Beta Analytic Inc
4985 SW 74 Court
Miami, Florida 33155
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2005-Accredited Testing Laboratory

May 06, 2019

Daniel George
Pace Analytical
1700 Elm Street SE
Minneapolis
MN, 55414
United States

Dear Mr. George

Please find enclosed your radiocarbon (C14) report for the material recently submitted. The result is reported as "% Biogenic Carbon". This indicates the percentage carbon from "renewable" (biomass or animal by-product) sources versus petroleum (or otherwise fossil) sources . For reference, 100 % Biogenic Carbon indicates that a material is entirely sourced from plants or animal by-products and 0 % Biogenic Carbon indicates that a material did not contain any carbon from plants or animal by-products. A value in between represents a mixture of natural and fossil sources.

The analytical measurement is cited as "percent modern carbon (pMC)". This is the percentage of C14 measured in the sample relative to a modern reference standard (NIST 4990C). The % Biogenic Carbon content is calculated from pMC by applying a small adjustment factor for C14 in carbon dioxide in air today. It is important to note is that all internationally recognized standards using C14 assume that the plant or biomass feedstocks were obtained from natural environments.

Reported results are accredited to ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 standards and all chemistry was performed here in our laboratory and counted in our own accelerators in Miami, Florida.

The international standard method utilized for this analysis is cited on your report. The report also indicates if the result is relative to total carbon (TC) or only total organic carbon (TOC). When interpreting the results, please consider any communications you may have had with us regarding the analysis. If you have any questions please contact us. We welcome your inquiries.

Sincerely,

Chris Patrick
Digital signature on file

Chris Patrick Director

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Beta Analytic
TESTING LABORATORY

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Summary of Results - % Biogenic Carbon Content
ASTM D6866-18 Method B (AMS)

Certificate Number: 411332524025100630
Validation: Chris Patrick
Digital signature on file

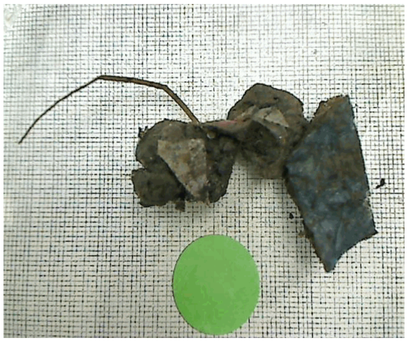
Submitter	Daniel George
Company	Pace Analytical
Date Received	April 26, 2019
Date Reported	May 06, 2019
Submitter Label	FL - Waste 01 (4/2/2019)

RESULT: 59 % Biogenic Carbon Content (as a fraction of total carbon)

Laboratory Number	Beta-524025
Percent modern carbon (pMC)	58.78 +/- 0.19 pMC
Atmospheric adjustment factor (REF)	100.0; = pMC/1.000

Package received - labeling COC


View of content


4681.2mg analyzed (1mm x 1mm scale)

Disclosures: All work was done at Beta Analytic in its own chemistry lab and AMSs. No subcontractors were used. Beta's chemistry laboratory and AMS do not react or measure artificial C 14 used in biomedical and environmental AMS studies. Beta is a C14 tracer-free facility. Validating quality assurance is verified with a Quality Assurance report posted separately to the web library containing the PDF downloadable copy of this report.

Precision on the RESULT is cited as +/- 3% (absolute). The cited precision on the analytical measure (pMC) is 1 sigma (1 relative standard deviation). The reported result only applies to the analyzed material. The accuracy of the RESULT relies on the measured carbon in the analyzed material having been in recent equilibrium with CO_2 in the air and/or from fossil carbon (from living more than 40,000 years ago such as petroleum or coal. The RESULT only applies to relative carbon content, not to relative mass content. The RESULT is calculated by adjusting pMC by the applicable "Atmospheric adjustment factor (REF)" cited in this report.

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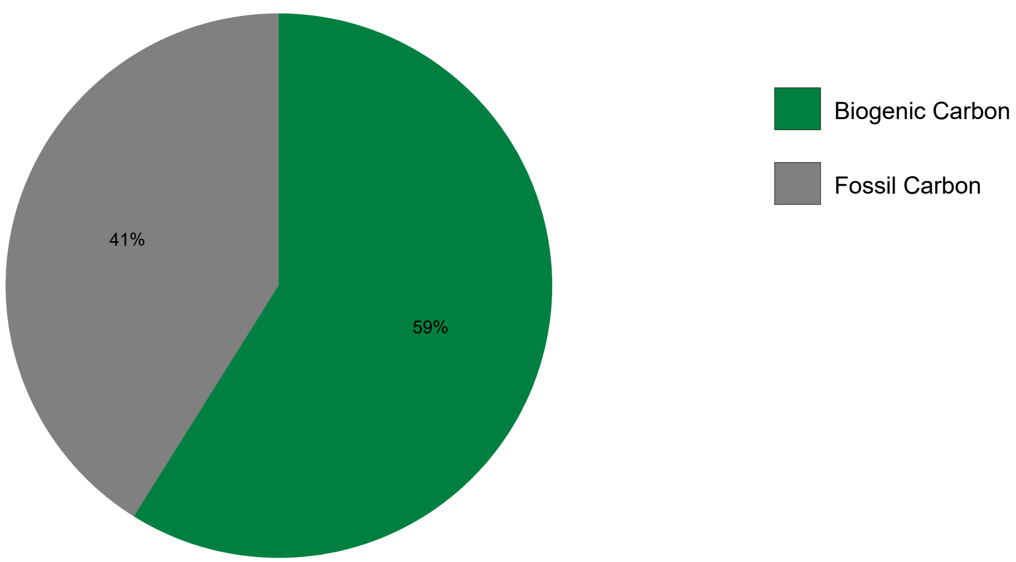

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% Biogenic Carbon Content ASTM D6866-18 Method B (AMS)

Explanation of Results

The result was obtained using the radiocarbon isotope (also known as Carbon-14, C14 or 14C), a naturally occurring isotope of carbon that is radioactive and decays in such a way that there is none left after about 45,000 years following the death of a plant or animal. Its most common use is radiocarbon dating by archaeologists. An industrial application was also developed to determine if consumer products and CO2 emissions were sourced from plants/biomass or from materials such as petroleum or coal (fossil-based). By 2003 there was growing demand for a standardized methodology for applying Carbon-14 testing within the regulatory environment. The first of these standards was ASTM D6866-04, which was written with the assistance of Beta Analytic. Since ASTM was largely viewed as a US standard, European stakeholders soon began demanding an equivalent CEN standard while global stakeholders called for ISO standardization.

The analytical procedures for measuring radiocarbon content using the different standards are identical. The only difference is the reporting format. Results are usually reported using the standardized terminology "% biobased carbon". Only ASTM D6866 uses the term "% biogenic carbon" when the result represents all carbon present (Total Carbon) rather than just the organic carbon (Total Organic Carbon). The terms "% biobased carbon" and "% biogenic carbon" are now the standard units in regulatory and industrial applications, replacing obscure units of measure historically reported by radiocarbon dating laboratories e.g. disintegrations per minute per gram (dpm/g) or radiocarbon age.

The result was obtained by measuring the ratio of radiocarbon in the material relative to a National Institute of Standards and Technology (NIST) modern reference standard (SRM 4990C). This ratio was calculated as a percentage and is reported as percent modern carbon (pMC). The value obtained relative to the NIST standard is normalized to the year 1950 AD so an adjustment was required to calculate a carbon source value relative to today. This factor is listed on the report sheet as the terminology "REF".

Interpretation and application of the results is straightforward. A value of 100% biobased or biogenic carbon would indicate that 100% of the carbon came from plants or animal by-products (biomass) living in the natural environment and a value of 0% would mean that all of the carbon was derived from petrochemicals, coal and other fossil sources. A value between 0-100% would indicate a mixture. The higher the value, the greater the proportion of naturally sourced components in the material.

BETA Beta Analytic TESTING LABORATORY

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Quality Assurance Report

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NIST SRM-4990B and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error x 2) to account for total laboratory error.

Report Date: May 06, 2019
Submitter: Mr. Daniel George

QA MEASUREMENTS

Reference 1

Expected Value: 0.42 +/- 0.04

Measured Value: 0.42 +/- 0.03 pMC

Agreement: Accepted

Reference 2

Expected Value: 129.41 +/- 0.06 pMC

Measured Value: 129.63 +/- 0.39 pMC

Agreement: Accepted

Reference 3

Expected Value: 96.69 +/- 0.50 pMC

Measured Value: 96.42 +/- 0.30 pMC

Agreement: Accepted

COMMENT: All measurements passed acceptance tests.

Validation: Chris Patrick
Digital signature on file

Date: May 06, 2019

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Summary of Results - % Biogenic Carbon Content
ASTM D6866-18 Method B (AMS)

Certificate Number: 411333524026100630
Validation: Chris Patrick
Digital signature on file

Submitter	Daniel George
Company	Pace Analytical
Date Received	April 26, 2019
Date Reported	May 06, 2019
Submitter Label	FL - Waste 02 (4/2/2019)

RESULT: 61 % Biogenic Carbon Content (as a fraction of total carbon)

Laboratory Number	Beta-524026
Percent modern carbon (pMC)	61.29 +/- 0.19 pMC
Atmospheric adjustment factor (REF)	100.0; = pMC/1.000

Package received - labeling COC


View of content


4767.8mg analyzed (1mm x 1mm scale)

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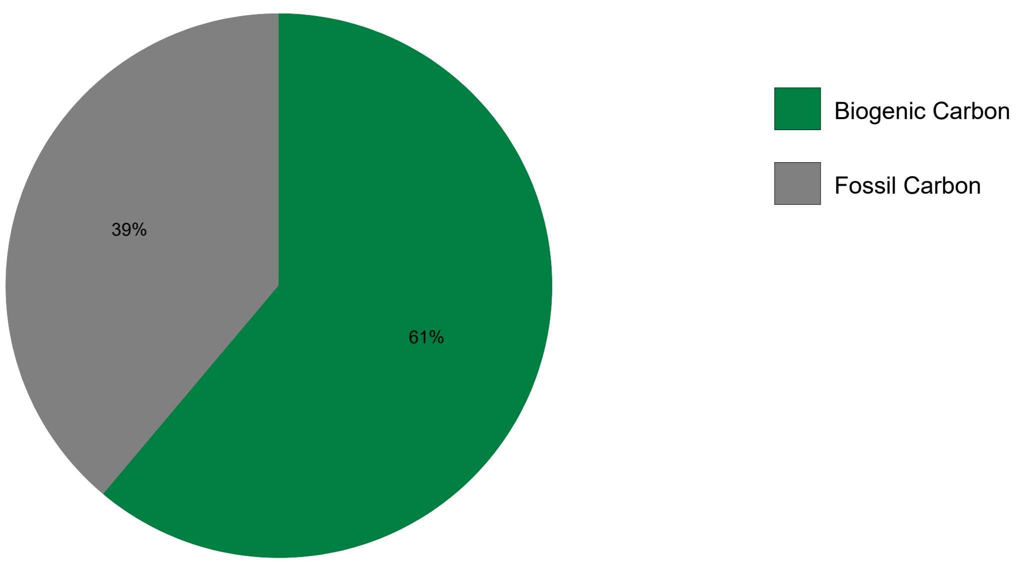

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Report Date: May 06, 2019
Submitter: Mr. Daniel George

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Expected Value: 0.42 +/- 0.04

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Agreement: Accepted

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Expected Value: 129.41 +/- 0.06 pMC

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Agreement: Accepted

Reference 3

Expected Value: 96.69 +/- 0.50 pMC

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Agreement: Accepted

COMMENT: All measurements passed acceptance tests.

Validation: Chris Patrick
Digital signature on file

Date: May 06, 2019

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Chris Patrick Director

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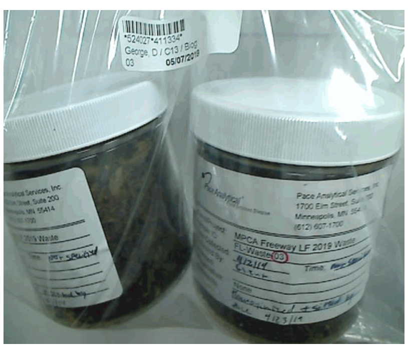
Summary of Results - % Biogenic Carbon Content
ASTM D6866-18 Method B (AMS)

Certificate Number: 411334524027100630
Validation: Chris Patrick
Digital signature on file

Submitter	Daniel George
Company	Pace Analytical
Date Received	April 26, 2019
Date Reported	May 06, 2019
Submitter Label	FL - Waste 03 (4/2/2019)

RESULT: 79 % Biogenic Carbon Content (as a fraction of total carbon)

Laboratory Number	Beta-524027
Percent modern carbon (pMC)	78.74 +/- 0.2 pMC
Atmospheric adjustment factor (REF)	100.0; = pMC/1.000


Package received - labeling COC


View of content


3825.8mg analyzed (1mm x 1mm scale)

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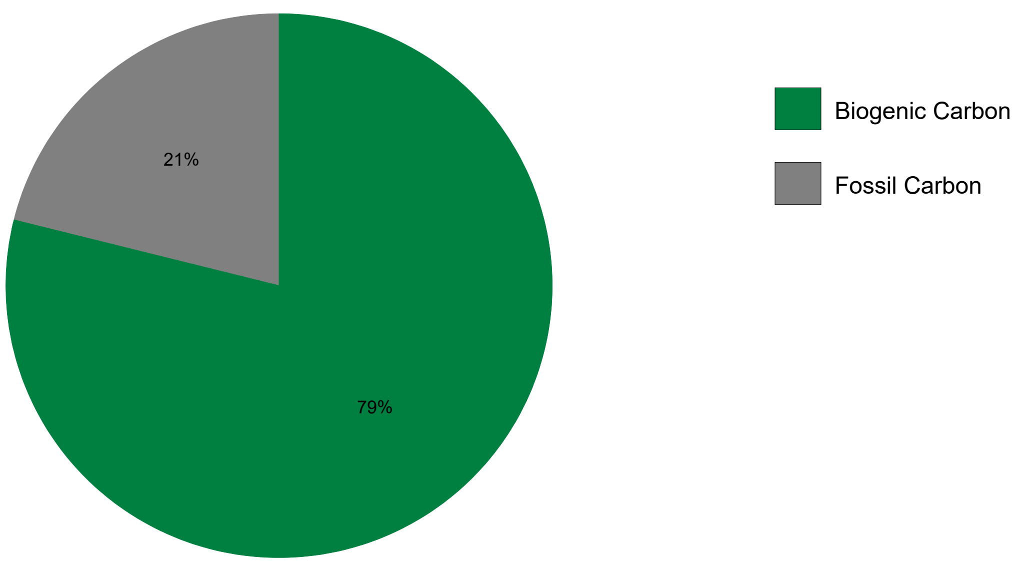

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COMMENT: All measurements passed acceptance tests.

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Digital signature on file

Date: May 06, 2019

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Sample Number: 19-M789

Report Date: 5/ 8/19

Daniel George
Pace Analytical
1700 Elm St
Minneapolis MN 55414

Work Order #: 81-0357
P.O. #: PRJ07786
Date Collected: 4/ 2/19

Date Received: 4/26/19

Sample Description: FL-Waste-01

*** PROXIMATE ***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	49.13	wt. %		
Ash	37.10	wt. %	72.93	wt. %
BTU/lb	1265	BTU/lb	2488	BTU/lb
Total Sulfur	0.10	wt. %	0.20	wt. %

*** ULTIMATE ***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	49.13	wt. %		
Ash	37.10	wt. %	72.93	wt. %
Carbon	9.50	wt. %	18.68	wt. %
Hydrogen	6.65	wt. %	2.27	wt. %
Nitrogen	0.25	wt. %	0.49	wt. %
Total Sulfur	0.10	wt. %	0.20	wt. %
Oxygen by Difference	46.40	wt. %	5.44	wt. %
Chlorine	1270	ug/g	2500	ug/g

*** SULFUR FORMS ***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Sulfur	0.10	wt. %	0.20	wt. %

*** ASH FUSION ***

ANALYTE	REDUCING	OXIDIZING

*** MINERAL ANALYSIS OF ASH ***

ANALYTE	DRY BASIS

*** MISCELLANEOUS ***

ANALYTE	AS RECEIVED	DRY BASIS
Hydrogen less H2O	1.15	
Oxygen Less H2O	2.77	

Approved by: Stacy Zander SZ

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Sample Number: 19-M790

Report Date: 5/ 8/19

Daniel George
Pace Analytical
1700 Elm St
Minneapolis MN 55414

Work Order #: 81-0357
P.O. #: PRJ07786
Date Collected: 4/ 2/19

Date Received: 4/26/19

Sample Description: FL-Waste-02

*** PROXIMATE ***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	23.65	wt. %		
Ash	64.53	wt. %	84.52	wt. %
BTU/lb	580	BTU/lb	759	BTU/lb
Total Sulfur	0.75	wt. %	0.98	wt. %

*** ULTIMATE ***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	23.65	wt. %		
Ash	64.53	wt. %	84.52	wt. %
Carbon	4.53	wt. %	5.93	wt. %
Hydrogen	2.82	wt. %	< 0.5	wt. %
Nitrogen	< 0.2	wt. %	< 0.26	wt. %
Total Sulfur	0.75	wt. %	0.98	wt. %
Oxygen by Difference	27.17	wt. %	8.08	wt. %
Chlorine	260	ug/g	341	ug/g

*** SULFUR FORMS ***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Sulfur	0.75	wt. %	0.98	wt. %

*** ASH FUSION ***

ANALYTE	REDUCING	OXIDIZING

*** MINERAL ANALYSIS OF ASH ***

ANALYTE	DRY BASIS

*** MISCELLANEOUS ***

ANALYTE	AS RECEIVED	DRY BASIS
Hydrogen less H2O	0.17	
Oxygen Less H2O	6.17	

Approved by: Stacy Zander SZ

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
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MEMBER ACIL

Sample Number: 19-M791

Report Date: 5/ 8/19

Daniel George
Pace Analytical
1700 Elm St
Minneapolis MN 55414

Work Order #: 81-0357
P.O. #: PRJ07786
Date Collected: 4/ 2/19

Date Received: 4/26/19

Sample Description: FL-Waste-03

*** PROXIMATE ***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	24.07	wt. %		
Ash	63.90	wt. %	84.16	wt. %
BTU/lb	934	BTU/lb	1230	BTU/lb
Total Sulfur	0.28	wt. %	0.37	wt. %

*** ULTIMATE ***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	24.07	wt. %		
Ash	63.90	wt. %	84.16	wt. %
Carbon	6.24	wt. %	8.22	wt. %
Hydrogen	3.16	wt. %	0.61	wt. %
Nitrogen	< 0.2	wt. %	< 0.26	wt. %
Total Sulfur	0.28	wt. %	0.37	wt. %
Oxygen by Difference	26.22	wt. %	6.38	wt. %
Chlorine	271	ug/g	357	ug/g

*** SULFUR FORMS ***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Sulfur	0.28	wt. %	0.37	wt. %

*** ASH FUSION ***

ANALYTE	REDUCING	OXIDIZING

*** MINERAL ANALYSIS OF ASH ***

ANALYTE	DRY BASIS

*** MISCELLANEOUS ***

ANALYTE	AS RECEIVED	DRY BASIS
Hydrogen less H2O	0.47	
Oxygen Less H2O	4.84	

Approved by: Stacy Zander SL

81-0357

Minnesota Pollution Control Agency

Chain-of-Custody Form revision 2013.0909

Work Order Number:
Turnaround Time:
COC Type:
COC ID:
Page: 1 of 1

FOR LAB USE ONLY

Lab Work Order Sticker

PROJECT/CLIENT INFO

Facility Code:	MNSW-057 — Program Code (MDH Lab Only): QW
Project Name:	19-01567 MPCA Freeway LF 2019 Waste — Project Task Code: PRJ07786
Project Manager:	Brad Jacobson 612-607-6375 Pace MN-FLD: 1700 Elm St., MPLS, MN 55414
Potential Hazard?	If yes, add information to Sampler Comments Section

LABORATORY

Lab Name: MVTL - North Dakota
Address: 2616 East Broadway Ave.
Bismark ND 58501
Phone No: 701-258-9720

SAMPLE DETAILS

SAMPLE TYPE CODES
Sample=Routine Sample
S-IVP=Integrated Vertical Profile Sample
S-CWOP=Composite Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample

LAB MATRIX CODES
DW=Drinking Water
NW=Non-potable Water
SD=Soil/Solid
WP=Wipe
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRIX CODES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample

ANALYSIS REQUESTED

	Location Identifier	Sample Type	Date	Time	Start Depth, in meters	End Depth, in meters	Grab (G) or Composite (C) Sample	Lab Matrix Code	Field Matrix Code	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	PRESERV. / ANALYSIS	Chlorine - SW846/5050/9251	Sulfur - D4239	CHN+O2 - D5373	Moisture - D3173	Ash @ 750 - D3174	Calorific Value - D5865	Lab Sample No.	#
M789	FL-Waste-01	Sample	4/2/2019	---	---	---	C	SD		N	Bulk waste rec'vd from Barr 4/10/19			X	X	X	X	X	X		1
M790	FL-Waste-02	Sample	4/2/2019	---	---	---	C	SD		N	Bulk waste rec'vd from Barr 4/10/19			X	X	X	X	X	X		2
M791	FL-Waste-03	Sample	4/2/2019	---	---	---	C	SD		N	Bulk waste rec'vd from Barr 4/10/19			X	X	X	X	X	X		3
																					4
																					5
											4/26/19										6
											DMG										7
																					8
																					9
																					10

Sampled By: Barr Engineering Staff
Sampler's Signature: Not Available - Material received without COC
Phone #:

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/ Affilliation	Date/Time
(Sampler)*Pace staff minimizing/reducing material: Daniel George / Pace	4/26/19 1150	N Buchmann MVTL	26 Apr 19 1055 2.3C TM562

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 11, 2019

Mr. Brad Jacobson
Pace Analytical Services, LLC..
1700 Elm Street
Suite 200
Minneapolis, MN 55414

RE: Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Dear Mr. Jacobson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 29, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Anderson
jennifer.anderson@pacelabs.com
(612)607-6436
Project Manager

Enclosures

cc: Tom Halverson, Pace Analytical Field Services
Chris Pelosi, Pace Analytical Services - Field Services

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	19-01567 MPCA Freeway LF 19 SL
Pace Project No.:	10468888

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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Minneapolis, MN 55414
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SAMPLE SUMMARY

