
Nitric Acid, Reagent Grade	Fisher 111506	7/3/17
Glucose Check Solution, 20000 ug/L	GNE12-49528-TOC	1/28/17

All standards and stocks were made as described in the SOP for this method (circle one): Y or N
If no (N), see attached page for standards prep.

Form: GN087A-66
Rev. Date:11/9/15

ACCUTEST

Balance : B-39
glass pipet : class A.

GENERAL CHEMISTRY STANDARD PREPARATION LOG

Product: TOC

GN or GP Number: _____

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume or weight used with units	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
GNE12-49520-TOC	fisher #155362 exp 7/8/21	Sucrose	47.59	B-39	DI H_2O	100mL	200,000	1/28/17	YZ	12/31/16
GNE12-49521-TOC	fisher 120314 exp 7/10/17	Glucose	12.59	B-39	DI H_2O	100mL	50,000	↓	↓	↓

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Standard (mg/l)	Expiration Date	Analyst	Date
Sucrose STDs										
GNE12-49522-TOC	GNE12-49520-TOC	200,000	0.5	autopipet 41	DI H_2O	100mL	1000	1/28/17	YZ	12/31/16
GNE12-49523-TOC	↓	↓	2.5	↓	↓	↓	5000	↓	↓	↓
GNE12-49524-TOC			5.0	class A pipet			10000			
GNE12-49525-TOC			12.5				25000			
GNE12-49526-TOC			20.0				40000			
GNE12-49527-TOC	↓	↓	25.0	↓	↓	↓	50000	↓	↓	↓
Glucose STDs										
GNE12-49528-TOC	GNE12-49521-TOC	50,000	40.0	class A pipet	DI H_2O	100mL	20,000	1/28/17	YZ	12/31/16
GNE12-49529-TOC	↓	↓	50.0	↓	↓	↓	25,000	↓	↓	↓

* If Class A glass pipets are used, enter an A. For balances or autopipets, then enter the appropriate Accutest ID number.

Form: GN121-01
Rev. Date: 1/13/09

TOC-Control L Report

d61231s1.toc.tlx

Instr.Information

Instrument Options	TOC/SSM/Sparge Kit/
Catalyst	Regular Sensitivity

Cal. Curve

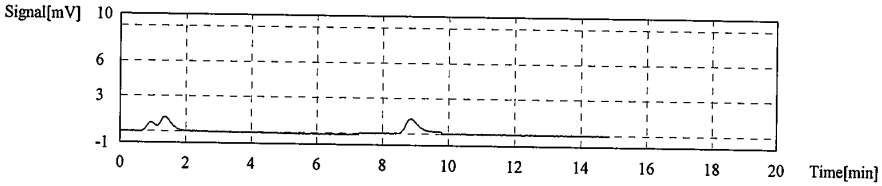
Sample Name:	Untitled
Sample ID:	Untitled
Cal. Curve:	d61231s1.2016_12_31_11_04_49.cal
Status	Completed

Type	Auto
Standard	SSM-TC

AbsC: 0.000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date/Time
1	4.216	4.216	0.000ug	100.0mg	*******		12/31/2016 11:08:38 AM
2	0.000	0.000	0.000ug	100.0mg	*******		12/31/2016 11:14:52 AM
3	3.250	3.250	0.000ug	100.0mg	*******		12/31/2016 11:19:29 AM
4	0.000	0.000	0.000ug	100.0mg	*******		12/31/2016 11:25:18 AM

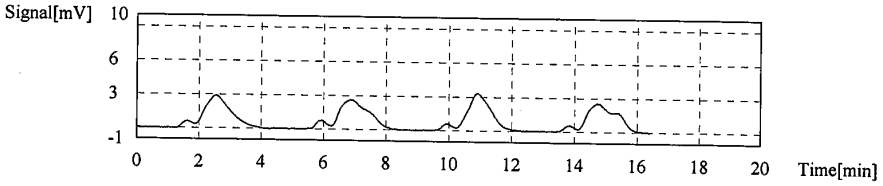
Mean Area 1.867
Mean CNV 1.867



AbsC: 0.01000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date/Time
1	18.09	18.09	0.01000ug	100.0mg	*******		12/31/2016 11:30:51 AM
2	17.93	17.93	0.01000ug	100.0mg	*******		12/31/2016 11:36:35 AM
3	17.27	17.27	0.01000ug	100.0mg	*******		12/31/2016 11:41:46 AM
4	17.36	17.36	0.01000ug	100.0mg	*******		12/31/2016 11:47:22 AM

Mean Area 17.66
Mean CNV 17.66



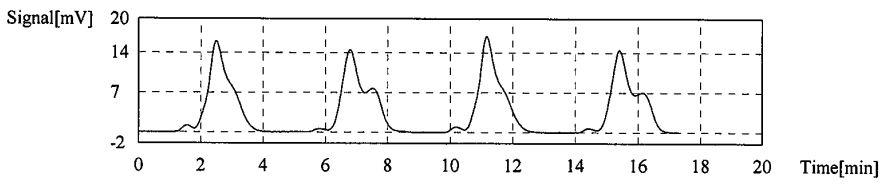
AbsC: 0.05000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date/Time
1	81.58	81.58	0.05000ug	100.0mg	*******		12/31/2016 11:54:15 AM
2	82.10	82.10	0.05000ug	100.0mg	*******		12/31/2016 12:00:07 PM
3	81.85	81.85	0.05000ug	100.0mg	*******		12/31/2016 12:06:44 PM
4	81.50	81.50	0.05000ug	100.0mg	*******		12/31/2016 12:12:56 PM

TOC-Control L Report

d61231s1.toc.tlx

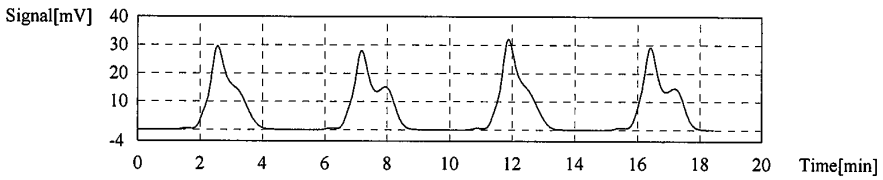
Mean Area 81.76
Mean CNV 81.76



AbsC: 0.1000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date / Time
1	161.3	161.3	0.1000ug	100.0mg	*******		12/31/2016 12:20:37 PM
2	164.9	164.9	0.1000ug	100.0mg	*******		12/31/2016 12:26:54 PM
3	166.6	166.6	0.1000ug	100.0mg	*******		12/31/2016 12:32:41 PM
4	167.1	167.1	0.1000ug	100.0mg	*******		12/31/2016 12:38:33 PM

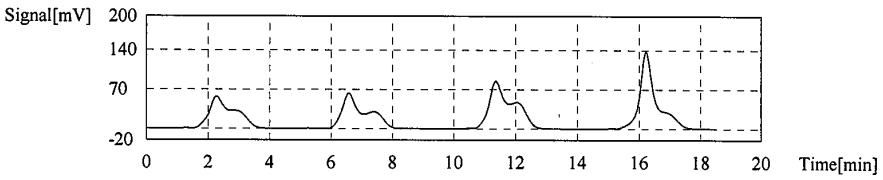
Mean Area 165.0
Mean CNV 165.0



AbsC: 0.2500ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date / Time
1	318.7	318.7	0.2500ug	100.0mg	*******		12/31/2016 1:37:39 PM
2	335.6	335.6	0.2500ug	100.0mg	*******		12/31/2016 1:45:00 PM
3	456.9	456.9	0.2500ug	100.0mg	*******		12/31/2016 1:52:55 PM
4	507.0	507.0	0.2500ug	100.0mg	*******		12/31/2016 2:01:48 PM

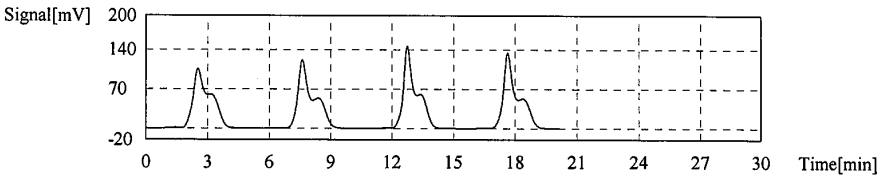
Mean Area 404.6
Mean CNV 404.5



AbsC: 0.4000ug

No	Area	CNV	AbsC	Weight	Rem	Ex	Date / Time
1	617.4	617.4	0.4000ug	100.0mg	*******		12/31/2016 2:08:59 PM
2	637.9	637.9	0.4000ug	100.0mg	*******		12/31/2016 2:15:55 PM
3	649.5	649.5	0.4000ug	100.0mg	*******		12/31/2016 2:22:17 PM
4	649.4	649.4	0.4000ug	100.0mg	*******		12/31/2016 2:30:02 PM

Mean Area 638.5
Mean CNV 638.5



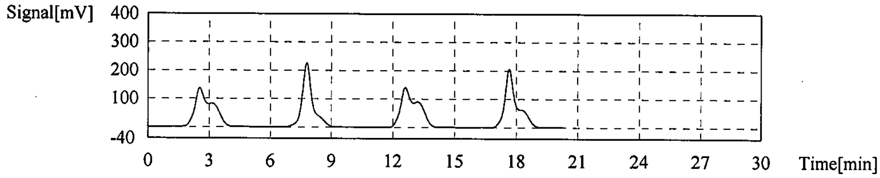
AbsC: 0.5000ug

TOC-Control L Report

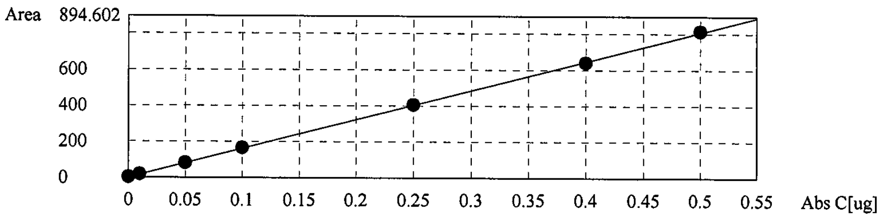
d61231s1.toc.tlx

No.	Area	CNV	Abs C	Weight	Rem.	Ex.	Date/Time
1	800.7	800.7	0.5000ug	100.0mg	*******		12/31/2016 2:36:47 PM
2	796.5	796.5	0.5000ug	100.0mg	*******		12/31/2016 2:43:32 PM
3	814.5	814.5	0.5000ug	100.0mg	*******		12/31/2016 2:49:57 PM
4	841.4	841.4	0.5000ug	100.0mg	*******		12/31/2016 2:57:43 PM

Mean Area 813.3
Mean CNV 813.3



Slope: 1612
Intercept 1.612
r^2 0.9998
r 0.9999
Zero Shift No



TOC-Control L Report

d70127s2.toc.tlx

Instr.Information

Instrument Options	TOC/SSM/Sparge Kit/
Catalyst	Regular Sensitivity

Sample

Sample Name:	CRI
Sample ID:	
Origin:	TOCSMCALSW846.met
Status	Completed
Chk. Result	

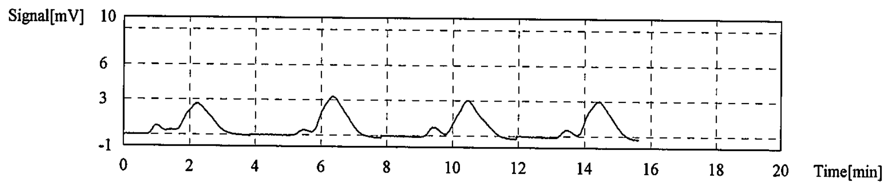
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.1008mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	16.45	16.45	0.09206mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 7:49:43 AM
2	18.46	18.46	0.1045mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 7:55:30 AM
3	19.02	19.02	0.1080mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:02:01 AM
4	17.52	17.52	0.09870mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:07:34 AM

Mean Conc.	0.1008mg/L
CV Conc	6.93%



Sample

Sample Name:	HSTD
Sample ID:	
Origin:	TOCSMCALSW846.met
Status	Completed
Chk. Result	

Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:5.074mg/L

1. Det

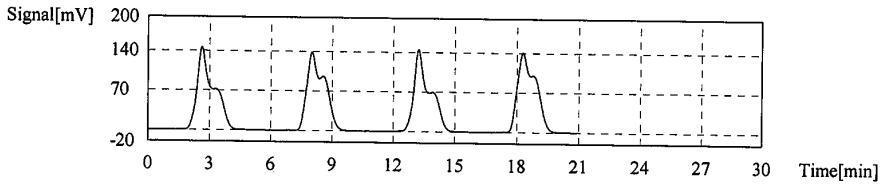
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	819.7	819.7	5.076mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:14:45 AM
2	826.6	826.6	5.119mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:25:20 AM
3	771.5	771.5	4.777mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:32:34 AM
4	859.8	859.8	5.325mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 8:41:36 AM

TOC-Control L Report

d70127s2.toc.tlx

Mean Conc. 5.074mg/L
CV Conc 4.45%



Sample

Sample Name: ICV
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

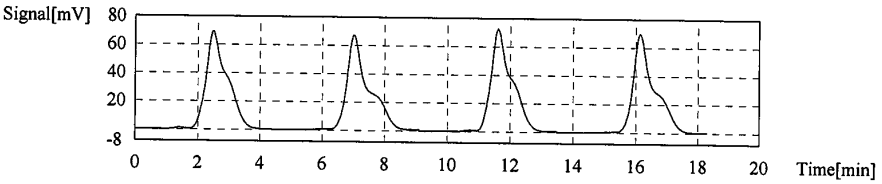
Type	Name	Dilution Factor	Sample Amount	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.002mg/L

1. Det

Anal.: SSM-TC

No.	Area	ONV	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	322.5	322.5	1.991mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:29:27 AM
2	319.2	319.2	1.970mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:36:26 AM
3	329.2	329.2	2.033mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:45:58 AM
4	326.1	326.1	2.013mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:52:32 AM

Mean Conc. 2.002mg/L
CV Conc 1.34%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

Type	Name	Dilution Factor	Sample Amount	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.530mg/L

1. Det

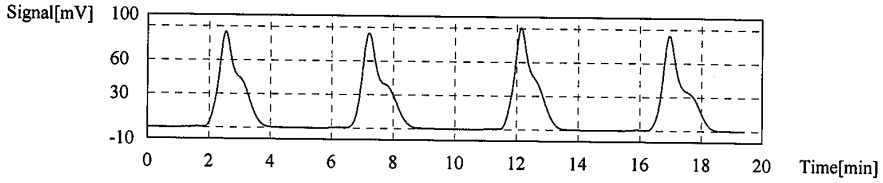
Anal.: SSM-TC

TOC-Control L Report

d70127s2.toc.tlx

No.	Area	NV	Conc.	Weight	Volume	Data Name	Date/Time
1	401.8	401.8	2.483mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 9:59:38 AM
2	414.8	414.8	2.564mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:07:04 AM
3	414.9	414.9	2.564mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:14:27 AM
4	405.9	405.9	2.508mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:22:24 AM

Mean Conc. 2.530mg/L
CV Conc 1.61%



Sample

Sample Name: GP2935-MB1
Sample ID: TOCLK
Origin: TOCSSMSW846.met
Status Completed
Chk. Result

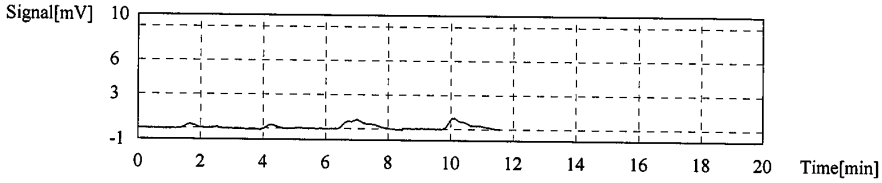
Type	Anal.	Dilution	Factor	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00568mg/L

1. Det

Anal.: SSM-TC

No.	Area	NV	Conc.	Weight	Volume	Data Name	Date/Time
1	0.7594	0.7594	-0.00529mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:26:22 AM
2	0.8808	0.8808	-0.00454mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:34:08 AM
3	4.528	4.528	0.01809mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:40:06 AM
4	3.940	3.940	0.01445mg/L	100.0mg	100uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:46:42 AM

Mean Conc. 0.00568mg/L
CV Conc 217.03%



Sample

Sample Name: GP2935-B1
Sample ID:
Origin: TOCSSMSW846.met
Status Completed
Chk. Result

Type	Anal.	Dilution	Factor	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.019mg/L

TOC-Control L Report

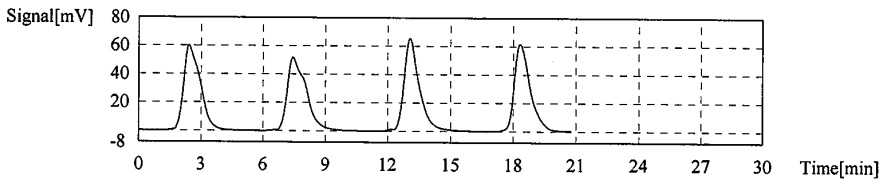
d70127s2.toc.tlx

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Conc.	Weight	Volume	Dil.	Cal. Curve	Date / Time
1	332.9	332.9	2.055mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:52:38 AM
2	324.1	324.1	2.001mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 10:59:35 AM
3	329.8	329.8	2.036mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 11:06:06 AM
4	321.5	321.5	1.985mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 11:24:11 AM

Mean Conc. 2.019mg/L
CV Conc 1.60%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSMCALSW846.met
Status Completed
Chk. Result

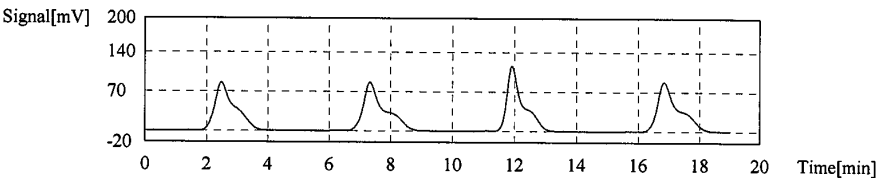
Type	Anal.	Weight / Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.530mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Conc.	Weight	Volume	Dil.	Cal. Curve	Date / Time
1	389.5	389.5	2.407mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:10:51 PM
2	411.7	411.7	2.544mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:18:34 PM
3	415.9	415.9	2.570mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:27:31 PM
4	420.4	420.4	2.598mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:34:26 PM

Mean Conc. 2.530mg/L
CV Conc 3.36%



Sample

Sample Name: JC35821-2
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

TOC-Control L Report

d70127s2.toc.tlx

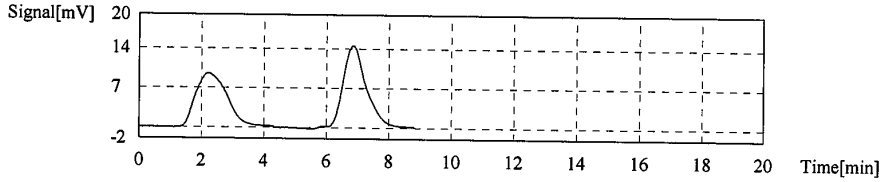
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.04119mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	64.78	64.78	0.03762mg/L	1042mg	1041uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:42:43 PM
2	76.57	76.80	0.04477mg/L	1039mg	1038uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 2:50:08 PM

Mean Conc. 0.04119mg/L
CV Conc 12.28%



Sample

Sample Name: JC36019-1
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

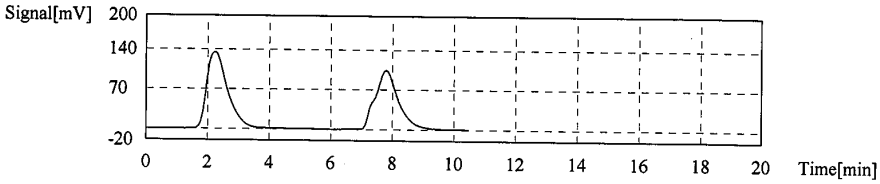
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:7.125mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	630.8	630.8	7.551mg/L	51.70mg	51uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:04:51 PM
2	542.6	559.9	6.700mg/L	50.10mg	50uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:13:25 PM

Mean Conc. 7.125mg/L
CV Conc 8.45%



Sample

Sample Name: JC34922-4A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

TOC-Control L Report

d70127s2.toc.tlx

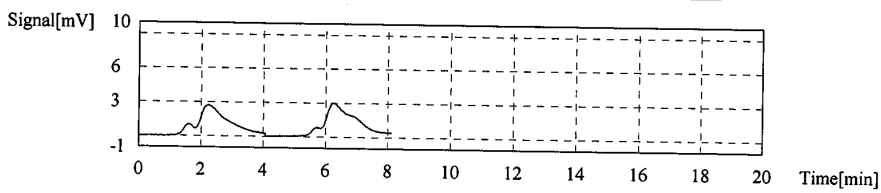
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00927mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	16.17	16.17	0.00903mg/L	1000mg	1000uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:19:36 PM
2	16.94	16.94	0.00951mg/L	1000mg	1000uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:28:51 PM

Mean Conc. 0.00927mg/L
CV Conc 3.64%



Sample

Sample Name: JC34922-5A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

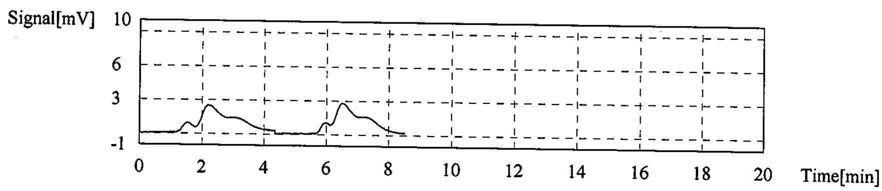
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00983mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	16.92	16.92	0.00950mg/L	1000mg	1000uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:34:15 PM
2	17.99	17.99	0.01016mg/L	1000mg	1000uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:42:11 PM

Mean Conc. 0.00983mg/L
CV Conc 4.78%



Sample

Sample Name: GP2935-D1
Sample ID: JC35821-2
Origin: TOCSSM.met
Status Completed
Chk. Result

TOC-Control L Report

d70127s2.toc.tlx

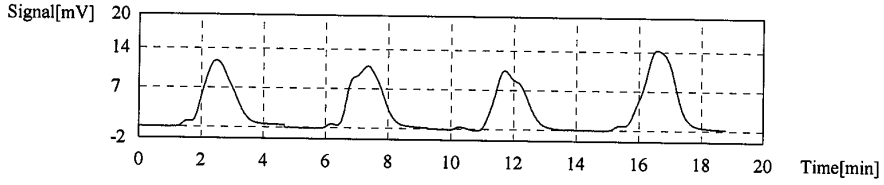
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.04675mg/L

1. Det

Anal.: SSM-TC

No.	Area	Corr. Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	75.96	75.96	0.04503mg/L	1024mg	1024uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:49:07 PM
2	77.94	77.83	0.04617mg/L	1026mg	1025uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 3:54:55 PM
3	69.70	66.03	0.03907mg/L	1081mg	1081uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:06:34 PM
4	99.84	95.21	0.05674mg/L	1074mg	1074uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:14:04 PM