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10468888001	**FD-SB-F2 (0-6ft)**	Solid	03/29/19 09:00	03/29/19 14:20
10468888002	**FD-SB-G5 (0-6ft)**	Solid	03/29/19 09:30	03/29/19 14:20
10468888003	**FD-SB-C3 (0-4.5ft)**	Solid	03/29/19 09:50	03/29/19 14:20
10468888004	**FD-SB-A4 (0-3ft)**	Solid	03/29/19 10:15	03/29/19 14:20
10468888005	**FD-SB-B1 (0-7.5ft)**	Solid	03/29/19 10:40	03/29/19 14:20
10468888006	**Trip Blank**	Solid	03/29/19 00:00	03/29/19 14:20

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SAMPLE ANALYTE COUNT

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10468888001	**FD-SB-F2 (0-6ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10468888002	**FD-SB-G5 (0-6ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10468888003	**FD-SB-C3 (0-4.5ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10468888004	**FD-SB-A4 (0-3ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10468888005	**FD-SB-B1 (0-7.5ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	LMW	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10468888006	**Trip Blank**	WI MOD GRO	AJR	2	PASI-M
		EPA 8260B	GDM	70	PASI-M

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-F2 (0-6ft) **Lab ID: 10468888001** Collected: 03/29/19 09:00 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**135**	mg/kg	97.8	25.4	10	04/01/19 08:11	04/02/19 16:23		T6
Surrogates									
n-Triacontane (S)	0	%.	50-150		10	04/01/19 08:11	04/02/19 16:23	638-68-6	S4
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**3.1J**	mg/kg	11.4	1.5	1	04/09/19 10:22	04/09/19 16:55		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%.	80-150		1	04/09/19 10:22	04/09/19 16:55	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**57.4**	mg/kg	0.56	0.047	1	04/01/19 11:50	04/02/19 12:35	7440-39-3	
Silver	**<0.041**	mg/kg	0.56	0.041	1	04/01/19 11:50	04/02/19 12:35	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**3.6**	mg/kg	0.53	0.19	20	04/01/19 11:50	04/05/19 02:29	7440-38-2	
Cadmium	**0.11**	mg/kg	0.085	0.028	20	04/01/19 11:50	04/05/19 02:29	7440-43-9	
Chromium	**18.9**	mg/kg	0.53	0.13	20	04/01/19 11:50	04/05/19 02:29	7440-47-3	
Lead	**16.7**	mg/kg	0.21	0.061	20	04/01/19 11:50	04/05/19 02:29	7439-92-1	
Selenium	**0.56**	mg/kg	0.53	0.15	20	04/01/19 11:50	04/05/19 02:29	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.030**	mg/kg	0.022	0.0090	1	04/01/19 12:10	04/03/19 11:33	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**13.3**	%	0.10	0.10	1		04/01/19 11:19		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<2.4**	ug/kg	57.7	2.4	5	04/01/19 09:15	04/02/19 21:17	83-32-9	
Acenaphthylene	**<2.9**	ug/kg	57.7	2.9	5	04/01/19 09:15	04/02/19 21:17	208-96-8	
Anthracene	**<2.7**	ug/kg	57.7	2.7	5	04/01/19 09:15	04/02/19 21:17	120-12-7	
Benzo(a)anthracene	**86.5**	ug/kg	57.7	6.2	5	04/01/19 09:15	04/02/19 21:17	56-55-3	
Benzo(a)pyrene	**110**	ug/kg	57.7	4.0	5	04/01/19 09:15	04/02/19 21:17	50-32-8	
Benzo(b)fluoranthene	**144**	ug/kg	57.7	2.2	5	04/01/19 09:15	04/02/19 21:17	205-99-2	
Benzo(e)pyrene	**102**	ug/kg	57.7	4.1	5	04/01/19 09:15	04/02/19 21:17	192-97-2	N2
Benzo(g,h,i)perylene	**108**	ug/kg	57.7	3.7	5	04/01/19 09:15	04/02/19 21:17	191-24-2	
Benzo(k)fluoranthene	**58.7**	ug/kg	57.7	4.9	5	04/01/19 09:15	04/02/19 21:17	207-08-9	
Chrysene	**119**	ug/kg	57.7	7.8	5	04/01/19 09:15	04/02/19 21:17	218-01-9	
Dibenz(a,h)anthracene	**<2.7**	ug/kg	57.7	2.7	5	04/01/19 09:15	04/02/19 21:17	53-70-3	
Fluoranthene	**181**	ug/kg	57.7	2.5	5	04/01/19 09:15	04/02/19 21:17	206-44-0	
Fluorene	**<1.8**	ug/kg	57.7	1.8	5	04/01/19 09:15	04/02/19 21:17	86-73-7	
Indeno(1,2,3-cd)pyrene	**71.7**	ug/kg	57.7	3.9	5	04/01/19 09:15	04/02/19 21:17	193-39-5	
Naphthalene	**<4.4**	ug/kg	57.7	4.4	5	04/01/19 09:15	04/02/19 21:17	91-20-3	
Phenanthrene	**121**	ug/kg	57.7	11.1	5	04/01/19 09:15	04/02/19 21:17	85-01-8	
Pyrene	**204**	ug/kg	57.7	8.8	5	04/01/19 09:15	04/02/19 21:17	129-00-0	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-F2 (0-6ft) **Lab ID: 10468888001** Collected: 03/29/19 09:00 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Surrogates									
2-Fluorobiphenyl (S)	87	%.	30-125		5	04/01/19 09:15	04/02/19 21:17	321-60-8	D3
p-Terphenyl-d14 (S)	74	%.	30-125		5	04/01/19 09:15	04/02/19 21:17	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<353**	ug/kg	1130	353	1	04/01/19 10:21	04/01/19 14:58	67-64-1	
Allyl chloride	**<47.5**	ug/kg	227	47.5	1	04/01/19 10:21	04/01/19 14:58	107-05-1	
Benzene	**<3.2**	ug/kg	22.7	3.2	1	04/01/19 10:21	04/01/19 14:58	71-43-2	
Bromobenzene	**<3.5**	ug/kg	56.7	3.5	1	04/01/19 10:21	04/01/19 14:58	108-86-1	
Bromochloromethane	**<19.6**	ug/kg	56.7	19.6	1	04/01/19 10:21	04/01/19 14:58	74-97-5	
Bromodichloromethane	**<19.4**	ug/kg	56.7	19.4	1	04/01/19 10:21	04/01/19 14:58	75-27-4	
Bromoform	**<85.8**	ug/kg	227	85.8	1	04/01/19 10:21	04/01/19 14:58	75-25-2	
Bromomethane	**<66.3**	ug/kg	567	66.3	1	04/01/19 10:21	04/01/19 14:58	74-83-9	
2-Butanone (MEK)	**<30.1**	ug/kg	283	30.1	1	04/01/19 10:21	04/01/19 14:58	78-93-3	
n-Butylbenzene	**<27.0**	ug/kg	56.7	27.0	1	04/01/19 10:21	04/01/19 14:58	104-51-8	
sec-Butylbenzene	**<10.9**	ug/kg	56.7	10.9	1	04/01/19 10:21	04/01/19 14:58	135-98-8	
tert-Butylbenzene	**<10.9**	ug/kg	56.7	10.9	1	04/01/19 10:21	04/01/19 14:58	98-06-6	
Carbon tetrachloride	**<27.1**	ug/kg	56.7	27.1	1	04/01/19 10:21	04/01/19 14:58	56-23-5	
Chlorobenzene	**<3.2**	ug/kg	56.7	3.2	1	04/01/19 10:21	04/01/19 14:58	108-90-7	
Chloroethane	**<29.5**	ug/kg	567	29.5	1	04/01/19 10:21	04/01/19 14:58	75-00-3	
Chloroform	**<28.3**	ug/kg	56.7	28.3	1	04/01/19 10:21	04/01/19 14:58	67-66-3	
Chloromethane	**<13.6**	ug/kg	227	13.6	1	04/01/19 10:21	04/01/19 14:58	74-87-3	
2-Chlorotoluene	**<2.8**	ug/kg	56.7	2.8	1	04/01/19 10:21	04/01/19 14:58	95-49-8	
4-Chlorotoluene	**<2.9**	ug/kg	56.7	2.9	1	04/01/19 10:21	04/01/19 14:58	106-43-4	
1,2-Dibromo-3-chloropropane	**<197**	ug/kg	567	197	1	04/01/19 10:21	04/01/19 14:58	96-12-8	
Dibromochloromethane	**<6.6**	ug/kg	227	6.6	1	04/01/19 10:21	04/01/19 14:58	124-48-1	
1,2-Dibromoethane (EDB)	**<6.0**	ug/kg	56.7	6.0	1	04/01/19 10:21	04/01/19 14:58	106-93-4	
Dibromomethane	**<10.4**	ug/kg	56.7	10.4	1	04/01/19 10:21	04/01/19 14:58	74-95-3	
1,2-Dichlorobenzene	**<2.3**	ug/kg	56.7	2.3	1	04/01/19 10:21	04/01/19 14:58	95-50-1	
1,3-Dichlorobenzene	**<2.1**	ug/kg	56.7	2.1	1	04/01/19 10:21	04/01/19 14:58	541-73-1	
1,4-Dichlorobenzene	**<3.5**	ug/kg	56.7	3.5	1	04/01/19 10:21	04/01/19 14:58	106-46-7	
Dichlorodifluoromethane	**<18.4**	ug/kg	227	18.4	1	04/01/19 10:21	04/01/19 14:58	75-71-8	
1,1-Dichloroethane	**<6.4**	ug/kg	56.7	6.4	1	04/01/19 10:21	04/01/19 14:58	75-34-3	
1,2-Dichloroethane	**<6.2**	ug/kg	56.7	6.2	1	04/01/19 10:21	04/01/19 14:58	107-06-2	
1,1-Dichloroethene	**<17.0**	ug/kg	56.7	17.0	1	04/01/19 10:21	04/01/19 14:58	75-35-4	
cis-1,2-Dichloroethene	**<9.4**	ug/kg	56.7	9.4	1	04/01/19 10:21	04/01/19 14:58	156-59-2	
trans-1,2-Dichloroethene	**<26.5**	ug/kg	56.7	26.5	1	04/01/19 10:21	04/01/19 14:58	156-60-5	
Dichlorofluoromethane	**<78.3**	ug/kg	567	78.3	1	04/01/19 10:21	04/01/19 14:58	75-43-4	N2
1,2-Dichloropropane	**<9.8**	ug/kg	56.7	9.8	1	04/01/19 10:21	04/01/19 14:58	78-87-5	
1,3-Dichloropropane	**<7.8**	ug/kg	56.7	7.8	1	04/01/19 10:21	04/01/19 14:58	142-28-9	
2,2-Dichloropropane	**<7.1**	ug/kg	227	7.1	1	04/01/19 10:21	04/01/19 14:58	594-20-7	
1,1-Dichloropropene	**<26.2**	ug/kg	56.7	26.2	1	04/01/19 10:21	04/01/19 14:58	563-58-6	
cis-1,3-Dichloropropene	**<8.1**	ug/kg	56.7	8.1	1	04/01/19 10:21	04/01/19 14:58	10061-01-5	
trans-1,3-Dichloropropene	**<7.9**	ug/kg	56.7	7.9	1	04/01/19 10:21	04/01/19 14:58	10061-02-6	
Diethyl ether (Ethyl ether)	**<34.7**	ug/kg	227	34.7	1	04/01/19 10:21	04/01/19 14:58	60-29-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-F2 (0-6ft) **Lab ID: 10468888001** Collected: 03/29/19 09:00 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Ethylbenzene	**<3.1**	ug/kg	56.7	3.1	1	04/01/19 10:21	04/01/19 14:58	100-41-4	
Hexachloro-1,3-butadiene	**<13.8**	ug/kg	283	13.8	1	04/01/19 10:21	04/01/19 14:58	87-68-3	
Isopropylbenzene (Cumene)	**<2.5**	ug/kg	56.7	2.5	1	04/01/19 10:21	04/01/19 14:58	98-82-8	
p-Isopropyltoluene	**<17.2**	ug/kg	56.7	17.2	1	04/01/19 10:21	04/01/19 14:58	99-87-6	
Methylene Chloride	**<107**	ug/kg	227	107	1	04/01/19 10:21	04/01/19 14:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<11.8**	ug/kg	283	11.8	1	04/01/19 10:21	04/01/19 14:58	108-10-1	
Methyl-tert-butyl ether	**<6.7**	ug/kg	56.7	6.7	1	04/01/19 10:21	04/01/19 14:58	1634-04-4	
Naphthalene	**<53.0**	ug/kg	227	53.0	1	04/01/19 10:21	04/01/19 14:58	91-20-3	
n-Propylbenzene	**<3.0**	ug/kg	56.7	3.0	1	04/01/19 10:21	04/01/19 14:58	103-65-1	
Styrene	**<2.6**	ug/kg	56.7	2.6	1	04/01/19 10:21	04/01/19 14:58	100-42-5	
1,1,1,2-Tetrachloroethane	**<17.8**	ug/kg	56.7	17.8	1	04/01/19 10:21	04/01/19 14:58	630-20-6	
1,1,2,2-Tetrachloroethane	**<10**	ug/kg	56.7	10	1	04/01/19 10:21	04/01/19 14:58	79-34-5	
Tetrachloroethene	**<19.9**	ug/kg	56.7	19.9	1	04/01/19 10:21	04/01/19 14:58	127-18-4	
Tetrahydrofuran	**<82.4**	ug/kg	2270	82.4	1	04/01/19 10:21	04/01/19 14:58	109-99-9	
Toluene	**<13.8**	ug/kg	56.7	13.8	1	04/01/19 10:21	04/01/19 14:58	108-88-3	
1,2,3-Trichlorobenzene	**<9.1**	ug/kg	56.7	9.1	1	04/01/19 10:21	04/01/19 14:58	87-61-6	
1,2,4-Trichlorobenzene	**<12.6**	ug/kg	56.7	12.6	1	04/01/19 10:21	04/01/19 14:58	120-82-1	
1,1,1-Trichloroethane	**<26.4**	ug/kg	56.7	26.4	1	04/01/19 10:21	04/01/19 14:58	71-55-6	
1,1,2-Trichloroethane	**<6.8**	ug/kg	56.7	6.8	1	04/01/19 10:21	04/01/19 14:58	79-00-5	
Trichloroethene	**<8.7**	ug/kg	56.7	8.7	1	04/01/19 10:21	04/01/19 14:58	79-01-6	
Trichlorofluoromethane	**<98.8**	ug/kg	227	98.8	1	04/01/19 10:21	04/01/19 14:58	75-69-4	M1
1,2,3-Trichloropropane	**<14.8**	ug/kg	227	14.8	1	04/01/19 10:21	04/01/19 14:58	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<65.7**	ug/kg	227	65.7	1	04/01/19 10:21	04/01/19 14:58	76-13-1	
1,2,4-Trimethylbenzene	**<11.3**	ug/kg	56.7	11.3	1	04/01/19 10:21	04/01/19 14:58	95-63-6	
1,3,5-Trimethylbenzene	**<9.0**	ug/kg	56.7	9.0	1	04/01/19 10:21	04/01/19 14:58	108-67-8	
Vinyl chloride	**<11.2**	ug/kg	22.7	11.2	1	04/01/19 10:21	04/01/19 14:58	75-01-4	
Xylene (Total)	**<13.1**	ug/kg	170	13.1	1	04/01/19 10:21	04/01/19 14:58	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	90	%.	75-125		1	04/01/19 10:21	04/01/19 14:58	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	04/01/19 10:21	04/01/19 14:58	2037-26-5	
4-Bromofluorobenzene (S)	90	%.	75-125		1	04/01/19 10:21	04/01/19 14:58	460-00-4	

Sample: FD-SB-G5 (0-6ft) **Lab ID: 10468888002** Collected: 03/29/19 09:30 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**90.9**	mg/kg	16.7	4.3	2	04/01/19 08:11	04/03/19 10:29		T6
Surrogates									
n-Triacontane (S)	89	%.	50-150		2	04/01/19 08:11	04/03/19 10:29	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**2.9J**	mg/kg	13.3	1.7	1	04/09/19 10:22	04/09/19 17:19		

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-G5 (0-6ft) **Lab ID: 10468888002** Collected: 03/29/19 09:30 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%.	80-150		1	04/09/19 10:22	04/09/19 17:19	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**54.2**	mg/kg	0.52	0.044	1	04/01/19 11:50	04/02/19 12:44	7440-39-3	
Silver	**<0.038**	mg/kg	0.52	0.038	1	04/01/19 11:50	04/02/19 12:44	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**6.1**	mg/kg	0.57	0.20	20	04/01/19 11:50	04/05/19 02:32	7440-38-2	
Cadmium	**0.52**	mg/kg	0.091	0.030	20	04/01/19 11:50	04/05/19 02:32	7440-43-9	
Chromium	**30.4**	mg/kg	0.57	0.14	20	04/01/19 11:50	04/05/19 02:32	7440-47-3	
Lead	**44.4**	mg/kg	0.23	0.065	20	04/01/19 11:50	04/05/19 02:32	7439-92-1	
Selenium	**1.1**	mg/kg	0.57	0.17	20	04/01/19 11:50	04/05/19 02:32	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.023**	mg/kg	0.022	0.0087	1	04/01/19 12:10	04/03/19 11:35	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**13.2**	%	0.10	0.10	1		04/01/19 11:19		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<2.4**	ug/kg	57.5	2.4	5	04/01/19 09:15	04/02/19 21:38	83-32-9	
Acenaphthylene	**<2.8**	ug/kg	57.5	2.8	5	04/01/19 09:15	04/02/19 21:38	208-96-8	
Anthracene	**<2.7**	ug/kg	57.5	2.7	5	04/01/19 09:15	04/02/19 21:38	120-12-7	
Benzo(a)anthracene	**73.1**	ug/kg	57.5	6.2	5	04/01/19 09:15	04/02/19 21:38	56-55-3	
Benzo(a)pyrene	**81.8**	ug/kg	57.5	4.0	5	04/01/19 09:15	04/02/19 21:38	50-32-8	
Benzo(b)fluoranthene	**95.6**	ug/kg	57.5	2.1	5	04/01/19 09:15	04/02/19 21:38	205-99-2	
Benzo(e)pyrene	**72.8**	ug/kg	57.5	4.1	5	04/01/19 09:15	04/02/19 21:38	192-97-2	N2
Benzo(g,h,i)perylene	**79.6**	ug/kg	57.5	3.6	5	04/01/19 09:15	04/02/19 21:38	191-24-2	
Benzo(k)fluoranthene	**<4.9**	ug/kg	57.5	4.9	5	04/01/19 09:15	04/02/19 21:38	207-08-9	
Chrysene	**79.3**	ug/kg	57.5	7.8	5	04/01/19 09:15	04/02/19 21:38	218-01-9	
Dibenz(a,h)anthracene	**<2.7**	ug/kg	57.5	2.7	5	04/01/19 09:15	04/02/19 21:38	53-70-3	
Fluoranthene	**150**	ug/kg	57.5	2.5	5	04/01/19 09:15	04/02/19 21:38	206-44-0	
Fluorene	**<1.8**	ug/kg	57.5	1.8	5	04/01/19 09:15	04/02/19 21:38	86-73-7	
Indeno(1,2,3-cd)pyrene	**<3.9**	ug/kg	57.5	3.9	5	04/01/19 09:15	04/02/19 21:38	193-39-5	
Naphthalene	**<4.4**	ug/kg	57.5	4.4	5	04/01/19 09:15	04/02/19 21:38	91-20-3	
Phenanthrene	**70.3**	ug/kg	57.5	11.0	5	04/01/19 09:15	04/02/19 21:38	85-01-8	
Pyrene	**148**	ug/kg	57.5	8.8	5	04/01/19 09:15	04/02/19 21:38	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	84	%.	30-125		5	04/01/19 09:15	04/02/19 21:38	321-60-8	D3
p-Terphenyl-d14 (S)	74	%.	30-125		5	04/01/19 09:15	04/02/19 21:38	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<407**	ug/kg	1310	407	1	04/01/19 10:21	04/01/19 15:34	67-64-1	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-G5 (0-6ft) **Lab ID: 10468888002** Collected: 03/29/19 09:30 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Allyl chloride	**<54.8**	ug/kg	262	54.8	1	04/01/19 10:21	04/01/19 15:34	107-05-1	
Benzene	**5.1J**	ug/kg	26.2	3.7	1	04/01/19 10:21	04/01/19 15:34	71-43-2	
Bromobenzene	**<4.0**	ug/kg	65.4	4.0	1	04/01/19 10:21	04/01/19 15:34	108-86-1	
Bromochloromethane	**<22.6**	ug/kg	65.4	22.6	1	04/01/19 10:21	04/01/19 15:34	74-97-5	
Bromodichloromethane	**<22.4**	ug/kg	65.4	22.4	1	04/01/19 10:21	04/01/19 15:34	75-27-4	
Bromoform	**<99.1**	ug/kg	262	99.1	1	04/01/19 10:21	04/01/19 15:34	75-25-2	
Bromomethane	**<76.5**	ug/kg	654	76.5	1	04/01/19 10:21	04/01/19 15:34	74-83-9	
2-Butanone (MEK)	**<34.8**	ug/kg	327	34.8	1	04/01/19 10:21	04/01/19 15:34	78-93-3	
n-Butylbenzene	**<31.1**	ug/kg	65.4	31.1	1	04/01/19 10:21	04/01/19 15:34	104-51-8	
sec-Butylbenzene	**<12.5**	ug/kg	65.4	12.5	1	04/01/19 10:21	04/01/19 15:34	135-98-8	
tert-Butylbenzene	**<12.6**	ug/kg	65.4	12.6	1	04/01/19 10:21	04/01/19 15:34	98-06-6	
Carbon tetrachloride	**<31.3**	ug/kg	65.4	31.3	1	04/01/19 10:21	04/01/19 15:34	56-23-5	
Chlorobenzene	**<3.7**	ug/kg	65.4	3.7	1	04/01/19 10:21	04/01/19 15:34	108-90-7	
Chloroethane	**<34.0**	ug/kg	654	34.0	1	04/01/19 10:21	04/01/19 15:34	75-00-3	
Chloroform	**<32.7**	ug/kg	65.4	32.7	1	04/01/19 10:21	04/01/19 15:34	67-66-3	
Chloromethane	**<15.7**	ug/kg	262	15.7	1	04/01/19 10:21	04/01/19 15:34	74-87-3	
2-Chlorotoluene	**<3.2**	ug/kg	65.4	3.2	1	04/01/19 10:21	04/01/19 15:34	95-49-8	
4-Chlorotoluene	**<3.3**	ug/kg	65.4	3.3	1	04/01/19 10:21	04/01/19 15:34	106-43-4	
1,2-Dibromo-3-chloropropane	**<228**	ug/kg	654	228	1	04/01/19 10:21	04/01/19 15:34	96-12-8	
Dibromochloromethane	**<7.6**	ug/kg	262	7.6	1	04/01/19 10:21	04/01/19 15:34	124-48-1	
1,2-Dibromoethane (EDB)	**<6.9**	ug/kg	65.4	6.9	1	04/01/19 10:21	04/01/19 15:34	106-93-4	
Dibromomethane	**<12.0**	ug/kg	65.4	12.0	1	04/01/19 10:21	04/01/19 15:34	74-95-3	
1,2-Dichlorobenzene	**<2.6**	ug/kg	65.4	2.6	1	04/01/19 10:21	04/01/19 15:34	95-50-1	
1,3-Dichlorobenzene	**<2.4**	ug/kg	65.4	2.4	1	04/01/19 10:21	04/01/19 15:34	541-73-1	
1,4-Dichlorobenzene	**<4.1**	ug/kg	65.4	4.1	1	04/01/19 10:21	04/01/19 15:34	106-46-7	
Dichlorodifluoromethane	**<21.2**	ug/kg	262	21.2	1	04/01/19 10:21	04/01/19 15:34	75-71-8	
1,1-Dichloroethane	**<7.3**	ug/kg	65.4	7.3	1	04/01/19 10:21	04/01/19 15:34	75-34-3	
1,2-Dichloroethane	**<7.2**	ug/kg	65.4	7.2	1	04/01/19 10:21	04/01/19 15:34	107-06-2	
1,1-Dichloroethene	**<19.6**	ug/kg	65.4	19.6	1	04/01/19 10:21	04/01/19 15:34	75-35-4	
cis-1,2-Dichloroethene	**<10.8**	ug/kg	65.4	10.8	1	04/01/19 10:21	04/01/19 15:34	156-59-2	
trans-1,2-Dichloroethene	**<30.6**	ug/kg	65.4	30.6	1	04/01/19 10:21	04/01/19 15:34	156-60-5	
Dichlorofluoromethane	**<90.4**	ug/kg	654	90.4	1	04/01/19 10:21	04/01/19 15:34	75-43-4	N2
1,2-Dichloropropane	**<11.3**	ug/kg	65.4	11.3	1	04/01/19 10:21	04/01/19 15:34	78-87-5	
1,3-Dichloropropane	**<9.1**	ug/kg	65.4	9.1	1	04/01/19 10:21	04/01/19 15:34	142-28-9	
2,2-Dichloropropane	**<8.2**	ug/kg	262	8.2	1	04/01/19 10:21	04/01/19 15:34	594-20-7	
1,1-Dichloropropene	**<30.2**	ug/kg	65.4	30.2	1	04/01/19 10:21	04/01/19 15:34	563-58-6	
cis-1,3-Dichloropropene	**<9.4**	ug/kg	65.4	9.4	1	04/01/19 10:21	04/01/19 15:34	10061-01-5	
trans-1,3-Dichloropropene	**<9.1**	ug/kg	65.4	9.1	1	04/01/19 10:21	04/01/19 15:34	10061-02-6	
Diethyl ether (Ethyl ether)	**<40.0**	ug/kg	262	40.0	1	04/01/19 10:21	04/01/19 15:34	60-29-7	
Ethylbenzene	**<3.6**	ug/kg	65.4	3.6	1	04/01/19 10:21	04/01/19 15:34	100-41-4	
Hexachloro-1,3-butadiene	**<16.0**	ug/kg	327	16.0	1	04/01/19 10:21	04/01/19 15:34	87-68-3	
Isopropylbenzene (Cumene)	**<2.9**	ug/kg	65.4	2.9	1	04/01/19 10:21	04/01/19 15:34	98-82-8	
p-Isopropyltoluene	**<19.9**	ug/kg	65.4	19.9	1	04/01/19 10:21	04/01/19 15:34	99-87-6	
Methylene Chloride	**<123**	ug/kg	262	123	1	04/01/19 10:21	04/01/19 15:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<13.6**	ug/kg	327	13.6	1	04/01/19 10:21	04/01/19 15:34	108-10-1	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-G5 (0-6ft) **Lab ID: 10468888002** Collected: 03/29/19 09:30 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Methyl-tert-butyl ether	**<7.8**	ug/kg	65.4	7.8	1	04/01/19 10:21	04/01/19 15:34	1634-04-4	
Naphthalene	**<61.2**	ug/kg	262	61.2	1	04/01/19 10:21	04/01/19 15:34	91-20-3	
n-Propylbenzene	**<3.5**	ug/kg	65.4	3.5	1	04/01/19 10:21	04/01/19 15:34	103-65-1	
Styrene	**<3.0**	ug/kg	65.4	3.0	1	04/01/19 10:21	04/01/19 15:34	100-42-5	
1,1,1,2-Tetrachloroethane	**<20.5**	ug/kg	65.4	20.5	1	04/01/19 10:21	04/01/19 15:34	630-20-6	
1,1,2,2-Tetrachloroethane	**<11.5**	ug/kg	65.4	11.5	1	04/01/19 10:21	04/01/19 15:34	79-34-5	
Tetrachloroethene	**<23.0**	ug/kg	65.4	23.0	1	04/01/19 10:21	04/01/19 15:34	127-18-4	
Tetrahydrofuran	**<95.1**	ug/kg	2620	95.1	1	04/01/19 10:21	04/01/19 15:34	109-99-9	
Toluene	**<16.0**	ug/kg	65.4	16.0	1	04/01/19 10:21	04/01/19 15:34	108-88-3	
1,2,3-Trichlorobenzene	**<10.5**	ug/kg	65.4	10.5	1	04/01/19 10:21	04/01/19 15:34	87-61-6	
1,2,4-Trichlorobenzene	**<14.5**	ug/kg	65.4	14.5	1	04/01/19 10:21	04/01/19 15:34	120-82-1	
1,1,1-Trichloroethane	**<30.5**	ug/kg	65.4	30.5	1	04/01/19 10:21	04/01/19 15:34	71-55-6	
1,1,2-Trichloroethane	**<7.8**	ug/kg	65.4	7.8	1	04/01/19 10:21	04/01/19 15:34	79-00-5	
Trichloroethene	**<10.1**	ug/kg	65.4	10.1	1	04/01/19 10:21	04/01/19 15:34	79-01-6	
Trichlorofluoromethane	**<114**	ug/kg	262	114	1	04/01/19 10:21	04/01/19 15:34	75-69-4	
1,2,3-Trichloropropane	**<17.1**	ug/kg	262	17.1	1	04/01/19 10:21	04/01/19 15:34	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<75.9**	ug/kg	262	75.9	1	04/01/19 10:21	04/01/19 15:34	76-13-1	
1,2,4-Trimethylbenzene	**<13.1**	ug/kg	65.4	13.1	1	04/01/19 10:21	04/01/19 15:34	95-63-6	
1,3,5-Trimethylbenzene	**<10.4**	ug/kg	65.4	10.4	1	04/01/19 10:21	04/01/19 15:34	108-67-8	
Vinyl chloride	**<12.9**	ug/kg	26.2	12.9	1	04/01/19 10:21	04/01/19 15:34	75-01-4	
Xylene (Total)	**<15.2**	ug/kg	196	15.2	1	04/01/19 10:21	04/01/19 15:34	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%.	75-125		1	04/01/19 10:21	04/01/19 15:34	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1	04/01/19 10:21	04/01/19 15:34	2037-26-5	
4-Bromofluorobenzene (S)	91	%.	75-125		1	04/01/19 10:21	04/01/19 15:34	460-00-4	

Sample: FD-SB-C3 (0-4.5ft) **Lab ID: 10468888003** Collected: 03/29/19 09:50 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**21.9**	mg/kg	10.2	2.6	1	04/01/19 08:11	04/02/19 16:36		T6
Surrogates									
n-Triacontane (S)	81	%.	50-150		1	04/01/19 08:11	04/02/19 16:36	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**2.9J**	mg/kg	11.9	1.5	1	04/09/19 10:22	04/09/19 17:43		
Surrogates									
a,a,a-Trifluorotoluene (S)	96	%.	80-150		1	04/09/19 10:22	04/09/19 17:43	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**51.7**	mg/kg	0.53	0.044	1	04/01/19 11:50	04/02/19 12:49	7440-39-3	
Silver	**<0.038**	mg/kg	0.53	0.038	1	04/01/19 11:50	04/02/19 12:49	7440-22-4	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-C3 (0-4.5ft) **Lab ID: 10468888003** Collected: 03/29/19 09:50 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**75.1**	mg/kg	0.56	0.20	20	04/01/19 11:50	04/05/19 03:07	7440-38-2	
Cadmium	**0.22**	mg/kg	0.089	0.030	20	04/01/19 11:50	04/05/19 03:07	7440-43-9	
Chromium	**13.0**	mg/kg	0.56	0.14	20	04/01/19 11:50	04/05/19 03:07	7440-47-3	
Lead	**130**	mg/kg	0.22	0.064	20	04/01/19 11:50	04/05/19 03:07	7439-92-1	
Selenium	**0.57**	mg/kg	0.56	0.16	20	04/01/19 11:50	04/05/19 03:07	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.14**	mg/kg	0.022	0.0087	1	04/01/19 12:10	04/03/19 11:41	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**13.0**	%	0.10	0.10	1		04/01/19 11:57		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<2.4**	ug/kg	57.5	2.4	5	04/01/19 09:15	04/02/19 21:59	83-32-9	
Acenaphthylene	**457**	ug/kg	57.5	2.8	5	04/01/19 09:15	04/02/19 21:59	208-96-8	
Anthracene	**373**	ug/kg	57.5	2.7	5	04/01/19 09:15	04/02/19 21:59	120-12-7	
Benzo(a)anthracene	**868**	ug/kg	57.5	6.2	5	04/01/19 09:15	04/02/19 21:59	56-55-3	
Benzo(a)pyrene	**981**	ug/kg	57.5	3.9	5	04/01/19 09:15	04/02/19 21:59	50-32-8	
Benzo(b)fluoranthene	**1250**	ug/kg	57.5	2.1	5	04/01/19 09:15	04/02/19 21:59	205-99-2	
Benzo(e)pyrene	**765**	ug/kg	57.5	4.1	5	04/01/19 09:15	04/02/19 21:59	192-97-2	N2
Benzo(g,h,i)perylene	**609**	ug/kg	57.5	3.6	5	04/01/19 09:15	04/02/19 21:59	191-24-2	
Benzo(k)fluoranthene	**439**	ug/kg	57.5	4.9	5	04/01/19 09:15	04/02/19 21:59	207-08-9	
Chrysene	**948**	ug/kg	57.5	7.8	5	04/01/19 09:15	04/02/19 21:59	218-01-9	
Dibenz(a,h)anthracene	**231**	ug/kg	57.5	2.6	5	04/01/19 09:15	04/02/19 21:59	53-70-3	
Fluoranthene	**1150**	ug/kg	57.5	2.5	5	04/01/19 09:15	04/02/19 21:59	206-44-0	
Fluorene	**63.1**	ug/kg	57.5	1.8	5	04/01/19 09:15	04/02/19 21:59	86-73-7	
Indeno(1,2,3-cd)pyrene	**541**	ug/kg	57.5	3.8	5	04/01/19 09:15	04/02/19 21:59	193-39-5	
Naphthalene	**<4.4**	ug/kg	57.5	4.4	5	04/01/19 09:15	04/02/19 21:59	91-20-3	
Phenanthrene	**135**	ug/kg	57.5	11.0	5	04/01/19 09:15	04/02/19 21:59	85-01-8	
Pyrene	**1440**	ug/kg	57.5	8.8	5	04/01/19 09:15	04/02/19 21:59	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	86	%.	30-125		5	04/01/19 09:15	04/02/19 21:59	321-60-8	D4
p-Terphenyl-d14 (S)	82	%.	30-125		5	04/01/19 09:15	04/02/19 21:59	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<392**	ug/kg	1260	392	1	04/01/19 10:21	04/01/19 15:52	67-64-1	
Allyl chloride	**<52.8**	ug/kg	252	52.8	1	04/01/19 10:21	04/01/19 15:52	107-05-1	
Benzene	**<3.6**	ug/kg	25.2	3.6	1	04/01/19 10:21	04/01/19 15:52	71-43-2	
Bromobenzene	**<3.9**	ug/kg	63.0	3.9	1	04/01/19 10:21	04/01/19 15:52	108-86-1	
Bromochloromethane	**<21.8**	ug/kg	63.0	21.8	1	04/01/19 10:21	04/01/19 15:52	74-97-5	
Bromodichloromethane	**<21.6**	ug/kg	63.0	21.6	1	04/01/19 10:21	04/01/19 15:52	75-27-4	
Bromoform	**<95.4**	ug/kg	252	95.4	1	04/01/19 10:21	04/01/19 15:52	75-25-2	
Bromomethane	**<73.7**	ug/kg	630	73.7	1	04/01/19 10:21	04/01/19 15:52	74-83-9	
2-Butanone (MEK)	**<33.5**	ug/kg	315	33.5	1	04/01/19 10:21	04/01/19 15:52	78-93-3	
n-Butylbenzene	**<30.0**	ug/kg	63.0	30.0	1	04/01/19 10:21	04/01/19 15:52	104-51-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-C3 (0-4.5ft) **Lab ID: 10468888003** Collected: 03/29/19 09:50 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
sec-Butylbenzene	**<12.1**	ug/kg	63.0	12.1	1	04/01/19 10:21	04/01/19 15:52	135-98-8	
tert-Butylbenzene	**<12.1**	ug/kg	63.0	12.1	1	04/01/19 10:21	04/01/19 15:52	98-06-6	
Carbon tetrachloride	**<30.1**	ug/kg	63.0	30.1	1	04/01/19 10:21	04/01/19 15:52	56-23-5	
Chlorobenzene	**<3.6**	ug/kg	63.0	3.6	1	04/01/19 10:21	04/01/19 15:52	108-90-7	
Chloroethane	**<32.8**	ug/kg	630	32.8	1	04/01/19 10:21	04/01/19 15:52	75-00-3	
Chloroform	**<31.5**	ug/kg	63.0	31.5	1	04/01/19 10:21	04/01/19 15:52	67-66-3	
Chloromethane	**<15.1**	ug/kg	252	15.1	1	04/01/19 10:21	04/01/19 15:52	74-87-3	
2-Chlorotoluene	**<3.1**	ug/kg	63.0	3.1	1	04/01/19 10:21	04/01/19 15:52	95-49-8	
4-Chlorotoluene	**<3.2**	ug/kg	63.0	3.2	1	04/01/19 10:21	04/01/19 15:52	106-43-4	
1,2-Dibromo-3-chloropropane	**<219**	ug/kg	630	219	1	04/01/19 10:21	04/01/19 15:52	96-12-8	
Dibromochloromethane	**<7.3**	ug/kg	252	7.3	1	04/01/19 10:21	04/01/19 15:52	124-48-1	
1,2-Dibromoethane (EDB)	**<6.6**	ug/kg	63.0	6.6	1	04/01/19 10:21	04/01/19 15:52	106-93-4	
Dibromomethane	**<11.6**	ug/kg	63.0	11.6	1	04/01/19 10:21	04/01/19 15:52	74-95-3	
1,2-Dichlorobenzene	**<2.5**	ug/kg	63.0	2.5	1	04/01/19 10:21	04/01/19 15:52	95-50-1	
1,3-Dichlorobenzene	**<2.3**	ug/kg	63.0	2.3	1	04/01/19 10:21	04/01/19 15:52	541-73-1	
1,4-Dichlorobenzene	**<3.9**	ug/kg	63.0	3.9	1	04/01/19 10:21	04/01/19 15:52	106-46-7	
Dichlorodifluoromethane	**<20.4**	ug/kg	252	20.4	1	04/01/19 10:21	04/01/19 15:52	75-71-8	
1,1-Dichloroethane	**<7.1**	ug/kg	63.0	7.1	1	04/01/19 10:21	04/01/19 15:52	75-34-3	
1,2-Dichloroethane	**<6.9**	ug/kg	63.0	6.9	1	04/01/19 10:21	04/01/19 15:52	107-06-2	
1,1-Dichloroethene	**<18.9**	ug/kg	63.0	18.9	1	04/01/19 10:21	04/01/19 15:52	75-35-4	
cis-1,2-Dichloroethene	**<10.4**	ug/kg	63.0	10.4	1	04/01/19 10:21	04/01/19 15:52	156-59-2	
trans-1,2-Dichloroethene	**<29.5**	ug/kg	63.0	29.5	1	04/01/19 10:21	04/01/19 15:52	156-60-5	
Dichlorofluoromethane	**<87.1**	ug/kg	630	87.1	1	04/01/19 10:21	04/01/19 15:52	75-43-4	N2
1,2-Dichloropropane	**<10.9**	ug/kg	63.0	10.9	1	04/01/19 10:21	04/01/19 15:52	78-87-5	
1,3-Dichloropropane	**<8.7**	ug/kg	63.0	8.7	1	04/01/19 10:21	04/01/19 15:52	142-28-9	
2,2-Dichloropropane	**<7.9**	ug/kg	252	7.9	1	04/01/19 10:21	04/01/19 15:52	594-20-7	
1,1-Dichloropropene	**<29.1**	ug/kg	63.0	29.1	1	04/01/19 10:21	04/01/19 15:52	563-58-6	
cis-1,3-Dichloropropene	**<9.0**	ug/kg	63.0	9.0	1	04/01/19 10:21	04/01/19 15:52	10061-01-5	
trans-1,3-Dichloropropene	**<8.8**	ug/kg	63.0	8.8	1	04/01/19 10:21	04/01/19 15:52	10061-02-6	
Diethyl ether (Ethyl ether)	**<38.6**	ug/kg	252	38.6	1	04/01/19 10:21	04/01/19 15:52	60-29-7	
Ethylbenzene	**<3.4**	ug/kg	63.0	3.4	1	04/01/19 10:21	04/01/19 15:52	100-41-4	
Hexachloro-1,3-butadiene	**<15.4**	ug/kg	315	15.4	1	04/01/19 10:21	04/01/19 15:52	87-68-3	
Isopropylbenzene (Cumene)	**<2.8**	ug/kg	63.0	2.8	1	04/01/19 10:21	04/01/19 15:52	98-82-8	
p-Isopropyltoluene	**<19.2**	ug/kg	63.0	19.2	1	04/01/19 10:21	04/01/19 15:52	99-87-6	
Methylene Chloride	**<119**	ug/kg	252	119	1	04/01/19 10:21	04/01/19 15:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<13.1**	ug/kg	315	13.1	1	04/01/19 10:21	04/01/19 15:52	108-10-1	
Methyl-tert-butyl ether	**<7.5**	ug/kg	63.0	7.5	1	04/01/19 10:21	04/01/19 15:52	1634-04-4	
Naphthalene	**<59.0**	ug/kg	252	59.0	1	04/01/19 10:21	04/01/19 15:52	91-20-3	
n-Propylbenzene	**<3.4**	ug/kg	63.0	3.4	1	04/01/19 10:21	04/01/19 15:52	103-65-1	
Styrene	**<2.9**	ug/kg	63.0	2.9	1	04/01/19 10:21	04/01/19 15:52	100-42-5	
1,1,1,2-Tetrachloroethane	**<19.8**	ug/kg	63.0	19.8	1	04/01/19 10:21	04/01/19 15:52	630-20-6	
1,1,2,2-Tetrachloroethane	**<11.1**	ug/kg	63.0	11.1	1	04/01/19 10:21	04/01/19 15:52	79-34-5	
Tetrachloroethene	**<22.2**	ug/kg	63.0	22.2	1	04/01/19 10:21	04/01/19 15:52	127-18-4	
Tetrahydrofuran	**<91.6**	ug/kg	2520	91.6	1	04/01/19 10:21	04/01/19 15:52	109-99-9	
Toluene	**<15.4**	ug/kg	63.0	15.4	1	04/01/19 10:21	04/01/19 15:52	108-88-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-C3 (0-4.5ft) **Lab ID: 10468888003** Collected: 03/29/19 09:50 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,2,3-Trichlorobenzene	**<10.1**	ug/kg	63.0	10.1	1	04/01/19 10:21	04/01/19 15:52	87-61-6	
1,2,4-Trichlorobenzene	**<14.0**	ug/kg	63.0	14.0	1	04/01/19 10:21	04/01/19 15:52	120-82-1	
1,1,1-Trichloroethane	**<29.4**	ug/kg	63.0	29.4	1	04/01/19 10:21	04/01/19 15:52	71-55-6	
1,1,2-Trichloroethane	**<7.5**	ug/kg	63.0	7.5	1	04/01/19 10:21	04/01/19 15:52	79-00-5	
Trichloroethene	**<9.7**	ug/kg	63.0	9.7	1	04/01/19 10:21	04/01/19 15:52	79-01-6	
Trichlorofluoromethane	**<110**	ug/kg	252	110	1	04/01/19 10:21	04/01/19 15:52	75-69-4	
1,2,3-Trichloropropane	**<16.5**	ug/kg	252	16.5	1	04/01/19 10:21	04/01/19 15:52	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<73.1**	ug/kg	252	73.1	1	04/01/19 10:21	04/01/19 15:52	76-13-1	
1,2,4-Trimethylbenzene	**<12.6**	ug/kg	63.0	12.6	1	04/01/19 10:21	04/01/19 15:52	95-63-6	
1,3,5-Trimethylbenzene	**<10.0**	ug/kg	63.0	10.0	1	04/01/19 10:21	04/01/19 15:52	108-67-8	
Vinyl chloride	**<12.4**	ug/kg	25.2	12.4	1	04/01/19 10:21	04/01/19 15:52	75-01-4	
Xylene (Total)	**<14.6**	ug/kg	189	14.6	1	04/01/19 10:21	04/01/19 15:52	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	92	%.	75-125		1	04/01/19 10:21	04/01/19 15:52	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	04/01/19 10:21	04/01/19 15:52	2037-26-5	
4-Bromofluorobenzene (S)	91	%.	75-125		1	04/01/19 10:21	04/01/19 15:52	460-00-4	