Mean Conc. 0.04675mg/L
CV Conc 15.72%



Sample

Sample Name: GP2935-S1
Sample ID: JC35821-2
Origin: TOCSSM.met
Status Completed
Chk. Result

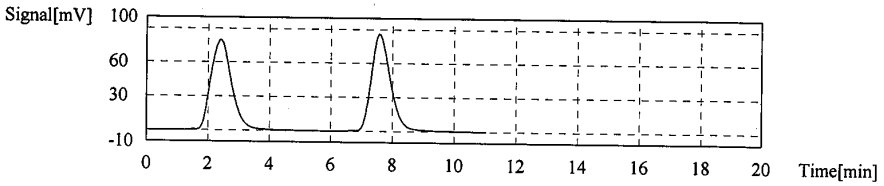
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.3863mg/L

1. Det

Anal.: SSM-TC

No.	Area	Corr. Area	Conc.	Weight	Volume	Cal. Curve	Date/Time
1	373.2	373.2	0.3906mg/L	590.3mg	590uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:20:33 PM
2	375.4	365.1	0.3821mg/L	607.0mg	607uL	d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:30:52 PM

Mean Conc. 0.3863mg/L
CV Conc 1.56%



Sample

TOC-Control L Report

d70127s2.toc.tlx

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

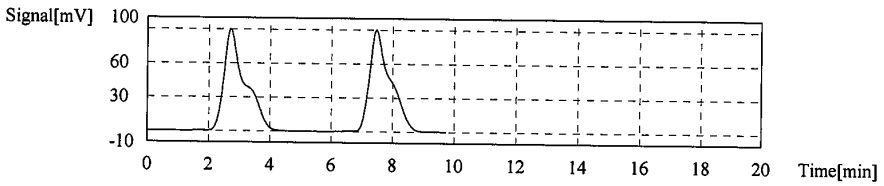
Type	Analyte	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.664mg/L

1. Det

Anal.: SSM-TC

No.	Area	Corr. Area	Conc.	Weight	Volume	Dil.	Data File	Date Time
1	432.9	432.9	2.676mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:38:29 PM
2	429.0	429.0	2.652mg/L	100.0mg	100uL		d61231s1.2016_12_31_11_04_49.cal	1/27/2017 4:46:22 PM

Mean Conc. 2.664mg/L
CV Conc 0.64%



mrp 02/01

TEST: Ferrous Iron (FE2/7) ANALYST: MRP GN BATCH: GN58793
METHOD: ASTM D3872-86 DATE: 2/1/2017 REAGENT ID's: See attached page
RDL: 0.20 %

F = Weight of Iron in g / Vol. Of Dichomate in mL = 0.0063

%Fe2/7 = ml Dichromate x F x 100 / sample wt in g x (%sol/100)

QC Summary						Units	Within limits? (Y/N)
Dup. Sample ID:	JC36017-1R	original- 0.63		Duplicate: 0.63 ✓	RPD 0.00		
MS Sample ID:	JC36017-1R	original 0.63	Amt.Spiked 41.82 ✓	MS 40.04 ✓	REC 94.23 ✓		
MB ID and prep date:	2/1/2017	Result: <02		RDL: 0.2	<RDL? Y ✓		
SB ID and prep date:	2/1/2017	Amt. Spiked:		Result:	REC:		
External ID:		Known:		Result:	REC:		

Spike prep: 0.25 gms Iron sample+ 0.71gm sample taken

Bottle #	Sample Description	Sample Weight in g	Start Time/End Time	Titrant Start in ml	Titrant End in ml	Titrant Total (ml)	Result in mg/l	Final Result in mg/l	RDL	Units
	MB		11:30/11:45	0.00	0.05	0.05	0.063	<02	0.2	%
	B1	0.25		0.00	39.80	39.80	for std.only		0.2	%
2	JC36017-1R MS	0.71		0.00	38.00	38.00	40.0450	40.04	0.2	%
2	JC36017-1R DUP	0.71		0.00	0.60	0.60	0.6322	0.63	0.2	%
2	JC36017-1R ✓	0.71		0.00	0.60	0.60	0.6322	0.63	0.2	%
1	JC36049-1R ✓	0.61		0.00	0.25	0.25	0.3305	0.33	0.2	%
1	JC36135-26R	0.51		0.00	0.60	0.60	0.8792	0.88	0.2	%
2	JC36204-17R ✓	0.57		0.00	0.80	0.80	1.0470	1.05	0.2	%
1	JC35528-7R ✓	0.70		0.00	0.40	0.40	0.41	0.41	0.2	%
2	JC35528-21T ✓	0.60		0.00	0.30	0.30	0.3808	0.38		%
										%
										%
										%
										%
										%

	Description	% SOLIDS
	JC36017-1R	84.2
	JC36049-1R	78.10
	JC36135-26R	84.3
	JC36204-17R	84.4
	JC35528-7R	86.9
	JC35528-21T	82.70

MS = 0.25 x 100 / sample wt in g x (%sol/100)

= 25 / 0.71 / 0.842

= 41.82

Reason codes for data corrections : 1 - reviewer error correction; 2 - transcription error; 3-computer error; 4- analyst error
ANAL mrp 2/1/2017
COMMENTS:

Form: GN198-01
Rev. Date: 6/16/06

SGS ACCUTEST

GN 58793

Reagent Information Log
Test Name: FE2/7

Reagent	Reagent # or Manufacturer/Lot
Iron Wire Std	Fisher # 135597 09/27/2018
HCL(1:1)	GNE12-56408-FE2/7 XP6/12/2017
60% Sulfuric Acid/Phosphoric Acid	GNE22-49866-fe2/7 8/1/17
Potassium Dichromate Solution	GNE2-49867-FE2/7 08/1/2017
Diphenyl Amine Indicator	GNE12-49429-FE2/7 XP 6/9/2017

All standards and stocks were made as described in the SOP for this method (circle one): Y or N
If no (N), see attached page for standards prep.

Form: GN087-01
Rev. Date:2/1/2017

mrp 02/01

ACCUTEST.

Analyst mrp

Method sulf

TIME ; 9.00 / 12.00

Prep Da 2/1/2017

Balance #____B-43_____

GN GN58794

Sample Prep Log

Sample ID	Sample Size	FINAL VOLUME	
GN58794-MB1	10 ML DI / H20	NEGATIVE	B.NO
JC36017-1R DUP	10.12GM	NEGATIVE	2
JC36017-1R ✓	10.10 GM	NEGATIVE	2
JC36049-1R ✓	10.18GM	NEGATIVE	1
JC36135-26R	10.10 GM	NEGATIVE	1
JC36204-17R ✓	10.25 GM	NEGATIVE	1
JC35528-7R ✓	10.25 GM	NEGATIVE	1
JC36528-21T ✓	10.10GM	NEGATIVE	2

Form: GN166-03
Rev. Date: 11/19/15

7.3

7

LABORATORY REVIEW SIGNATURE FORM
(To be stored with the raw data)

File ID: E70202S1.TXT
Analyst: CD

Date Analyzed: 02/02/17
Run ID: GN58865

Methods: LLOYD KAHN 1988 MOD

The following analyst(s) have reviewd this run and attest that, to the best of their knowledge, this documentation is complete and correct:

Analyst: CD Date 2/2/17

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

Analyst: _____ Date _____

The following supervisor or their designee has reviewed this run and attests that, to the best of their knowledge, this documentation is complete and correct:

Supervisor (or designee): _____ Date 2/03/

7.4

7

C:\TOC-L\Data\e70202s1.toc.tlx

	Type	Sample Name	Sample ID	Origin	Manual Diluti	Result	Comment
1	Unknown	CRI		TOCSSMCAL.met	1.000	SSM-TC:0.09214mg/L	
2	Unknown	HSTD		TOCSSMCAL.met	1.000	SSM-TC:4.943mg/L	
3	Unknown	ICV		TOCSSMCAL.met	1.000	SSM-TC:2.005mg/L	
4	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.463mg/L	
5	Unknown	GP2935-MB3	LK	TOCSSM.met	1.000	SSM-TC:0.00124mg/L	
6	Unknown	GP29358-B3		TOCSSM.met	1.000	SSM-TC:0.1928mg/L	
7	Unknown	GP2935-MB4	LK	TOCSSM.met	1.000	SSM-TC:-0.00001mg/	
8	Unknown	GP2935-MB5	LK	TOCSSM.met	1.000	SSM-TC:0.00270mg/L	
9	Unknown	GP2935-MB6	LK	TOCSSM.met	1.000	SSM-TC:0.00201mg/L	
10	Unknown	JC36049-1R	(A)	TOCSSM.met	1.000	SSM-TC:1.053mg/L	
11	Unknown	JC36204-17R	(3)	TOCSSM.met	1.000	SSM-TC:0.1947mg/L	rerun 1.0g
12	Unknown	JC35528-21T	(A)	TOCSSM.met	1.000	SSM-TC:4.276mg/L	multiple injections
13	Unknown	JC36135-29R	(3)	TOCSSM.met	1.000	SSM-TC:0.09220mg/L	rerun 1.0g
14	Unknown	JC34923-1A		TOCSSM.met	1.000	SSM-TC:0.01171mg/L	
15	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.458mg/L	
16	Unknown	JC34923-2A	(A)	TOCSSM.met	1.000	SSM-TC:0.01163mg/L	
17	Unknown	JC34923-3A		TOCSSM.met	1.000	SSM-TC:0.01124mg/L	
18	Unknown	JC36204-17R		TOCSSM.met	1.000	SSM-TC:0.2980mg/L	
19	Unknown	JC36135-29R		TOCSSM.met	1.000	SSM-TC:0.07437mg/L	
20	Unknown	CCV		TOCSSMCAL.met	1.000	SSM-TC:2.317mg/L	

GN58865

e70202s1.toc
CZD 2/2/17

7.4

7

2/2/2017 2:47:21 PM

1/2

ACCUTEST.

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-39

GN Batch ID GN58865
Date 2/2/17
Analyst CZD

Sample ID	Sample Weight	Bottle #	Sample Description & comments
CRI			
HSTD			
ICV			
CCV			
GP2935-MB3	1.0000		
	1.0000		
GP2935-B3	1.0000		
	1.0000		
GP2935-MB4	1.0000		
	1.0000		
GP2935-MB5	1.0000		
	1.0000		
GP2935-MB6	1.0000		
	1.0000		
JC36049-1R	0.1017	2	
	0.1007		
	0.1043		
	0.1061		
JC36264-17R	0.1000	2	Under range rerun at 1.0g
	0.1063		
	0.1011		
	0.1040		

Analyst: CZD Date: 2/2/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments:
BSP: 100ul of 2000 mg/kg c/L → 1.0g silica Sand TV=2000 mg/kg

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST.

Test: **Total Organic Carbon**
Product: **TOC**
Method: **Corp. Eng. 81 M/SW846 9060 M or EPA Region 2 Lloyd Kahn** (circle one)
RDL = 1000 mg/kg or 100 mg/kg (circle one)

Units = mg/kg
Balance ID: B-39

GN Batch ID GN58865
Date 2/2/17
Analyst CZD

Sample ID	Sample Weight	Bottle #	Sample Description & comments
JC35528-21T	0.1070	1	multiple boats
	0.1008		
	0.1051		
	0.1017		
JC36135-29R	0.1075	1	under range rerun at 1.0g
	0.1043		
	0.1053		
	0.1026		
JC34923-1A	1.0000		
CCV	1.0000		
JC34923-2A	1.0000		
	1.0000		
JC34923-3A	1.0000		
	1.0000		
JC36204-17R	1.0067	2	
	1.0039		
	1.0021		
	1.0072		
JC36135-29R	1.0016	1	
	1.0005		
	1.0087		
	1.0037		
CCV			

Analyst: CZD Date: 2/2/17 QCReviewer: _____ Date: _____
Manager Review: _____ Date: _____
Comments:

Form: GN058-01
Rev. Date: 11/11/08

ACCUTEST LABORATORIES

Day 1

MDL Schedule Log

Product: TOCLK

Matrix: Soil

Instrument: TOC E

3 MB's

Sample #: JC34923-1A→3A (MDL) or MDLVER x

Concentration: 100 mg/L or (mg/kg) or

Prep:

Sample #: MDL or MDLVER x

Concentration: mg/L or mg/kg or

Prep:

Date: 2/2/17

Analyst: CLD

Batch #: GN58865

Form: GN278-02 Revised: 10/16/12

ACCUTEST LABORATORIES

GN58865

Reagent Information Log - TOC - Soil

LK

Reagent	Reagent # or Manufacturer/Lot	Exp. Date
Sucrose Stock Solution, 200000 mg/L	GNE1-49821-TOC	2/25/17
Glucose Stock Solution, 50000 ug/L	GNE1-49828-TOC	2/25/17
Glucose Check Solution, 25000 ug/L	GNE1-49830-TOC	2/25/17
Nitric Acid, Reagent Grade	Fisher 1115060	7/3/17
Glucose Check Solution, 20000 ug/L	GNE1-49829-TOC	2/25/17

All standards and stocks were made as described in the SOP for this method (circle one): Y or N
If no (N), see attached page for standards prep.

Form: GN087A-66
Rev. Date:11/9/15

7.4

7

ACCUTEST

Balance : B-39
glass pipet : class A.

GENERAL CHEMISTRY STANDARD PREPARATION LOG

Product: TOCLK

GN or GP Number: GN58865

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume or weight used with units	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
GNE1-49821-TOC	fisher #155362 exp 7/8/21	Sucrose	47.59	B-39	DI H_2O	100mL	200,000	2/25/17	YZ	1/28/17
GNE1-49828-TOC	fisher 120314 exp 7/10/17	Glucose	12.59	B-39	DI H_2O	100mL	50,000	↓	↓	↓

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Balance or Autopipet ID (*)	Diluent	Final Volume	Final Conc. of Standard (mg/l)	Expiration Date	Analyst	Date
Sucrose STDs										
GNE1-49822-TOC	GNE1-49821-TOC	200,000	0.5	autopipet 41	DI H_2O	100mL	1000	2/25/17	YZ	1/28/17
GNE1-49823-TOC	↓	↓	2.5	↓	↓	↓	5000	↓	↓	↓
GNE1-49824-TOC			5.0	class A pipet			10000			
GNE1-49825-TOC			12.5	↓			25000			
GNE1-49826-TOC			20.0				40000			
GNE1-49827-TOC	↓	↓	25.0	↓	↓	↓	50000	↓	↓	↓
Glucose STDs										
GNE1-49829-TOC	GNE1-49828-TOC	50,000	40.0	class A pipet	DI H_2O	100mL	20,000	2/25/17	YZ	1/28/17
GNE1-49830-TOC	↓	↓	50.0	↓	↓	↓	25,000	↓	↓	↓

* If Class A glass pipets are used, enter an A. For balances or autopipets, then enter the appropriate Accutest ID number.

Form: GN121-01
Rev. Date: 1/13/09

TOC-Control L Report

e70130s1.toc.tlx

Instr.Information

Instrument Options TOC/SSM/Sparge Kit/
Catalyst Regular Sensitivity

Cal. Curve

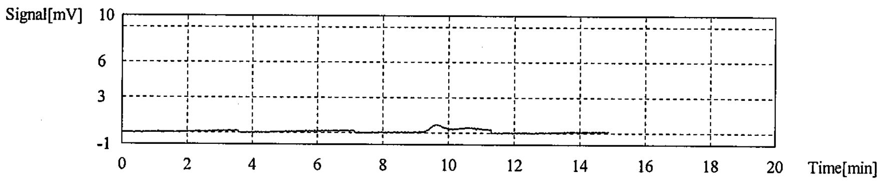
Sample Name: Untitled
Sample ID: Untitled
Cal. Curve: e70130s1.2017_01_30_07_42_21.cal
Status Completed

Type	Anal.
Standard	SSM-TC

AbsC: 0.000ug

No.	Area	CNV	AbsC	Weight	Rem	Ex	Date / Time
1	0.000	0.000	0.000ug	100.0mg	*******		1/30/2017 7:47:03 AM
2	0.000	0.000	0.000ug	100.0mg	*******		1/30/2017 7:51:27 AM
3	2.842	2.842	0.000ug	100.0mg	*******		1/30/2017 7:56:51 AM
4	0.000	0.000	0.000ug	100.0mg	*******		1/30/2017 8:01:46 AM

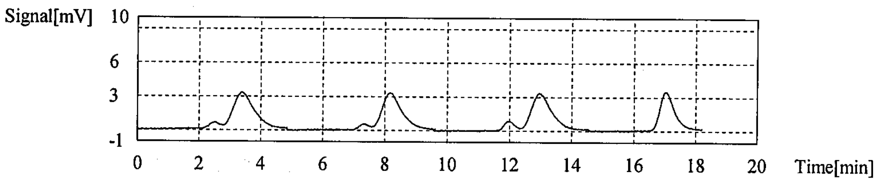
Mean Area 0.7105
Mean CNV 0.7105



AbsC: 0.01000ug

No.	Area	CNV	AbsC	Weight	Rem	Ex	Date / Time
1	16.03	16.03	0.01000ug	100.0mg	*******		1/30/2017 8:09:01 AM
2	15.36	15.36	0.01000ug	100.0mg	*******		1/30/2017 8:15:39 AM
3	16.04	16.04	0.01000ug	100.0mg	*******		1/30/2017 8:21:57 AM
4	11.10	11.10	0.01000ug	100.0mg	*******		1/30/2017 8:28:08 AM

Mean Area 14.63
Mean CNV 14.63



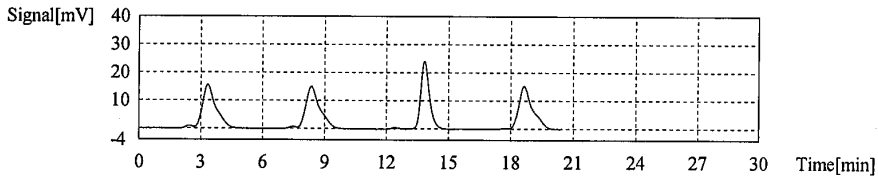
AbsC: 0.05000ug

No.	Area	CNV	AbsC	Weight	Rem	Ex	Date / Time
1	72.78	72.78	0.05000ug	100.0mg	*******		1/30/2017 8:35:30 AM
2	72.56	72.56	0.05000ug	100.0mg	*******		1/30/2017 8:44:47 AM
3	72.45	72.45	0.05000ug	100.0mg	*******		1/30/2017 8:51:57 AM
4	71.06	71.06	0.05000ug	100.0mg	*******		1/30/2017 8:59:39 AM

TOC-Control L Report

e70130s1.toc.tlx

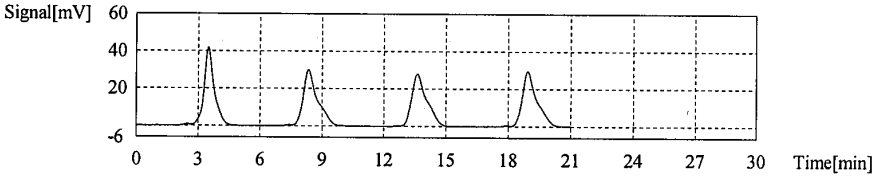
Mean Area 72.21
Mean CNV 72.21



AbsC: 0.1000ug

No	Area	CNV	Amt	Conc	Rem	Flg	Date/Time
1	144.2	144.2	0.1000ug	100.0mg	*******		1/30/2017 9:07:53 AM
2	143.0	143.0	0.1000ug	100.0mg	*******		1/30/2017 9:14:52 AM
3	141.5	141.5	0.1000ug	100.0mg	*******		1/30/2017 9:22:33 AM
4	143.5	143.5	0.1000ug	100.0mg	*******		1/30/2017 9:30:38 AM

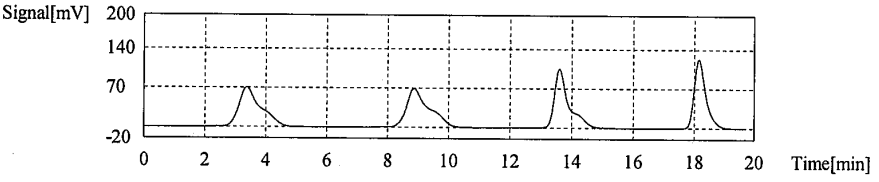
Mean Area 143.1
Mean CNV 143.1



AbsC: 0.2500ug

No	Area	CNV	Amt	Conc	Rem	Flg	Date/Time
1	355.6	355.6	0.2500ug	100.0mg	*******		1/30/2017 9:38:24 AM
2	358.9	358.9	0.2500ug	100.0mg	*******		1/30/2017 9:49:09 AM
3	342.1	342.1	0.2500ug	100.0mg	*******		1/30/2017 9:55:40 AM
4	332.3	332.3	0.2500ug	100.0mg	*******		1/30/2017 10:01:26 AM

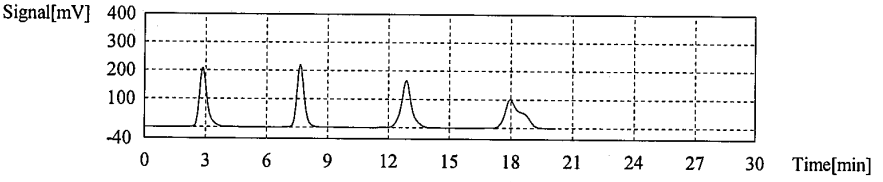
Mean Area 347.2
Mean CNV 347.2



AbsC: 0.4000ug

No	Area	CNV	Amt	Conc	Rem	Flg	Date/Time
1	546.7	546.7	0.4000ug	100.0mg	*******		1/30/2017 10:08:24 AM
2	552.5	552.5	0.4000ug	100.0mg	*******		1/30/2017 10:15:19 AM
3	582.1	582.1	0.4000ug	100.0mg	*******		1/30/2017 10:24:17 AM
4	564.4	564.4	0.4000ug	100.0mg	*******		1/30/2017 10:33:28 AM

Mean Area 561.4
Mean CNV 561.4



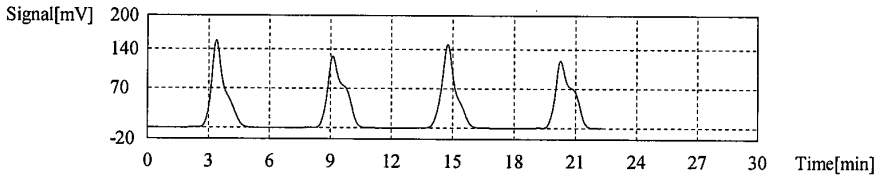
AbsC: 0.5000ug

TOC-Control L Report

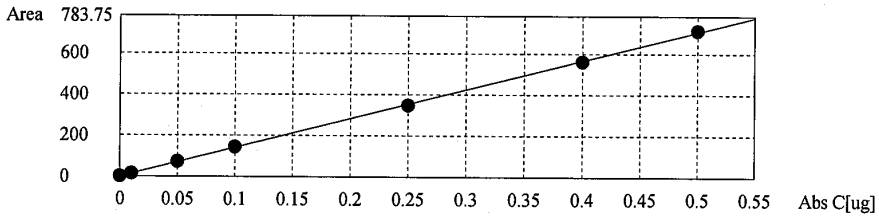
e70130s1.toc.tlx

1	723.2	723.2	0.5000ug	100.0mg	*******	1/30/2017 10:42:00 AM
2	726.5	726.5	0.5000ug	100.0mg	*******	1/30/2017 10:49:33 AM
3	708.1	708.1	0.5000ug	100.0mg	*******	1/30/2017 10:58:31 AM
4	692.2	692.2	0.5000ug	100.0mg	*******	1/30/2017 11:05:43 AM