Sample: FD-SB-A4 (0-3ft) **Lab ID: 10468888004** Collected: 03/29/19 10:15 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**47.5**	mg/kg	19.5	5.1	2	04/01/19 08:11	04/03/19 10:36		T6
Surrogates									
n-Triacontane (S)	105	%.	50-150		2	04/01/19 08:11	04/03/19 10:36	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.5**	mg/kg	11.8	1.5	1	04/09/19 10:22	04/09/19 20:11		
Surrogates									
a,a,a-Trifluorotoluene (S)	109	%.	80-150		1	04/09/19 10:22	04/09/19 20:11	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**57.6**	mg/kg	0.54	0.045	1	04/01/19 11:50	04/02/19 12:50	7440-39-3	
Silver	**<0.039**	mg/kg	0.54	0.039	1	04/01/19 11:50	04/02/19 12:50	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**4.5**	mg/kg	0.56	0.20	20	04/01/19 11:50	04/05/19 03:10	7440-38-2	
Cadmium	**0.18**	mg/kg	0.090	0.030	20	04/01/19 11:50	04/05/19 03:10	7440-43-9	
Chromium	**11.3**	mg/kg	0.56	0.14	20	04/01/19 11:50	04/05/19 03:10	7440-47-3	
Lead	**26.8**	mg/kg	0.23	0.065	20	04/01/19 11:50	04/05/19 03:10	7439-92-1	
Selenium	**0.57**	mg/kg	0.56	0.16	20	04/01/19 11:50	04/05/19 03:10	7782-49-2	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-A4 (0-3ft) **Lab ID: 10468888004** Collected: 03/29/19 10:15 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.031**	mg/kg	0.023	0.0091	1	04/01/19 12:10	04/03/19 11:43	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**14.7**	%	0.10	0.10	1		04/01/19 11:57		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<2.4**	ug/kg	58.4	2.4	5	04/01/19 09:15	04/02/19 22:20	83-32-9	
Acenaphthylene	**<2.9**	ug/kg	58.4	2.9	5	04/01/19 09:15	04/02/19 22:20	208-96-8	
Anthracene	**114**	ug/kg	58.4	2.7	5	04/01/19 09:15	04/02/19 22:20	120-12-7	
Benzo(a)anthracene	**211**	ug/kg	58.4	6.3	5	04/01/19 09:15	04/02/19 22:20	56-55-3	
Benzo(a)pyrene	**199**	ug/kg	58.4	4.0	5	04/01/19 09:15	04/02/19 22:20	50-32-8	
Benzo(b)fluoranthene	**220**	ug/kg	58.4	2.2	5	04/01/19 09:15	04/02/19 22:20	205-99-2	
Benzo(e)pyrene	**133**	ug/kg	58.4	4.2	5	04/01/19 09:15	04/02/19 22:20	192-97-2	N2
Benzo(g,h,i)perylene	**149**	ug/kg	58.4	3.7	5	04/01/19 09:15	04/02/19 22:20	191-24-2	
Benzo(k)fluoranthene	**99.8**	ug/kg	58.4	4.9	5	04/01/19 09:15	04/02/19 22:20	207-08-9	
Chrysene	**184**	ug/kg	58.4	7.9	5	04/01/19 09:15	04/02/19 22:20	218-01-9	
Dibenz(a,h)anthracene	**<2.7**	ug/kg	58.4	2.7	5	04/01/19 09:15	04/02/19 22:20	53-70-3	
Fluoranthene	**416**	ug/kg	58.4	2.5	5	04/01/19 09:15	04/02/19 22:20	206-44-0	
Fluorene	**<1.8**	ug/kg	58.4	1.8	5	04/01/19 09:15	04/02/19 22:20	86-73-7	
Indeno(1,2,3-cd)pyrene	**136**	ug/kg	58.4	3.9	5	04/01/19 09:15	04/02/19 22:20	193-39-5	
Naphthalene	**<4.5**	ug/kg	58.4	4.5	5	04/01/19 09:15	04/02/19 22:20	91-20-3	
Phenanthrene	**352**	ug/kg	58.4	11.2	5	04/01/19 09:15	04/02/19 22:20	85-01-8	
Pyrene	**427**	ug/kg	58.4	8.9	5	04/01/19 09:15	04/02/19 22:20	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%.	30-125		5	04/01/19 09:15	04/02/19 22:20	321-60-8	D3
p-Terphenyl-d14 (S)	70	%.	30-125		5	04/01/19 09:15	04/02/19 22:20	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<375**	ug/kg	1210	375	1	04/01/19 10:21	04/01/19 16:10	67-64-1	
Allyl chloride	**<50.5**	ug/kg	241	50.5	1	04/01/19 10:21	04/01/19 16:10	107-05-1	
Benzene	**<3.4**	ug/kg	24.1	3.4	1	04/01/19 10:21	04/01/19 16:10	71-43-2	
Bromobenzene	**<3.7**	ug/kg	60.3	3.7	1	04/01/19 10:21	04/01/19 16:10	108-86-1	
Bromochloromethane	**<20.9**	ug/kg	60.3	20.9	1	04/01/19 10:21	04/01/19 16:10	74-97-5	
Bromodichloromethane	**<20.6**	ug/kg	60.3	20.6	1	04/01/19 10:21	04/01/19 16:10	75-27-4	
Bromoform	**<91.3**	ug/kg	241	91.3	1	04/01/19 10:21	04/01/19 16:10	75-25-2	
Bromomethane	**<70.5**	ug/kg	603	70.5	1	04/01/19 10:21	04/01/19 16:10	74-83-9	
2-Butanone (MEK)	**<32.1**	ug/kg	301	32.1	1	04/01/19 10:21	04/01/19 16:10	78-93-3	
n-Butylbenzene	**<28.7**	ug/kg	60.3	28.7	1	04/01/19 10:21	04/01/19 16:10	104-51-8	
sec-Butylbenzene	**<11.5**	ug/kg	60.3	11.5	1	04/01/19 10:21	04/01/19 16:10	135-98-8	
tert-Butylbenzene	**<11.6**	ug/kg	60.3	11.6	1	04/01/19 10:21	04/01/19 16:10	98-06-6	
Carbon tetrachloride	**<28.8**	ug/kg	60.3	28.8	1	04/01/19 10:21	04/01/19 16:10	56-23-5	
Chlorobenzene	**<3.4**	ug/kg	60.3	3.4	1	04/01/19 10:21	04/01/19 16:10	108-90-7	
Chloroethane	**<31.3**	ug/kg	603	31.3	1	04/01/19 10:21	04/01/19 16:10	75-00-3	
Chloroform	**<30.1**	ug/kg	60.3	30.1	1	04/01/19 10:21	04/01/19 16:10	67-66-3	
Chloromethane	**<14.5**	ug/kg	241	14.5	1	04/01/19 10:21	04/01/19 16:10	74-87-3	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-A4 (0-3ft) **Lab ID: 10468888004** Collected: 03/29/19 10:15 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
2-Chlorotoluene	**<3.0**	ug/kg	60.3	3.0	1	04/01/19 10:21	04/01/19 16:10	95-49-8	
4-Chlorotoluene	**<3.1**	ug/kg	60.3	3.1	1	04/01/19 10:21	04/01/19 16:10	106-43-4	
1,2-Dibromo-3-chloropropane	**<210**	ug/kg	603	210	1	04/01/19 10:21	04/01/19 16:10	96-12-8	
Dibromochloromethane	**<7.0**	ug/kg	241	7.0	1	04/01/19 10:21	04/01/19 16:10	124-48-1	
1,2-Dibromoethane (EDB)	**<6.3**	ug/kg	60.3	6.3	1	04/01/19 10:21	04/01/19 16:10	106-93-4	
Dibromomethane	**<11.1**	ug/kg	60.3	11.1	1	04/01/19 10:21	04/01/19 16:10	74-95-3	
1,2-Dichlorobenzene	**<2.4**	ug/kg	60.3	2.4	1	04/01/19 10:21	04/01/19 16:10	95-50-1	
1,3-Dichlorobenzene	**<2.2**	ug/kg	60.3	2.2	1	04/01/19 10:21	04/01/19 16:10	541-73-1	
1,4-Dichlorobenzene	**<3.7**	ug/kg	60.3	3.7	1	04/01/19 10:21	04/01/19 16:10	106-46-7	
Dichlorodifluoromethane	**<19.5**	ug/kg	241	19.5	1	04/01/19 10:21	04/01/19 16:10	75-71-8	
1,1-Dichloroethane	**<6.8**	ug/kg	60.3	6.8	1	04/01/19 10:21	04/01/19 16:10	75-34-3	
1,2-Dichloroethane	**<6.6**	ug/kg	60.3	6.6	1	04/01/19 10:21	04/01/19 16:10	107-06-2	
1,1-Dichloroethene	**<18.1**	ug/kg	60.3	18.1	1	04/01/19 10:21	04/01/19 16:10	75-35-4	
cis-1,2-Dichloroethene	**<10**	ug/kg	60.3	10	1	04/01/19 10:21	04/01/19 16:10	156-59-2	
trans-1,2-Dichloroethene	**<28.2**	ug/kg	60.3	28.2	1	04/01/19 10:21	04/01/19 16:10	156-60-5	
Dichlorofluoromethane	**<83.3**	ug/kg	603	83.3	1	04/01/19 10:21	04/01/19 16:10	75-43-4	N2
1,2-Dichloropropane	**<10.4**	ug/kg	60.3	10.4	1	04/01/19 10:21	04/01/19 16:10	78-87-5	
1,3-Dichloropropane	**<8.3**	ug/kg	60.3	8.3	1	04/01/19 10:21	04/01/19 16:10	142-28-9	
2,2-Dichloropropane	**<7.5**	ug/kg	241	7.5	1	04/01/19 10:21	04/01/19 16:10	594-20-7	
1,1-Dichloropropene	**<27.8**	ug/kg	60.3	27.8	1	04/01/19 10:21	04/01/19 16:10	563-58-6	
cis-1,3-Dichloropropene	**<8.6**	ug/kg	60.3	8.6	1	04/01/19 10:21	04/01/19 16:10	10061-01-5	
trans-1,3-Dichloropropene	**<8.4**	ug/kg	60.3	8.4	1	04/01/19 10:21	04/01/19 16:10	10061-02-6	
Diethyl ether (Ethyl ether)	**<36.9**	ug/kg	241	36.9	1	04/01/19 10:21	04/01/19 16:10	60-29-7	
Ethylbenzene	**<3.3**	ug/kg	60.3	3.3	1	04/01/19 10:21	04/01/19 16:10	100-41-4	
Hexachloro-1,3-butadiene	**<14.7**	ug/kg	301	14.7	1	04/01/19 10:21	04/01/19 16:10	87-68-3	
Isopropylbenzene (Cumene)	**<2.7**	ug/kg	60.3	2.7	1	04/01/19 10:21	04/01/19 16:10	98-82-8	
p-Isopropyltoluene	**<18.3**	ug/kg	60.3	18.3	1	04/01/19 10:21	04/01/19 16:10	99-87-6	
Methylene Chloride	**<113**	ug/kg	241	113	1	04/01/19 10:21	04/01/19 16:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<12.5**	ug/kg	301	12.5	1	04/01/19 10:21	04/01/19 16:10	108-10-1	
Methyl-tert-butyl ether	**<7.2**	ug/kg	60.3	7.2	1	04/01/19 10:21	04/01/19 16:10	1634-04-4	
Naphthalene	**<56.4**	ug/kg	241	56.4	1	04/01/19 10:21	04/01/19 16:10	91-20-3	
n-Propylbenzene	**<3.2**	ug/kg	60.3	3.2	1	04/01/19 10:21	04/01/19 16:10	103-65-1	
Styrene	**<2.7**	ug/kg	60.3	2.7	1	04/01/19 10:21	04/01/19 16:10	100-42-5	
1,1,1,2-Tetrachloroethane	**<18.9**	ug/kg	60.3	18.9	1	04/01/19 10:21	04/01/19 16:10	630-20-6	
1,1,2,2-Tetrachloroethane	**<10.6**	ug/kg	60.3	10.6	1	04/01/19 10:21	04/01/19 16:10	79-34-5	
Tetrachloroethene	**<21.2**	ug/kg	60.3	21.2	1	04/01/19 10:21	04/01/19 16:10	127-18-4	
Tetrahydrofuran	**<87.6**	ug/kg	2410	87.6	1	04/01/19 10:21	04/01/19 16:10	109-99-9	
Toluene	**<14.7**	ug/kg	60.3	14.7	1	04/01/19 10:21	04/01/19 16:10	108-88-3	
1,2,3-Trichlorobenzene	**<9.6**	ug/kg	60.3	9.6	1	04/01/19 10:21	04/01/19 16:10	87-61-6	
1,2,4-Trichlorobenzene	**<13.4**	ug/kg	60.3	13.4	1	04/01/19 10:21	04/01/19 16:10	120-82-1	
1,1,1-Trichloroethane	**<28.1**	ug/kg	60.3	28.1	1	04/01/19 10:21	04/01/19 16:10	71-55-6	
1,1,2-Trichloroethane	**<7.2**	ug/kg	60.3	7.2	1	04/01/19 10:21	04/01/19 16:10	79-00-5	
Trichloroethene	**<9.3**	ug/kg	60.3	9.3	1	04/01/19 10:21	04/01/19 16:10	79-01-6	
Trichlorofluoromethane	**<105**	ug/kg	241	105	1	04/01/19 10:21	04/01/19 16:10	75-69-4	
1,2,3-Trichloropropane	**<15.8**	ug/kg	241	15.8	1	04/01/19 10:21	04/01/19 16:10	96-18-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-A4 (0-3ft) **Lab ID: 10468888004** Collected: 03/29/19 10:15 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,2-Trichlorotrifluoroethane	**<69.9**	ug/kg	241	69.9	1	04/01/19 10:21	04/01/19 16:10	76-13-1	
1,2,4-Trimethylbenzene	**<12.1**	ug/kg	60.3	12.1	1	04/01/19 10:21	04/01/19 16:10	95-63-6	
1,3,5-Trimethylbenzene	**<9.6**	ug/kg	60.3	9.6	1	04/01/19 10:21	04/01/19 16:10	108-67-8	
Vinyl chloride	**<11.9**	ug/kg	24.1	11.9	1	04/01/19 10:21	04/01/19 16:10	75-01-4	
Xylene (Total)	**<14.0**	ug/kg	181	14.0	1	04/01/19 10:21	04/01/19 16:10	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%.	75-125		1	04/01/19 10:21	04/01/19 16:10	17060-07-0	
Toluene-d8 (S)	98	%.	75-125		1	04/01/19 10:21	04/01/19 16:10	2037-26-5	
4-Bromofluorobenzene (S)	89	%.	75-125		1	04/01/19 10:21	04/01/19 16:10	460-00-4	

Sample: FD-SB-B1 (0-7.5ft) **Lab ID: 10468888005** Collected: 03/29/19 10:40 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**16.7**	mg/kg	8.9	2.3	1	04/01/19 08:11	04/02/19 16:43		T6
Surrogates									
n-Triacontane (S)	86	%.	50-150		1	04/01/19 08:11	04/02/19 16:43	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**2.0J**	mg/kg	11.7	1.5	1	04/09/19 10:22	04/09/19 20:35		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%.	80-150		1	04/09/19 10:22	04/09/19 20:35	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**48.7**	mg/kg	0.52	0.043	1	04/01/19 11:50	04/02/19 12:52	7440-39-3	
Silver	**<0.038**	mg/kg	0.52	0.038	1	04/01/19 11:50	04/02/19 12:52	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**4.8**	mg/kg	0.51	0.18	20	04/01/19 11:50	04/05/19 03:14	7440-38-2	
Cadmium	**0.14**	mg/kg	0.082	0.027	20	04/01/19 11:50	04/05/19 03:14	7440-43-9	
Chromium	**17.7**	mg/kg	0.51	0.13	20	04/01/19 11:50	04/05/19 03:14	7440-47-3	
Lead	**18.1**	mg/kg	0.21	0.059	20	04/01/19 11:50	04/05/19 03:14	7439-92-1	
Selenium	**1.0**	mg/kg	0.51	0.15	20	04/01/19 11:50	04/05/19 03:14	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.024**	mg/kg	0.021	0.0083	1	04/01/19 12:10	04/03/19 11:46	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**11.7**	%	0.10	0.10	1		04/01/19 11:57		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-B1 (0-7.5ft) **Lab ID: 10468888005** Collected: 03/29/19 10:40 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<2.3**	ug/kg	56.6	2.3	5	04/01/19 09:15	04/02/19 22:41	83-32-9	
Acenaphthylene	**89.3**	ug/kg	56.6	2.8	5	04/01/19 09:15	04/02/19 22:41	208-96-8	
Anthracene	**128**	ug/kg	56.6	2.6	5	04/01/19 09:15	04/02/19 22:41	120-12-7	
Benzo(a)anthracene	**335**	ug/kg	56.6	6.1	5	04/01/19 09:15	04/02/19 22:41	56-55-3	
Benzo(a)pyrene	**351**	ug/kg	56.6	3.9	5	04/01/19 09:15	04/02/19 22:41	50-32-8	
Benzo(b)fluoranthene	**451**	ug/kg	56.6	2.1	5	04/01/19 09:15	04/02/19 22:41	205-99-2	
Benzo(e)pyrene	**238**	ug/kg	56.6	4.1	5	04/01/19 09:15	04/02/19 22:41	192-97-2	N2
Benzo(g,h,i)perylene	**243**	ug/kg	56.6	3.6	5	04/01/19 09:15	04/02/19 22:41	191-24-2	
Benzo(k)fluoranthene	**194**	ug/kg	56.6	4.8	5	04/01/19 09:15	04/02/19 22:41	207-08-9	
Chrysene	**328**	ug/kg	56.6	7.7	5	04/01/19 09:15	04/02/19 22:41	218-01-9	
Dibenz(a,h)anthracene	**68.5**	ug/kg	56.6	2.6	5	04/01/19 09:15	04/02/19 22:41	53-70-3	
Fluoranthene	**673**	ug/kg	56.6	2.4	5	04/01/19 09:15	04/02/19 22:41	206-44-0	
Fluorene	**<1.8**	ug/kg	56.6	1.8	5	04/01/19 09:15	04/02/19 22:41	86-73-7	
Indeno(1,2,3-cd)pyrene	**234**	ug/kg	56.6	3.8	5	04/01/19 09:15	04/02/19 22:41	193-39-5	
Naphthalene	**<4.4**	ug/kg	56.6	4.4	5	04/01/19 09:15	04/02/19 22:41	91-20-3	
Phenanthrene	**306**	ug/kg	56.6	10.9	5	04/01/19 09:15	04/02/19 22:41	85-01-8	
Pyrene	**556**	ug/kg	56.6	8.7	5	04/01/19 09:15	04/02/19 22:41	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	89	%.	30-125		5	04/01/19 09:15	04/02/19 22:41	321-60-8	D3
p-Terphenyl-d14 (S)	79	%.	30-125		5	04/01/19 09:15	04/02/19 22:41	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<339**	ug/kg	1090	339	1	04/01/19 10:21	04/01/19 16:28	67-64-1	
Allyl chloride	**<45.7**	ug/kg	218	45.7	1	04/01/19 10:21	04/01/19 16:28	107-05-1	
Benzene	**<3.1**	ug/kg	21.8	3.1	1	04/01/19 10:21	04/01/19 16:28	71-43-2	
Bromobenzene	**<3.3**	ug/kg	54.5	3.3	1	04/01/19 10:21	04/01/19 16:28	108-86-1	
Bromochloromethane	**<18.9**	ug/kg	54.5	18.9	1	04/01/19 10:21	04/01/19 16:28	74-97-5	
Bromodichloromethane	**<18.7**	ug/kg	54.5	18.7	1	04/01/19 10:21	04/01/19 16:28	75-27-4	
Bromoform	**<82.6**	ug/kg	218	82.6	1	04/01/19 10:21	04/01/19 16:28	75-25-2	
Bromomethane	**<63.8**	ug/kg	545	63.8	1	04/01/19 10:21	04/01/19 16:28	74-83-9	
2-Butanone (MEK)	**<29.0**	ug/kg	273	29.0	1	04/01/19 10:21	04/01/19 16:28	78-93-3	
n-Butylbenzene	**<26.0**	ug/kg	54.5	26.0	1	04/01/19 10:21	04/01/19 16:28	104-51-8	
sec-Butylbenzene	**<10.4**	ug/kg	54.5	10.4	1	04/01/19 10:21	04/01/19 16:28	135-98-8	
tert-Butylbenzene	**<10.5**	ug/kg	54.5	10.5	1	04/01/19 10:21	04/01/19 16:28	98-06-6	
Carbon tetrachloride	**<26.1**	ug/kg	54.5	26.1	1	04/01/19 10:21	04/01/19 16:28	56-23-5	
Chlorobenzene	**<3.1**	ug/kg	54.5	3.1	1	04/01/19 10:21	04/01/19 16:28	108-90-7	
Chloroethane	**<28.4**	ug/kg	545	28.4	1	04/01/19 10:21	04/01/19 16:28	75-00-3	
Chloroform	**<27.3**	ug/kg	54.5	27.3	1	04/01/19 10:21	04/01/19 16:28	67-66-3	
Chloromethane	**<13.1**	ug/kg	218	13.1	1	04/01/19 10:21	04/01/19 16:28	74-87-3	
2-Chlorotoluene	**<2.7**	ug/kg	54.5	2.7	1	04/01/19 10:21	04/01/19 16:28	95-49-8	
4-Chlorotoluene	**<2.8**	ug/kg	54.5	2.8	1	04/01/19 10:21	04/01/19 16:28	106-43-4	
1,2-Dibromo-3-chloropropane	**<190**	ug/kg	545	190	1	04/01/19 10:21	04/01/19 16:28	96-12-8	
Dibromochloromethane	**<6.3**	ug/kg	218	6.3	1	04/01/19 10:21	04/01/19 16:28	124-48-1	
1,2-Dibromoethane (EDB)	**<5.7**	ug/kg	54.5	5.7	1	04/01/19 10:21	04/01/19 16:28	106-93-4	
Dibromomethane	**<10.0**	ug/kg	54.5	10.0	1	04/01/19 10:21	04/01/19 16:28	74-95-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-B1 (0-7.5ft) **Lab ID: 10468888005** Collected: 03/29/19 10:40 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,2-Dichlorobenzene	**<2.2**	ug/kg	54.5	2.2	1	04/01/19 10:21	04/01/19 16:28	95-50-1	
1,3-Dichlorobenzene	**<2.0**	ug/kg	54.5	2.0	1	04/01/19 10:21	04/01/19 16:28	541-73-1	
1,4-Dichlorobenzene	**<3.4**	ug/kg	54.5	3.4	1	04/01/19 10:21	04/01/19 16:28	106-46-7	
Dichlorodifluoromethane	**<17.7**	ug/kg	218	17.7	1	04/01/19 10:21	04/01/19 16:28	75-71-8	
1,1-Dichloroethane	**<6.1**	ug/kg	54.5	6.1	1	04/01/19 10:21	04/01/19 16:28	75-34-3	
1,2-Dichloroethane	**<6.0**	ug/kg	54.5	6.0	1	04/01/19 10:21	04/01/19 16:28	107-06-2	
1,1-Dichloroethene	**<16.4**	ug/kg	54.5	16.4	1	04/01/19 10:21	04/01/19 16:28	75-35-4	
cis-1,2-Dichloroethene	**<9.0**	ug/kg	54.5	9.0	1	04/01/19 10:21	04/01/19 16:28	156-59-2	
trans-1,2-Dichloroethene	**<25.5**	ug/kg	54.5	25.5	1	04/01/19 10:21	04/01/19 16:28	156-60-5	
Dichlorofluoromethane	**<75.4**	ug/kg	545	75.4	1	04/01/19 10:21	04/01/19 16:28	75-43-4	N2
1,2-Dichloropropane	**<9.4**	ug/kg	54.5	9.4	1	04/01/19 10:21	04/01/19 16:28	78-87-5	
1,3-Dichloropropane	**<7.5**	ug/kg	54.5	7.5	1	04/01/19 10:21	04/01/19 16:28	142-28-9	
2,2-Dichloropropane	**<6.8**	ug/kg	218	6.8	1	04/01/19 10:21	04/01/19 16:28	594-20-7	
1,1-Dichloropropene	**<25.2**	ug/kg	54.5	25.2	1	04/01/19 10:21	04/01/19 16:28	563-58-6	
cis-1,3-Dichloropropene	**<7.8**	ug/kg	54.5	7.8	1	04/01/19 10:21	04/01/19 16:28	10061-01-5	
trans-1,3-Dichloropropene	**<7.6**	ug/kg	54.5	7.6	1	04/01/19 10:21	04/01/19 16:28	10061-02-6	
Diethyl ether (Ethyl ether)	**<33.4**	ug/kg	218	33.4	1	04/01/19 10:21	04/01/19 16:28	60-29-7	
Ethylbenzene	**<3.0**	ug/kg	54.5	3.0	1	04/01/19 10:21	04/01/19 16:28	100-41-4	
Hexachloro-1,3-butadiene	**<13.3**	ug/kg	273	13.3	1	04/01/19 10:21	04/01/19 16:28	87-68-3	
Isopropylbenzene (Cumene)	**<2.4**	ug/kg	54.5	2.4	1	04/01/19 10:21	04/01/19 16:28	98-82-8	
p-Isopropyltoluene	**<16.6**	ug/kg	54.5	16.6	1	04/01/19 10:21	04/01/19 16:28	99-87-6	
Methylene Chloride	**<103**	ug/kg	218	103	1	04/01/19 10:21	04/01/19 16:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<11.3**	ug/kg	273	11.3	1	04/01/19 10:21	04/01/19 16:28	108-10-1	
Methyl-tert-butyl ether	**<6.5**	ug/kg	54.5	6.5	1	04/01/19 10:21	04/01/19 16:28	1634-04-4	
Naphthalene	**<51.0**	ug/kg	218	51.0	1	04/01/19 10:21	04/01/19 16:28	91-20-3	
n-Propylbenzene	**<2.9**	ug/kg	54.5	2.9	1	04/01/19 10:21	04/01/19 16:28	103-65-1	
Styrene	**<2.5**	ug/kg	54.5	2.5	1	04/01/19 10:21	04/01/19 16:28	100-42-5	
1,1,1,2-Tetrachloroethane	**<17.1**	ug/kg	54.5	17.1	1	04/01/19 10:21	04/01/19 16:28	630-20-6	
1,1,2,2-Tetrachloroethane	**<9.6**	ug/kg	54.5	9.6	1	04/01/19 10:21	04/01/19 16:28	79-34-5	
Tetrachloroethene	**<19.2**	ug/kg	54.5	19.2	1	04/01/19 10:21	04/01/19 16:28	127-18-4	
Tetrahydrofuran	**<79.3**	ug/kg	2180	79.3	1	04/01/19 10:21	04/01/19 16:28	109-99-9	
Toluene	**<13.3**	ug/kg	54.5	13.3	1	04/01/19 10:21	04/01/19 16:28	108-88-3	
1,2,3-Trichlorobenzene	**<8.7**	ug/kg	54.5	8.7	1	04/01/19 10:21	04/01/19 16:28	87-61-6	
1,2,4-Trichlorobenzene	**<12.1**	ug/kg	54.5	12.1	1	04/01/19 10:21	04/01/19 16:28	120-82-1	
1,1,1-Trichloroethane	**<25.4**	ug/kg	54.5	25.4	1	04/01/19 10:21	04/01/19 16:28	71-55-6	
1,1,2-Trichloroethane	**<6.5**	ug/kg	54.5	6.5	1	04/01/19 10:21	04/01/19 16:28	79-00-5	
Trichloroethene	**<8.4**	ug/kg	54.5	8.4	1	04/01/19 10:21	04/01/19 16:28	79-01-6	
Trichlorofluoromethane	**<95.1**	ug/kg	218	95.1	1	04/01/19 10:21	04/01/19 16:28	75-69-4	
1,2,3-Trichloropropane	**<14.3**	ug/kg	218	14.3	1	04/01/19 10:21	04/01/19 16:28	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<63.3**	ug/kg	218	63.3	1	04/01/19 10:21	04/01/19 16:28	76-13-1	
1,2,4-Trimethylbenzene	**<10.9**	ug/kg	54.5	10.9	1	04/01/19 10:21	04/01/19 16:28	95-63-6	
1,3,5-Trimethylbenzene	**<8.7**	ug/kg	54.5	8.7	1	04/01/19 10:21	04/01/19 16:28	108-67-8	
Vinyl chloride	**<10.7**	ug/kg	21.8	10.7	1	04/01/19 10:21	04/01/19 16:28	75-01-4	
Xylene (Total)	**<12.7**	ug/kg	164	12.7	1	04/01/19 10:21	04/01/19 16:28	1330-20-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: FD-SB-B1 (0-7.5ft) **Lab ID: 10468888005** Collected: 03/29/19 10:40 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Surrogates									
1,2-Dichloroethane-d4 (S)	91	%.	75-125		1	04/01/19 10:21	04/01/19 16:28	17060-07-0	
Toluene-d8 (S)	97	%.	75-125		1	04/01/19 10:21	04/01/19 16:28	2037-26-5	
4-Bromofluorobenzene (S)	89	%.	75-125		1	04/01/19 10:21	04/01/19 16:28	460-00-4	