Mean Area 712.5
Mean CNV 712.5



Slope: 1413
Intercept 0.02087
r^2 0.9998
r 0.9999
Zero Shift No



TOC-Control L Report

e70202s1.toc.tlx

Instr.Information

Instrument Options: TOC/SSM/Sparge Kit/
Catalyst: Regular Sensitivity

Sample

Sample Name: CRI
Sample ID:
Origin: TOCSSMCAL.met
Status: Completed
Chk. Result

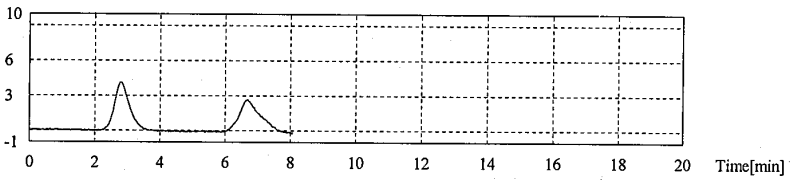
Type	Anal.	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.09214mg/L

1. Det

Anal.: SSM-TC

No.	Area	CMV	Conc.	Weight	Volume	Rack	Cal. Curve	Date/Time
1	13.12	13.12	0.09268mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 7:56:12 AM
2	12.97	12.97	0.09161mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:03:10 AM

Mean Conc. 0.09214mg/L
CV Conc 0.81%



Sample

Sample Name: HSTD
Sample ID:
Origin: TOCSSMCAL.met
Status: Completed
Chk. Result

Type	Anal.	Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:4.943mg/L

1. Det

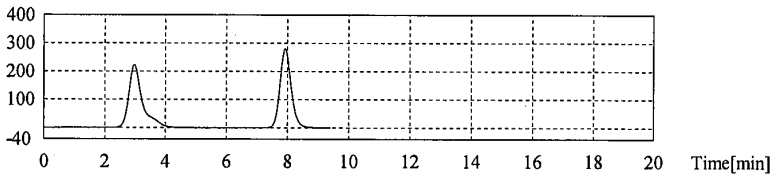
Anal.: SSM-TC

No.	Area	CMV	Conc.	Weight	Volume	Rack	Cal. Curve	Date/Time
1	688.3	688.3	4.870mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:12:40 AM
2	709.1	709.1	5.017mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:22:30 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 4.943mg/L
CV Conc 2.11%



Sample

Sample Name: ICV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

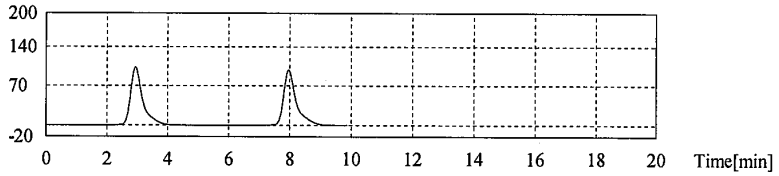
Type	Anal.	Method Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.005mg/L

1. Det

Anal.: SSM-TC

No.	Area	ONV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	286.3	286.3	2.025mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:31:43 AM
2	280.6	280.6	1.985mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:41:14 AM

Mean Conc. 2.005mg/L
CV Conc 1.42%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

Type	Anal.	Method Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.463mg/L

1. Det

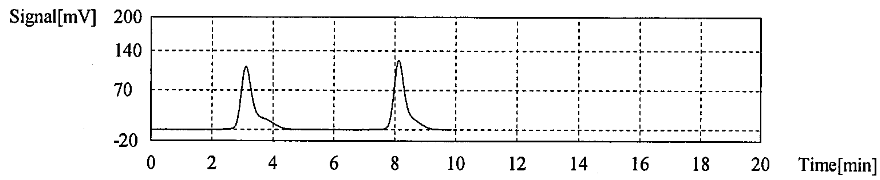
Anal.: SSM-TC

No.	Area	ONV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	347.8	347.8	2.461mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 8:51:10 AM
2	348.6	348.6	2.466mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:00:44 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 2.463mg/L
CV Conc 0.16%



Sample

Sample Name: GP2935-MB3
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

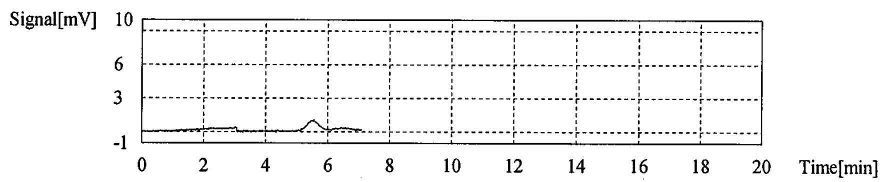
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00124mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex	Cal. Curve	Date/Time
1	0.000	0.000	-0.00001mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:06:40 AM
2	3.561	3.561	0.00250mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:13:37 AM

Mean Conc. 0.00124mg/L
CV Conc 143.10%



Sample

Sample Name: GP29358-B3
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.1928mg/L

1. Det

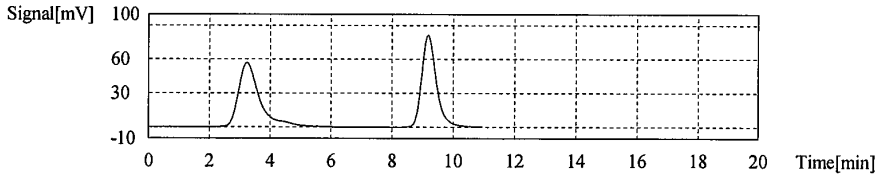
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex	Cal. Curve	Date/Time
1	274.7	274.7	0.1943mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:22:26 AM
2	270.3	270.3	0.1912mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:30:49 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.1928mg/L
CV Conc 1.14%



Sample

Sample Name: GP2935-MB4
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

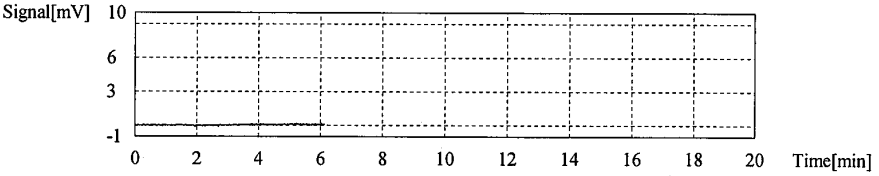
Type	Anal.	Injection Vol.	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:-0.00001mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	0.000	0.000	-0.00001mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:37:03 AM
2	0.000	0.000	-0.00001mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:41:08 AM

Mean Conc. -0.00001mg/L
CV Conc 0.00%



Sample

Sample Name: GP2935-MB5
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Injection Vol.	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00270mg/L

1. Det

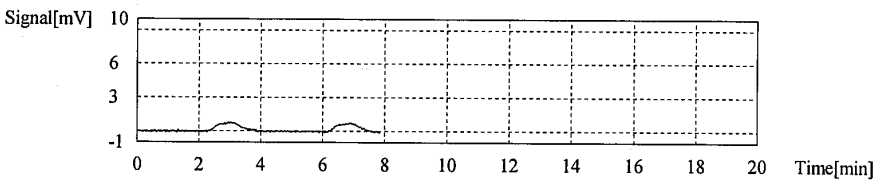
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	Ex.	Cal. Curve	Date/Time
1	3.492	3.492	0.00246mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:47:07 AM
2	4.178	4.178	0.00294mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 9:53:53 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.00270mg/L
CV Conc 12.72%



Sample

Sample Name: GP2935-MB6
Sample ID: LK
Origin: TOCSSM.met
Status Completed
Chk. Result

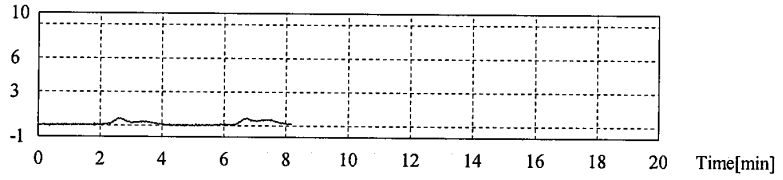
Type	Analyte	Weight/Volume	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.00201mg/L

1. Det

Anal.: SSM-TC

NO	Area	CNV	Conc	Weight	Volume	Rx	Cal Curve	Date/Time
1	1.868	1.868	0.00131mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:02:55 AM
2	3.858	3.858	0.00271mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:31:55 AM

Mean Conc. 0.00201mg/L
CV Conc 49.51%



Sample

Sample Name: JC36049-1R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Analyte	Weight/Volume	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:1.053mg/L

1. Det

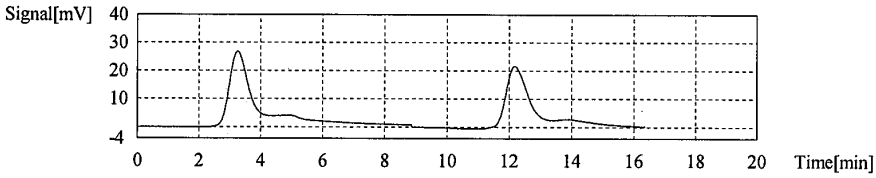
Anal.: SSM-TC

NO	Area	CNV	Conc	Weight	Volume	Rx	Cal Curve	Date/Time
1	163.3	163.3	1.136mg/L	101.7mg	101uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:42:42 AM
2	138.2	139.6	0.9708mg/L	100.7mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:52:09 AM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 1.053mg/L
CV Conc 11.08%



Sample

Sample Name: JC36204-17R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

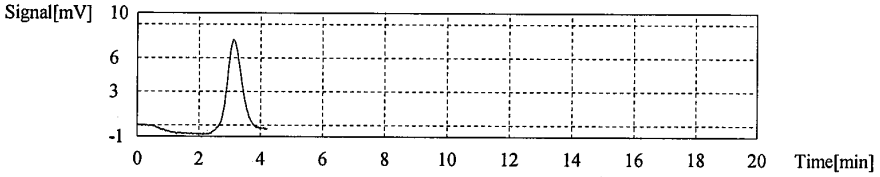
Type	Anal.	Dilution	Dens.	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.1947mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	27.54	27.54	0.1947mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 10:58:20 AM

Mean Conc. 0.1947mg/L
CV Conc 0.00%



Sample

Sample Name: JC35528-21T
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Dilution	Dens.	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:4.276mg/L

1. Det

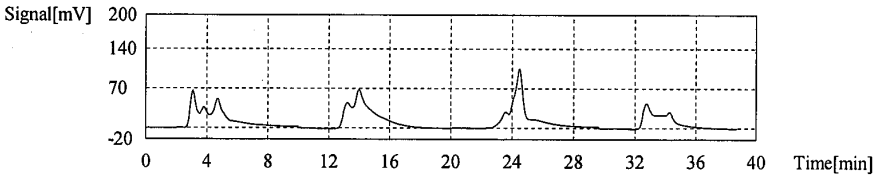
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	644.3	644.3	4.260mg/L	107.0mg	107uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:11:20 AM
2	758.0	804.6	5.320mg/L	100.8mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:24:04 AM
3	653.3	665.1	4.398mg/L	105.1mg	105uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:35:16 AM
4	449.5	472.9	3.127mg/L	101.7mg	101uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:48:23 AM

TOC-Control L Report

e70202s1.toc.tix

Mean Conc. 4.276mg/L
CV Conc 21.03%



Sample

Sample Name: JC36135-29R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

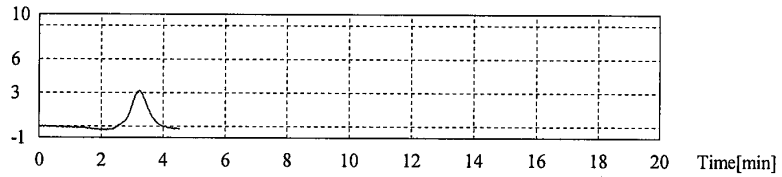
Type	Anal.	Multiplication	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.09220mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	DF	Cal. Curve	Date/Time
1	14.03	14.03	0.09220mg/L	107.5mg	107uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 11:54:03 AM

Mean Conc. 0.09220mg/L
CV Conc 0.00%



Sample

Sample Name: JC34923-1A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Multiplication	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.01171mg/L

1. Det

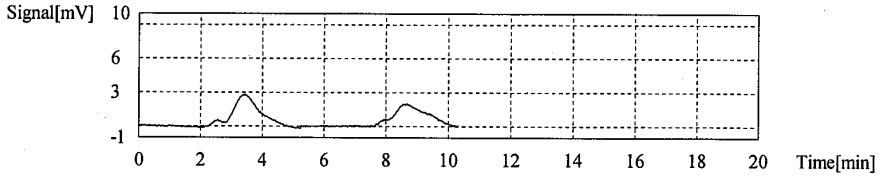
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	DF	Cal. Curve	Date/Time
1	18.40	18.40	0.01300mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:01:55 PM
2	14.74	14.74	0.01041mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:08:53 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.01171mg/L
CV Conc 15.64%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

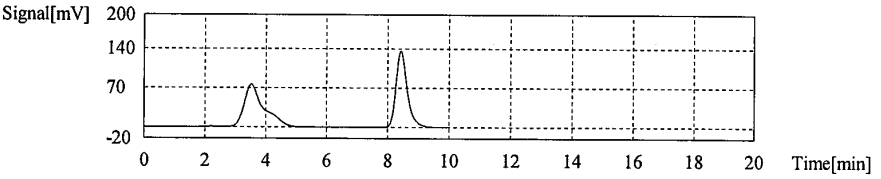
Type	Anal	Dilution Factor	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.458mg/L

1. Det

Anal.: SSM-TC

No	Area	CNV	Conc	Weight	Volume	Rx	Cal Curve	Injection Time
1	346.8	346.8	2.453mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:16:22 PM
2	348.1	348.1	2.463mg/L	100.0mg	100uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 12:22:22 PM

Mean Conc. 2.458mg/L
CV Conc 0.26%



Sample

Sample Name: JC34923-2A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal	Dilution Factor	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.01163mg/L

1. Det

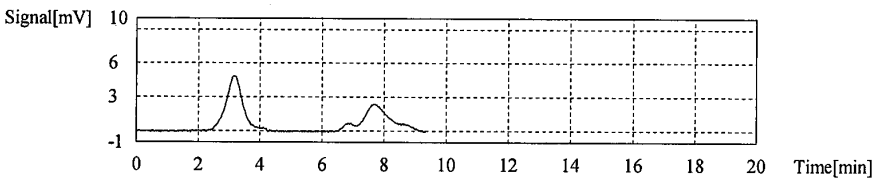
Anal.: SSM-TC

No	Area	CNV	Conc	Weight	Volume	Rx	Cal Curve	Injection Time
1	17.26	17.26	0.01220mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:36:11 PM
2	15.66	15.66	0.01106mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:43:30 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.01163mg/L
CV Conc 6.88%



Sample

Sample Name: JC34923-3A
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

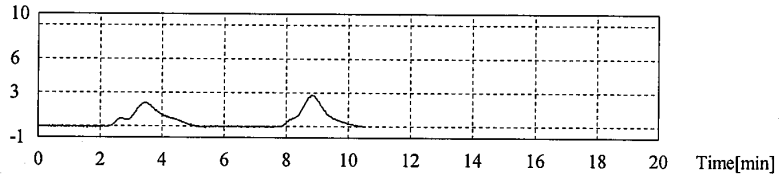
Type	Anal.	Multiplier	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.01124mg/L

1. Det

Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	15.48	15.48	0.01094mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:52:03 PM
2	16.34	16.34	0.01155mg/L	1000mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 1:59:03 PM

Mean Conc. 0.01124mg/L
CV Conc 3.83%



Sample

Sample Name: JC36204-17R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

Type	Anal.	Multiplier	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.2980mg/L

1. Det

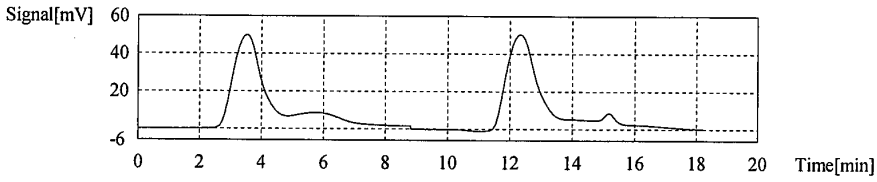
Anal.: SSM-TC

No.	Area	CNV	Conc.	Weight	Volume	ES	Cal. Curve	Date/Time
1	405.9	405.9	0.2870mg/L	1001mg	1000uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:09:12 PM
2	438.6	437.2	0.3091mg/L	1004mg	1003uL		e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:20:16 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc. 0.2980mg/L
CV Conc 5.25%



Sample

Sample Name: JC36135-29R
Sample ID:
Origin: TOCSSM.met
Status Completed
Chk. Result

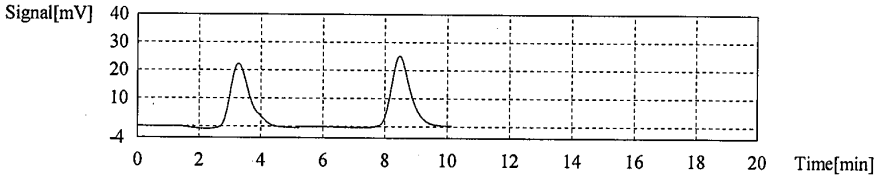
Type	Anal.	Mean Conc.	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.07437mg/L

1. Det

Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	IS	Cal. Curve	Date Time
1	103.1	103.1	0.07281mg/L	1002mg	1001uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:27:23 PM
2	107.4	107.5	0.07593mg/L	1001mg	1000uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:33:24 PM

Mean Conc. 0.07437mg/L
CV Conc 2.97%



Sample

Sample Name: CCV
Sample ID:
Origin: TOCSSMCAL.met
Status Completed
Chk. Result

Type	Anal.	Mean Conc.	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:2.317mg/L

1. Det

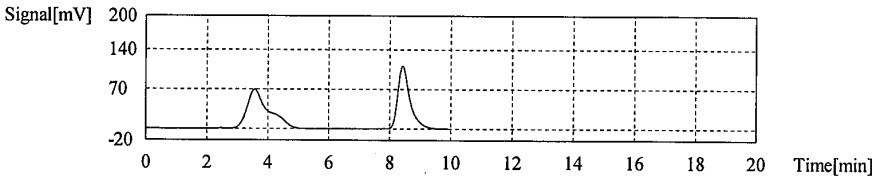
Anal.: SSM-TC

No.	Area	Conc.	Weight	Volume	IS	Cal. Curve	Date Time
1	345.8	345.8	2.446mg/L	100.0mg	100uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:41:14 PM
2	309.1	309.1	2.187mg/L	100.0mg	100uL	e70130s1.2017_01_30_07_42_21.cal	2/2/2017 2:47:03 PM

TOC-Control L Report

e70202s1.toc.tlx

Mean Conc.	2.317mg/L
CV Conc	7.93%



Hexavalent Chromium

Test Title:	XCRA
GN Batch:	GN58956
Analyst:	RI
Prep Date:	2/2/2017
Analysis Date:	2/3/2017
Instrument ID:	P

Method: SW846 3060A, 7196A

Note: All results below shown on a wet weight basis.

Corr. Coef:	0.99985
Slope:	0.8043
Y Intercept:	0.0019

Bottle #	Sample #	Sample Absorbance	BKGRD Abs	Analysis Times	Y Values Corr Sample Absorbance	X Values Conc(mg/l)	Final Vol. (ml)	Sam. Wt. (g)	Dilution	Final Conc.	Units	MDL	RDL
	Cal. Blk.	0.000	NA	9:25	0.000	0.0000							
	STD 1	0.010	NA	9:29	0.010	0.0100							
	STD 2	0.045	NA	9:29	0.045	0.0500							
	STD 3	0.088	NA	9:29	0.088	0.1000							
	STD 4	0.236	NA	9:29	0.236	0.3000							
	STD 5	0.405	NA	9:29	0.405	0.5000							
	STD 6	0.638	NA	9:29	0.638	0.8000							
	STD 7	0.813	NA	9:29	0.813	1.0000							
	CCV	0.382	NA	16:45	0.382	0.4726	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.002	NA	16:45	0.002	0.0001	NA	NA	NA	NA	mg/l	0.007	0.010
	GP3044-MB1	0.002	0.000	16:51	0.002	0.0001	100.0	2.5000	1	0.005	mg/kg	0.280	0.400
	GP3044-B1	0.732	0.000	16:51	0.732	0.9078	100.0	2.5000	1	36.311	mg/kg	0.280	0.400
	GP3044-S1	0.089	0.035	16:51	0.054	0.0648	100.0	2.5400	1	2.550	mg/kg	0.280	0.394
	GP3044-D1	0.085	0.059	16:51	0.026	0.0300	100.0	2.6000	1	1.153	mg/kg	0.280	0.385
	JC36204-17R	0.042	0.027	16:51	0.015	0.0163	100.0	2.5700	1	0.634	mg/kg	0.280	0.389
	JC36204-17RPSCON	0.408	0.019	16:51	0.389	0.4813	100.0	2.5700	2	37.455	mg/kg	0.280	0.778
	GP3044-B2	>3	OVR	16:51		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	GP3044-S2	>3	OVR	16:51		#VALUE!	100.0	2.5300	1	#VALUE!	mg/kg	0.280	0.395
	GP3044-B2	0.310	0.000	16:51	0.310	0.3831	100.0	2.5000	50	766.155	mg/kg	0.280	20.000
	GP3044-S2	0.204	0.000	16:51	0.204	0.2513	100.0	2.5300	50	496.606	mg/kg	0.280	19.763
	CCV	0.380	NA	16:51	0.380	0.4701	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.002	NA	16:51	0.002	0.0001	NA	NA	NA	NA	mg/l	0.007	0.010
	JC36204-14R	0.019	0.012	16:54	0.007	0.0063	100.0	2.6000	1	0.244	mg/kg	0.280	0.385
	JC36204-15R	0.077	0.077	16:54	0.000	-0.0024	100.0	2.5600	1	-0.092	mg/kg	0.280	0.391
	JC36204-16R	0.088	0.087	16:54	0.001	-0.0011	100.0	2.5600	1	-0.044	mg/kg	0.280	0.391
				16:54		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				16:54		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				16:54		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				16:54		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				16:54		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				16:54		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
				16:54		#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV	0.380	NA	16:54	0.380	0.4701	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB	0.002	NA	16:54	0.002	0.0001	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
	CCV		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
	CCB		NA			#VALUE!	NA	NA	NA	NA	mg/l	0.007	0.010
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400
						#VALUE!	100.0	2.5000	1	#VALUE!	mg/kg	0.280	0.400

ACCUTEST

Test: **Hexavalent Chromium** MDL = 0.28 mg/kg GNBatch ID: GN58956
Product: **XCr** RDL = 0.4 mg/kg Date: 2-3-2017
Method: **SW846 3060A/7196A**

Digestion Batch QC Summary Units = mg/kg

Method Blank ID: GP3044-MB Date: 2-3-2017 Result: <RDL RDL: 0.40 <RDL: Yes
Sol. Spike Blank ID: B1 Date: Result: 36.311 Spike: 40.03 %Rec: 90.74
Insol. Spike Blank ID: B2 Date: Result: 466.155 Spike: 471.713 %Rec.: 99.67
Duplicate ID: D1 Samp. Result: 0.634 Dup. Result: 1.153 %RPD: 58.09
Sol. MS ID: S1 Samp. Result: MS Result: 2.55 Spike: 39.37 %Rec: 4.87
Insol. MS ID: S2 Samp. Result: MS Result: 496.606 Spike: 809.63 %Rec: 61.41
Post Spike ID: JC36204-17B Samp. Result: PS Result: 39.455 Spike: 40.12 %Rec: 91.77
Diluted Sample ID: Samp. Result: Dil. Result: %RPD:
pH adj. PS ID: Samp. Result: MS Result: Spike: %Rec:

Analysis Batch QC Summary Units = mg/l

CCV: 2-3-2017 Result: 0.4726 TV: 0.500 %Rec.: 94.52
CCV: Result: 0.4701 TV: 0.500 %Rec.: 94.02
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:
CCV: Result: TV: 0.500 %Rec.:

CCB: 2-3-2017 Result: <RDL RDL: 0.010 <RDL: Yes
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:
CCB: Result: RDL: 0.010 <RDL:

Reagent Reference Information - refer to attached reagent reference information page(s).

Insoluble spike = $PbCrO_4$ Molecular weight = 323.2 g/mol Cr = 52.0 g/mol

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount

Analyst: Date: 2-3-2017

Comments:

Form: GN066-04
Rev. Date: 16-Mar-2016

SGS ACCUTEST - Dayton

3060A/7196A POST-DIGEST SPIKE LEVEL CALCULATION SPREADSHEET

GP Batch: GP3044

NOTE: Always dilute post-spike first, then take a 45 ml aliquot of the diluted post-spike and add the spike amount.

Sample ID	PS Aliquot Weight in g Digested in 100 ml	Weight in 45 ml	Results in mg/kg.	Amount in ml to add of 100 ppm solution	Dilution needed	Suggested Dilution to use	Actual Dilution to be used	Suggested ml of 100 ppm to spike on dilution of sample.	Actual ml of 100 ppm to spike on dilution of sample.	Est. Read-back on curve in mg/l	Calculated Spike Amount in mg/kg	Use calculated or default spike?
JC36204-17R	2.57	1.1565	0.634	0.463	yes	1	2	0.232	0.232	0.524	40.121	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike
		0		0.000	no	0		#DIV/0!		#DIV/0!	#DIV/0!	efault (40 mg/kg) spike

3060A/7196A INSOLUBLE SPIKE CALCULATION

Weight of PbCrO4	Weight of Sample	Amount Spiked
0.0121	2.5	778.713
0.0127	2.53	807.635
		#DIV/0!
		#DIV/0!
		#DIV/0!

Validated By: JJY
Doc. Control #: AGN-XCRAPSCALC-01

Date Validated: 2/26/13

ACCUTEST

Hexavalent Chromium pH Adjustment Log
Method Sw846 3060A/7196A

pH adj. start time: 1622 / 1634
pH adj. end time: 1628 / 1641

pH Meter ID: 62
Digestion Date: 2/2/17
pH adj. Date: 2-3-2017
GN Batch ID: GN58956

GP 3044

Sample ID	Sample Weight in g	pH after HNO3 (7.0 to 8.0)	Final Volume (ml)	pH after H2SO4 (1.5 to 2.5)	bkg pH after H2SO4	Spike Amounts	Spike Solution	Digestate Description/Comments
CCV		7.41	100	1.90	—	5.0 ml	10 ppm ultra	
CCV								
CCV								
CCV								
CCB		7.21	100	1.96	—			
CCB								
CCB								
CCB								
MS (Sol) JC 36204-17R	2.54	7.62	100	1.92	1.84	1.0ml	100ppm LGC	
MS (Insol.)	2.53	7.43		1.82	NR	0.01279	PbCrO4	
DUP	2.60	7.29		1.90	1.64			
SB (Sol)	2.50g	7.90		1.81	1.71	1.0ml	100ppm LGC	
SB (Insol)	2.50g	7.41		1.91	NR	0.01219	PbCrO4	
MB	2.50g	7.32		1.86	1.72			
1 JC 36204-17R	2.57	7.61		1.84	1.62			yellow
2 -14R	2.60	7.51		1.93	1.81			↓
3 -15R	2.56	7.43		1.84	1.65			Brown
4 -16R	2.56	7.29		1.89	1.91			↓
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
SB (Insol)	2.50g	7.41	100	1.92	1.84			dilution 1:50 1ml to 50ml
MS (Insol.)	2.57	7.43		1.81	1.62			dilution 1:50 (1↑50)
PS	2.54	7.61		1.80	1.55	0.2324	100ppm LGC	(2.25↑50)
pH adjusted PS							100ppm LGC	ph=
1:5 dil.								10ml to 50ml
JC 36204-17R	2.54							

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Digestion analyst & date: SP 2/2/17
Analysis analyst & date: 2-3-2017
Spike Witness: MF

Form: GN067-02b

ACCUTEST

GN/GP Batch ID: GP 3044 GN 58956

Reagent Information Log - XCRA (soil 3060A/7196)

Reagent	Exp. Date	Reagent # or Manufacturer/Lot
Calibration Source: Hexavalent Chromium, 1000 mg/L Stock	6/30/2018	VHG Labs 84971-9
Calibration Checks: Hexavalent Chromium, 1000 mg/L Stock	12/31/2020	Ultra Lot : R01215
10.0ppm Ultra CCV Spike	6/17/2017	GNE12-49422-XCRA
Spiking Solution Source 100 PPM LGC VHG	7/12/2017	GNE1-49648-XCRA
Lead Chromate (Insoluble Hexavalent Chromium Spike)	11/16/2020	Sigma Aldrich Lot #BCBP0031V
Magnesium Chloride, Anhydrous	8/14/2018	Alfa Aesar Lot #F19Z033
1N NaOH	7/13/2017	GNE1-49667-XCR
Digestion Solution	3/2/2017	GNE1-49617-XCR
Phosphate Buffer Solution	5/5/2017	GNE8-49027-XCRA
5.0 M Nitric Acid	7/11/2017	GNE1-49638-XCRA
Diphenylcarbazide Solution	2/22/2017	GNE1-49814-XCR
Sulfuric Acid, 10%	7/10/2017	GNE1-49627-XCR
Filter	NA	LOT# 150130034
Teflon Chips	NA	919120
0.45um syringe filter	NA	151221062

Form: GN087A-21B
Rev. Date: 2/18/10

7.5
7

SGS ACCUTEST

HEXAVALENT CHROMIUM TEMPERATURE & TIME DIGESTON LOG (METHOD SW846 3060A)

Digest batches for a minimum of 1 hour.

Record temperatures at the start, middle and end of each digestion.

Corrected temperatures must be from 90-95 deg. C.

Digestion Date: 2/2/17		Hot Plate ID: 9		Hot Plate ID: 8		Hot Plate ID: 11		Hot Plate ID: 6		Hot Plate ID: 10			
		Thermometer ID: 453		Thermometer ID: 463		Thermometer ID: 3124165		Thermometer ID: 462		Thermometer ID: 3106914			
		Correction Factor: -1		Correction Factor: -1		Correction Factor: -2.0		Correction Factor: 0		Correction Factor: -1.0			
		Temperatures		Temperatures		Temperatures		Temperatures		Temperatures			
GP Batch ID(s)	Time	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected	Analyst Check	2nd Analyst Check
GP 3042	Start time 10:40	93	92	92	91	94	92	91	91	95	94	SP	MP
GP 3043	Half time 11:10	93	92	92	91	94	92	91	91	95	94	SP	MP
GP 3044	End time 11:40	93	92	92	91	94	92	91	91	95	94	SP	MP
GP 3045	Start time 12:00	92	91	93	92	93	91	90	90	95	94	SP	MP
GP 3046	Half time 12:30	92	91	93	92	93	91	90	90	95	94	SP	MP
GP ~~3047~~ 3048 SP	End time 13:00	92	91	93	92	93	91	90	90	95	94	SP	MP
	Start time												
	Half time												
	End time												

Data Reviewed: _____

Form: GN074-03
Revised: 28-Nov-16

ACCUTEST.

Hexavalent Chromium pH Adjustment Log
Method: SW846 3060A/7196A

pH adj. start time: 9:03 9:13
pH adj. end time: 9:09 9:17

pH adjustment Date: 2-3-2017
GN Batch ID: GN 58956

Sample ID	Sample Weight in g	pH after HNO3	Final Volume (ml)	pH after H2SO4	Comments	Spike Info.
Calibration Blank	NA	9.14	100	1.84		
0.010 mg/l standard	NA	9.26	100	1.78	10ppm LGC VHG	0.10 ml of 10 mg/l
0.050 mg/l standard	NA	9.12	100	1.64	10ppm LGC VHG	0.50 ml of 10 mg/l
0.100 mg/l standard	NA	9.31	100	1.81	10ppm LGC VHG	1.00 ml of 10 mg/l
0.300 mg/l standard	NA	9.41	100	1.86	10ppm LGC VHG	3.00 ml of 10 mg/l
0.500 mg/l standard	NA	9.12	100	1.91	10ppm LGC VHG	5.00 ml of 10 mg/l
0.800 mg/l standard	NA	9.20	100	1.84	10ppm LGC VHG	8.00 ml of 10 mg/l
1.00 mg/l standard	NA	9.21	100	1.90	10ppm LGC VHG	10.0 ml of 10 mg/l

Reagent Reference Information - refer to attached reagent reference information page(s).

{1000000 ug/g x Insoluble spike wt(g) x 52/323.2}/ms sample wt(g) = Insoluble spike amount of PbCrO4

Anayst: [signature]
Date: 2-3-2017

Form: GN068-01
Rev. Date:5/22/06

ACCUTEST.

HEXAVALENT CHROMIUM STANDARD PREPARATION LOG

Product: XCRA

GN or GP Number: GN 58956

Intermediate Standard Description	Stock used to prepare standard	Stock concentration	Stock volume used in ml	Diluent	Final Volume	Final Conc. of Intermediate (mg/l)	Expiration Date	Analyst	Date
10 ppm	Lot # 84971-4	1000 ppm	1.0 ml	DI	100 mls	10 mg/l	2/1/2018	[illegible]	2-3-2017
100 ppm	Lot # 84971-4	1000 ppm	10 ml	DI	100 mls	100 mg/l	2/1/2018		
5 ppm		1000 ppm	1.0 ml	DI	200 mg/l	5 mg/l			
7.5 ppm		1000 ppm	1.5 ml	DI	200 mg/l	7.5 mg/l			
10 ppm	ULTRALOT#R01215	1000 ppm	1.0 ml	DI	100 mg/l	10 mg/l	12/31/2020		

Standard Description	Intermediate or Stock used to prepare standard	Intermediate or Stock concentration	Intermediate or Stock volume used in ml	Diluent	Final Volume	Final Conc. Of Standard (mg/l)	Expiration Date	Analyst	Date
.010 ppm	10.0 ppm	10.0 ppm	0.1 ppm	DI	100 mls	0.01 mg/l	2-4-2017	[illegible]	2-3-2017
.050 ppm	10.0 ppm	10.0 ppm	0.5 ppm	DI	100 mls	0.05 mg/l			
.10 ppm	10.0 ppm	10.0 ppm	1.0 ppm	DI	100 mls	0.10 mg/l			
.03 ppm	10.0 ppm	10.0 ppm	3.0 ppm	DI	100 mls	0.30 mg/l			
.50 ppm	10.0 ppm	10.0 ppm	5.0 ppm	DI	100 mls	0.50 mg/l			
.80 ppm	10.0 ppm	10.0 ppm	8.0 ppm	DI	100 mls	0.80 mg/l			
1.00 ppm	10.0 ppm	10.0 ppm	10.0 ppm	DI	100 mls	1.0 mg/l			

Form: GN205-01
Rev. Date:9/10/07

Attachment J-C: Data Validation Reports

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	PPG Garfield Avenue Verification Borings Soil Sampling	
Laboratory:	SGS/Accutest, Dayton, NJ	
Laboratory Job No.:	JC36049 and JC36049R	
Analysis/Method:	Hexavalent Chromium SW846 3060A/7196A	
Validation Level:	Full	
Site Location/Address:	Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ	
AECOM Project No:	60279173 GA.RI.RPT.HDS	
Prepared by:	Sharon McKechnie /AECOM	Completed on: 2/06/2017
Reviewed by:	Kristin Rutherford/ AECOM	File Name: JC36049_R_2017_02_06-F

Introduction

The data were reviewed in accordance with the FSP-QAPP and the following NJDEP and/or Region 2 validation Standard Operating Procedure(s) (SOP):

- NJDEP Office of Data Quality SOP 5.A.10, Rev 3 (September 2009), SOP for Analytical Data Validation of Hexavalent Chromium - for USEPA SW-846 Method 3060A, USEPA SW-846 Method 7196A.

The results of quality control data analyzed with site samples were used to assess the overall reliability of the data. The following qualifiers were used to identify data quality issues:

U: Indicates the analyte was not detected in the sample above the sample reporting limit.

J: Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.

UJ: Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.

UB: The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.

JB: The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real". The concentration is quantitatively qualified (JB) due to method blank contamination.

R: The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

RA: The sample result was rejected due to NJ specific data validation QC requirements; however, the result is usable for project objectives. Refer to the Data Quality and Usability section in this data validation report for further discussion.

Sample Information

The samples listed below were collected by AECOM on January 24, 2017 as part of the PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ. Only the samples and parameters listed below were validated.

Field ID	Laboratory ID	Matrix	Fraction
114-MW16AB-O-2.0-2.5	JC36049-1, -1R	Soil	Hexavalent Chromium
114-MW16AB-O-4.5-5.0	JC36049-2, -2R	Soil	Hexavalent Chromium
114-MW16AB-O-4.5-5.0X (Field Duplicate of 114-MW16AB-O-4.5-5.0)	JC36049-3, -3R	Soil	Hexavalent Chromium
114-MW16AB-O-5.5-6.0	JC36049-4, -4R	Soil	Hexavalent Chromium
HDS-FB20170124 (Equipment Blank)	JC36049-17	Aqueous	Hexavalent Chromium

The samples were collected following the procedures detailed in the Work Order for Garfield Avenue Remedial Action (GARA) and the Field Sampling Plan/Quality Assurance Project Plan for Non-Residential and Residential Chromium Sites Hudson County, New Jersey (December 2011).

General Comments

Samples starting with 114-MW16AB-**O**- were initially reported as 114-MW16AB-**0** due to an error on the COC. The laboratory was contacted and revised reports were issued. No action other than this note was necessary.

Additional samples were listed on the COC; however, they were placed on hold.

Quality control (QC) issues identified during validation are discussed below. Refer to the Target Analyte Summary Hit List(s) in Attachment A for a listing of all detected results, qualified results, and associated qualifications, where applicable. The nonconformances for each section discussed below are presented in Attachment B.

Hexavalent Chromium

MS Results

Sample 114-MW16AB-O-2.0-2.5 (JC36049-1) was selected for the matrix spike (MS) analysis associated with the samples in this SDG. The soluble and insoluble MS recoveries from the initial batch were 66.8% and 101.1%, respectively. The soluble MS recovery did not meet the quality control (QC) criteria of 75-125%. The post digestion spike (PDS) recovery was 99%, which met the PDS criteria of 85-115%.

Based on the low soluble MS recovery the samples were reanalyzed using Method 7196. The soluble and insoluble MS results from the reanalysis were 68.3% and 82.3%, respectively. The soluble MS recovery did not meet the QC criteria of 75-125%. The PDS recovery was 96%, which met the PDS criteria of 85-115%.

Since the initial and reanalysis soluble matrix spikes failed to meet QC criteria, additional parameters were analyzed to determine if matrix interference could be the cause for the poor matrix spike recoveries. All samples included in this sample data group (SDG) were tested for pH and oxidation-reduction potential (ORP), and plotted on an Eh/pH phase diagram. From this chart, the source sample for the matrix spike analysis, 114-MW16AB-O-2.0-2.5, was plotted below the phase change line, indicating a reducing potential with the sample matrix, which suggests the sample matrix environment is incapable of supporting hexavalent chromium. To confirm the oxidizing/reducing potential within the sample matrix, the additional ancillary parameters ferrous iron, sulfide screen, and total organic carbon (TOC) were analyzed for the matrix spike source sample. The sulfide screen was reported as nondetect, indicating no reducing agents within the sample matrix; however, the ferrous iron (0.33%) and the TOC results (13,500 mg/kg) were positive, indicating potential reducing agents within the sample matrix.

Since the soluble MS recoveries from both the initial and reanalysis failed to meet QC criteria, but all MS recoveries were greater than 50%, the reported hexavalent chromium results in all the soil samples in this SDG were qualified as estimated (J) due to the low MS recoveries. The highest detected hexavalent chromium result between the initial and reanalysis was reported for each soil sample.

Laboratory Duplicate Precision

The laboratory duplicate (LD) relative percent difference (RPD) for hexavalent chromium in the initial analysis of sample 114-MW16AB-O-2.0-2.5 (JC36049-1) exceeded the QC criteria of 20%. Therefore, all hexavalent chromium soil results reported from the initial analysis were qualified as estimated (J) with an unknown direction of bias.

Refer to the Soil Target Analyte Summary Hit List(s) in Attachment A for a listing of all results qualified on the basis of LD precision. Refer to the tables in Attachment B for a listing of LD results, associated samples, and qualification actions.

Field Duplicate Precision

Field duplicate (FD) pair 114-MW16AB-O-4.5-5.0 (JC36049-2) and 114-MW16AB-O-4.5-5.0X (JC36049-3R) did not meet the RPD QC criteria of less than 20%; therefore, all soil results were qualified as estimated (J) with an unknown direction of bias.

Refer to the Soil Target Analyte Summary Hit List(s) in Attachment A for a listing of all results qualified on the basis of field duplicate precision. Refer to the tables in Attachment B for a listing of field duplicate results and associated qualification actions.

Data Quality and Usability

In general, these data appear to be valid and may be used for decision-making purposes. No data were rejected. Qualified and detected results are presented in Attachments A and B.

All hexavalent chromium soil results were estimated with the potential for low bias due to low MS recoveries. The highest detected hexavalent chromium result between the initial analysis and reanalysis was reported for each sample.

Summary of additional issues noted for this data set:

- Selected hexavalent chromium soil results were qualified as estimated based on laboratory duplicate and/or field duplicate precision.

ATTACHMENTS

Attachment A: Target Analyte Summary Hit List(s)

Attachment B: Data Validation Report Form

Attachment A

Target Analyte Summary Hit List(s)

Soil Target Analyte Summary Hit List (Hexavalent Chromium)

Site Name PPG Garfield Avenue Verification Borings Soil Sampling
Sampling Date January 24, 2017
Lab Name/ID SGS/Accutest, Dayton, NJ
SDG No JC36049 and JC36049R
Sample Matrix Soil
Trip Blank ID NA
Field Blank ID HDS-FB20170124

Field Sample ID	Lab Sample ID	Analyte	Method Blank (mg/kg)	Laboratory Sample Result (mg/kg)	Validation Sample Result (mg/kg)	RL (mg/kg)	Quality Assurance Decision	NJDEP Validation Footnote
114-MW16AB-O-2.0-2.5	JC36049-1	CHROMIUM (HEXAVALENT)	U	2.3	2.3	0.51	Qualify	1,2,3
114-MW16AB-O-4.5-5.0	JC36049-2	CHROMIUM (HEXAVALENT)	U	4.0	4.0	0.49	Qualify	1,2,3
114-MW16AB-O-4.5-5.0X	JC36049-3R	CHROMIUM (HEXAVALENT)	U	1.4	1.4	0.50	Qualify	1,2
114-MW16AB-O-5.5-6.0	JC36049-4	CHROMIUM (HEXAVALENT)	U	1.7	1.7	0.48	Qualify	1,2,3

Note: A “U” under Method Blank column indicates a nondetect result.

NJDEP Laboratory Footnote

1. The result was estimated because the MS recoveries were less than 75%, but at least one recovery was above 50%.
2. The reported value was estimated because the field duplicate precision criteria were not met.
3. The reported value was estimated because the lab duplicate precision criteria were not met.

Attachment B

Data Validation Report Form

Client Name: PPG Industries	**Project Number:** 60279173 GA.RI.RPT.HDS
Site Location: PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ	**Project Manager:** Bill Spronz
Laboratory: SGS/Accutest, Dayton, NJ	**Type of Validation:** Full
Laboratory Job No JC36049 and JC36049R	**Date Checked:** 2/6/2017
Validator: Sharon McKechnie	**Peer:** Kristin Rutherford

ITEM	YES	NO	N/A	COMMENTS
Sample results included?	X			
Reporting Limits met project requirements?	X			
Field I.D. included?	X			
Laboratory I.D. included?	X			
Did data package sample IDs match sample IDs on COC?	X*			*Yes, however the COC IDs were incorrect. See memo.
Did electronic data deliverable (EDD) sample IDs match COC sample IDs?	X			
Did data package sample IDs match electronic data deliverable (EDD) sample IDs?	X			
Sample matrix included?	X			
Sample receipt temperature 2-6ºC?	X			
Signed COCs included?	X			
Date of sample collection included?	X			
Date of sample digestion included?	X			
Holding time to digestion met criteria? (Soils -30 days from collection to digestion.)	X			
Date of analysis included?	X			
Holding time to analysis met criteria? (Soils -168 hours from digestion to analysis; Aqueous - 24 hours from collection to analysis.	X			
Method reference included?	X			
Laboratory Case Narrative included?	X			
Definitions: MDL - Method Detection Limit; %R - Percent Recovery; RL - Reporting Limit; RPD - Relative Percent Difference; RSD - Relative Standard Deviation :Corr - Correlation Coefficient.				

ITEM	YES	NO	N/A	COMMENTS
Initial calibration documentation included in lab package?	X			
1) Blank plus 4 standards (7196A) or blank plus 3 standards (7199)	X			
2) Correlation coefficient of >0.995 (7196A) or >0.999 (7199)	X			
3) Calibrate daily or each time instrument is set up.	X			
Calibration Check Standard (CCS) for 7196A and Quality Control Sample (QCS) for 7199 Included in Lab Package?	X			
1) %R criteria met? (90 - 110%)	X			
2) Correct frequency of one per every 10 samples	X			
3) CCS and QCS from independent source and at mid- level of calibration curve	X			
Calibration Blanks	X			
1) Analyzed prior to initial calibration standards and after each CCS/QCS?	X			
2) Absolute value should not exceed MDL.	X			
Method Blank, Field Blanks and/or Equipment Blanks Included in Lab Package?	X			
1) Method blank analyzed with each preparation batch?	X			
2) Absolute value should not exceed MDL.	X			
Eh and pH Data	X			
1) Eh and pH data was included and plotted for all samples?	X			
Soluble Matrix Spike Data Included in Lab Package?	X			
1) Soluble Matrix %R criteria met? (75-125%R).		X		See table
2) Was the spike concentration 40 mg/Kg or twice the sample concentration?		X		JC36049-1/1R spiked at 49.8 mg/kg and 51 mg/kg, respectively. The data was not affected.
3) Was a sample spiked at the frequency of 1 per batch or 20 samples?	X			
Insoluble Matrix Spike Data Included in Lab Package?	X			
1) Insoluble Matrix %R criteria met? (75-125%R).	X			See table
2) Was the spike concentration around 400 to 800 mg/Kg?		X		JC36049-1/1R spiked at 1170 mg/kg and 1320 mg/kg, respectively. The data was not affected.