Sample: Trip Blank **Lab ID: 10468888006** Collected: 03/29/19 00:00 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.3**	mg/kg	10.0	1.3	1	04/09/19 10:22	04/10/19 01:30		
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%.	80-150		1	04/09/19 10:22	04/10/19 01:30	98-08-8	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<311**	ug/kg	1000	311	1	04/01/19 10:21	04/01/19 14:40	67-64-1	
Allyl chloride	**<41.9**	ug/kg	200	41.9	1	04/01/19 10:21	04/01/19 14:40	107-05-1	
Benzene	**<2.8**	ug/kg	20.0	2.8	1	04/01/19 10:21	04/01/19 14:40	71-43-2	
Bromobenzene	**<3.1**	ug/kg	50.0	3.1	1	04/01/19 10:21	04/01/19 14:40	108-86-1	
Bromochloromethane	**<17.3**	ug/kg	50.0	17.3	1	04/01/19 10:21	04/01/19 14:40	74-97-5	
Bromodichloromethane	**<17.1**	ug/kg	50.0	17.1	1	04/01/19 10:21	04/01/19 14:40	75-27-4	
Bromoform	**<75.7**	ug/kg	200	75.7	1	04/01/19 10:21	04/01/19 14:40	75-25-2	
Bromomethane	**<58.5**	ug/kg	500	58.5	1	04/01/19 10:21	04/01/19 14:40	74-83-9	
2-Butanone (MEK)	**<26.6**	ug/kg	250	26.6	1	04/01/19 10:21	04/01/19 14:40	78-93-3	
n-Butylbenzene	**<23.8**	ug/kg	50.0	23.8	1	04/01/19 10:21	04/01/19 14:40	104-51-8	
sec-Butylbenzene	**<9.6**	ug/kg	50.0	9.6	1	04/01/19 10:21	04/01/19 14:40	135-98-8	
tert-Butylbenzene	**<9.6**	ug/kg	50.0	9.6	1	04/01/19 10:21	04/01/19 14:40	98-06-6	
Carbon tetrachloride	**<23.9**	ug/kg	50.0	23.9	1	04/01/19 10:21	04/01/19 14:40	56-23-5	
Chlorobenzene	**<2.8**	ug/kg	50.0	2.8	1	04/01/19 10:21	04/01/19 14:40	108-90-7	
Chloroethane	**<26.0**	ug/kg	500	26.0	1	04/01/19 10:21	04/01/19 14:40	75-00-3	
Chloroform	**<25.0**	ug/kg	50.0	25.0	1	04/01/19 10:21	04/01/19 14:40	67-66-3	
Chloromethane	**<12.0**	ug/kg	200	12.0	1	04/01/19 10:21	04/01/19 14:40	74-87-3	
2-Chlorotoluene	**<2.5**	ug/kg	50.0	2.5	1	04/01/19 10:21	04/01/19 14:40	95-49-8	
4-Chlorotoluene	**<2.6**	ug/kg	50.0	2.6	1	04/01/19 10:21	04/01/19 14:40	106-43-4	
1,2-Dibromo-3-chloropropane	**<174**	ug/kg	500	174	1	04/01/19 10:21	04/01/19 14:40	96-12-8	
Dibromochloromethane	**<5.8**	ug/kg	200	5.8	1	04/01/19 10:21	04/01/19 14:40	124-48-1	
1,2-Dibromoethane (EDB)	**<5.3**	ug/kg	50.0	5.3	1	04/01/19 10:21	04/01/19 14:40	106-93-4	
Dibromomethane	**<9.2**	ug/kg	50.0	9.2	1	04/01/19 10:21	04/01/19 14:40	74-95-3	
1,2-Dichlorobenzene	**<2.0**	ug/kg	50.0	2.0	1	04/01/19 10:21	04/01/19 14:40	95-50-1	
1,3-Dichlorobenzene	**<1.8**	ug/kg	50.0	1.8	1	04/01/19 10:21	04/01/19 14:40	541-73-1	
1,4-Dichlorobenzene	**<3.1**	ug/kg	50.0	3.1	1	04/01/19 10:21	04/01/19 14:40	106-46-7	
Dichlorodifluoromethane	**<16.2**	ug/kg	200	16.2	1	04/01/19 10:21	04/01/19 14:40	75-71-8	
1,1-Dichloroethane	**<5.6**	ug/kg	50.0	5.6	1	04/01/19 10:21	04/01/19 14:40	75-34-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Sample: Trip Blank **Lab ID: 10468888006** Collected: 03/29/19 00:00 Received: 03/29/19 14:20 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,2-Dichloroethane	**<5.5**	ug/kg	50.0	5.5	1	04/01/19 10:21	04/01/19 14:40	107-06-2	
1,1-Dichloroethene	**<15.0**	ug/kg	50.0	15.0	1	04/01/19 10:21	04/01/19 14:40	75-35-4	
cis-1,2-Dichloroethene	**<8.3**	ug/kg	50.0	8.3	1	04/01/19 10:21	04/01/19 14:40	156-59-2	
trans-1,2-Dichloroethene	**<23.4**	ug/kg	50.0	23.4	1	04/01/19 10:21	04/01/19 14:40	156-60-5	
Dichlorofluoromethane	**<69.1**	ug/kg	500	69.1	1	04/01/19 10:21	04/01/19 14:40	75-43-4	N2
1,2-Dichloropropane	**<8.6**	ug/kg	50.0	8.6	1	04/01/19 10:21	04/01/19 14:40	78-87-5	
1,3-Dichloropropane	**<6.9**	ug/kg	50.0	6.9	1	04/01/19 10:21	04/01/19 14:40	142-28-9	
2,2-Dichloropropane	**<6.2**	ug/kg	200	6.2	1	04/01/19 10:21	04/01/19 14:40	594-20-7	
1,1-Dichloropropene	**<23.1**	ug/kg	50.0	23.1	1	04/01/19 10:21	04/01/19 14:40	563-58-6	
cis-1,3-Dichloropropene	**<7.2**	ug/kg	50.0	7.2	1	04/01/19 10:21	04/01/19 14:40	10061-01-5	
trans-1,3-Dichloropropene	**<7.0**	ug/kg	50.0	7.0	1	04/01/19 10:21	04/01/19 14:40	10061-02-6	
Diethyl ether (Ethyl ether)	**<30.6**	ug/kg	200	30.6	1	04/01/19 10:21	04/01/19 14:40	60-29-7	
Ethylbenzene	**<2.7**	ug/kg	50.0	2.7	1	04/01/19 10:21	04/01/19 14:40	100-41-4	
Hexachloro-1,3-butadiene	**<12.2**	ug/kg	250	12.2	1	04/01/19 10:21	04/01/19 14:40	87-68-3	
Isopropylbenzene (Cumene)	**<2.2**	ug/kg	50.0	2.2	1	04/01/19 10:21	04/01/19 14:40	98-82-8	
p-Isopropyltoluene	**<15.2**	ug/kg	50.0	15.2	1	04/01/19 10:21	04/01/19 14:40	99-87-6	
Methylene Chloride	**<94.1**	ug/kg	200	94.1	1	04/01/19 10:21	04/01/19 14:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<10.4**	ug/kg	250	10.4	1	04/01/19 10:21	04/01/19 14:40	108-10-1	
Methyl-tert-butyl ether	**<6.0**	ug/kg	50.0	6.0	1	04/01/19 10:21	04/01/19 14:40	1634-04-4	
Naphthalene	**<46.8**	ug/kg	200	46.8	1	04/01/19 10:21	04/01/19 14:40	91-20-3	
n-Propylbenzene	**<2.7**	ug/kg	50.0	2.7	1	04/01/19 10:21	04/01/19 14:40	103-65-1	
Styrene	**<2.3**	ug/kg	50.0	2.3	1	04/01/19 10:21	04/01/19 14:40	100-42-5	
1,1,1,2-Tetrachloroethane	**<15.7**	ug/kg	50.0	15.7	1	04/01/19 10:21	04/01/19 14:40	630-20-6	
1,1,2,2-Tetrachloroethane	**<8.8**	ug/kg	50.0	8.8	1	04/01/19 10:21	04/01/19 14:40	79-34-5	
Tetrachloroethene	**<17.6**	ug/kg	50.0	17.6	1	04/01/19 10:21	04/01/19 14:40	127-18-4	
Tetrahydrofuran	**<72.7**	ug/kg	2000	72.7	1	04/01/19 10:21	04/01/19 14:40	109-99-9	
Toluene	**<12.2**	ug/kg	50.0	12.2	1	04/01/19 10:21	04/01/19 14:40	108-88-3	
1,2,3-Trichlorobenzene	**<8.0**	ug/kg	50.0	8.0	1	04/01/19 10:21	04/01/19 14:40	87-61-6	
1,2,4-Trichlorobenzene	**<11.1**	ug/kg	50.0	11.1	1	04/01/19 10:21	04/01/19 14:40	120-82-1	
1,1,1-Trichloroethane	**<23.3**	ug/kg	50.0	23.3	1	04/01/19 10:21	04/01/19 14:40	71-55-6	
1,1,2-Trichloroethane	**<6.0**	ug/kg	50.0	6.0	1	04/01/19 10:21	04/01/19 14:40	79-00-5	
Trichloroethene	**<7.7**	ug/kg	50.0	7.7	1	04/01/19 10:21	04/01/19 14:40	79-01-6	
Trichlorofluoromethane	**<87.2**	ug/kg	200	87.2	1	04/01/19 10:21	04/01/19 14:40	75-69-4	
1,2,3-Trichloropropane	**<13.1**	ug/kg	200	13.1	1	04/01/19 10:21	04/01/19 14:40	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<58.0**	ug/kg	200	58.0	1	04/01/19 10:21	04/01/19 14:40	76-13-1	
1,2,4-Trimethylbenzene	**<10.0**	ug/kg	50.0	10.0	1	04/01/19 10:21	04/01/19 14:40	95-63-6	
1,3,5-Trimethylbenzene	**<8.0**	ug/kg	50.0	8.0	1	04/01/19 10:21	04/01/19 14:40	108-67-8	
Vinyl chloride	**<9.8**	ug/kg	20.0	9.8	1	04/01/19 10:21	04/01/19 14:40	75-01-4	
Xylene (Total)	**<11.6**	ug/kg	150	11.6	1	04/01/19 10:21	04/01/19 14:40	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	92	%.	75-125		1	04/01/19 10:21	04/01/19 14:40	17060-07-0	
Toluene-d8 (S)	95	%.	75-125		1	04/01/19 10:21	04/01/19 14:40	2037-26-5	
4-Bromofluorobenzene (S)	93	%.	75-125		1	04/01/19 10:21	04/01/19 14:40	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

QC Batch: 598246 — Analysis Method: WI MOD GRO
QC Batch Method: EPA 5030 Medium Soil — Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005, 10468888006

METHOD BLANK: 3234580 — Matrix: Solid
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005, 10468888006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	<1.3	10.0	1.3	04/09/19 13:41	
a,a,a-Trifluorotoluene (S)	%.	100	80-150		04/09/19 13:41	

LABORATORY CONTROL SAMPLE & LCSD: 3234581 — 3234582

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	50	44.1	43.9	88	88	80-120	0	20	
a,a,a-Trifluorotoluene (S)	%.				98	98	80-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3235289 — 3235290

Parameter	Units	10468902001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	51.3	54.4	54.7	62.0	101	108	80-120	12	20	
a,a,a-Trifluorotoluene (S)	%.						101	96	80-150			

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

QC Batch: 596720 Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B Analysis Description: 7471B Mercury Solids
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

METHOD BLANK: 3227068 Matrix: Solid
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.0071	0.018	0.0071	04/03/19 11:19	

LABORATORY CONTROL SAMPLE: 3227069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.47	0.49	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227070 3227071

Parameter	Units	10468835007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.045	0.52	0.52	0.59	0.63	105	112	80-120	6	20	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

QC Batch: 596714 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3050 | Analysis Description: 6010D Solids
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

METHOD BLANK: 3227044 | Matrix: Solid
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	mg/kg	<0.038	0.45	0.038	04/02/19 12:29	
Silver	mg/kg	<0.033	0.45	0.033	04/02/19 12:29	

LABORATORY CONTROL SAMPLE: 3227045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/kg	49.5	49.9	101	80-120	
Silver	mg/kg	24.8	24.2	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227046 3227047

Parameter	Units	10468888001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/kg	57.4	57.7	55.5	116	125	102	122	75-125	7	20	
Silver	mg/kg	<0.041	28.8	27.7	25.1	24.6	87	89	75-125	2	20	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

QC Batch: 596717 Analysis Method: EPA 6020B
QC Batch Method: EPA 3050 Analysis Description: 6020B Solids UPD5
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

METHOD BLANK: 3227056 Matrix: Solid
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	<0.17	0.47	0.17	04/05/19 02:19	
Cadmium	mg/kg	<0.025	0.075	0.025	04/05/19 02:19	
Chromium	mg/kg	<0.12	0.47	0.12	04/05/19 02:19	
Lead	mg/kg	<0.054	0.19	0.054	04/05/19 02:19	
Selenium	mg/kg	<0.14	0.47	0.14	04/05/19 02:19	

LABORATORY CONTROL SAMPLE: 3227057

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	50.1	100	80-120	
Cadmium	mg/kg	50	53.5	107	80-120	
Chromium	mg/kg	50	54.3	109	80-120	
Lead	mg/kg	50	53.2	106	80-120	
Selenium	mg/kg	50	51.2	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227058 3227059

Parameter	Units	10468835005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	1.8	53.5	55	50.1	55.9	90	98	75-125	11	20	
Cadmium	mg/kg	ND	53.5	55	51.2	58.7	96	107	75-125	14	20	
Chromium	mg/kg	28.0	53.5	55	72.6	77.8	83	91	75-125	7	20	
Lead	mg/kg	3.0	53.5	55	53.0	59.5	94	103	75-125	12	20	
Selenium	mg/kg	ND	53.5	55	48.7	55.6	90	100	75-125	13	20	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

QC Batch: 596785 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10468888001, 10468888002

SAMPLE DUPLICATE: 3227344

Parameter	Units	10468884008 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	13.2	13.4	2	30	

SAMPLE DUPLICATE: 3227478

Parameter	Units	10468886005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	9.5	8.9	7	30	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

QC Batch: 596786 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10468888003, 10468888004, 10468888005

SAMPLE DUPLICATE: 3227255

Parameter	Units	10468888003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	13.0	13.1	1	30	

SAMPLE DUPLICATE: 3227256

Parameter	Units	10468902003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.4	20.4	0	30	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

QC Batch: 596792 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005, 10468888006