ITEM	YES	NO	N/A	COMMENTS
Post Digestion Spike	X			JC36049-1/1R
1) Post Digestion Spike %R criteria met? (85-115%R).	X			See table
2) Was the spike concentration 40 mg/Kg or twice the sample concentration?	X			
3) Was a sample spiked at the frequency of 1 per batch or 20 samples?	X			
Sample Duplicate Data Included in Lab Package?	X			JC36049-1/1R
1) RPD criteria met? (RPD < 20%) if both results are ≥4x RL or control limit of± RL if both results are <4xRL.	X	X*		*Initial analysis did not meet criteria. See table
2) Was a sample duplicate analyzed at the frequency of 1 per batch or 20 samples?	X			
Was a Laboratory Control Sample (LCS) Included in Lab Package?	X			
1) %R criteria met? (80-120%R).	X			
2) Was an LCS analyzed at the frequency of 1/batch or 20 samples?	X			
Were any Field Duplicate samples submitted with this SDG?	X			JC36049-2/ JC36049-3R
1) RPD criteria met? (RPD < 20%) if both results are ≥4x RL or control limit of± RL if both results are <4xRL.		X		See table
Were all sample quantitation and reporting requirements met?	X			
1) Were all solid samples reported with percent solids > 50%?	X			All OK, no table.
2) Were any samples analyzed or reported with dilutions?		X		
Miscellaneous Items	X			
1) For soils by 7196A, was the pH within a range of 7.0-8.0?	X			
2) For soils by 7199, was the pH within a range of 9.0-9.5?			X	
3) For aqueous by 7196A, was the pH with a range of 1.5-2.5?	X			
4) For soils (3060A), was the digestion temperature 90-95C for at least 60 minutes?	X			
5) For 7199, was each sample injected twice and was the RPD ≤20?			X	
Total chromium result greater than hexavalent chromium result where applicable?	X			Total chromium reported JC36049A. See Table.

Matrix Spikes

Sample ID	Lab ID	Analyte	Matrix Spike	% Recovery	Lower Limit	Upper Limit	PDS%	PDS Limits
114-MW16AB-O-2.0-2.5	JC36049-1	CHROMIUM (HEXAVALENT)	Soluble	66.8	75	125	99	85-115
114-MW16AB-O-2.0-2.5	JC36049-1	CHROMIUM (HEXAVALENT)	Insoluble	101.1				
114-MW16AB-O-2.0-2.5	JC36049-1R	CHROMIUM (HEXAVALENT)	Soluble	68.3			96	
114-MW16AB-O-2.0-2.5	JC36049-1R	CHROMIUM (HEXAVALENT)	Insoluble	82.3				

Laboratory Duplicate

Sample ID	Lab ID	Analyte	Sample Result	Duplicate Result	QL	Units	RPD (%)	Action
114-MW16AB-O-2.0-2.5	JC36049-1	CHROMIUM (HEXAVALENT)	2.3	7.4	0.51	mg/kg	105.2	**RPD>20%, Estimate (J)**
114-MW16AB-O-2.0-2.5	JC36049-1R	CHROMIUM (HEXAVALENT)	0.55	1.0	0.51	mg/kg	58.1	RPD >20%. Both Results <4X RL, Absolute Difference 0.45 mg/kg<RL; Accept

Field Duplicate

Lab Sample ID	Result	RL	Dup Lab Sample ID	Dup Result	Dup RL	Units	RPD (%)	Action
JC36049-2	4.0	0.49	JC36049-3R	1.4	0.49	mg/kg	96.3	**RPD>35%, One Result >4X RL, One Under 4X RL; Estimate (J)**

Chromium vs Hexavalent Chromium

Lab Sample ID	Total Chromium (mg/kg)	Total Chromium Reporting Limit (mg/kg)	Total Hexavalent Chromium (mg/kg)	Hexavalent Chromium Reporting Limit (mg/kg)	Action
JC36049-1	53.5	1.3	2.3	0.51	Total Chromium > Hexavalent Chromium; Accept
JC36049-2	19.3	1.2	4	0.49	Total Chromium > Hexavalent Chromium; Accept
JC36049-3	16.4	1.2	1.4	0.5	Total Chromium > Hexavalent Chromium; Accept
JC36049-4	23.0	1.2	1.7	0.48	Total Chromium > Hexavalent Chromium; Accept
JC36049-17 (ug/l)	0	10	0	10	Both Nondetect, Accept

SDG#: JC36049/ Method 7196	x - concentration	y - response
Batch: GN58610		
Cr+6 ICAL 1/27/17	0	0
Soil	0.01	0.009
(p. 45 of data pkg)	0.05	0.045
	0.1	0.09
	0.3	0.254
	0.5	0.43
	0.8	0.679
	1	0.851

				(p. 45 of data pkg)
AECOM Calculated Offset	0.0019	OK	Reported Offset	0.0019
AECOM Slope	0.8489	OK	Reported Slope	0.8489
AECOM Calculated r	0.99997	OK	Reported r	0.99997

LCS calculation	**GP2869-B1**	**P.26,45**		
Background Absorbance	0			
Total absorbance	0.798			
Total absorbance - background	0.798			
Instrument Concentration	0.938			
Sample weight (mg/kg)	0.0025			
Final Volume (L)	0.1			
Dilution Factor	1			
AECOM Calculated LCS Result (mg/Kg)	37.5	OK	Reported Result (mg/Kg)	37.5

%R = Found/True*100	**GP2869-B1**	**P.26,45**		
True Value (mg/kg)	40			
AECOM Calculated %R	93.8	OK	Reported %R	93.8

MS calculation	**GP2869-S1**	**P.28,45**	**JC36049-1**	
Background reading	0.083			
Total absorbance	0.692			
Total absorbance - background	0.609			
Instrument Concentration	0.7152			
Sample weight (mg/kg)	0.00257			
Final Volume (L)	0.1			
Percent solids	0.781			
Dilution Factor	1			
AECOM Calculated MS Result (mg/Kg)	35.6	OK	Reported Result (mg/Kg)	35.6

%R = Found/True*100	**GP2869-S1**	**P.28,45**	**JC36049-1**	
True Value (mg/kg)	49.8			
Native concentration (mg/Kg)	2.3			
AECOM%R	66.9	OK, rounding	Reported %R	66.8

Percent Solids	**JC36049-1**	**P.29**	**114-MW16AB-O-2.0-2.5**	
Empty dish weight=	19.03			
Wet weight=	26.57			
Dry weight=	24.92			
AECOM%solids =	78.1	OK	reported %solids=	78.1

Reporting Limit	JC36049-1	P.9,45	114-MW16AB-O-2.0-2.5	
Low Standard	0.01			
Initial weight (mg/kg)	0.0025			
Final volume (L)	0.1			
Percent solids	0.781			
Dilution Factor	1			
Reporting Limit	0.51	OK	Reported RL (mg/Kg)=	0.51

Sample Calculations

	JC36049-1	P.9,45	114-MW16AB-O-2.0-2.5	
Background reading	0.069			
Total absorbance	0.111			
Total absorbance - background	0.042			
Instrument Response	0.047			
Sample weight (mg/kg)	0.0026			
Final Volume (L)	0.1			
Percent solids	0.781			
Dilution Factor	1			
AECOM Calculated Result (mg/Kg)	2.3	OK	Reported Result (mg/Kg)	2.3

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	PPG Garfield Avenue Verification Borings Soil Sampling	
Laboratory:	SGS/Accutest, Dayton, NJ	
Laboratory Job No.:	JC36049A	
Analysis/Method:	CCPW Metals SW-846 3010A/3050B/6010C	
Validation Level:	Limited	
Site Location/Address:	Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ	
AECOM Project No:	60279173 GA.RI.RPT.HDS	
Prepared by:	Sharon McKechnie/AECOM	Completed on: 01/30/2017
Reviewed by:	Kristin Rutherford/AECOM	File Name : JC36049A _2017_01_30_DVR-F

Introduction

The data were reviewed in accordance with the FSP-QAPP and the following NJDEP and /or Region 2 validation Standard Operating Procedure(s) (SOP):

- NJDEP Office of Data Quality SOP 5.A.16, Rev 1 (May 2002), Quality Assurance Data Validation of Analytical Deliverables for Inorganics (based on USEPA SW-846 Methods); and
- ICP-AES Data Validation, SOP No. HW-3a Revision 0 (July 2015).

The results of quality control data analyzed with site samples were used to assess the overall reliability of the data. The following qualifiers were used to identify data quality issues:

U: Indicates the analyte was not detected in the sample above the sample reporting limit.

J: Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.

UJ: Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.

UB: The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.

JB: The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real". The concentration is quantitatively qualified (JB) due to method blank contamination.

R: The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

RA: The sample result was rejected due to NJ specific data validation QC requirements; however, the result is usable for project objectives. Refer to the Data Quality and Usability section in this data validation report for further discussion.

Sample Information

The samples listed below were collected by AECOM on January 24, 2017 as part of the PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ. Only the samples and parameters listed below were validated.

Field ID	Laboratory ID	Matrix	Fraction
114-MW16AB-O-2.0-2.5	JC36049-1A	Soil	CCPW Metals*
114-MW16AB-O-4.5-5.0	JC36049-2A	Soil	CCPW Metals*
114-MW16AB-O-4.5-5.0X (Field Duplicate of 114-MW16AB-O-4.5-5.0)	JC36049-3A	Soil	CCPW Metals*
114-MW16AB-O-5.5-6.0	JC36049-4A	Soil	CCPW Metals*
HDS-FB20170124 (Equipment Blank)	JC36049-17A	Aqueous	CCPW Metals*
*CCPW Metals: Antimony, chromium, nickel, thallium, vanadium			

The samples were collected following the procedures detailed in the Work Order for Garfield Avenue Remedial Action (GARA) and the Field Sampling Plan/Quality Assurance Project Plan for Non-Residential and Residential Chromium Sites Hudson County, New Jersey (December 2011).

General Comments

Samples starting with 114-MW16AB-**O**- were initially reported as 114-MW16AB-**0** due to an error on the COC. The laboratory was contacted and revised reports were issued. No action other than this note was necessary.

Additional samples were listed on the COC; however, they were placed on hold.

Quality control (QC) issues identified during validation are discussed below. Refer to the Target Analyte Summary Hit List(s) in Attachment A for a listing of all detected results, qualified results, and associated qualifications, where applicable. The nonconformances for each section discussed below are presented in Attachment B.

TAL Metals

Laboratory Blanks

Nickel was detected in the soil method blank (MB) at a concentration above the method detection limit (MDL), but below the reporting limit (RL); however, there was no effect on the data. Refer to the tables in Appendix B for a listing of MB results.

Matrix Spike Results

Sample 114-MW16AB-O-2.0-2.5 (JC36049-1A) was analyzed as the soil matrix spike/matrix spike duplicate (MS/MSD) in this SDG.

The MS and MSD recoveries were below the QC criteria for antimony; therefore, the positive result for antimony was qualified as estimated (J) with a possible low bias in spiked sample 114-MW16AB-O-2.0-2.5 (JC36049-1A).

The MS/MSD relative percent difference (RPD) was outside the QC criteria for nickel and thallium. The result for nickel was qualified as estimated (J) in sample 114-MW16AB-O-2.0-2.5 (JC36049-1A) with an

undefined bias. Since the result for thallium in sample 114-MW16AB-O-2.0-2.5 (JC36049-1A) was nondetect, no qualification was required.

Refer to the Target Analyte Summary Hit List(s) in Attachment A for a listing of all results qualified on the basis of MS/MSD %R/RPD. Refer to the tables in Appendix B for a listing of MS results.

Data Quality and Usability

In general, these data appear to be valid and may be used for decision-making purposes. No data were rejected. Qualified and detected results are presented in Attachments A and B.

Issues noted for this sample set:

- The result for antimony in sample 114-MW16AB-O-2.0-2.5 (JC36049-1A) was estimated for MS recovery and may be biased low.
- The result for nickel in sample 114-MW16AB-O-2.0-2.5 (JC36049-1A) was estimated for MS/MSD precision with an undefined bias.

ATTACHMENTS

Attachment A: Target Analyte Summary Hit List(s)

Attachment B: Data Validation Report Form

Attachment A

Target Analyte Summary Hit List(s)

Soil Target Analyte Summary Hit List (TAL Metals)

Site Name PPG Garfield Avenue Verification Borings Soil Sampling
Sampling Date January 24, 2017
Lab Name/ID SGS/Accutest, Dayton, NJ
SDG No JC36049A
Sample Matrix Soil
Trip Blank ID NA
Field Blank ID HDS-FB20170124

Field Sample ID	Lab Sample ID	Analyte	Method Blank (mg/kg)	Laboratory Sample Result (mg/kg)	Validation Sample Result (mg/kg)	RL (mg/kg)	Quality Assurance Decision	NJDEP Validation Footnote
114-MW16AB-O-2.0-2.5	JC36049-1A	ANTIMONY	U	U	U	2.6	Qualify	1
114-MW16AB-O-2.0-2.5	JC36049-1A	CHROMIUM	U	53.5	53.5	1.3		
114-MW16AB-O-4.5-5.0	JC36049-2A	CHROMIUM	U	19.3	19.3	1.2		
114-MW16AB-O-4.5-5.0X	JC36049-3A	CHROMIUM	U	16.4	16.4	1.2		
114-MW16AB-O-5.5-6.0	JC36049-4A	CHROMIUM	U	23.0	23.0	1.2		
114-MW16AB-O-2.0-2.5	JC36049-1A	NICKEL	0.087	16.2	16.2	5.3	Qualify	1
114-MW16AB-O-4.5-5.0	JC36049-2A	NICKEL	0.087	10.9	10.9	4.8		
114-MW16AB-O-4.5-5.0X	JC36049-3A	NICKEL	0.087	11.0	11.0	4.9		
114-MW16AB-O-5.5-6.0	JC36049-4A	NICKEL	0.087	17.5	17.5	4.7		
114-MW16AB-O-2.0-2.5	JC36049-1A	THALLIUM	U	U	U	1.3		
114-MW16AB-O-2.0-2.5	JC36049-1A	VANADIUM	U	28.4	28.4	6.6		
114-MW16AB-O-4.5-5.0	JC36049-2A	VANADIUM	U	30.0	30.0	6.0		
114-MW16AB-O-4.5-5.0X	JC36049-3A	VANADIUM	U	22.0	22.0	6.1		
114-MW16AB-O-5.5-6.0	JC36049-4A	VANADIUM	U	43.5	43.5	5.8		

Note: A “U” under Method Blank column indicates a nondetect result.
A “U” under the Laboratory Sample Result and Validation Sample Result columns indicates a nondetect result at the RL.

NJDEP Laboratory Footnote

1. The result was qualified because the MS recovery or MS/MSD RPD did not meet QC criteria.

Attachment B

Data Validation Report Form

DATA VALIDATION REPORT FORM – METALS ANALYSIS

Client Name: PPG Industries	**Project Number:** 60279173 GA.RI.RPT.HDS
Site Location: PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ	**Project Manager:** Bill Spronz
Laboratory: SGS/Accutest, Dayton, NJ	**Type of Validation:** Limited
Laboratory Job No: JC36049A	**Date Checked:** 01/30/2017
Validator: Sharon McKechnie	**Peer:** Kristin Rutherford

ITEM	YES	NO	N/A	COMMENTS
Sample results included?	X			
Reporting Limits met project requirements?	X			
Field I.D. included?	X			
Laboratory I.D. included?	X			
Did data package sample IDs match sample IDs on COC?	X*			*Yes, but COC IDs were incorrect. See memo.
Did electronic data deliverable (EDD) sample IDs match COC sample IDs?	X			
Did data package sample IDs match electronic data deliverable (EDD) sample IDs?	X			
Sample matrix included?	X			
Sample receipt temperature 2-6ºC?	X			
Signed COCs included?	X			
Date of sample collection included?	X			
Date of sample digestion included?	X			
Date of analysis included?	X			
Holding time met QC criteria? (Metals -180 days from sample collection; Mercury - 28 days from sample collection. If HT exceeded by 10 days R all results.	X			
Method reference included?	X			
Laboratory Case Narrative included?	X			
Definitions: MDL - Method Detection Limit; %R - Percent Recovery; RL - Reporting Limit; RPD - Relative Percent Difference; RSD - Relative Standard Deviation :Corr - Correlation Coefficient.				

ITEM	YES	NO	N/A	COMMENTS
Sample dilutions?		X		
Initial calibration documentation included in lab package?			X	N/A for Limited Validation
1) Calibrate daily or each time instrument is set up.			X	
2) ICP (6010) -Blank plus 1 standard?			X	
3) Hg (7470/7471) -Blank plus 5 standards?			X	
Initial Calibration Verification Standard (ICV) for ICP (6010) and Initial Calibration Check Standard (ICCS) for Hg (7470/7471) included in lab package?			X	N/A for Limited Validation
1) Analyzed immediately after initial calibration?			X	
2) %R criteria met? (90-110%)			X	
3) Spot check ICV/ICCS results for several analytes.			X	
Continuing Calibration Verification Standard (CCV) for ICP (6010) and Calibration Check Standard (CCS) for Hg (7470/7471) included in Lab Package?			X	N/A for Limited Validation
1) Analyzed immediately after each ICV/ICC/CB and after every 10 samples?			X	
2) CCS and CCV from independent source and at mid- level of calibration curve.			X	
3) %R criteria met? (90-110%R).			X	
4) Spot check CCV/CCS results for several analytes.			X	
Low Calibration Standard (CRI) included in Lab Package?			X	N/A for Limited Validation
1) %R criteria met?			X	
Calibration Blanks			X	N/A for Limited Validation
1) Analyzed after daily calibration and after each ICV/ICC/CCV/CCS and after every 10 samples?			X	
2) Absolute value <3xIDL?			X	
Method Blank Included in Lab Package?	X			
1) Method blank analyzed with each preparation batch or every SDG, or 1/20 samples?	X			
2) Method blank analyzed 1/20 samples	X			
3) MB results nondetect?		X		See Table
4) Negative MB result reported?		X		

ITEM	YES	NO	N/A	COMMENTS
Field Blanks/Equipment Blanks Included in Lab Package?	X			
1) FB/EB result non-detect?	X			
ICP Interference Check Sample (ICS) included in Lab Package?			X	N/A for Limited Validation
1) Analyzed at beginning of analytical run?			X	
2) %R criteria met? (80-120%)			X	
3) Spot check accuracy of %Rs			X	
Matrix Spike/Matrix Spike Duplicate Data Included in Lab Package?	X			JC36049-1A
1) MS/MSD %R (75-125%R) and RPD (20%) criteria met?		X		See table
2) Was a sample spiked at the frequency of 1/batch or 20 samples?	X			
3) Was the MS performed on a site sample?	X			
4) Was the MS performed on a FB/EB or TB?		X		
Post Digestion Spike			X	N/A for Limited Validation
1) %R criteria met? (75-125%R)			X	
2) Was the spike performed on a FB/EB or TB?			X	
3) Was a sample spiked at the frequency of 1/batch or 20 samples?			X	
Laboratory Duplicate Data Included in Lab Package?		X		
Aqueous - RPD criteria met? (20%)			X	
Soil - RPD criteria met? (35%)			X	
Was a Laboratory Control Sample (LCS) Included in Lab Package?	X			
1) LCS %R criteria met? (80-120%R).	X			
2) Was an LCS analyzed at the frequency of 1/batch or 20 samples?	X			
Serial Dilution			X	N/A for Limited Validation
1) %D (<10%R) criteria met? -			X	
2) Was the frequency 1/batch or 20 samples?			X	
3) Was a site sample used?			X	
4) Was a FB/EB or TB used?			X	

ITEM	YES	NO	N/A	COMMENTS
5) Spot check accuracy of %Ds.			X	
Field Duplicate Data included in Lab Package?	X			
Aqueous - RPD criteria met? (20%)			X	
Soil - RPD criteria met? (35%)	X			All met criteria, no table
Percent Solids data included in Lab Package?	X			All met criteria no table
1) % Solids criteria (Reg 2 criteria) met? (>/=50%)	X			
Chromium result greater than corresponding hexavalent chromium result where applicable?	X			Hexavalent chromium reported in JC36049 and JC36049R See table

Blanks

Analyte	Result	3X	10X	Sample Actions	Associated Samples
Method Blank	**mg/kg**	**mg/kg**	**mg/kg**		
Nickel	0.087	0.26	0.87	All >10X MB, Accept	Soil samples

Matrix Spike 114-MW16AB-O-2.0-2.5 (JC36049-1A)

Analyte	MS% Recovery	MSD% Recovery	Lower Limit	Upper Limit	RPD (%) QC Limit 20%	Actions
Antimony	**55.2**	**61.7**	75	125	8.2	**Estimate (J) low bias**
Nickel	80.0	102.7			**20.5**	**Estimate (J) undefined bias**
Thallium	81.6	103.6			**20.8**	**Result nondetect, accept**

Total Chromium vs Hexavalent Chromium

Lab Sample ID	Total Chromium (mg/kg)	Total Chromium Reporting Limit (mg/kg)	Total Hexavalent Chromium (mg/kg)	Hexavalent Chromium Reporting Limit (mg/kg)	Action
JC36049-1	53.5	1.3	2.3	0.51	Cr >Cr6, Accept
JC36049-2	19.3	1.2	4	0.49	Cr >Cr6, Accept
JC36049-3	16.4	1.2	1.4	0.5	Cr >Cr6, Accept
JC36049-4	23.0	1.2	1.7	0.48	Cr >Cr6, Accept
JC36049-17 (ug/l)	0	10	0	10	Both Nondetect, Accept

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	PPG Garfield Avenue Verification Borings Soil Sampling
Laboratory:	SGS/Accutest, Dayton, NJ
Laboratory Job No.:	JC36135 and JC36135R
Analysis/Method:	Hexavalent Chromium SW846 3060A/7196A
Validation Level:	Full
Site Location/Address:	Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ
AECOM Project No:	60279173 GA.RI.RPT.HDS
Prepared by: Sharon McKechnie /AECOM	Completed on: 2/07/2017
Reviewed by: Kristin Rutherford/ AECOM	File Name: JC36049_R_2017_02_07_DVR-F

Introduction

The data were reviewed in accordance with the FSP-QAPP and the following NJDEP and/or Region 2 validation Standard Operating Procedure(s) (SOP):

- NJDEP Office of Data Quality SOP 5.A.10, Rev 3 (September 2009), SOP for Analytical Data Validation of Hexavalent Chromium - for USEPA SW-846 Method 3060A, USEPA SW-846 Method 7196A.

The results of quality control data analyzed with site samples were used to assess the overall reliability of the data. The following qualifiers were used to identify data quality issues:

U: Indicates the analyte was not detected in the sample above the sample reporting limit.

J: Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.

UJ: Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.

UB: The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.

JB: The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real". The concentration is quantitatively qualified (JB) due to method blank contamination.