METHOD BLANK: 3227293 Matrix: Solid
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005, 10468888006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	<15.7	50.0	15.7	04/01/19 13:10	
1,1,1-Trichloroethane	ug/kg	<23.3	50.0	23.3	04/01/19 13:10	
1,1,2,2-Tetrachloroethane	ug/kg	<8.8	50.0	8.8	04/01/19 13:10	
1,1,2-Trichloroethane	ug/kg	<6.0	50.0	6.0	04/01/19 13:10	
1,1,2-Trichlorotrifluoroethane	ug/kg	<58.0	200	58.0	04/01/19 13:10	
1,1-Dichloroethane	ug/kg	<5.6	50.0	5.6	04/01/19 13:10	
1,1-Dichloroethene	ug/kg	<15.0	50.0	15.0	04/01/19 13:10	
1,1-Dichloropropene	ug/kg	<23.1	50.0	23.1	04/01/19 13:10	
1,2,3-Trichlorobenzene	ug/kg	<8.0	50.0	8.0	04/01/19 13:10	
1,2,3-Trichloropropane	ug/kg	<13.1	200	13.1	04/01/19 13:10	
1,2,4-Trichlorobenzene	ug/kg	<11.1	50.0	11.1	04/01/19 13:10	
1,2,4-Trimethylbenzene	ug/kg	<10.0	50.0	10.0	04/01/19 13:10	
1,2-Dibromo-3-chloropropane	ug/kg	<174	500	174	04/01/19 13:10	
1,2-Dibromoethane (EDB)	ug/kg	<5.3	50.0	5.3	04/01/19 13:10	
1,2-Dichlorobenzene	ug/kg	<2.0	50.0	2.0	04/01/19 13:10	
1,2-Dichloroethane	ug/kg	<5.5	50.0	5.5	04/01/19 13:10	
1,2-Dichloropropane	ug/kg	<8.6	50.0	8.6	04/01/19 13:10	
1,3,5-Trimethylbenzene	ug/kg	<8.0	50.0	8.0	04/01/19 13:10	
1,3-Dichlorobenzene	ug/kg	<1.8	50.0	1.8	04/01/19 13:10	
1,3-Dichloropropane	ug/kg	<6.9	50.0	6.9	04/01/19 13:10	
1,4-Dichlorobenzene	ug/kg	<3.1	50.0	3.1	04/01/19 13:10	
2,2-Dichloropropane	ug/kg	<6.2	200	6.2	04/01/19 13:10	
2-Butanone (MEK)	ug/kg	<26.6	250	26.6	04/01/19 13:10	
2-Chlorotoluene	ug/kg	<2.5	50.0	2.5	04/01/19 13:10	
4-Chlorotoluene	ug/kg	<2.6	50.0	2.6	04/01/19 13:10	
4-Methyl-2-pentanone (MIBK)	ug/kg	<10.4	250	10.4	04/01/19 13:10	
Acetone	ug/kg	<311	1000	311	04/01/19 13:10	
Allyl chloride	ug/kg	<41.9	200	41.9	04/01/19 13:10	
Benzene	ug/kg	<2.8	20.0	2.8	04/01/19 13:10	
Bromobenzene	ug/kg	<3.1	50.0	3.1	04/01/19 13:10	
Bromochloromethane	ug/kg	<17.3	50.0	17.3	04/01/19 13:10	
Bromodichloromethane	ug/kg	<17.1	50.0	17.1	04/01/19 13:10	
Bromoform	ug/kg	<75.7	200	75.7	04/01/19 13:10	
Bromomethane	ug/kg	<58.5	500	58.5	04/01/19 13:10	
Carbon tetrachloride	ug/kg	<23.9	50.0	23.9	04/01/19 13:10	
Chlorobenzene	ug/kg	<2.8	50.0	2.8	04/01/19 13:10	
Chloroethane	ug/kg	<26.0	500	26.0	04/01/19 13:10	
Chloroform	ug/kg	<25.0	50.0	25.0	04/01/19 13:10	
Chloromethane	ug/kg	<12.0	200	12.0	04/01/19 13:10	
cis-1,2-Dichloroethene	ug/kg	<8.3	50.0	8.3	04/01/19 13:10	
cis-1,3-Dichloropropene	ug/kg	<7.2	50.0	7.2	04/01/19 13:10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

METHOD BLANK: 3227293 Matrix: Solid
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005, 10468888006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromochloromethane	ug/kg	<5.8	200	5.8	04/01/19 13:10	
Dibromomethane	ug/kg	<9.2	50.0	9.2	04/01/19 13:10	
Dichlorodifluoromethane	ug/kg	<16.2	200	16.2	04/01/19 13:10	
Dichlorofluoromethane	ug/kg	<69.1	500	69.1	04/01/19 13:10	N2
Diethyl ether (Ethyl ether)	ug/kg	<30.6	200	30.6	04/01/19 13:10	
Ethylbenzene	ug/kg	<2.7	50.0	2.7	04/01/19 13:10	
Hexachloro-1,3-butadiene	ug/kg	<12.2	250	12.2	04/01/19 13:10	
Isopropylbenzene (Cumene)	ug/kg	<2.2	50.0	2.2	04/01/19 13:10	
Methyl-tert-butyl ether	ug/kg	<6.0	50.0	6.0	04/01/19 13:10	
Methylene Chloride	ug/kg	<94.1	200	94.1	04/01/19 13:10	
n-Butylbenzene	ug/kg	<23.8	50.0	23.8	04/01/19 13:10	
n-Propylbenzene	ug/kg	<2.7	50.0	2.7	04/01/19 13:10	
Naphthalene	ug/kg	<46.8	200	46.8	04/01/19 13:10	
p-Isopropyltoluene	ug/kg	<15.2	50.0	15.2	04/01/19 13:10	
sec-Butylbenzene	ug/kg	<9.6	50.0	9.6	04/01/19 13:10	
Styrene	ug/kg	<2.3	50.0	2.3	04/01/19 13:10	
tert-Butylbenzene	ug/kg	<9.6	50.0	9.6	04/01/19 13:10	
Tetrachloroethene	ug/kg	<17.6	50.0	17.6	04/01/19 13:10	
Tetrahydrofuran	ug/kg	<72.7	2000	72.7	04/01/19 13:10	
Toluene	ug/kg	<12.2	50.0	12.2	04/01/19 13:10	
trans-1,2-Dichloroethene	ug/kg	<23.4	50.0	23.4	04/01/19 13:10	
trans-1,3-Dichloropropene	ug/kg	<7.0	50.0	7.0	04/01/19 13:10	
Trichloroethene	ug/kg	<7.7	50.0	7.7	04/01/19 13:10	
Trichlorofluoromethane	ug/kg	<87.2	200	87.2	04/01/19 13:10	
Vinyl chloride	ug/kg	<9.8	20.0	9.8	04/01/19 13:10	
Xylene (Total)	ug/kg	<11.6	150	11.6	04/01/19 13:10	
1,2-Dichloroethane-d4 (S)	%.	91	75-125		04/01/19 13:10	
4-Bromofluorobenzene (S)	%.	91	75-125		04/01/19 13:10	
Toluene-d8 (S)	%.	97	75-125		04/01/19 13:10	

LABORATORY CONTROL SAMPLE: 3227294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1000	797	80	53-125	
1,1,1-Trichloroethane	ug/kg	1000	721	72	53-146	
1,1,2,2-Tetrachloroethane	ug/kg	1000	668	67	51-125	
1,1,2-Trichloroethane	ug/kg	1000	791	79	55-125	
1,1,2-Trichlorotrifluoroethane	ug/kg	1000	937	94	49-150	
1,1-Dichloroethane	ug/kg	1000	702	70	56-125	
1,1-Dichloroethene	ug/kg	1000	883	88	48-148	
1,1-Dichloropropene	ug/kg	1000	750	75	55-142	
1,2,3-Trichlorobenzene	ug/kg	1000	762	76	47-125	
1,2,3-Trichloropropane	ug/kg	1000	740	74	52-125	
1,2,4-Trichlorobenzene	ug/kg	1000	728	73	48-125	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

LABORATORY CONTROL SAMPLE: 3227294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1000	758	76	51-126	
1,2-Dibromo-3-chloropropane	ug/kg	2500	1530	61	50-125	
1,2-Dibromoethane (EDB)	ug/kg	1000	801	80	52-125	
1,2-Dichlorobenzene	ug/kg	1000	760	76	50-125	
1,2-Dichloroethane	ug/kg	1000	720	72	51-125	
1,2-Dichloropropane	ug/kg	1000	766	77	57-125	
1,3,5-Trimethylbenzene	ug/kg	1000	750	75	52-127	
1,3-Dichlorobenzene	ug/kg	1000	768	77	50-128	
1,3-Dichloropropane	ug/kg	1000	752	75	55-125	
1,4-Dichlorobenzene	ug/kg	1000	754	75	51-125	
2,2-Dichloropropane	ug/kg	1000	706	71	41-136	
2-Butanone (MEK)	ug/kg	5000	2900	58	43-125	
2-Chlorotoluene	ug/kg	1000	728	73	52-126	
4-Chlorotoluene	ug/kg	1000	713	71	53-126	
4-Methyl-2-pentanone (MIBK)	ug/kg	5000	3400	68	39-125	
Acetone	ug/kg	5000	4360	87	46-136	
Allyl chloride	ug/kg	1000	700	70	48-130	
Benzene	ug/kg	1000	713	71	48-125	
Bromobenzene	ug/kg	1000	770	77	51-125	
Bromochloromethane	ug/kg	1000	754	75	52-125	
Bromodichloromethane	ug/kg	1000	755	75	51-131	
Bromoform	ug/kg	1000	749	75	52-125	
Bromomethane	ug/kg	1000	985	99	30-150	
Carbon tetrachloride	ug/kg	1000	760	76	59-129	
Chlorobenzene	ug/kg	1000	787	79	54-125	
Chloroethane	ug/kg	1000	1150	115	61-132	CH
Chloroform	ug/kg	1000	735	74	52-125	
Chloromethane	ug/kg	1000	689	69	46-125	
cis-1,2-Dichloroethene	ug/kg	1000	712	71	54-127	
cis-1,3-Dichloropropene	ug/kg	1000	740	74	50-134	
Dibromochloromethane	ug/kg	1000	762	76	54-125	
Dibromomethane	ug/kg	1000	807	81	51-125	
Dichlorodifluoromethane	ug/kg	1000	596	60	42-125	
Dichlorofluoromethane	ug/kg	1000	1050	105	30-150	N2
Diethyl ether (Ethyl ether)	ug/kg	1000	803	80	50-127	
Ethylbenzene	ug/kg	1000	778	78	51-125	
Hexachloro-1,3-butadiene	ug/kg	1000	864	86	41-133	
Isopropylbenzene (Cumene)	ug/kg	1000	807	81	54-134	
Methyl-tert-butyl ether	ug/kg	1000	646	65	53-125	
Methylene Chloride	ug/kg	1000	710	71	48-125	
n-Butylbenzene	ug/kg	1000	804	80	49-135	
n-Propylbenzene	ug/kg	1000	762	76	55-129	
Naphthalene	ug/kg	1000	681	68	51-125	
p-Isopropyltoluene	ug/kg	1000	829	83	53-134	
sec-Butylbenzene	ug/kg	1000	801	80	52-134	
Styrene	ug/kg	1000	759	76	53-128	
tert-Butylbenzene	ug/kg	1000	763	76	51-133	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL

Pace Project No.: 10468888

LABORATORY CONTROL SAMPLE: 3227294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/kg	1000	842	84	54-131	
Tetrahydrofuran	ug/kg	10000	8820	88	42-145	
Toluene	ug/kg	1000	787	79	51-125	
trans-1,2-Dichloroethene	ug/kg	1000	714	71	50-130	
trans-1,3-Dichloropropene	ug/kg	1000	751	75	52-125	
Trichloroethene	ug/kg	1000	868	87	55-131	
Trichlorofluoromethane	ug/kg	1000	1360	136	30-150	CH
Vinyl chloride	ug/kg	1000	772	77	58-125	
Xylene (Total)	ug/kg	3000	2370	79	52-125	
1,2-Dichloroethane-d4 (S)	%.			84	75-125	
4-Bromofluorobenzene (S)	%.			90	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227295 3227296

Parameter	Units	10468888001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/kg	<17.8	1270	1200	1440	1350	113	112	68-150	6	30	
1,1,1-Trichloroethane	ug/kg	<26.4	1270	1200	1320	1190	104	100	63-150	10	30	
1,1,2,2-Tetrachloroethane	ug/kg	<10	1270	1200	1190	1150	94	96	60-146	3	30	
1,1,2-Trichloroethane	ug/kg	<6.8	1270	1200	1380	1270	109	106	63-143	8	30	
1,1,2-Trichlorotrifluoroethane	ug/kg	<65.7	1270	1200	1570	1410	124	118	30-150	10	30	
1,1-Dichloroethane	ug/kg	<6.4	1270	1200	1200	1100	95	92	63-144	9	30	
1,1-Dichloroethene	ug/kg	<17.0	1270	1200	1440	1320	114	110	30-150	9	30	
1,1-Dichloropropene	ug/kg	<26.2	1270	1200	1320	1210	104	101	54-150	8	30	
1,2,3-Trichlorobenzene	ug/kg	<9.1	1270	1200	1360	1290	107	108	63-142	5	30	
1,2,3-Trichloropropane	ug/kg	<14.8	1270	1200	1340	1240	106	104	59-147	8	30	
1,2,4-Trichlorobenzene	ug/kg	<12.6	1270	1200	1410	1270	111	106	66-142	10	30	
1,2,4-Trimethylbenzene	ug/kg	<11.3	1270	1200	1350	1260	107	105	65-145	7	30	
1,2-Dibromo-3-chloropropane	ug/kg	<197	3160	2990	2910	2820	92	94	60-142	3	30	
1,2-Dibromoethane (EDB)	ug/kg	<6.0	1270	1200	1380	1310	109	109	67-135	6	30	
1,2-Dichlorobenzene	ug/kg	<2.3	1270	1200	1320	1240	105	104	68-141	6	30	
1,2-Dichloroethane	ug/kg	<6.2	1270	1200	1240	1160	98	97	56-132	7	30	
1,2-Dichloropropane	ug/kg	<9.8	1270	1200	1360	1240	108	103	58-150	10	30	
1,3,5-Trimethylbenzene	ug/kg	<9.0	1270	1200	1350	1240	107	104	66-148	9	30	
1,3-Dichlorobenzene	ug/kg	<2.1	1270	1200	1370	1280	108	107	63-148	7	30	
1,3-Dichloropropane	ug/kg	<7.8	1270	1200	1350	1270	107	106	63-142	6	30	
1,4-Dichlorobenzene	ug/kg	<3.5	1270	1200	1360	1250	107	105	68-140	8	30	
2,2-Dichloropropane	ug/kg	<7.1	1270	1200	1260	1130	99	95	62-143	10	30	
2-Butanone (MEK)	ug/kg	<30.1	6320	5990	5690	6020	90	101	53-138	6	30	
2-Chlorotoluene	ug/kg	<2.8	1270	1200	1290	1210	102	101	64-145	7	30	
4-Chlorotoluene	ug/kg	<2.9	1270	1200	1280	1200	101	101	63-149	6	30	
4-Methyl-2-pentanone (MIBK)	ug/kg	<11.8	6320	5990	6320	6150	100	103	47-150	3	30	
Acetone	ug/kg	<353	6320	5990	8360	8700	132	145	64-150	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227295 3227296

Parameter	Units	10468888001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Allyl chloride	ug/kg	<47.5	1270	1200	1140	1020	90	85	49-146	11	30	
Benzene	ug/kg	<3.2	1270	1200	1280	1160	101	97	63-136	10	30	
Bromobenzene	ug/kg	<3.5	1270	1200	1330	1280	105	107	63-142	4	30	
Bromochloromethane	ug/kg	<19.6	1270	1200	1340	1220	106	102	61-139	9	30	
Bromodichloromethane	ug/kg	<19.4	1270	1200	1390	1220	110	102	63-150	12	30	
Bromoform	ug/kg	<85.8	1270	1200	1370	1300	108	108	64-140	5	30	
Bromomethane	ug/kg	<66.3	1270	1200	1610	1430	127	119	56-148	12	30	
Carbon tetrachloride	ug/kg	<27.1	1270	1200	1330	1220	105	102	75-148	9	30	
Chlorobenzene	ug/kg	<3.2	1270	1200	1380	1280	109	107	62-147	7	30	
Chloroethane	ug/kg	<29.5	1270	1200	1870	1560	148	131	37-150	18	30	CH
Chloroform	ug/kg	<28.3	1270	1200	1290	1180	102	99	66-130	9	30	
Chloromethane	ug/kg	<13.6	1270	1200	1070	919	85	77	35-131	15	30	
cis-1,2-Dichloroethene	ug/kg	<9.4	1270	1200	1250	1140	99	95	63-143	10	30	
cis-1,3-Dichloropropene	ug/kg	<8.1	1270	1200	1350	1200	107	100	60-150	12	30	
Dibromochloromethane	ug/kg	<6.6	1270	1200	1400	1300	111	109	64-144	7	30	
Dibromomethane	ug/kg	<10.4	1270	1200	1430	1300	113	108	59-148	10	30	
Dichlorodifluoromethane	ug/kg	<18.4	1270	1200	807	682	64	57	30-125	17	30	
Dichlorofluoromethane	ug/kg	<78.3	1270	1200	1740	1500	138	126	39-150	15	30	N2
Diethyl ether (Ethyl ether)	ug/kg	<34.7	1270	1200	1410	1290	111	107	59-149	9	30	
Ethylbenzene	ug/kg	<3.1	1270	1200	1400	1320	111	110	64-142	6	30	
Hexachloro-1,3-butadiene	ug/kg	<13.8	1270	1200	1680	1500	132	126	58-150	11	30	
Isopropylbenzene (Cumene)	ug/kg	<2.5	1270	1200	1440	1360	114	113	67-150	6	30	
Methyl-tert-butyl ether	ug/kg	<6.7	1270	1200	1150	1100	91	92	69-134	4	30	
Methylene Chloride	ug/kg	<107	1270	1200	1220	1100	96	92	56-134	10	30	
n-Butylbenzene	ug/kg	<27.0	1270	1200	1450	1340	115	112	64-150	9	30	
n-Propylbenzene	ug/kg	<3.0	1270	1200	1360	1270	107	106	65-150	7	30	
Naphthalene	ug/kg	<53.0	1270	1200	1290	1250	101	103	63-148	3	30	
p-Isopropyltoluene	ug/kg	<17.2	1270	1200	1480	1340	117	112	69-150	9	30	
sec-Butylbenzene	ug/kg	<10.9	1270	1200	1450	1330	114	111	69-150	9	30	
Styrene	ug/kg	<2.6	1270	1200	1360	1280	108	107	63-150	6	30	
tert-Butylbenzene	ug/kg	<10.9	1270	1200	1380	1280	109	107	67-150	7	30	
Tetrachloroethene	ug/kg	<19.9	1270	1200	1520	1400	120	117	62-150	8	30	
Tetrahydrofuran	ug/kg	<82.4	12700	12000	16000	15000	127	126	53-150	7	30	
Toluene	ug/kg	<13.8	1270	1200	1400	1320	111	110	61-141	6	30	
trans-1,2-Dichloroethene	ug/kg	<26.5	1270	1200	1240	1100	98	92	52-148	12	30	
trans-1,3-Dichloropropene	ug/kg	<7.9	1270	1200	1350	1250	107	105	62-142	8	30	
Trichloroethene	ug/kg	<8.7	1270	1200	1540	1400	122	117	59-150	10	30	
Trichlorofluoromethane	ug/kg	<98.8	1270	1200	2230	1850	176	155	30-150	18	30	CH,M1
Vinyl chloride	ug/kg	<11.2	1270	1200	1250	1070	99	89	44-144	16	30	
Xylene (Total)	ug/kg	<13.1	3800	3590	4250	3970	112	111	67-145	7	30	
1,2-Dichloroethane-d4 (S)	%.						86	86	75-125			
4-Bromofluorobenzene (S)	%.						90	90	75-125			
Toluene-d8 (S)	%.						97	98	75-125			

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

QC Batch: 596780 | Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3550 | Analysis Description: 8270D Solid PAH by SIM MSSV
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

METHOD BLANK: 3227240 | Matrix: Solid
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Acenaphthene	ug/kg	<0.41	10.0	0.41	04/02/19 11:25	
Acenaphthylene	ug/kg	<0.50	10.0	0.50	04/02/19 11:25	
Anthracene	ug/kg	<0.47	10.0	0.47	04/02/19 11:25	
Benzo(a)anthracene	ug/kg	<1.1	10.0	1.1	04/02/19 11:25	
Benzo(a)pyrene	ug/kg	<0.69	10.0	0.69	04/02/19 11:25	
Benzo(b)fluoranthene	ug/kg	<0.37	10.0	0.37	04/02/19 11:25	
Benzo(e)pyrene	ug/kg	<0.72	10.0	0.72	04/02/19 11:25	N2
Benzo(g,h,i)perylene	ug/kg	<0.63	10.0	0.63	04/02/19 11:25	
Benzo(k)fluoranthene	ug/kg	<0.84	10.0	0.84	04/02/19 11:25	
Chrysene	ug/kg	<1.4	10.0	1.4	04/02/19 11:25	
Dibenz(a,h)anthracene	ug/kg	<0.46	10.0	0.46	04/02/19 11:25	
Fluoranthene	ug/kg	<0.43	10.0	0.43	04/02/19 11:25	
Fluorene	ug/kg	<0.31	10.0	0.31	04/02/19 11:25	
Indeno(1,2,3-cd)pyrene	ug/kg	<0.67	10.0	0.67	04/02/19 11:25	
Naphthalene	ug/kg	<0.77	10.0	0.77	04/02/19 11:25	
Phenanthrene	ug/kg	<1.9	10.0	1.9	04/02/19 11:25	
Pyrene	ug/kg	<1.5	10.0	1.5	04/02/19 11:25	
2-Fluorobiphenyl (S)	%.	88	30-125		04/02/19 11:25	
p-Terphenyl-d14 (S)	%.	83	30-125		04/02/19 11:25	

LABORATORY CONTROL SAMPLE: 3227241

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	33.3	26.5	80	46-125	
Acenaphthylene	ug/kg	33.3	28.4	85	44-125	
Anthracene	ug/kg	33.3	28.4	85	62-125	
Benzo(a)anthracene	ug/kg	33.3	26.7	80	53-125	
Benzo(a)pyrene	ug/kg	33.3	28.4	85	62-125	
Benzo(b)fluoranthene	ug/kg	33.3	29.2	87	51-125	
Benzo(e)pyrene	ug/kg	33.3	30.0	90	64-125	N2
Benzo(g,h,i)perylene	ug/kg	33.3	28.4	85	58-125	
Benzo(k)fluoranthene	ug/kg	33.3	28.1	84	59-125	
Chrysene	ug/kg	33.3	27.9	84	59-125	
Dibenz(a,h)anthracene	ug/kg	33.3	28.3	85	60-125	
Fluoranthene	ug/kg	33.3	30.7	92	67-125	
Fluorene	ug/kg	33.3	28.6	86	51-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	29.1	87	59-125	
Naphthalene	ug/kg	33.3	27.3	82	47-125	
Phenanthrene	ug/kg	33.3	26.7	80	61-125	
Pyrene	ug/kg	33.3	28.9	87	52-125	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

LABORATORY CONTROL SAMPLE: 3227241

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			88	30-125	
p-Terphenyl-d14 (S)	%.			85	30-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227284 3227285