R: The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

RA: The sample result was rejected due to NJ specific data validation QC requirements; however, the result is usable for project objectives. Refer to the Data Quality and Usability section in this data validation report for further discussion.

Sample Information

The samples listed below were collected by AECOM on January 25, 2017 as part of the PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ. Only the samples and parameters listed below were validated.

Field ID	Laboratory ID	Matrix	Fraction
HDS-FB20170125 (Equipment Blank)	JC36135-1	Aqueous	Hexavalent Chromium
MW7D-O-13.5-14.0	JC36135-26, -26R	Soil	Hexavalent Chromium
MW7D-O-13.5-14.0X (Field Duplicate of MW7D-O-13.5-14.0)	JC36135-27, -27R	Soil	Hexavalent Chromium
MW7D-O-14.5-15.0	JC36135-28, -28R	Soil	Hexavalent Chromium
MW7D-O-17.5-18.0	JC36135-29, -29R	Soil	Hexavalent Chromium
MW7D-O-4.5-5.0	JC36135-30, -30R	Soil	Hexavalent Chromium
MW7D-O-6.0-6.5	JC36135-31, -31R	Soil	Hexavalent Chromium
MW7D-O-9.5-10.0	JC36135-32, -32R	Soil	Hexavalent Chromium

The samples were collected following the procedures detailed in the Work Order for Garfield Avenue Remedial Action (GARA) and the Field Sampling Plan/Quality Assurance Project Plan for Non-Residential and Residential Chromium Sites Hudson County, New Jersey (December 2011).

General Comments

Quality control (QC) issues identified during validation are discussed below. Refer to the Target Analyte Summary Hit List(s) in Attachment A for a listing of all detected results, qualified results, and associated qualifications, where applicable. The nonconformances for each section discussed below are presented in Attachment B.

Hexavalent Chromium

MS Results

Sample MW7D-O-17.5-18.0 (JC36135-29) was selected for the matrix spike (MS) analysis associated with the samples in this SDG. The soluble and insoluble MS recoveries from the initial batch were 33.9% and 87.4%, respectively. The soluble MS recovery did not meet the quality control (QC) criteria of 75-125%. The post digestion spike (PDS) recovery was 78%, and after pH adjustment was 51%, which did not meet the PDS criteria of 85-115%.

Based on the low soluble MS recovery the samples were reanalyzed using Method 7196. The soluble and insoluble MS results from the reanalysis were 36.6% and 81.2%, respectively. The soluble MS recovery did not meet the QC criteria of 75-125%. The PDS recovery was 75%, which did not meet the PDS criteria of 85-115%. The PDS recovery after pH adjustment was 90%..

Since the initial and reanalysis soluble matrix spike and PDS recoveries failed to meet QC criteria, additional parameters were analyzed to determine if matrix interference could be the cause for the poor matrix spike recoveries. All samples included in this sample data group (SDG) were tested for pH and oxidation-reduction potential (ORP), and plotted on an Eh/pH phase diagram. From this chart, the source sample for the matrix spike analysis, MW7D-O-17.5-18.0, was plotted below the phase change line, indicating a reducing potential with the sample matrix, which suggests the sample matrix environment is incapable of supporting hexavalent chromium. To confirm the oxidizing/reducing potential within the sample matrix, the additional ancillary parameters ferrous iron, sulfide screen, and total organic carbon (TOC) were analyzed for the matrix spike source sample. The sulfide screen was reported as nondetect, indicating no reducing agents within the sample matrix; however, the ferrous iron (0.45%) and the TOC results (857 mg/kg) were positive, indicating potential reducing agents within the sample matrix.

Since the PDS and MS recoveries from both the initial and reanalysis failed to meet QC criteria, but all insoluble MS recoveries were greater than 50%, the reported hexavalent chromium results in all the soil samples in this SDG were qualified as estimated (J/UJ) due to low MS and PDS recoveries. The highest detected hexavalent chromium result or the nondetect hexavalent chromium result with the lowest reporting limit (RL) between the initial and reanalysis was reported for each soil sample.

Laboratory Duplicate Precision

The laboratory duplicate (LD) absolute difference for hexavalent chromium in the initial analysis of sample MW7D-O-17.5-18.0 (JC36135-29) exceeded the absolute difference QC criteria of ± RL. Therefore, all hexavalent chromium soil results reported from the initial analysis were qualified as estimated (J/UJ) with an unknown direction of bias.

Refer to the Soil Target Analyte Summary Hit List(s) in Attachment A for a listing of all results qualified on the basis of LD precision. Refer to the tables in Attachment B for a listing of LD results, associated samples, and qualification actions.

Sample Results

Reported results (flagged B by the laboratory) that were less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL) are approximate values and have been qualified as estimated (J).

Data Quality and Usability

In general, these data appear to be valid and may be used for decision-making purposes. No data were rejected. Qualified and detected results are presented in Attachments A and B.

All hexavalent chromium soil results were estimated with the potential for low bias due to low MS and PDS recoveries. The highest detected hexavalent chromium result or the nondetect hexavalent chromium result with the lowest RLs between the initial analysis and reanalysis was reported for each sample.

Summary of additional issues noted for this data set:

- Selected hexavalent chromium soil results were qualified as estimated based on laboratory duplicate precision.
- Reported results greater than the MDL but less than the RL were qualified as estimated.

ATTACHMENTS

Attachment A: Target Analyte Summary Hit List(s)

Attachment B: Data Validation Report Form

Attachment A

Target Analyte Summary Hit List(s)

Soil Target Analyte Summary Hit List (Hexavalent Chromium)

Site Name PPG Garfield Avenue Verification Borings Soil Sampling
Sampling Date January 25, 2017
Lab Name/ID SGS/Accutest, Dayton, NJ
SDG No JC36135 and JC36135R
Sample Matrix Soil
Trip Blank ID NA
Field Blank ID HDS-FB20170125

Field Sample ID	Lab Sample ID	Analyte	Method Blank (mg/kg)	Laboratory Sample Result (mg/kg)	Validation Sample Result (mg/kg)	RL (mg/kg)	Quality Assurance Decision	NJDEP Validation Footnote
MW7D-O-13.5-14.0	JC36135-26R	CHROMIUM (HEXAVALENT)	U	0.65	0.65	0.47	Qualify	1,2
MW7D-O-13.5-14.0X	JC36135-27R	CHROMIUM (HEXAVALENT)	U	0.36B	0.36	0.48	Qualify	1,2,4
MW7D-O-14.5-15.0	JC36135-28	CHROMIUM (HEXAVALENT)	U	0.53B	0.53	0.54	Qualify	1,2,3,4
MW7D-O-17.5-18.0	JC36135-29	CHROMIUM (HEXAVALENT)	U	0.91	0.91	0.46	Qualify	1,2,3
MW7D-O-4.5-5.0	JC36135-30R	CHROMIUM (HEXAVALENT)	U	2.1	2.1	0.48	Qualify	1,2
MW7D-O-6.0-6.5	JC36135-31	CHROMIUM (HEXAVALENT)	U	U	U	0.47	Qualify	1,2,3
MW7D-O-9.5-10.0	JC36135-32R	CHROMIUM (HEXAVALENT)	U	0.59	0.59	0.48	Qualify	1,2

Note: A “U” under Method Blank column indicates a nondetect result.
A “U” under the Laboratory Sample Result and Validation Sample Result columns indicates a nondetect result at the RL.

NJDEP Laboratory Footnote

1. The result was estimated because the MS recoveries were less than 75%, but at least one recovery was above 50%.
2. The sample result was qualified because the PDS did not meet the QC criteria.
3. The reported value was estimated because the lab duplicate precision criteria were not met.
4. The reported result was greater than the MDL but less than the RL and qualified as estimated.

Attachment B

Data Validation Report Form

Client Name: PPG Industries	**Project Number:** 60279173 GA.RI.RPT.HDS
Site Location: PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ	**Project Manager:** Bill Spronz
Laboratory: SGS/Accutest, Dayton, NJ	**Type of Validation:** Full
Laboratory Job No JC36135 and JC36135R	**Date Checked:** 2/7/2017
Validator: Sharon McKechnie	**Peer:** Kristin Rutherford

ITEM	YES	NO	N/A	COMMENTS
Sample results included?	X			
Reporting Limits met project requirements?	X			
Field I.D. included?	X			
Laboratory I.D. included?	X			
Did data package sample IDs match sample IDs on COC?	X			
Did electronic data deliverable (EDD) sample IDs match COC sample IDs?	X			
Did data package sample IDs match electronic data deliverable (EDD) sample IDs?	X			
Sample matrix included?	X			
Sample receipt temperature 2-6ºC?	X			
Signed COCs included?	X			
Date of sample collection included?	X			
Date of sample digestion included?	X			
Holding time to digestion met criteria? (Soils -30 days from collection to digestion.)	X			
Date of analysis included?	X			
Holding time to analysis met criteria? (Soils -168 hours from digestion to analysis; Aqueous - 24 hours from collection to analysis.	X			
Method reference included?	X			
Laboratory Case Narrative included?	X			
Definitions: MDL - Method Detection Limit; %R - Percent Recovery; RL - Reporting Limit; RPD - Relative Percent Difference; RSD - Relative Standard Deviation :Corr - Correlation Coefficient.				

ITEM	YES	NO	N/A	COMMENTS
Initial calibration documentation included in lab package?	X			
1) Blank plus 4 standards (7196A) or blank plus 3 standards (7199)	X			
2) Correlation coefficient of >0.995 (7196A) or >0.999 (7199)	X			
3) Calibrate daily or each time instrument is set up.	X			
Calibration Check Standard (CCS) for 7196A and Quality Control Sample (QCS) for 7199 Included in Lab Package?	X			
1) %R criteria met? (90 - 110%)	X			
2) Correct frequency of one per every 10 samples	X			
3) CCS and QCS from independent source and at mid- level of calibration curve	X			
Calibration Blanks	X			
1) Analyzed prior to initial calibration standards and after each CCS/QCS?	X			
2) Absolute value should not exceed MDL.	X			
Method Blank, Field Blanks and/or Equipment Blanks Included in Lab Package?	X			
1) Method blank analyzed with each preparation batch?	X			
2) Absolute value should not exceed MDL.	X			
Eh and pH Data	X			
1) Eh and pH data was included and plotted for all samples?	X			
Soluble Matrix Spike Data Included in Lab Package?	X			
1) Soluble Matrix %R criteria met? (75-125%R).		X		See table
2) Was the spike concentration 40 mg/Kg or twice the sample concentration?		X		JC36135-29/29R spiked at 44.8 mg/kg and 44.3 mg/kg, respectively. The data was not affected.
3) Was a sample spiked at the frequency of 1 per batch or 20 samples?	X			
Insoluble Matrix Spike Data Included in Lab Package?	X			
1) Insoluble Matrix %R criteria met? (75-125%R).	X			See table
2) Was the spike concentration around 400 to 800 mg/Kg?		X		JC36135-29/29R spiked at 1250 mg/kg and 1050 mg/kg, respectively. The data was not affected.

ITEM	YES	NO	N/A	COMMENTS
Post Digestion Spike	X			JC36135-29/29R
1) Post Digestion Spike %R criteria met? (85-115%R).		X		See table
2) Was the spike concentration 40 mg/Kg or twice the sample concentration?	X			
3) Was a sample spiked at the frequency of 1 per batch or 20 samples?	X			
Sample Duplicate Data Included in Lab Package?	X			JC36135-29/29R
1) RPD criteria met? (RPD < 20%) if both results are ≥4x RL or control limit of± RL if both results are <4xRL.	X	X*		*Initial analysis did not meet criteria. See table
2) Was a sample duplicate analyzed at the frequency of 1 per batch or 20 samples?	X			
Was a Laboratory Control Sample (LCS) Included in Lab Package?	X			
1) %R criteria met? (80-120%R).	X			
2) Was an LCS analyzed at the frequency of 1/batch or 20 samples?	X			
Were any Field Duplicate samples submitted with this SDG?	X			JC36135-26R/ JC36135-27R
1) RPD criteria met? (RPD < 20%) if both results are ≥4x RL or control limit of± RL if both results are <4xRL.	X			See table
Were all sample quantitation and reporting requirements met?	X			
1) Were all solid samples reported with percent solids > 50%?	X			All OK, no table.
2) Were any samples analyzed or reported with dilutions?		X		
Miscellaneous Items	X			
1) For soils by 7196A, was the pH within a range of 7.0-8.0?	X			
2) For soils by 7199, was the pH within a range of 9.0-9.5?			X	
3) For aqueous by 7196A, was the pH with a range of 1.5-2.5?	X			
4) For soils (3060A), was the digestion temperature 90-95C for at least 60 minutes?	X			
5) For 7199, was each sample injected twice and was the RPD ≤20?			X	
Total chromium result greater than hexavalent chromium result where applicable?	X			Total chromium reported JC36135A. See Table.

Matrix Spikes

Sample ID	Lab ID	Analyte	Matrix Spike	% Recovery	Lower Limit	Upper Limit	PDS%/pH Adj PDS	PDS Limits
MW7D-O-17.5-18.0	JC36135-29	CHROMIUM (HEXAVALENT)	Soluble	33.9	75	125	78/51	85-115
MW7D-O-17.5-18.0	JC36135-29	CHROMIUM (HEXAVALENT)	Insoluble	87.4				
MW7D-O-17.5-18.0	JC36135-29R	CHROMIUM (HEXAVALENT)	Soluble	36.6			75/90	
MW7D-O-17.5-18.0	JC36135-29R	CHROMIUM (HEXAVALENT)	Insoluble	81.2				

Laboratory Duplicate

Sample ID	Lab ID	Analyte	Sample Result	Duplicate Result	QL	Units	RPD (%)	Action
MW7D-O-17.5-18.0	JC36135-29	CHROMIUM (HEXAVALENT)	0.91	0.34	0.46	mg/kg	91.2	**Both Results <4X RL, Absolute Difference 0.57 >RL; Estimate (J/UJ) Initial Analysis Batch**
MW7D-O-17.5-18.0	JC36135-29R	CHROMIUM (HEXAVALENT)	0.32 U	0.69	0.46	mg/kg	NC	RPD Not Calculable (NC). Detected Result <4X RL; Accept

Field Duplicate

Lab Sample ID	Result	RL	Dup Lab Sample ID	Dup Result	Dup RL	Units	RPD (%)	Action
JC36135-26R	0.65	0.47	JC36135-27R	0.36	0.48	mg/kg	57.4	Both Results <4X RL, Absolute Difference 0.29 <RL; Accept

Chromium vs Hexavalent Chromium

Lab Sample ID	Total Chromium (mg/kg)	Total Chromium Reporting Limit (mg/kg)	Total Hexavalent Chromium (mg/kg)	Hexavalent Chromium Reporting Limit (mg/kg)	Action
JC36135-26	22.9	1.1	0.65	0.47	Cr >Cr6, Accept
JC36135-27	35.9	1.2	0.36	0.48	Cr >Cr6, Accept
JC36135-28	18.7	1.3	0.53	0.46	Cr >Cr6, Accept
JC36135-29	14.6	1.1	0.91	0.46	Cr >Cr6, Accept
JC36135-30	433	1.2	2.1	0.48	Cr >Cr6, Accept
JC36135-31	20.5	1.1	0	0.47	Cr >Cr6, Accept
JC36135-32	17	1.2	0.59	0.48	Cr >Cr6, Accept
JC36135-1 (ug/l)	0	10	0	10	Both Nondetect, Accept

SDG#: JC36135/ Method 7196	x - concentration	y - response
Batch: GN58680		
Cr+6 ICAL 1/30/17	0	0
Soil	0.01	0.01
(p. 49 of data pkg)	0.05	0.045
	0.1	0.09
	0.3	0.247
	0.5	0.403
	0.8	0.628
	1	0.813

				(p. 49 of data pkg)
AECOM Calculated Offset	0.0040	OK	Reported Offset	0.0040
AECOM Slope	0.7987	OK	Reported Slope	0.7987
AECOM Calculated r	0.99970	OK	Reported r	0.99970

LCS calculation	**GP2917-B1**	**P.35,49**		
Background Absorbance	0			
Total absorbance	0.736			
Total absorbance - background	0.736			
Instrument Concentration	0.917			
Sample weight (mg/kg)	0.0025			
Final Volume (L)	0.1			
Dilution Factor	1			
AECOM Calculated LCS Result (mg/Kg)	36.7	OK	Reported Result (mg/Kg)	36.7

%R = Found/True*100	**GP2917-B1**	**P.35,49**		
True Value (mg/kg)	40			
AECOM Calculated %R	91.7	OK, rounding	Reported %R	91.8

MS calculation	**GP2917-S1**	**P.37,49**	**JC36135-29**	
Background reading	0.025			
Total absorbance	0.316			
Total absorbance - background	0.291			
Instrument Concentration	0.3594			
Sample weight (mg/kg)	0.00257			
Final Volume (L)	0.1			
Percent solids	0.868			
Dilution Factor	1			
AECOM Calculated MS Result (mg/Kg)	16.1	OK	Reported Result (mg/Kg)	16.1

%R = Found/True*100	**GP2917-S1**	**P.37,49**	**JC36135-29**	
True Value (mg/kg)	44.8			
Native concentration (mg/Kg)	0.91			
AECOM%R	33.9	OK	Reported %R	33.9

Percent Solids	**JC36135-29**	**P.38**	**MW7D-O-17.5-18.0**	
Empty dish weight=	24.65			
Wet weight=	30.99			
Dry weight=	30.15			
AECOM%solids =	86.8	OK	reported %solids=	86.8

Reporting Limit	**JC36135-29**	**P.14,49**	**MW7D-O-17.5-18.0**	
Low Standard	0.01			
Initial weight (mg/kg)	0.0025			
Final volume (L)	0.1			
Percent solids	0.868			
Dilution Factor	1			
Reporting Limit	0.46	OK	Reported RL (mg/Kg)=	0.46

Sample Calculations

	JC36135-29	**P.14,49**	**MW7D-O-17.5-18.0**	
Background reading	0.017			
Total absorbance	0.037			
Total absorbance - background	0.02			
Instrument Response	0.020			
Sample weight (mg/kg)	0.00254			
Final Volume (L)	0.1			
Percent solids	0.868			
Dilution Factor	1			
AECOM Calculated Result (mg/Kg)	0.91	OK	Reported Result (mg/Kg)	0.91

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	PPG Garfield Avenue Verification Borings Soil Sampling
Laboratory:	SGS/Accutest, Dayton, NJ
Laboratory Job No.:	JC36135A
Analysis/Method:	CCPW Metals SW-846 3010A/3050B/6010C
Validation Level:	Limited
Site Location/Address:	Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ
AECOM Project No:	60279173 GA.RI.RPT.HDS
Prepared by: Sharon McKechnie/AECOM	Completed on: 02/6/2017
Reviewed by: Kristin Rutherford/AECOM	File Name : JC36135A _2017_02_06_DVR-F

Introduction

The data were reviewed in accordance with the FSP-QAPP and the following NJDEP and /or Region 2 validation Standard Operating Procedure(s) (SOP):

- NJDEP Office of Data Quality SOP 5.A.16, Rev 1 (May 2002), Quality Assurance Data Validation of Analytical Deliverables for Inorganics (based on USEPA SW-846 Methods); and
- ICP-AES Data Validation, SOP No. HW-3a Revision 0 (July 2015).

The results of quality control data analyzed with site samples were used to assess the overall reliability of the data. The following qualifiers were used to identify data quality issues:

U: Indicates the analyte was not detected in the sample above the sample reporting limit.

J: Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.

UJ: Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.

UB: The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.

JB: The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real". The concentration is quantitatively qualified (JB) due to method blank contamination.

R: The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

RA: The sample result was rejected due to NJ specific data validation QC requirements; however, the result is usable for project objectives. Refer to the Data Quality and Usability section in this data validation report for further discussion.

Sample Information

The samples listed below were collected by AECOM on January 25, 2017 as part of the PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ. Only the samples and parameters listed below were validated.

Field ID	Laboratory ID	Matrix	Fraction
HDS-FB20170125 (Equipment Blank)	JC36135-1A	Aqueous	CCPW Metals*
MW7D-O-13.5-14.0	JC36135-26A	Soil	CCPW Metals*
MW7D-O-13.5-14.0X (Field Duplicate of MW7D-O-13.5-14.0)	JC36135-27A	Soil	CCPW Metals*
MW7D-O-14.5-15.0	JC36135-28A	Soil	CCPW Metals*
MW7D-O-17.5-18.0	JC36135-29A	Soil	CCPW Metals*
MW7D-O-4.5-5.0	JC36135-30A	Soil	CCPW Metals*
MW7D-O-6.0-6.5	JC36135-31A	Soil	CCPW Metals*
MW7D-O-9.5-10.0	JC36135-32A	Soil	CCPW Metals*
*CCPW Metals: Antimony, chromium, nickel, thallium, vanadium			

The samples were collected following the procedures detailed in the Work Order for Garfield Avenue Remedial Action (GARA) and the Field Sampling Plan/Quality Assurance Project Plan for Non-Residential and Residential Chromium Sites Hudson County, New Jersey (December 2011).

General Comments

Additional samples were listed on the COC; however, they were placed on hold.

Quality control (QC) issues identified during validation are discussed below. Refer to the Target Analyte Summary Hit List(s) in Attachment A for a listing of all detected results, qualified results, and associated qualifications, where applicable. The nonconformances for each section discussed below are presented in Attachment B.

TAL Metals

Laboratory Blanks

Nickel was detected in the soil method blank (MB) at a concentration above the method detection limit (MDL), but below the reporting limit (RL); however, there was no effect on the data. Refer to the tables in Appendix B for a listing of MB results.

Equipment Blanks

Nickel was detected in the equipment blank (EB) at a concentration above the MDL, but below the RL; however, there was no effect on the data. Refer to the tables in Appendix B for a listing of EB results.

Matrix Spike Results

Sample MW7D-O-17.5-18.0 (JC36135-29A) was analyzed as the soil matrix spike/matrix spike duplicate (MS/MSD) in this SDG.

The MS and MSD recoveries were below the QC criteria for antimony; therefore, the nondetected result for antimony in sample MW7D-O-17.5-18.0 (JC36135-29A) was qualified as estimated (UJ) with a possible low bias.

Refer to the Target Analyte Summary Hit List(s) in Attachment A for a listing of all results qualified on the basis of MS/MSD %R. Refer to the tables in Appendix B for a listing of MS results.

Field Duplicate Results

Samples MW7D-O-13.5-14.0 (JC36135-26A) and MW7D-O-13.5-14.0X (JC36135-27A) were collected as the FD pair associated with the samples in this SDG. The 35% RPD criteria was not met for chromium; therefore, the results in the FD pair were qualified (J) as estimated with an unknown direction of bias due to poor field duplicate precision.

Refer to the Target Analyte Summary Hitlist(s) in Attachment A for a listing of all results qualified on the basis of FD precision. Refer to the tables in Appendix B for a listing of FD results and associated qualification actions.

Sample Results

Reported results (flagged B by the laboratory) that were less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL) are approximate values and have been qualified as estimated (J).

Data Quality and Usability

In general, these data appear to be valid and may be used for decision-making purposes. No data were rejected. Qualified and detected results are presented in Attachments A and B.