Parameter	Units	10468906002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	ug/kg	ND	36.3	36.3	32.9	33.8	91	93	30-125	3	30	
Acenaphthylene	ug/kg	109	36.3	36.3	121	75.5	34	-92	30-125	46	30	M1,R1
Anthracene	ug/kg	56.6	36.3	36.3	88.2	73.3	87	46	30-131	18	30	
Benzo(a)anthracene	ug/kg	143	36.3	36.3	145	105	6	-105	30-126	32	30	M1,R1
Benzo(a)pyrene	ug/kg	169	36.3	36.3	159	101	-28	-189	30-150	45	30	M1,R1
Benzo(b)fluoranthene	ug/kg	222	36.3	36.3	222	132	1	-247	30-150	51	30	M1,R1
Benzo(e)pyrene	ug/kg	129	36.3	36.3	131	83.2	6	-127	30-150	45	30	M1,N2, R1
Benzo(g,h,i)perylene	ug/kg	226	36.3	36.3	212	126	-38	-274	30-150	51	30	M1,R1
Benzo(k)fluoranthene	ug/kg	78.9	36.3	36.3	83.6	105	13	73	30-150	23	30	M1
Chrysene	ug/kg	117	36.3	36.3	124	85.0	21	-87	30-150	37	30	M1,R1
Dibenz(a,h)anthracene	ug/kg	41.7	36.3	36.3	64.9	45.1	64	9	30-143	36	30	M1,R1
Fluoranthene	ug/kg	196	36.3	36.3	211	150	43	-126	30-143	34	30	M1,R1
Fluorene	ug/kg	ND	36.3	36.3	36.6	39.1	101	108	30-138	7	30	
Indeno(1,2,3-cd)pyrene	ug/kg	147	36.3	36.3	144	88.4	-7	-161	30-150	48	30	M1,R1
Naphthalene	ug/kg	ND	36.3	36.3	34.3	30.4	95	84	30-125	12	30	
Phenanthrene	ug/kg	66.0	36.3	36.3	96.7	97.4	85	87	30-142	1	30	
Pyrene	ug/kg	178	36.3	36.3	179	124	3	-149	30-149	36	30	M1,R1
2-Fluorobiphenyl (S)	%.						84	84	30-125			
p-Terphenyl-d14 (S)	%.						77	82	30-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

QC Batch: 596751 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

METHOD BLANK: 3227167 Matrix: Solid
Associated Lab Samples: 10468888001, 10468888002, 10468888003, 10468888004, 10468888005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
WDRO C10-C28	mg/kg	<2.6	10.0	2.6	04/02/19 16:03	
n-Triacontane (S)	%.	86	50-150		04/02/19 16:03	

LABORATORY CONTROL SAMPLE & LCSD: 3227168 3227169

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
WDRO C10-C28	mg/kg	80	71.3	73.5	89	92	70-120	3	20	
n-Triacontane (S)	%.				88	85	50-150			

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QUALIFIERS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D4	Sample was diluted due to the presence of high levels of target analytes.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.
T6	High boiling point hydrocarbons are present in the sample.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10468888

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10468888001	**FD-SB-F2 (0-6ft)**	WI MOD DRO	596751	WI MOD DRO	597331
10468888002	**FD-SB-G5 (0-6ft)**	WI MOD DRO	596751	WI MOD DRO	597331
10468888003	**FD-SB-C3 (0-4.5ft)**	WI MOD DRO	596751	WI MOD DRO	597331
10468888004	**FD-SB-A4 (0-3ft)**	WI MOD DRO	596751	WI MOD DRO	597331
10468888005	**FD-SB-B1 (0-7.5ft)**	WI MOD DRO	596751	WI MOD DRO	597331
10468888001	**FD-SB-F2 (0-6ft)**	EPA 5030 Medium Soil	598246	WI MOD GRO	598392
10468888002	**FD-SB-G5 (0-6ft)**	EPA 5030 Medium Soil	598246	WI MOD GRO	598392
10468888003	**FD-SB-C3 (0-4.5ft)**	EPA 5030 Medium Soil	598246	WI MOD GRO	598392
10468888004	**FD-SB-A4 (0-3ft)**	EPA 5030 Medium Soil	598246	WI MOD GRO	598392
10468888005	**FD-SB-B1 (0-7.5ft)**	EPA 5030 Medium Soil	598246	WI MOD GRO	598392
10468888006	**Trip Blank**	EPA 5030 Medium Soil	598246	WI MOD GRO	598392
10468888001	**FD-SB-F2 (0-6ft)**	EPA 3050	596714	EPA 6010D	597016
10468888002	**FD-SB-G5 (0-6ft)**	EPA 3050	596714	EPA 6010D	597016
10468888003	**FD-SB-C3 (0-4.5ft)**	EPA 3050	596714	EPA 6010D	597016
10468888004	**FD-SB-A4 (0-3ft)**	EPA 3050	596714	EPA 6010D	597016
10468888005	**FD-SB-B1 (0-7.5ft)**	EPA 3050	596714	EPA 6010D	597016
10468888001	**FD-SB-F2 (0-6ft)**	EPA 3050	596717	EPA 6020B	597085
10468888002	**FD-SB-G5 (0-6ft)**	EPA 3050	596717	EPA 6020B	597085
10468888003	**FD-SB-C3 (0-4.5ft)**	EPA 3050	596717	EPA 6020B	597085
10468888004	**FD-SB-A4 (0-3ft)**	EPA 3050	596717	EPA 6020B	597085
10468888005	**FD-SB-B1 (0-7.5ft)**	EPA 3050	596717	EPA 6020B	597085
10468888001	**FD-SB-F2 (0-6ft)**	EPA 7471B	596720	EPA 7471B	596969
10468888002	**FD-SB-G5 (0-6ft)**	EPA 7471B	596720	EPA 7471B	596969
10468888003	**FD-SB-C3 (0-4.5ft)**	EPA 7471B	596720	EPA 7471B	596969
10468888004	**FD-SB-A4 (0-3ft)**	EPA 7471B	596720	EPA 7471B	596969
10468888005	**FD-SB-B1 (0-7.5ft)**	EPA 7471B	596720	EPA 7471B	596969
10468888001	**FD-SB-F2 (0-6ft)**	ASTM D2974	596785		
10468888002	**FD-SB-G5 (0-6ft)**	ASTM D2974	596785		
10468888003	**FD-SB-C3 (0-4.5ft)**	ASTM D2974	596786		
10468888004	**FD-SB-A4 (0-3ft)**	ASTM D2974	596786		
10468888005	**FD-SB-B1 (0-7.5ft)**	ASTM D2974	596786		
10468888001	**FD-SB-F2 (0-6ft)**	EPA 3550	596780	EPA 8270D by SIM	597091
10468888002	**FD-SB-G5 (0-6ft)**	EPA 3550	596780	EPA 8270D by SIM	597091
10468888003	**FD-SB-C3 (0-4.5ft)**	EPA 3550	596780	EPA 8270D by SIM	597091
10468888004	**FD-SB-A4 (0-3ft)**	EPA 3550	596780	EPA 8270D by SIM	597091
10468888005	**FD-SB-B1 (0-7.5ft)**	EPA 3550	596780	EPA 8270D by SIM	597091
10468888001	**FD-SB-F2 (0-6ft)**	EPA 5035/5030B	596792	EPA 8260B	596837
10468888002	**FD-SB-G5 (0-6ft)**	EPA 5035/5030B	596792	EPA 8260B	596837
10468888003	**FD-SB-C3 (0-4.5ft)**	EPA 5035/5030B	596792	EPA 8260B	596837
10468888004	**FD-SB-A4 (0-3ft)**	EPA 5035/5030B	596792	EPA 8260B	596837
10468888005	**FD-SB-B1 (0-7.5ft)**	EPA 5035/5030B	596792	EPA 8260B	596837
10468888006	**Trip Blank**	EPA 5035/5030B	596792	EPA 8260B	596837

Minnesota Pollution Control Agency

Chain-of-Custody Form

revision 2013.0909

Work Order Number:	COC Type:
Turnaround Time:	COC ID:

Page: 1 of 1

FOR LAB USE ONLY

Lab Work Order Sticker

PROJECT/CLIENT INFO

Facility Code:	MNSW-057 — Program Code (MDH Lab Only):
Project Name:	19-01567 MPCA Freeway LF 2019 Soils/Solids — Project Task Code: PRJ07786
Project Manager:	Brad Jacobson 612-607-6375 — EPIC PROFILE #: 38716 Line 1
Potential Hazard?	If yes, add information to Sampler Comments Section

LABORATORY

Lab Name: Pace Analytical - Minneapolis, MN

Address: 1700 SE Elm Street

Minneapolis MN 55414

Phone No: 612-607-6400

SAMPLE DETAILS

SAMPLE TYPE CODES
Sample=Routine Sample
S-IVP=Integrated Vertical Profile Sample
S-CWOP=Composite Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample

LAB MATRIX CODES
DW=Drinking Water
NW=Non-potable Water
SD=Soil/Solid
WP=Wipe
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRIX CODES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample

ANALYSIS REQUESTED

Location Identifier	Sample Type	Date	Time	Start Depth, in meters	End Depth, in meters	Grab (G) or Composite (C) Sample	Lab Matrix Code	Field Matrix Code	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	PRESERV. / ANALYSIS	Metals 6020/6010 / Mercury 7471 - QAPP Table 3b	8260 MLS / GRO - QAPP Table 3b	8270 PAH / DRO - QAPP Analytical Table 3b				Lab Sample No.	#
FD-SB-F2 (0-6 ft)	Sample	3/29/19	0900			G	SD		N		8		X	X	X				001	1
FD-SB-E5 (0-6 ft)	Sample	3/29/19	0930			G	SD		N		8		X	X	X				002	2
FD-SB-C3 (0-4.5 ft)	Sample	3/29/19	0950			G	SD		N		8		X	X	X				003	3
FD-SB-A4 (0-3 ft)	Sample	3/29/19	1015			G	SD		N		8		X	X	X				004	4
FD-SB-B1 (0-7.5 ft)	Sample	3/29/19	1040			G	SD		N		8		X	X	X				005	5
~~Trip Blank~~	~~[illegible] 3/29/19~~								N										006	6
									N	DA 3/29/19										
									N											
									N											
									N											

WO#: 10468888

10468888

Sampled By: David Anderson / Chris Pelosi

Sampler's Signature: David Anderson

Phone #:

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) David Anderson / Pace Analytical	3/29/19/1420	[illegible signature]	3/29/19 1425

1.8°C

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 06Feb2019 Page 1 of 1
	Document No.: **F-MN-L-213-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: MPCA

Project #: WO# : 10468888
PM: JMA Due Date: 04/05/19
CLIENT: PASI-MNFLD

Courier: ☐ Fed Ex ☑ Pace ☐ UPS ☐ SpeeDee ☐ USPS ☐ Commercial ☐ Client ☐ See Exception

Tracking Number: ____________

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:____________ **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ G87A9155100842 ☑ G87A9170600254 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 1.8 °C	**Average Corrected Temp (no temp blank only):** ____ °C See Exceptions ☐
Correction Factor: True **Cooler Temp Corrected w/temp blank :** 1.8 °C	

USDA Regulated Soil: (☐ N/A, water sample/Other:____________) **Date/Initials of Person Examining Contents:** TL 3/29/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other____
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No		8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☑ Soil ☐ Oil ☐ Other____	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** See Exception ☐
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☑ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No See Exception ☐
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	13. See Exception ☐
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	14.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	Pace Trip Blank Lot # (if purchased): 110518-3

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: ____________ Date/Time: ____________

Comments/Resolution: ____________

Project Manager Review: J Anderson **Date:** 04/01/2019

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

TL

Labeled by: ____________

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 17, 2019

Mr. Brad Jacobson
Pace Analytical Services, LLC..
1700 Elm Street
Suite 200
Minneapolis, MN 55414

RE: Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Dear Mr. Jacobson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 03, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Anderson
jennifer.anderson@pacelabs.com
(612)607-6436
Project Manager

Enclosures

cc: Tom Halverson, Pace Analytical Field Services
Chris Pelosi, Pace Analytical Services - Field Services

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	19-01567 MPCA Freeway LF 19 SL
Pace Project No.:	10469445

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10469445001	**FL-SB-01-(0-10ft)**	Solid	04/02/19 09:25	04/03/19 16:04
10469445002	**FL-SB-02 (0-6ft)**	Solid	04/02/19 10:00	04/03/19 16:04
10469445003	**FL-SB-03 (0-6.5ft)**	Solid	04/02/19 10:25	04/03/19 16:04
10469445004	**FL-SB-04 (0-2ft)**	Solid	04/02/19 10:45	04/03/19 16:04
10469445005	**FL-SB-05 (0-6.5ft)**	Solid	04/02/19 11:15	04/03/19 16:04
10469445006	**FL-SB-06 (0-4.5ft)**	Solid	04/02/19 11:40	04/03/19 16:04
10469445007	**FL-SB-07 (0-4.5ft)**	Solid	04/02/19 12:20	04/03/19 16:04
10469445008	**FL-SB-08 (0-5ft)**	Solid	04/02/19 13:20	04/03/19 16:04
10469445009	**FL-SB-09 (0-8ft)**	Solid	04/02/19 14:30	04/03/19 16:04
10469445010	**FL-SB-10 (0-25ft)**	Solid	04/02/19 15:15	04/03/19 16:04
10469445011	**FL-SB-11 (0-20ft)**	Solid	04/02/19 16:00	04/03/19 16:04
10469445012	**FL-SB-12 (0-10ft)**	Solid	04/02/19 16:40	04/03/19 16:04
10469445013	**FL-SB-13 (0-6ft)**	Solid	04/02/19 17:10	04/03/19 16:04
10469445014	**FL-SB-14 (0-10ft)**	Solid	04/02/19 17:40	04/03/19 16:04
10469445015	**Trip Blank**	Solid	04/02/19 00:00	04/03/19 16:04

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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SAMPLE ANALYTE COUNT

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10469445001	**FL-SB-01-(0-10ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10469445002	**FL-SB-02 (0-6ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10469445003	**FL-SB-03 (0-6.5ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10469445004	**FL-SB-04 (0-2ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10469445005	**FL-SB-05 (0-6.5ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10469445006	**FL-SB-06 (0-4.5ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10469445007	**FL-SB-07 (0-4.5ft)**	WI MOD DRO	JVM	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10469445008	**FL-SB-08 (0-5ft)**	WI MOD DRO	ST1	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10469445009	**FL-SB-09 (0-8ft)**	WI MOD DRO	ST1	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
10469445010	**FL-SB-10 (0-25ft)**	WI MOD DRO	ST1	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
		EPA 9060 Modified	TJJ	4	PASI-G
10469445011	**FL-SB-11 (0-20ft)**	WI MOD DRO	ST1	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
		EPA 9060 Modified	TJJ	4	PASI-G
10469445012	**FL-SB-12 (0-10ft)**	WI MOD DRO	ST1	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
		EPA 9060 Modified	TJJ	4	PASI-G
10469445013	**FL-SB-13 (0-6ft)**	WI MOD DRO	ST1	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
		EPA 9060 Modified	TJJ	4	PASI-G
10469445014	**FL-SB-14 (0-10ft)**	WI MOD DRO	ST1	2	PASI-M
		WI MOD GRO	AJR	2	PASI-M
		EPA 6010D	IP	2	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	RJS	5	PASI-M
		EPA 7471B	WBS	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	SNG	19	PASI-M
		EPA 8260B	GDM	70	PASI-M
		EPA 9060 Modified	TJJ	4	PASI-G
10469445015	**Trip Blank**	WI MOD GRO	AJR	2	PASI-M
		EPA 8260B	GDM	70	PASI-M

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-01-(0-10ft) **Lab ID: 10469445001** Collected: 04/02/19 09:25 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**53.7**	mg/kg	17.3	4.5	2	04/04/19 08:23	04/05/19 14:07		T6
Surrogates									
n-Triacontane (S)	100	%.	50-150		2	04/04/19 08:23	04/05/19 14:07	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.4**	mg/kg	11.2	1.4	1	04/11/19 13:33	04/12/19 02:33		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%.	80-150		1	04/11/19 13:33	04/12/19 02:33	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**63.7**	mg/kg	0.55	0.045	1	04/05/19 11:58	04/09/19 13:04	7440-39-3	M1,R1
Silver	**<0.040**	mg/kg	0.55	0.040	1	04/05/19 11:58	04/09/19 13:04	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**3.6**	mg/kg	0.56	0.20	20	04/05/19 11:58	04/15/19 23:29	7440-38-2	
Cadmium	**0.21**	mg/kg	0.089	0.030	20	04/05/19 11:58	04/15/19 23:29	7440-43-9	
Chromium	**13.6**	mg/kg	0.56	0.14	20	04/05/19 11:58	04/15/19 23:29	7440-47-3	
Lead	**25.7**	mg/kg	0.22	0.064	20	04/05/19 11:58	04/15/19 23:29	7439-92-1	M6
Selenium	**0.85**	mg/kg	0.56	0.16	20	04/05/19 11:58	04/15/19 23:29	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.025**	mg/kg	0.021	0.0083	1	04/05/19 12:48	04/15/19 13:07	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**14.3**	%	0.10	0.10	1		04/05/19 13:31		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**55.2J**	ug/kg	58.1	2.4	5	04/04/19 09:08	04/05/19 17:59	83-32-9	
Acenaphthylene	**53.8J**	ug/kg	58.1	2.9	5	04/04/19 09:08	04/05/19 17:59	208-96-8	
Anthracene	**259**	ug/kg	58.1	2.7	5	04/04/19 09:08	04/05/19 17:59	120-12-7	
Benzo(a)anthracene	**546**	ug/kg	58.1	6.3	5	04/04/19 09:08	04/05/19 17:59	56-55-3	
Benzo(a)pyrene	**506**	ug/kg	58.1	4.0	5	04/04/19 09:08	04/05/19 17:59	50-32-8	
Benzo(b)fluoranthene	**623**	ug/kg	58.1	2.2	5	04/04/19 09:08	04/05/19 17:59	205-99-2	
Benzo(e)pyrene	**340**	ug/kg	58.1	4.2	5	04/04/19 09:08	04/05/19 17:59	192-97-2	N2
Benzo(g,h,i)perylene	**298**	ug/kg	58.1	3.7	5	04/04/19 09:08	04/05/19 17:59	191-24-2	
Benzo(k)fluoranthene	**375**	ug/kg	58.1	4.9	5	04/04/19 09:08	04/05/19 17:59	207-08-9	
Chrysene	**565**	ug/kg	58.1	7.9	5	04/04/19 09:08	04/05/19 17:59	218-01-9	
Dibenz(a,h)anthracene	**94.8**	ug/kg	58.1	2.7	5	04/04/19 09:08	04/05/19 17:59	53-70-3	
Fluoranthene	**1450**	ug/kg	58.1	2.5	5	04/04/19 09:08	04/05/19 17:59	206-44-0	
Fluorene	**58.7**	ug/kg	58.1	1.8	5	04/04/19 09:08	04/05/19 17:59	86-73-7	
Indeno(1,2,3-cd)pyrene	**302**	ug/kg	58.1	3.9	5	04/04/19 09:08	04/05/19 17:59	193-39-5	
Naphthalene	**17.1J**	ug/kg	58.1	4.5	5	04/04/19 09:08	04/05/19 17:59	91-20-3	
Phenanthrene	**1060**	ug/kg	58.1	11.2	5	04/04/19 09:08	04/05/19 17:59	85-01-8	
Pyrene	**996**	ug/kg	58.1	8.9	5	04/04/19 09:08	04/05/19 17:59	129-00-0	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-01-(0-10ft) **Lab ID: 10469445001** Collected: 04/02/19 09:25 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Surrogates									
2-Fluorobiphenyl (S)	72	%.	30-125		5	04/04/19 09:08	04/05/19 17:59	321-60-8	
p-Terphenyl-d14 (S)	67	%.	30-125		5	04/04/19 09:08	04/05/19 17:59	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<356**	ug/kg	1140	356	1	04/04/19 12:06	04/04/19 15:27	67-64-1	
Allyl chloride	**<48.0**	ug/kg	229	48.0	1	04/04/19 12:06	04/04/19 15:27	107-05-1	
Benzene	**4.1J**	ug/kg	22.9	3.2	1	04/04/19 12:06	04/04/19 15:27	71-43-2	
Bromobenzene	**<3.5**	ug/kg	57.2	3.5	1	04/04/19 12:06	04/04/19 15:27	108-86-1	
Bromochloromethane	**<19.8**	ug/kg	57.2	19.8	1	04/04/19 12:06	04/04/19 15:27	74-97-5	
Bromodichloromethane	**<19.6**	ug/kg	57.2	19.6	1	04/04/19 12:06	04/04/19 15:27	75-27-4	
Bromoform	**<86.6**	ug/kg	229	86.6	1	04/04/19 12:06	04/04/19 15:27	75-25-2	
Bromomethane	**<67.0**	ug/kg	572	67.0	1	04/04/19 12:06	04/04/19 15:27	74-83-9	
2-Butanone (MEK)	**<30.4**	ug/kg	286	30.4	1	04/04/19 12:06	04/04/19 15:27	78-93-3	
n-Butylbenzene	**<27.2**	ug/kg	57.2	27.2	1	04/04/19 12:06	04/04/19 15:27	104-51-8	
sec-Butylbenzene	**<11.0**	ug/kg	57.2	11.0	1	04/04/19 12:06	04/04/19 15:27	135-98-8	
tert-Butylbenzene	**<11.0**	ug/kg	57.2	11.0	1	04/04/19 12:06	04/04/19 15:27	98-06-6	
Carbon tetrachloride	**<27.4**	ug/kg	229	27.4	1	04/04/19 12:06	04/04/19 15:27	56-23-5	
Chlorobenzene	**<3.2**	ug/kg	57.2	3.2	1	04/04/19 12:06	04/04/19 15:27	108-90-7	
Chloroethane	**<29.8**	ug/kg	572	29.8	1	04/04/19 12:06	04/04/19 15:27	75-00-3	
Chloroform	**<28.6**	ug/kg	57.2	28.6	1	04/04/19 12:06	04/04/19 15:27	67-66-3	
Chloromethane	**<13.7**	ug/kg	229	13.7	1	04/04/19 12:06	04/04/19 15:27	74-87-3	
2-Chlorotoluene	**<2.8**	ug/kg	57.2	2.8	1	04/04/19 12:06	04/04/19 15:27	95-49-8	
4-Chlorotoluene	**<2.9**	ug/kg	57.2	2.9	1	04/04/19 12:06	04/04/19 15:27	106-43-4	
1,2-Dibromo-3-chloropropane	**<199**	ug/kg	572	199	1	04/04/19 12:06	04/04/19 15:27	96-12-8	
Dibromochloromethane	**<6.6**	ug/kg	229	6.6	1	04/04/19 12:06	04/04/19 15:27	124-48-1	
1,2-Dibromoethane (EDB)	**<6.0**	ug/kg	57.2	6.0	1	04/04/19 12:06	04/04/19 15:27	106-93-4	
Dibromomethane	**<10.5**	ug/kg	57.2	10.5	1	04/04/19 12:06	04/04/19 15:27	74-95-3	
1,2-Dichlorobenzene	**<2.3**	ug/kg	57.2	2.3	1	04/04/19 12:06	04/04/19 15:27	95-50-1	
1,3-Dichlorobenzene	**<2.1**	ug/kg	57.2	2.1	1	04/04/19 12:06	04/04/19 15:27	541-73-1	
1,4-Dichlorobenzene	**<3.5**	ug/kg	57.2	3.5	1	04/04/19 12:06	04/04/19 15:27	106-46-7	
Dichlorodifluoromethane	**<18.5**	ug/kg	229	18.5	1	04/04/19 12:06	04/04/19 15:27	75-71-8	
1,1-Dichloroethane	**<6.4**	ug/kg	57.2	6.4	1	04/04/19 12:06	04/04/19 15:27	75-34-3	
1,2-Dichloroethane	**<6.3**	ug/kg	57.2	6.3	1	04/04/19 12:06	04/04/19 15:27	107-06-2	
1,1-Dichloroethene	**<17.2**	ug/kg	57.2	17.2	1	04/04/19 12:06	04/04/19 15:27	75-35-4	
cis-1,2-Dichloroethene	**<9.5**	ug/kg	57.2	9.5	1	04/04/19 12:06	04/04/19 15:27	156-59-2	
trans-1,2-Dichloroethene	**<26.8**	ug/kg	57.2	26.8	1	04/04/19 12:06	04/04/19 15:27	156-60-5	
Dichlorofluoromethane	**<79.1**	ug/kg	572	79.1	1	04/04/19 12:06	04/04/19 15:27	75-43-4	N2
1,2-Dichloropropane	**<9.9**	ug/kg	57.2	9.9	1	04/04/19 12:06	04/04/19 15:27	78-87-5	
1,3-Dichloropropane	**<7.9**	ug/kg	57.2	7.9	1	04/04/19 12:06	04/04/19 15:27	142-28-9	
2,2-Dichloropropane	**<7.1**	ug/kg	229	7.1	1	04/04/19 12:06	04/04/19 15:27	594-20-7	
1,1-Dichloropropene	**<26.4**	ug/kg	57.2	26.4	1	04/04/19 12:06	04/04/19 15:27	563-58-6	
cis-1,3-Dichloropropene	**<8.2**	ug/kg	57.2	8.2	1	04/04/19 12:06	04/04/19 15:27	10061-01-5	
trans-1,3-Dichloropropene	**<8.0**	ug/kg	57.2	8.0	1	04/04/19 12:06	04/04/19 15:27	10061-02-6	
Diethyl ether (Ethyl ether)	**<35.0**	ug/kg	229	35.0	1	04/04/19 12:06	04/04/19 15:27	60-29-7	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-01-(0-10ft) **Lab ID: 10469445001** Collected: 04/02/19 09:25 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Ethylbenzene	**<3.1**	ug/kg	57.2	3.1	1	04/04/19 12:06	04/04/19 15:27	100-41-4	
Hexachloro-1,3-butadiene	**<14.0**	ug/kg	286	14.0	1	04/04/19 12:06	04/04/19 15:27	87-68-3	
Isopropylbenzene (Cumene)	**<2.5**	ug/kg	57.2	2.5	1	04/04/19 12:06	04/04/19 15:27	98-82-8	
p-Isopropyltoluene	**<17.4**	ug/kg	57.2	17.4	1	04/04/19 12:06	04/04/19 15:27	99-87-6	
Methylene Chloride	**<108**	ug/kg	229	108	1	04/04/19 12:06	04/04/19 15:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<11.9**	ug/kg	286	11.9	1	04/04/19 12:06	04/04/19 15:27	108-10-1	
Methyl-tert-butyl ether	**<6.8**	ug/kg	57.2	6.8	1	04/04/19 12:06	04/04/19 15:27	1634-04-4	
Naphthalene	**<53.6**	ug/kg	229	53.6	1	04/04/19 12:06	04/04/19 15:27	91-20-3	
n-Propylbenzene	**<3.1**	ug/kg	57.2	3.1	1	04/04/19 12:06	04/04/19 15:27	103-65-1	
Styrene	**<2.6**	ug/kg	57.2	2.6	1	04/04/19 12:06	04/04/19 15:27	100-42-5	
1,1,1,2-Tetrachloroethane	**<18.0**	ug/kg	57.2	18.0	1	04/04/19 12:06	04/04/19 15:27	630-20-6	
1,1,2,2-Tetrachloroethane	**<10.1**	ug/kg	57.2	10.1	1	04/04/19 12:06	04/04/19 15:27	79-34-5	
Tetrachloroethene	**<20.1**	ug/kg	57.2	20.1	1	04/04/19 12:06	04/04/19 15:27	127-18-4	
Tetrahydrofuran	**<83.2**	ug/kg	2290	83.2	1	04/04/19 12:06	04/04/19 15:27	109-99-9	
Toluene	**<14.0**	ug/kg	57.2	14.0	1	04/04/19 12:06	04/04/19 15:27	108-88-3	
1,2,3-Trichlorobenzene	**<9.1**	ug/kg	57.2	9.1	1	04/04/19 12:06	04/04/19 15:27	87-61-6	
1,2,4-Trichlorobenzene	**<12.7**	ug/kg	57.2	12.7	1	04/04/19 12:06	04/04/19 15:27	120-82-1	
1,1,1-Trichloroethane	**<26.7**	ug/kg	57.2	26.7	1	04/04/19 12:06	04/04/19 15:27	71-55-6	
1,1,2-Trichloroethane	**<6.8**	ug/kg	57.2	6.8	1	04/04/19 12:06	04/04/19 15:27	79-00-5	
Trichloroethene	**<8.8**	ug/kg	57.2	8.8	1	04/04/19 12:06	04/04/19 15:27	79-01-6	
Trichlorofluoromethane	**<99.8**	ug/kg	229	99.8	1	04/04/19 12:06	04/04/19 15:27	75-69-4	
1,2,3-Trichloropropane	**<15.0**	ug/kg	229	15.0	1	04/04/19 12:06	04/04/19 15:27	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<66.4**	ug/kg	229	66.4	1	04/04/19 12:06	04/04/19 15:27	76-13-1	
1,2,4-Trimethylbenzene	**<11.4**	ug/kg	57.2	11.4	1	04/04/19 12:06	04/04/19 15:27	95-63-6	
1,3,5-Trimethylbenzene	**<9.1**	ug/kg	57.2	9.1	1	04/04/19 12:06	04/04/19 15:27	108-67-8	
Vinyl chloride	**<11.3**	ug/kg	22.9	11.3	1	04/04/19 12:06	04/04/19 15:27	75-01-4	
Xylene (Total)	**<13.3**	ug/kg	172	13.3	1	04/04/19 12:06	04/04/19 15:27	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%.	75-125		1	04/04/19 12:06	04/04/19 15:27	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1	04/04/19 12:06	04/04/19 15:27	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	04/04/19 12:06	04/04/19 15:27	460-00-4	