Issues noted for this sample set:

- Antimony in sample MW7D-O-17.5-18.0 (JC36135-29A) was estimated for MS recoveries and may have a low bias.
- The results for chromium in samples MW7D-O-13.5-14.0 (JC36135-26A) and MW7D-O-13.5-14.0X (JC36135-27A) were estimated for field duplicate precision.
- Reported results greater than the MDL but less than the RL were qualified as estimated.

ATTACHMENTS

Attachment A: Target Analyte Summary Hit List(s)

Attachment B: Data Validation Report Form

Attachment A

Target Analyte Summary Hit List(s)

Soil Target Analyte Summary Hit List (TAL Metals)

Site Name PPG Garfield Avenue Verification Borings Soil Sampling
Sampling Date January 25, 2017
Lab Name/ID SGS/Accutest, Dayton, NJ
SDG No JC36135A
Sample Matrix Soil
Trip Blank ID NA
Field Blank ID HDS-FB20170125

Field Sample ID	Lab Sample ID	Analyte	Method Blank (mg/kg)	Laboratory Sample Result (mg/kg)	Validation Sample Result (mg/kg)	RL (mg/kg)	Quality Assurance Decision	NJDEP Validation Footnote
MW7D-O-17.5-18.0	JC36135-29A	ANTIMONY	U	U	U	2.3	Qualify	1
MW7D-O-4.5-5.0	JC36135-30A	ANTIMONY	U	4.7	4.7	2.4		
MW7D-O-6.0-6.5	JC36135-31A	ANTIMONY	U	1.4B	1.4	2.3	Qualify	2
MW7D-O-13.5-14.0	JC36135-26A	CHROMIUM	U	22.9	22.9	1.1	Qualify	3
MW7D-O-13.5-14.0X	JC36135-27A	CHROMIUM	U	35.9	35.9	1.2	Qualify	3
MW7D-O-14.5-15.0	JC36135-28A	CHROMIUM	U	18.7	18.7	1.3		
MW7D-O-17.5-18.0	JC36135-29A	CHROMIUM	U	14.6	14.6	1.1		
MW7D-O-4.5-5.0	JC36135-30A	CHROMIUM	U	433	433	1.2		
MW7D-O-6.0-6.5	JC36135-31A	CHROMIUM	U	20.5	20.5	1.1		
MW7D-O-9.5-10.0	JC36135-32A	CHROMIUM	U	17.0	17.0	1.2		
MW7D-O-13.5-14.0	JC36135-26A	NICKEL	0.089	13.0	13.0	4.5		
MW7D-O-13.5-14.0X	JC36135-27A	NICKEL	0.089	12.4	12.4	4.7		
MW7D-O-14.5-15.0	JC36135-28A	NICKEL	0.089	16.7	16.7	5.2		
MW7D-O-17.5-18.0	JC36135-29A	NICKEL	0.089	8.7	8.7	4.5		
MW7D-O-4.5-5.0	JC36135-30A	NICKEL	0.089	26.2	26.2	4.7		
MW7D-O-6.0-6.5	JC36135-31A	NICKEL	0.089	14.7	14.7	4.6		
MW7D-O-9.5-10.0	JC36135-32A	NICKEL	0.089	13.3	13.3	4.6		

Field Sample ID	Lab Sample ID	Analyte	Method Blank (mg/kg)	Laboratory Sample Result (mg/kg)	Validation Sample Result (mg/kg)	RL (mg/kg)	Quality Assurance Decision	NJDEP Validation Footnote
MW7D-O-13.5-14.0	JC36135-26A	VANADIUM	U	34.7	34.7	5.6		
MW7D-O-13.5-14.0X	JC36135-27A	VANADIUM	U	32.0	32.0	5.9		
MW7D-O-14.5-15.0	JC36135-28A	VANADIUM	U	25.4	25.4	6.5		
MW7D-O-17.5-18.0	JC36135-29A	VANADIUM	U	21.4	21.4	5.6		
MW7D-O-4.5-5.0	JC36135-30A	VANADIUM	U	66.5	66.5	5.9		
MW7D-O-6.0-6.5	JC36135-31A	VANADIUM	U	28.2	28.2	5.7		
MW7D-O-9.5-10.0	JC36135-32A	VANADIUM	U	28.5	28.5	5.8		

Note: A “U” under Method Blank column indicates a nondetect result.
A “U” under the Laboratory Sample Result and Validation Sample Result columns indicates a nondetect result at the RL.

NJDEP Laboratory Footnote

1. The result was qualified because the MS recovery did not meet QC criteria.

2 The reported result was greater than the MDL but less than the RL and qualified (J) as estimated by the laboratory.

3. The result was qualified due to field duplicate precision.

Aqueous Target Analyte Summary Hit List (TAL Metals)

Site Name PPG Garfield Avenue Verification Borings Soil Sampling
Sampling Date January 25, 2017
Lab Name/ID SGS/Accutest, Dayton, NJ
SDG No JC36135A
Sample Matrix Aqueous
Trip Blank ID NA
Field Blank ID HDS-FB20170125

Field Sample ID	Lab Sample ID	Analyte	Method Blank (ug/l)	Laboratory Sample Result (ug/l)	Validation Sample Result (ug/l)	RL (ug/l)	Quality Assurance Decision	NJDEP Validation Footnote
HDS-FB20170125	JC36135-1A	NICKEL	U	1.1B	1.1	10	Qualify	1

Note: A “U” under Method Blank column indicates a nondetect result.
A “U” under the Laboratory Sample Result and Validation Sample Result columns indicates a nondetect result at the RL.

NJDEP Laboratory Footnote

1. The reported result was greater than the MDL but less than the RL and qualified (J) as estimated by the laboratory.

Attachment B

Data Validation Report Form

Client Name: PPG Industries	**Project Number:** 60279173 GA.RI.RPT.HDS
Site Location: PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ	**Project Manager:** Bill Spronz
Laboratory: SGS/Accutest, Dayton, NJ	**Type of Validation:** Limited
Laboratory Job No: JC36135A	**Date Checked:** 02/06/2017
Validator: Sharon McKechnie	**Peer:** Kristin Rutherford

ITEM	YES	NO	N/A	COMMENTS
Sample results included?	X			
Reporting Limits met project requirements?	X			
Field I.D. included?	X			
Laboratory I.D. included?	X			
Did data package sample IDs match sample IDs on COC?	X			
Did electronic data deliverable (EDD) sample IDs match COC sample IDs?	X			
Did data package sample IDs match electronic data deliverable (EDD) sample IDs?	X			
Sample matrix included?	X			
Sample receipt temperature 2-6ºC?	X			
Signed COCs included?	X			
Date of sample collection included?	X			
Date of sample digestion included?	X			
Date of analysis included?	X			
Holding time met QC criteria? (Metals -180 days from sample collection; Mercury - 28 days from sample collection. If HT exceeded by 10 days R all results.	X			
Method reference included?	X			
Laboratory Case Narrative included?	X			
Definitions: MDL - Method Detection Limit; %R - Percent Recovery; RL - Reporting Limit; RPD - Relative Percent Difference; RSD - Relative Standard Deviation :Corr - Correlation Coefficient.				

ITEM	YES	NO	N/A	COMMENTS
Sample dilutions?	X			Up to 3X
Initial calibration documentation included in lab package?			X	N/A for Limited Validation
1) Calibrate daily or each time instrument is set up.			X	
2) ICP (6010) -Blank plus 1 standard?			X	
3) Hg (7470/7471) -Blank plus 5 standards?			X	
Initial Calibration Verification Standard (ICV) for ICP (6010) and Initial Calibration Check Standard (ICCS) for Hg (7470/7471) included in lab package?			X	N/A for Limited Validation
1) Analyzed immediately after initial calibration?			X	
2) %R criteria met? (90-110%)			X	
3) Spot check ICV/ICCS results for several analytes.			X	
Continuing Calibration Verification Standard (CCV) for ICP (6010) and Calibration Check Standard (CCS) for Hg (7470/7471) included in Lab Package?			X	N/A for Limited Validation
1) Analyzed immediately after each ICV/ICC/CB and after every 10 samples?			X	
2) CCS and CCV from independent source and at mid- level of calibration curve.			X	
3) %R criteria met? (90-110%R).			X	
4) Spot check CCV/CCS results for several analytes.			X	
Low Calibration Standard (CRI) included in Lab Package?			X	N/A for Limited Validation
1) %R criteria met?			X	
Calibration Blanks			X	N/A for Limited Validation
1) Analyzed after daily calibration and after each ICV/ICC/CCV/CCS and after every 10 samples?			X	
2) Absolute value <3xIDL?			X	
Method Blank Included in Lab Package?	X			
1) Method blank analyzed with each preparation batch or every SDG, or 1/20 samples?	X			
2) Method blank analyzed 1/20 samples	X			
3) MB results nondetect?		X		See Table
4) Negative MB result reported?		X		

ITEM	YES	NO	N/A	COMMENTS
Field Blanks/Equipment Blanks Included in Lab Package?	X			
1) FB/EB result non-detect?		X		See Table
ICP Interference Check Sample (ICS) included in Lab Package?			X	N/A for Limited Validation
1) Analyzed at beginning of analytical run?			X	
2) %R criteria met? (80-120%)			X	
3) Spot check accuracy of %Rs			X	
Matrix Spike/Matrix Spike Duplicate Data Included in Lab Package?	X			JC36135-29A
1) MS/MSD %R (75-125%R) and RPD (20%) criteria met?		X		See table
2) Was a sample spiked at the frequency of 1/batch or 20 samples?	X			
3) Was the MS performed on a site sample?	X			
4) Was the MS performed on a FB/EB or TB?		X		
Post Digestion Spike			X	N/A for Limited Validation
1) %R criteria met? (75-125%R)			X	
2) Was the spike performed on a FB/EB or TB?			X	
3) Was a sample spiked at the frequency of 1/batch or 20 samples?			X	
Laboratory Duplicate Data Included in Lab Package?		X		
Aqueous - RPD criteria met? (20%)			X	
Soil - RPD criteria met? (35%)			X	
Was a Laboratory Control Sample (LCS) Included in Lab Package?	X			
1) LCS %R criteria met? (80-120%R).	X			
2) Was an LCS analyzed at the frequency of 1/batch or 20 samples?	X			
Serial Dilution			X	N/A for Limited Validation
1) %D (<10%R) criteria met? -			X	
2) Was the frequency 1/batch or 20 samples?			X	
3) Was a site sample used?			X	
4) Was a FB/EB or TB used?			X	

ITEM	YES	NO	N/A	COMMENTS
5) Spot check accuracy of %Ds.			X	
Field Duplicate Data included in Lab Package?	X			
Aqueous - RPD criteria met? (20%)			X	
Soil - RPD criteria met? (35%)		X		See table for chromium
Percent Solids data included in Lab Package?	X			All met criteria no table
1) % Solids criteria (Reg 2 criteria) met? (>/=50%)	X			
Chromium result greater than corresponding hexavalent chromium result where applicable?	X			Hexavalent chromium reported in JC36135 and JC36135R See table

Blanks

Analyte	Result	3X	10X	Sample Actions	Associated Samples
Method Blank	**mg/kg**	**mg/kg**	**mg/kg**		
Nickel	0.089	0.267	0.89	All >10X MB, Accept	All Soil

Analyte	Result	Result	3X	10X	Sample Actions	Associated Samples
Equipment Blank	**ug/l**	**mg/kg**	**mg/kg**	**mg/kg**		
Nickel	1.1	0.11	0.33	1.1	All>10X EB, Accept	All Soil

*Note: A nominal weight of 1g and nominal final volume of 0.10L was used to convert aqueous units (ug/L) to soils units (mg/kg) in the absence of a full data deliverable.

Matrix Spike MW7D-O-17.5-18.0 (JC36135-29A)

Analyte	MS% Recovery	MSD% Recovery	Lower Limit	Upper Limit	Actions
Antimony	**73.6**	**66.6**	75	125	**Estimate (UJ) low bias**

Field Duplicate

Analyte	Lab Sample	Result	RL	Dup Lab Sample	Dup Result	Dup RL	Units	RPD (%)	Action
CHROMIUM	JC36135-26A	22.9	1.1	JC36135-27A	35.9	1.2	mg/kg	44.2	**RPD>35%, Estimate (J)**

Total Chromium vs Hexavalent Chromium

Lab Sample ID	Total Chromium (mg/kg)	Total Chromium Reporting Limit (mg/kg)	Total Hexavalent Chromium (mg/kg)	Hexavalent Chromium Reporting Limit (mg/kg)	Action
JC36135-26	22.9	1.1	0.65	0.47	Cr >Cr6, Accept
JC36135-27	35.9	1.2	0.36	0.48	Cr >Cr6, Accept
JC36135-28	18.7	1.3	0.53	0.46	Cr >Cr6, Accept
JC36135-29	14.6	1.1	0.91	0.46	Cr >Cr6, Accept
JC36135-30	433	1.2	2.1	0.48	Cr >Cr6, Accept
JC36135-31	20.5	1.1	0	0.47	Cr >Cr6, Accept
JC36135-32	17	1.2	0.59	0.48	Cr >Cr6, Accept
JC36135-1 (ug/l)	0	10	0	10	Both Nondetect

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	PPG Garfield Avenue Verification Borings Soil Sampling	
Laboratory:	SGS/Accutest, Dayton, NJ	
Laboratory Job No.:	JC36204 and JC36204R	
Analysis/Method:	Hexavalent Chromium SW846 3060A/7196A	
Validation Level:	Full	
Site Location/Address:	Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ	
AECOM Project No:	60279173 GA.RI.RPT.HDS	
Prepared by:	Sharon McKechnie /AECOM	Completed on: 2/07/2017
Reviewed by:	Kristin Rutherford/ AECOM	File Name: JC36204_R_2017_02_07_DVR-F

Introduction

The data were reviewed in accordance with the FSP-QAPP and the following NJDEP and/or Region 2 validation Standard Operating Procedure(s) (SOP):

- NJDEP Office of Data Quality SOP 5.A.10, Rev 3 (September 2009), SOP for Analytical Data Validation of Hexavalent Chromium - for USEPA SW-846 Method 3060A, USEPA SW-846 Method 7196A.

The results of quality control data analyzed with site samples were used to assess the overall reliability of the data. The following qualifiers were used to identify data quality issues:

U: Indicates the analyte was not detected in the sample above the sample reporting limit.

J: Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.

UJ: Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.

UB: The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.

JB: The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real". The concentration is quantitatively qualified (JB) due to method blank contamination.

R: The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

RA: The sample result was rejected due to NJ specific data validation QC requirements; however, the result is usable for project objectives. Refer to the Data Quality and Usability section in this data validation report for further discussion.

Sample Information

The samples listed below were collected by AECOM on January 26, 2017 as part of the PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ. Only the samples and parameters listed below were validated.

Field ID	Laboratory ID	Matrix	Fraction
HDS-FB20170126 (Equipment Blank)	JC36204-1	Aqueous	Hexavalent Chromium
MW8D-O-11.0-11.5	JC36204-14, -14R	Soil	Hexavalent Chromium
MW8D-O-4.0-4.5	JC36204-15, -15R	Soil	Hexavalent Chromium
MW8D-O-4.0-4.5X (Field Duplicate of MW8D-O-4.0-4.5)	JC36204-16, -16R	Soil	Hexavalent Chromium
MW8D-O-7.0-7.5	JC36204-17, -17R	Soil	Hexavalent Chromium

The samples were collected following the procedures detailed in the Work Order for Garfield Avenue Remedial Action (GARA) and the Field Sampling Plan/Quality Assurance Project Plan for Non-Residential and Residential Chromium Sites Hudson County, New Jersey (December 2011).

General Comments

Quality control (QC) issues identified during validation are discussed below. Refer to the Target Analyte Summary Hit List(s) in Attachment A for a listing of all detected results, qualified results, and associated qualifications, where applicable. The nonconformances for each section discussed below are presented in Attachment B.

Hexavalent Chromium

MS Results

Sample MW8D-O-7.0-7.5 (JC36204-17) was selected for the matrix spike (MS) analysis associated with the samples in this SDG. The soluble and insoluble MS recoveries from the initial batch were 4.7% and 79.0%, respectively. The soluble MS recovery did not meet the quality control (QC) criteria of 75-125%. The post digestion spike (PDS) recovery was 97%, which met the PDS criteria of 85-115%.

Based on the low soluble MS recovery the samples were reanalyzed using Method 7196. The soluble and insoluble MS results from the reanalysis were 4.8% and 61.4%, respectively. The soluble and in soluble MS recoveries did not meet the QC criteria of 75-125%. The PDS recovery was 92%, which met the PDS criteria of 85-115%.

Since the initial and reanalysis soluble and/or insoluble matrix spike recoveries failed to meet QC criteria, additional parameters were analyzed to determine if matrix interference could be the cause for the poor matrix spike recoveries. All samples included in this sample data group (SDG) were tested for pH and oxidation-reduction potential (ORP), and plotted on an Eh/pH phase diagram. From this chart, the source sample for the matrix spike, MW8D-O-7.0-7.5, analysis was plotted below the

phase change line, indicating a reducing potential with the sample matrix, which suggests the sample matrix environment is incapable of supporting hexavalent chromium. To confirm the oxidizing/reducing potential within the sample matrix, the additional ancillary parameters ferrous iron, sulfide screen, and total organic carbon (TOC) were analyzed for the matrix spike source sample. The sulfide screen was reported as nondetect, indicating no reducing agents within the sample matrix; however, the ferrous iron (1.1%) and the TOC results (3530 mg/kg) were positive, indicating potential reducing agents within the sample matrix.

Since the soluble and/or insoluble MS recoveries from both the initial and reanalysis failed to meet QC criteria, but all insoluble MS recoveries were greater than 50%, the reported hexavalent chromium results in all the soil samples in this SDG were qualified as estimated (J/UJ) due to the low MS recoveries. The highest detected hexavalent chromium result or the nondetect hexavalent chromium result with the lowest reporting limit (RL) between the initial and reanalysis was reported for each soil sample.

Laboratory Duplicate Precision

The laboratory duplicate (LD) absolute difference for hexavalent chromium in the reanalysis of sample MW8D-O-7.0-7.5 (JC36204-17R) exceeded the absolute difference QC criteria of ± RL. Therefore, all hexavalent chromium soil results reported from the reanalysis were qualified as estimated (J) with an unknown direction of bias.

Refer to the Soil Target Analyte Summary Hit List(s) in Attachment A for a listing of all results qualified on the basis of LD precision. Refer to the tables in Attachment B for a listing of LD results, associated samples, and qualification actions.

Data Quality and Usability

In general, these data appear to be valid and may be used for decision-making purposes. No data were rejected. Qualified and detected results are presented in Attachments A and B.

All hexavalent chromium soil results were estimated with the potential for low bias due to low MS recoveries. The highest detected hexavalent chromium result or the nondetect hexavalent chromium result with the lowest RL between the initial analysis and reanalysis was reported for each sample.

Summary of additional issues noted for this data set:

- Selected hexavalent chromium soil results were qualified as estimated based on laboratory duplicate precision.

ATTACHMENTS

Attachment A: Target Analyte Summary Hit List(s)

Attachment B: Data Validation Report Form

Attachment A

Target Analyte Summary Hit List(s)

Soil Target Analyte Summary Hit List (Hexavalent Chromium)

Site Name PPG Garfield Avenue Verification Borings Soil Sampling
Sampling Date January 26, 2017
Lab Name/ID SGS/Accutest, Dayton, NJ
SDG No JC36204 and JC36204R
Sample Matrix Soil
Trip Blank ID NA
Field Blank ID HDS-FB20170126

Field Sample ID	Lab Sample ID	Analyte	Method Blank (mg/kg)	Laboratory Sample Result (mg/kg)	Validation Sample Result (mg/kg)	RL (mg/kg)	Quality Assurance Decision	NJDEP Validation Footnote
MW8D-O-11.0-11.5	JC36204-14	CHROMIUM (HEXAVALENT)	U	U	UJ	0.48	Qualify	1
MW8D-O-4.0-4.5	JC36204-15	CHROMIUM (HEXAVALENT)	U	U	UJ	0.49	Qualify	1
MW8D-O-4.0-4.5X	JC36204-16	CHROMIUM (HEXAVALENT)	U	U	UJ	0.47	Qualify	1
MW8D-O-7.0-7.5	JC36204-17R	CHROMIUM (HEXAVALENT)	U	0.75	0.75	0.47	Qualify	1,2

Note: A “U” under Method Blank column indicates a nondetect result.
A “U” under the Laboratory Sample Result and Validation Sample Result columns indicates a nondetect result at the RL.

NJDEP Laboratory Footnote

1. The result was estimated because the MS recoveries were less than 75%, but at least one recovery was above 50%.

2. The reported value was estimated because the lab duplicate precision criteria were not met.

Attachment B

Data Validation Report Form

Client Name: PPG Industries	**Project Number:** 60279173 GA.RI.RPT.HDS
Site Location: PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ	**Project Manager:** Bill Spronz
Laboratory: SGS/Accutest, Dayton, NJ	**Type of Validation:** Full
Laboratory Job No JC36204 and JC36204R	**Date Checked:** 2/7/2017
Validator: Sharon McKechnie	**Peer:** Kristin Rutherford

ITEM	YES	NO	N/A	COMMENTS
Sample results included?	X			
Reporting Limits met project requirements?	X			
Field I.D. included?	X			
Laboratory I.D. included?	X			
Did data package sample IDs match sample IDs on COC?	X			
Did electronic data deliverable (EDD) sample IDs match COC sample IDs?	X			
Did data package sample IDs match electronic data deliverable (EDD) sample IDs?	X			
Sample matrix included?	X			
Sample receipt temperature 2-6ºC?	X			
Signed COCs included?	X			
Date of sample collection included?	X			
Date of sample digestion included?	X			
Holding time to digestion met criteria? (Soils -30 days from collection to digestion.)	X			
Date of analysis included?	X			
Holding time to analysis met criteria? (Soils -168 hours from digestion to analysis; Aqueous - 24 hours from collection to analysis.	X			
Method reference included?	X			
Laboratory Case Narrative included?	X			
Definitions: MDL - Method Detection Limit; %R - Percent Recovery; RL - Reporting Limit; RPD - Relative Percent Difference; RSD - Relative Standard Deviation :Corr - Correlation Coefficient.				

ITEM	YES	NO	N/A	COMMENTS
Initial calibration documentation included in lab package?	X			
1) Blank plus 4 standards (7196A) or blank plus 3 standards (7199)	X			
2) Correlation coefficient of >0.995 (7196A) or >0.999 (7199)	X			
3) Calibrate daily or each time instrument is set up.	X			
Calibration Check Standard (CCS) for 7196A and Quality Control Sample (QCS) for 7199 Included in Lab Package?	X			
1) %R criteria met? (90 - 110%)	X			
2) Correct frequency of one per every 10 samples	X			
3) CCS and QCS from independent source and at mid- level of calibration curve	X			
Calibration Blanks	X			
1) Analyzed prior to initial calibration standards and after each CCS/QCS?	X			
2) Absolute value should not exceed MDL.	X			
Method Blank, Field Blanks and/or Equipment Blanks Included in Lab Package?	X			
1) Method blank analyzed with each preparation batch?	X			
2) Absolute value should not exceed MDL.	X			
Eh and pH Data	X			
1) Eh and pH data was included and plotted for all samples?	X			
Soluble Matrix Spike Data Included in Lab Package?	X			
1) Soluble Matrix %R criteria met? (75-125%R).		X		See table
2) Was the spike concentration 40 mg/Kg or twice the sample concentration?		X		JC36204-17/17R spiked at 46.6 mg/kg and 46.5 mg/kg, respectively. The data was not affected.
3) Was a sample spiked at the frequency of 1 per batch or 20 samples?	X			
Insoluble Matrix Spike Data Included in Lab Package?	X			
1) Insoluble Matrix %R criteria met? (75-125%R).		X		See table
2) Was the spike concentration around 400 to 800 mg/Kg?		X		JC36204-17/17R spiked at 957 mg/kg and 961 mg/kg, respectively. The data was not affected.

ITEM	YES	NO	N/A	COMMENTS
Post Digestion Spike	X			JC36204-17/17R
1) Post Digestion Spike %R criteria met? (85-115%R).	X			See table
2) Was the spike concentration 40 mg/Kg or twice the sample concentration?	X			
3) Was a sample spiked at the frequency of 1 per batch or 20 samples?	X			
Sample Duplicate Data Included in Lab Package?	X			JC36204-17/17R
1) RPD criteria met? (RPD < 20%) if both results are ≥4x RL or control limit of± RL if both results are <4xRL.	X	X*		*Reanalysis did not meet criteria. See table
2) Was a sample duplicate analyzed at the frequency of 1 per batch or 20 samples?	X			
Was a Laboratory Control Sample (LCS) Included in Lab Package?	X			
1) %R criteria met? (80-120%R).	X			
2) Was an LCS analyzed at the frequency of 1/batch or 20 samples?	X			
Were any Field Duplicate samples submitted with this SDG?	X			JC36204-15R/ JC36204-16R
1) RPD criteria met? (RPD < 20%) if both results are ≥4x RL or control limit of± RL if both results are <4xRL.	X			See table
Were all sample quantitation and reporting requirements met?	X			
1) Were all solid samples reported with percent solids > 50%?	X			All OK, no table.
2) Were any samples analyzed or reported with dilutions?		X		
Miscellaneous Items	X			
1) For soils by 7196A, was the pH within a range of 7.0-8.0?	X			
2) For soils by 7199, was the pH within a range of 9.0-9.5?			X	
3) For aqueous by 7196A, was the pH with a range of 1.5-2.5?	X			
4) For soils (3060A), was the digestion temperature 90-95C for at least 60 minutes?	X			
5) For 7199, was each sample injected twice and was the RPD ≤20?			X	
Total chromium result greater than hexavalent chromium result where applicable?	X			Total chromium reported JC36204A. See Table.

Matrix Spikes

Sample ID	Lab ID	Analyte	Matrix Spike	% Recovery	Lower Limit	Upper Limit	PDS%	PDS Limits
MW8D-O-7.0-7.5	JC36204-17	CHROMIUM (HEXAVALENT)	Soluble	4.7	75	125	97	85-115
MW8D-O-7.0-7.5	JC36204-17	CHROMIUM (HEXAVALENT)	Insoluble	79.0				
MW8D-O-7.0-7.5	JC36204-17R	CHROMIUM (HEXAVALENT)	Soluble	4.8			92	
MW8D-O-7.0-7.5	JC36204-17R	CHROMIUM (HEXAVALENT)	Insoluble	61.4				

Laboratory Duplicate

Sample ID	Lab ID	Analyte	Sample Result	Duplicate Result	QL	Units	RPD (%)	Action
MW8D-O-7.0-7.5	JC36204-17	CHROMIUM (HEXAVALENT)	0.33 U	0.64	0.47	mg/kg	NC	RPD Not Calculable (NC). Detected Result <4X RL; Accept.
MW8D-O-7.0-7.5	JC36204-17R	CHROMIUM (HEXAVALENT)	0.75	1.4	0.47	mg/kg	60.5	**Both Results <4X RL, Absolute Difference 0.65 >RL, Estimate (J) All From Rerun**

Field Duplicate

Lab Sample ID	Result	RL	Dup Lab Sample ID	Dup Result	Dup RL	Units	RPD (%)	Action
JC36204-15	0.34 U	0.47	JC36204-16	0.33 U	0.47	mg/kg	NC	Accept

Chromium vs Hexavalent Chromium

Lab Sample ID	Total Chromium (mg/kg)	Total Chromium Reporting Limit (mg/kg)	Total Hexavalent Chromium (mg/kg)	Hexavalent Chromium Reporting Limit (mg/kg)	Action
JC36204-14	19.0	0.94	0	0.48	Cr >Cr6, Accept
JC36204-15	25.3	1.2	0	0.49	Cr >Cr6, Accept
JC36204-16	19.1	1.1	0	0.47	Cr >Cr6, Accept
JC36204-17	17.6	1.2	0.75	0.47	Cr >Cr6, Accept
JC36204-1 (ug/l)	0	10	0	10	Both Nondetect, Accept

SDG#: JC36204/ Method 7196	x - concentration	y - response
Batch: GN58956		
Cr+6 ICAL 2/3/17	0	0
Soil	0.01	0.01
(p. 75 of data pkg)	0.05	0.045
	0.1	0.088
	0.3	0.236
	0.5	0.405
	0.8	0.638
	1	0.813

				(p. 75 of data pkg)
AECOM Calculated Offset	0.0019	OK	Reported Offset	0.0019
AECOM Slope	0.8043	OK	Reported Slope	0.8043
AECOM Calculated r	0.99985	OK	Reported r	0.99985

LCS calculation	**GP3044-B1**	**P.35,75**		
Background Absorbance	0			
Total absorbance	0.732			
Total absorbance - background	0.732			
Instrument Concentration	0.908			
Sample weight (mg/kg)	0.0025			
Final Volume (L)	0.1			
Dilution Factor	1			
AECOM Calculated LCS Result (mg/Kg)	36.3	OK	Reported Result (mg/Kg)	36.3

%R = Found/True*100	**GP3044-B1**	**P.35,75**		
True Value (mg/kg)	40			
AECOM Calculated %R	90.8	OK	Reported %R	90.8

MS calculation	**GP3044-S1**	**P.37,75**	**JC36204-17R**	
Background reading	0.035			
Total absorbance	0.089			
Total absorbance - background	0.054			
Instrument Concentration	0.0648			
Sample weight (mg/kg)	0.00254			
Final Volume (L)	0.1			
Percent solids	0.844			
Dilution Factor	1			
AECOM Calculated MS Result (mg/Kg)	3.0	OK	Reported Result (mg/Kg)	3.0

%R = Found/True*100	**GP3044-S1**	**P.37,75**	**JC36204-17R**	
True Value (mg/kg)	46.6			
Native concentration (mg/Kg)	0.75			
AECOM%R	4.9	OK, rounding	Reported %R	4.8

Percent Solids	**JC36204-17R**	**P.38**	**MW8D-O-7.0-7.5**	
Empty dish weight=	22.51			
Wet weight=	29.89			
Dry weight=	28.74			
AECOM%solids =	84.4	OK	reported %solids=	84.4

Reporting Limit	**JC36204-17R**	**P.11,75**	**MW8D-O-7.0-7.5**	
Low Standard	0.01			
Initial weight (mg/kg)	0.0025			
Final volume (L)	0.1			
Percent solids	0.844			
Dilution Factor	1			
Reporting Limit	0.47	OK	Reported RL (mg/Kg)=	0.47

Sample Calculations

	JC36204-17R	**P.11,75**	**MW8D-O-7.0-7.5**	
Background reading	0.027			
Total absorbance	0.042			
Total absorbance - background	0.015			
Instrument Response	0.016			
Sample weight (mg/kg)	0.00257			
Final Volume (L)	0.1			
Percent solids	0.844			
Dilution Factor	1			
AECOM Calculated Result (mg/Kg)	0.75	OK	Reported Result (mg/Kg)	0.75

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	PPG Garfield Avenue Verification Borings Soil Sampling
Laboratory:	SGS/Accutest, Dayton, NJ
Laboratory Job No.:	JC36204A
Analysis/Method:	CCPW Metals SW-846 3010A/3050B/6010C
Validation Level:	Limited
Site Location/Address:	Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ
AECOM Project No:	60279173 GA.RI.RPT.HDS
Prepared by: Sharon McKechnie/AECOM	Completed on: 02/6/2017
Reviewed by: Kristin Rutherford/AECOM	File Name : JC36204A _2017_02_06_DVR-F

Introduction

The data were reviewed in accordance with the FSP-QAPP and the following NJDEP and /or Region 2 validation Standard Operating Procedure(s) (SOP):

- NJDEP Office of Data Quality SOP 5.A.16, Rev 1 (May 2002), Quality Assurance Data Validation of Analytical Deliverables for Inorganics (based on USEPA SW-846 Methods); and
- ICP-AES Data Validation, SOP No. HW-3a Revision 0 (July 2015).

The results of quality control data analyzed with site samples were used to assess the overall reliability of the data. The following qualifiers were used to identify data quality issues:

U: Indicates the analyte was not detected in the sample above the sample reporting limit.

J: Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.

UJ: Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.

UB: The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.

JB: The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real". The concentration is quantitatively qualified (JB) due to method blank contamination.

R: The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

RA: The sample result was rejected due to NJ specific data validation QC requirements; however, the result is usable for project objectives. Refer to the Data Quality and Usability section in this data validation report for further discussion.

Sample Information

The samples listed below were collected by AECOM on January 26, 2017 as part of the PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ. Only the samples and parameters listed below were validated.

Field ID	Laboratory ID	Matrix	Fraction
HDS-FB20170126 (Equipment Blank)	JC36204-1A	Aqueous	CCPW Metals*
MW8D-O-11.0-11.5	JC36204-14A	Soil	CCPW Metals*
MW8D-O-4.0-4.5	JC36204-15A	Soil	CCPW Metals*
MW8D-O-4.0-4.5X (Field Duplicate of MW8D-O-4.0-4.5)	JC36204-16A	Soil	CCPW Metals*
MW8D-O-7.0-7.5	JC36204-17A	Soil	CCPW Metals*
*CCPW Metals: Antimony, chromium, nickel, thallium, vanadium			

The samples were collected following the procedures detailed in the Work Order for Garfield Avenue Remedial Action (GARA) and the Field Sampling Plan/Quality Assurance Project Plan for Non-Residential and Residential Chromium Sites Hudson County, New Jersey (December 2011).

General Comments

Additional samples were listed on the COC; however, they were placed on hold.

Quality control (QC) issues identified during validation are discussed below. Refer to the Target Analyte Summary Hit List(s) in Attachment A for a listing of all detected results, qualified results, and associated qualifications, where applicable. The nonconformances for each section discussed below are presented in Attachment B.

TAL Metals

Laboratory Blanks

Nickel and chromium were detected in the soil method blank (MB) at a concentration above the method detection limit (MDL), but below the reporting limit (RL); however, there was no effect on the data. Refer to the tables in Appendix B for a listing of MB results.

Equipment Blanks

Thallium was detected in the equipment blank (EB) at a concentration above the MDL, but below the RL; however, there was no effect on the data. Refer to the tables in Appendix B for a listing of EB results.

Matrix Spike Results

Sample MW8D-O-7.0-7.5 (JC36204-17A) was analyzed as the soil matrix spike/matrix spike duplicate (MS/MSD) in this SDG.

The MS and MSD recoveries (%Rs) were below the QC criteria for antimony. Therefore, the nondetected result for antimony in sample MW8D-O-7.0-7.5 (JC36204-17A) was qualified as estimated (UJ) with a possible low bias.

Refer to the Target Analyte Summary Hit List(s) in Attachment A for a listing of all results qualified on the basis of MS/MSD %R. Refer to the tables in Appendix B for a listing of MS results.

Sample Results

Reported results (flagged B by the laboratory) that were less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL) are approximate values and have been qualified as estimated (J).

Data Quality and Usability

In general, these data appear to be valid and may be used for decision-making purposes. No data were rejected. Qualified and detected results are presented in Attachments A and B.

Issues noted for this sample set:

- Antimony in sample MW8D-O-7.0-7.5 (JC36204-17A) was estimated for MS %R and may have a low bias.
- Reported results greater than the MDL but less than the RL were qualified as estimated.

ATTACHMENTS

Attachment A: Target Analyte Summary Hit List(s)

Attachment B: Data Validation Report Form

Attachment A

Target Analyte Summary Hit List(s)

Soil Target Analyte Summary Hit List (TAL Metals)

Site Name PPG Garfield Avenue Verification Borings Soil Sampling
Sampling Date January 26, 2017
Lab Name/ID SGS/Accutest, Dayton, NJ
SDG No JC36204A
Sample Matrix Soil
Trip Blank ID NA
Field Blank ID HDS-FB20170126

Field Sample ID	Lab Sample ID	Analyte	Method Blank (mg/kg)	Laboratory Sample Result (mg/kg)	Validation Sample Result (mg/kg)	RL (mg/kg)	Quality Assurance Decision	NJDEP Validation Footnote
MW8D-O-4.0-4.5	JC36204-15A	ANTIMONY	U	0.60B	0.60	2.3	Qualify	2
MW8D-O-4.0-4.5X	JC36204-16A	ANTIMONY	U	1.1B	1.1	2.3	Qualify	2
MW8D-O-7.0-7.5	JC36204-17A	ANTIMONY	U	U	UJ	2.3	Qualify	1
MW8D-O-11.0-11.5	JC36204-14A	CHROMIUM	0.15	19.0	19.0	0.94		
MW8D-O-4.0-4.5	JC36204-15A	CHROMIUM	0.15	25.3	25.3	1.2		
MW8D-O-4.0-4.5X	JC36204-16A	CHROMIUM	0.15	19.1	19.1	1.1		
MW8D-O-7.0-7.5	JC36204-17A	CHROMIUM	0.15	17.6	17.6	1.2		
MW8D-O-11.0-11.5	JC36204-14A	NICKEL	0.13	14.0	14.0	3.7		
MW8D-O-4.0-4.5	JC36204-15A	NICKEL	0.13	17.1	17.1	4.7		
MW8D-O-4.0-4.5X	JC36204-16A	NICKEL	0.13	15.1	15.1	4.5		
MW8D-O-7.0-7.5	JC36204-17A	NICKEL	0.13	15.7	15.7	4.6		
MW8D-O-11.0-11.5	JC36204-14A	VANADIUM	U	31.7	31.7	4.7		
MW8D-O-4.0-4.5	JC36204-15A	VANADIUM	U	29.8	29.8	5.8		
MW8D-O-4.0-4.5X	JC36204-16A	VANADIUM	U	27.1	27.1	5.6		
MW8D-O-7.0-7.5	JC36204-17A	VANADIUM	U	26.7	26.7	5.8		

Note: A “U” under Method Blank column indicates a nondetect result.
A “U” under the Laboratory Sample Result and Validation Sample Result columns indicates a nondetect result at the RL.

NJDEP Laboratory Footnote

1. The result was qualified because the MS and MSD recoveries did not meet QC criteria.

2 The reported result was greater than the MDL but less than the RL and qualified as estimated.

Aqueous Target Analyte Summary Hit List (TAL Metals)

Site Name PPG Garfield Avenue Verification Borings Soil Sampling
Sampling Date January 26, 2017
Lab Name/ID SGS/Accutest, Dayton, NJ
SDG No JC36204A
Sample Matrix Aqueous
Trip Blank ID NA
Field Blank ID HDS-FB20170126

Field Sample ID	Lab Sample ID	Analyte	Method Blank (ug/l)	Laboratory Sample Result (ug/l)	Validation Sample Result (ug/l)	RL (ug/l)	Quality Assurance Decision	NJDEP Validation Footnote
HDS-FB20170126	JC36204-1A	THALLIUM	U	2.4B	2.4	10	Qualify	1

Note: A “U” under Method Blank column indicates a nondetect result.

NJDEP Laboratory Footnote

1. The reported result was greater than the MDL but less than the RL and qualified as estimated.

Attachment B

Data Validation Report Form

Client Name: PPG Industries	**Project Number:** 60279173 GA.RI.RPT.HDS
Site Location: PPG Garfield Avenue Verification Borings Soil Sampling, Jersey City, NJ	**Project Manager:** Bill Spronz
Laboratory: SGS/Accutest, Dayton, NJ	**Type of Validation:** Limited
Laboratory Job No: JC36204A	**Date Checked:** 02/6/2017
Validator: Sharon McKechnie	**Peer:** Kristin Rutherford

ITEM	YES	NO	N/A	COMMENTS
Sample results included?	X			
Reporting Limits met project requirements?	X			
Field I.D. included?	X			
Laboratory I.D. included?	X			
Did data package sample IDs match sample IDs on COC?	X			
Did electronic data deliverable (EDD) sample IDs match COC sample IDs?	X			
Did data package sample IDs match electronic data deliverable (EDD) sample IDs?	X			
Sample matrix included?	X			
Sample receipt temperature 2-6ºC?	X			
Signed COCs included?	X			
Date of sample collection included?	X			
Date of sample digestion included?	X			
Date of analysis included?	X			
Holding time met QC criteria? (Metals -180 days from sample collection; Mercury - 28 days from sample collection. If HT exceeded by 10 days R all results.	X			
Method reference included?	X			
Laboratory Case Narrative included?	X			
Definitions: MDL - Method Detection Limit; %R - Percent Recovery; RL - Reporting Limit; RPD - Relative Percent Difference; RSD - Relative Standard Deviation :Corr - Correlation Coefficient.				

ITEM	YES	NO	N/A	COMMENTS
Sample dilutions?		X		
Initial calibration documentation included in lab package?			X	N/A for Limited Validation
1) Calibrate daily or each time instrument is set up.			X	
2) ICP (6010) -Blank plus 1 standard?			X	
3) Hg (7470/7471) -Blank plus 5 standards?			X	
Initial Calibration Verification Standard (ICV) for ICP (6010) and Initial Calibration Check Standard (ICCS) for Hg (7470/7471) included in lab package?			X	N/A for Limited Validation
1) Analyzed immediately after initial calibration?			X	
2) %R criteria met? (90-110%)			X	
3) Spot check ICV/ICCS results for several analytes.			X	
Continuing Calibration Verification Standard (CCV) for ICP (6010) and Calibration Check Standard (CCS) for Hg (7470/7471) included in Lab Package?			X	N/A for Limited Validation
1) Analyzed immediately after each ICV/ICC/CB and after every 10 samples?			X	
2) CCS and CCV from independent source and at mid- level of calibration curve.			X	
3) %R criteria met? (90-110%R).			X	
4) Spot check CCV/CCS results for several analytes.			X	
Low Calibration Standard (CRI) included in Lab Package?			X	N/A for Limited Validation
1) %R criteria met?			X	
Calibration Blanks			X	N/A for Limited Validation
1) Analyzed after daily calibration and after each ICV/ICC/CCV/CCS and after every 10 samples?			X	
2) Absolute value <3xIDL?			X	
Method Blank Included in Lab Package?	X			
1) Method blank analyzed with each preparation batch or every SDG, or 1/20 samples?	X			
2) Method blank analyzed 1/20 samples	X			
3) MB results nondetect?		X		See Table
4) Negative MB result reported?		X		

ITEM	YES	NO	N/A	COMMENTS
Field Blanks/Equipment Blanks Included in Lab Package?	X			
1) FB/EB result non-detect?		X		See Table
ICP Interference Check Sample (ICS) included in Lab Package?			X	N/A for Limited Validation
1) Analyzed at beginning of analytical run?			X	
2) %R criteria met? (80-120%)			X	
3) Spot check accuracy of %Rs			X	
Matrix Spike/Matrix Spike Duplicate Data Included in Lab Package?	X			JC36204-17A
1) MS/MSD %R (75-125%R) and RPD (20%) criteria met?		X		See table
2) Was a sample spiked at the frequency of 1/batch or 20 samples?	X			
3) Was the MS performed on a site sample?	X			
4) Was the MS performed on a FB/EB or TB?		X		
Post Digestion Spike			X	N/A for Limited Validation
1) %R criteria met? (75-125%R)			X	
2) Was the spike performed on a FB/EB or TB?			X	
3) Was a sample spiked at the frequency of 1/batch or 20 samples?			X	
Laboratory Duplicate Data Included in Lab Package?		X		
Aqueous - RPD criteria met? (20%)			X	
Soil - RPD criteria met? (35%)			X	
Was a Laboratory Control Sample (LCS) Included in Lab Package?	X			
1) LCS %R criteria met? (80-120%R).	X			
2) Was an LCS analyzed at the frequency of 1/batch or 20 samples?	X			
Serial Dilution			X	N/A for Limited Validation
1) %D (<10%R) criteria met? -			X	
2) Was the frequency 1/batch or 20 samples?			X	
3) Was a site sample used?			X	
4) Was a FB/EB or TB used?			X	

ITEM	YES	NO	N/A	COMMENTS
5) Spot check accuracy of %Ds.			X	
Field Duplicate Data included in Lab Package?	X			
Aqueous - RPD criteria met? (20%)			X	
Soil - RPD criteria met? (35%)	X			And see table for antimony
Percent Solids data included in Lab Package?	X			All met criteria no table
1) % Solids criteria (Reg 2 criteria) met? (>/=50%)	X			
Chromium result greater than corresponding hexavalent chromium result where applicable?	X			Hexavalent chromium reported in JC36204 and JC36204R See table

Blanks

Analyte	Result	3X	10X	Sample Actions	Associated Samples
Method Blank	**mg/kg**	**mg/kg**	**mg/kg**		
Nickel	0.13	0.39	1.3	All >10X MB, Accept	All Soil
Chromium	0.15	0.45	1.5		
Analyte	**Result**	**Result**	**3X**	**10X**	**Sample Actions**	**Associated Samples**
Equipment Blank	**ug/l**	**mg/kg**	**mg/kg**	**mg/kg**		
Thallium	2.4	0.24	0.72	2.4	All Nondetect, Accept	All Soil
*Note: A nominal weight of 1g and nominal final volume of 0.10L was used to convert aqueous units (ug/L) to soils units (mg/kg) in the absence of a full data deliverable.						

Matrix Spike MW8D-O-7.0-7.5 (JC36204-17A)

Analyte	MS% Recovery	MSD% Recovery	Lower Limit	Upper Limit	Actions
Antimony	**61.4**	**58.5**	75	125	**Estimate (UJ) low bias**

Field Duplicate

Analyte	Lab Sample	Result	RL	Dup Lab Sample	Dup Result	Dup DL	Units	RPD (%)	Action
ANTIMONY	JC36204-15A	0.6 B	2.3	JC36204-16A	1.1 B	2.3	mg/kg	58.8	RPD>35%. Both Results <RL. Absolute Difference (0.5) <RL; Accept

Total Chromium vs Hexavalent Chromium

Lab Sample ID	Total Chromium (mg/kg)	Total Chromium Reporting Limit (mg/kg)	Total Hexavalent Chromium (mg/kg)	Hexavalent Chromium Reporting Limit (mg/kg)	Action
JC36204-14	19.0	0.94	0	0.48	Cr >Cr6, Accept
JC36204-15	25.3	1.2	0	0.49	Cr >Cr6, Accept
JC36204-16	19.1	1.1	0	0.47	Cr >Cr6, Accept
JC36204-17	17.6	1.2	0.75	0.47	Cr >Cr6, Accept
JC36204-1 (ug/l)	0	10	0	10	Both Nondetect, Accept