Sample: FL-SB-02 (0-6ft) **Lab ID: 10469445002** Collected: 04/02/19 10:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**3.0J**	mg/kg	10.4	2.7	1	04/04/19 08:23	04/05/19 14:46		
Surrogates									
n-Triacontane (S)	91	%.	50-150		1	04/04/19 08:23	04/05/19 14:46	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.7**	mg/kg	13.2	1.7	1	04/11/19 13:33	04/12/19 02:59		

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-02 (0-6ft) **Lab ID: 10469445002** Collected: 04/02/19 10:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%.	80-150		1	04/11/19 13:33	04/12/19 02:59	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**102**	mg/kg	0.62	0.051	1	04/05/19 11:58	04/09/19 13:24	7440-39-3	
Silver	**<0.045**	mg/kg	0.62	0.045	1	04/05/19 11:58	04/09/19 13:24	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**7.0**	mg/kg	0.61	0.22	20	04/05/19 11:58	04/15/19 23:11	7440-38-2	
Cadmium	**0.24**	mg/kg	0.098	0.033	20	04/05/19 11:58	04/15/19 23:11	7440-43-9	
Chromium	**15.2**	mg/kg	0.61	0.15	20	04/05/19 11:58	04/15/19 23:11	7440-47-3	
Lead	**9.5**	mg/kg	0.24	0.070	20	04/05/19 11:58	04/15/19 23:11	7439-92-1	
Selenium	**1.2**	mg/kg	0.61	0.18	20	04/05/19 11:58	04/15/19 23:11	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.028**	mg/kg	0.024	0.0097	1	04/05/19 12:48	04/15/19 13:13	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**22.2**	%	0.10	0.10	1		04/05/19 13:31		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<0.52**	ug/kg	12.8	0.52	1	04/04/19 09:08	04/05/19 18:20	83-32-9	
Acenaphthylene	**<0.63**	ug/kg	12.8	0.63	1	04/04/19 09:08	04/05/19 18:20	208-96-8	
Anthracene	**<0.60**	ug/kg	12.8	0.60	1	04/04/19 09:08	04/05/19 18:20	120-12-7	
Benzo(a)anthracene	**<1.4**	ug/kg	12.8	1.4	1	04/04/19 09:08	04/05/19 18:20	56-55-3	
Benzo(a)pyrene	**<0.88**	ug/kg	12.8	0.88	1	04/04/19 09:08	04/05/19 18:20	50-32-8	
Benzo(b)fluoranthene	**<0.48**	ug/kg	12.8	0.48	1	04/04/19 09:08	04/05/19 18:20	205-99-2	
Benzo(e)pyrene	**<0.92**	ug/kg	12.8	0.92	1	04/04/19 09:08	04/05/19 18:20	192-97-2	N2
Benzo(g,h,i)perylene	**<0.81**	ug/kg	12.8	0.81	1	04/04/19 09:08	04/05/19 18:20	191-24-2	
Benzo(k)fluoranthene	**<1.1**	ug/kg	12.8	1.1	1	04/04/19 09:08	04/05/19 18:20	207-08-9	
Chrysene	**<1.7**	ug/kg	12.8	1.7	1	04/04/19 09:08	04/05/19 18:20	218-01-9	
Dibenz(a,h)anthracene	**<0.59**	ug/kg	12.8	0.59	1	04/04/19 09:08	04/05/19 18:20	53-70-3	
Fluoranthene	**<0.55**	ug/kg	12.8	0.55	1	04/04/19 09:08	04/05/19 18:20	206-44-0	
Fluorene	**<0.40**	ug/kg	12.8	0.40	1	04/04/19 09:08	04/05/19 18:20	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.86**	ug/kg	12.8	0.86	1	04/04/19 09:08	04/05/19 18:20	193-39-5	
Naphthalene	**<0.99**	ug/kg	12.8	0.99	1	04/04/19 09:08	04/05/19 18:20	91-20-3	
Phenanthrene	**<2.5**	ug/kg	12.8	2.5	1	04/04/19 09:08	04/05/19 18:20	85-01-8	
Pyrene	**<2.0**	ug/kg	12.8	2.0	1	04/04/19 09:08	04/05/19 18:20	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%.	30-125		1	04/04/19 09:08	04/05/19 18:20	321-60-8	
p-Terphenyl-d14 (S)	74	%.	30-125		1	04/04/19 09:08	04/05/19 18:20	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<409**	ug/kg	1320	409	1	04/04/19 12:06	04/04/19 15:45	67-64-1	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-02 (0-6ft) **Lab ID: 10469445002** Collected: 04/02/19 10:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Allyl chloride	**<55.1**	ug/kg	263	55.1	1	04/04/19 12:06	04/04/19 15:45	107-05-1	
Benzene	**<3.7**	ug/kg	26.3	3.7	1	04/04/19 12:06	04/04/19 15:45	71-43-2	
Bromobenzene	**<4.0**	ug/kg	65.8	4.0	1	04/04/19 12:06	04/04/19 15:45	108-86-1	
Bromochloromethane	**<22.8**	ug/kg	65.8	22.8	1	04/04/19 12:06	04/04/19 15:45	74-97-5	
Bromodichloromethane	**<22.5**	ug/kg	65.8	22.5	1	04/04/19 12:06	04/04/19 15:45	75-27-4	
Bromoform	**<99.6**	ug/kg	263	99.6	1	04/04/19 12:06	04/04/19 15:45	75-25-2	
Bromomethane	**<77.0**	ug/kg	658	77.0	1	04/04/19 12:06	04/04/19 15:45	74-83-9	
2-Butanone (MEK)	**<35.0**	ug/kg	329	35.0	1	04/04/19 12:06	04/04/19 15:45	78-93-3	
n-Butylbenzene	**<31.3**	ug/kg	65.8	31.3	1	04/04/19 12:06	04/04/19 15:45	104-51-8	
sec-Butylbenzene	**<12.6**	ug/kg	65.8	12.6	1	04/04/19 12:06	04/04/19 15:45	135-98-8	
tert-Butylbenzene	**<12.6**	ug/kg	65.8	12.6	1	04/04/19 12:06	04/04/19 15:45	98-06-6	
Carbon tetrachloride	**<31.5**	ug/kg	263	31.5	1	04/04/19 12:06	04/04/19 15:45	56-23-5	
Chlorobenzene	**<3.7**	ug/kg	65.8	3.7	1	04/04/19 12:06	04/04/19 15:45	108-90-7	
Chloroethane	**<34.2**	ug/kg	658	34.2	1	04/04/19 12:06	04/04/19 15:45	75-00-3	
Chloroform	**<32.9**	ug/kg	65.8	32.9	1	04/04/19 12:06	04/04/19 15:45	67-66-3	
Chloromethane	**<15.8**	ug/kg	263	15.8	1	04/04/19 12:06	04/04/19 15:45	74-87-3	
2-Chlorotoluene	**<3.2**	ug/kg	65.8	3.2	1	04/04/19 12:06	04/04/19 15:45	95-49-8	
4-Chlorotoluene	**<3.4**	ug/kg	65.8	3.4	1	04/04/19 12:06	04/04/19 15:45	106-43-4	
1,2-Dibromo-3-chloropropane	**<229**	ug/kg	658	229	1	04/04/19 12:06	04/04/19 15:45	96-12-8	
Dibromochloromethane	**<7.6**	ug/kg	263	7.6	1	04/04/19 12:06	04/04/19 15:45	124-48-1	
1,2-Dibromoethane (EDB)	**<6.9**	ug/kg	65.8	6.9	1	04/04/19 12:06	04/04/19 15:45	106-93-4	
Dibromomethane	**<12.1**	ug/kg	65.8	12.1	1	04/04/19 12:06	04/04/19 15:45	74-95-3	
1,2-Dichlorobenzene	**<2.7**	ug/kg	65.8	2.7	1	04/04/19 12:06	04/04/19 15:45	95-50-1	
1,3-Dichlorobenzene	**<2.4**	ug/kg	65.8	2.4	1	04/04/19 12:06	04/04/19 15:45	541-73-1	
1,4-Dichlorobenzene	**<4.1**	ug/kg	65.8	4.1	1	04/04/19 12:06	04/04/19 15:45	106-46-7	
Dichlorodifluoromethane	**<21.3**	ug/kg	263	21.3	1	04/04/19 12:06	04/04/19 15:45	75-71-8	
1,1-Dichloroethane	**<7.4**	ug/kg	65.8	7.4	1	04/04/19 12:06	04/04/19 15:45	75-34-3	
1,2-Dichloroethane	**<7.2**	ug/kg	65.8	7.2	1	04/04/19 12:06	04/04/19 15:45	107-06-2	
1,1-Dichloroethene	**<19.7**	ug/kg	65.8	19.7	1	04/04/19 12:06	04/04/19 15:45	75-35-4	
cis-1,2-Dichloroethene	**<10.9**	ug/kg	65.8	10.9	1	04/04/19 12:06	04/04/19 15:45	156-59-2	
trans-1,2-Dichloroethene	**<30.8**	ug/kg	65.8	30.8	1	04/04/19 12:06	04/04/19 15:45	156-60-5	
Dichlorofluoromethane	**<90.9**	ug/kg	658	90.9	1	04/04/19 12:06	04/04/19 15:45	75-43-4	N2
1,2-Dichloropropane	**<11.3**	ug/kg	65.8	11.3	1	04/04/19 12:06	04/04/19 15:45	78-87-5	
1,3-Dichloropropane	**<9.1**	ug/kg	65.8	9.1	1	04/04/19 12:06	04/04/19 15:45	142-28-9	
2,2-Dichloropropane	**<8.2**	ug/kg	263	8.2	1	04/04/19 12:06	04/04/19 15:45	594-20-7	
1,1-Dichloropropene	**<30.4**	ug/kg	65.8	30.4	1	04/04/19 12:06	04/04/19 15:45	563-58-6	
cis-1,3-Dichloropropene	**<9.4**	ug/kg	65.8	9.4	1	04/04/19 12:06	04/04/19 15:45	10061-01-5	
trans-1,3-Dichloropropene	**<9.1**	ug/kg	65.8	9.1	1	04/04/19 12:06	04/04/19 15:45	10061-02-6	
Diethyl ether (Ethyl ether)	**<40.3**	ug/kg	263	40.3	1	04/04/19 12:06	04/04/19 15:45	60-29-7	
Ethylbenzene	**<3.6**	ug/kg	65.8	3.6	1	04/04/19 12:06	04/04/19 15:45	100-41-4	
Hexachloro-1,3-butadiene	**<16.1**	ug/kg	329	16.1	1	04/04/19 12:06	04/04/19 15:45	87-68-3	
Isopropylbenzene (Cumene)	**<2.9**	ug/kg	65.8	2.9	1	04/04/19 12:06	04/04/19 15:45	98-82-8	
p-Isopropyltoluene	**<20.0**	ug/kg	65.8	20.0	1	04/04/19 12:06	04/04/19 15:45	99-87-6	
Methylene Chloride	**<124**	ug/kg	263	124	1	04/04/19 12:06	04/04/19 15:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<13.7**	ug/kg	329	13.7	1	04/04/19 12:06	04/04/19 15:45	108-10-1	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-02 (0-6ft) **Lab ID: 10469445002** Collected: 04/02/19 10:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Methyl-tert-butyl ether	**<7.8**	ug/kg	65.8	7.8	1	04/04/19 12:06	04/04/19 15:45	1634-04-4	
Naphthalene	**<61.6**	ug/kg	263	61.6	1	04/04/19 12:06	04/04/19 15:45	91-20-3	
n-Propylbenzene	**<3.5**	ug/kg	65.8	3.5	1	04/04/19 12:06	04/04/19 15:45	103-65-1	
Styrene	**<3.0**	ug/kg	65.8	3.0	1	04/04/19 12:06	04/04/19 15:45	100-42-5	
1,1,1,2-Tetrachloroethane	**<20.7**	ug/kg	65.8	20.7	1	04/04/19 12:06	04/04/19 15:45	630-20-6	
1,1,2,2-Tetrachloroethane	**<11.6**	ug/kg	65.8	11.6	1	04/04/19 12:06	04/04/19 15:45	79-34-5	
Tetrachloroethene	**<23.2**	ug/kg	65.8	23.2	1	04/04/19 12:06	04/04/19 15:45	127-18-4	
Tetrahydrofuran	**<95.7**	ug/kg	2630	95.7	1	04/04/19 12:06	04/04/19 15:45	109-99-9	
Toluene	**<16.1**	ug/kg	65.8	16.1	1	04/04/19 12:06	04/04/19 15:45	108-88-3	
1,2,3-Trichlorobenzene	**<10.5**	ug/kg	65.8	10.5	1	04/04/19 12:06	04/04/19 15:45	87-61-6	
1,2,4-Trichlorobenzene	**<14.6**	ug/kg	65.8	14.6	1	04/04/19 12:06	04/04/19 15:45	120-82-1	
1,1,1-Trichloroethane	**<30.7**	ug/kg	65.8	30.7	1	04/04/19 12:06	04/04/19 15:45	71-55-6	
1,1,2-Trichloroethane	**<7.9**	ug/kg	65.8	7.9	1	04/04/19 12:06	04/04/19 15:45	79-00-5	
Trichloroethene	**<10.1**	ug/kg	65.8	10.1	1	04/04/19 12:06	04/04/19 15:45	79-01-6	
Trichlorofluoromethane	**<115**	ug/kg	263	115	1	04/04/19 12:06	04/04/19 15:45	75-69-4	
1,2,3-Trichloropropane	**<17.2**	ug/kg	263	17.2	1	04/04/19 12:06	04/04/19 15:45	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<76.3**	ug/kg	263	76.3	1	04/04/19 12:06	04/04/19 15:45	76-13-1	
1,2,4-Trimethylbenzene	**<13.2**	ug/kg	65.8	13.2	1	04/04/19 12:06	04/04/19 15:45	95-63-6	
1,3,5-Trimethylbenzene	**<10.5**	ug/kg	65.8	10.5	1	04/04/19 12:06	04/04/19 15:45	108-67-8	
Vinyl chloride	**<12.9**	ug/kg	26.3	12.9	1	04/04/19 12:06	04/04/19 15:45	75-01-4	
Xylene (Total)	**<15.3**	ug/kg	197	15.3	1	04/04/19 12:06	04/04/19 15:45	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1	04/04/19 12:06	04/04/19 15:45	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1	04/04/19 12:06	04/04/19 15:45	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	04/04/19 12:06	04/04/19 15:45	460-00-4	

Sample: FL-SB-03 (0-6.5ft) **Lab ID: 10469445003** Collected: 04/02/19 10:25 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**183**	mg/kg	53.3	13.9	5	04/04/19 08:23	04/05/19 16:12		T6
Surrogates									
n-Triacontane (S)	128	%.	50-150		5	04/04/19 08:23	04/05/19 16:12	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**7.0J**	mg/kg	12.3	1.6	1	04/11/19 13:33	04/12/19 03:25		G+
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%.	80-150		1	04/11/19 13:33	04/12/19 03:25	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**100**	mg/kg	0.62	0.051	1	04/05/19 11:58	04/09/19 13:27	7440-39-3	
Silver	**<0.045**	mg/kg	0.62	0.045	1	04/05/19 11:58	04/09/19 13:27	7440-22-4	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-03 (0-6.5ft) **Lab ID: 10469445003** Collected: 04/02/19 10:25 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**4.9**	mg/kg	0.60	0.21	20	04/05/19 11:58	04/15/19 23:16	7440-38-2	
Cadmium	**0.24**	mg/kg	0.097	0.032	20	04/05/19 11:58	04/15/19 23:16	7440-43-9	
Chromium	**18.1**	mg/kg	0.60	0.15	20	04/05/19 11:58	04/15/19 23:16	7440-47-3	
Lead	**24.8**	mg/kg	0.24	0.069	20	04/05/19 11:58	04/15/19 23:16	7439-92-1	
Selenium	**1.4**	mg/kg	0.60	0.18	20	04/05/19 11:58	04/15/19 23:16	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.22**	mg/kg	0.024	0.0094	1	04/05/19 12:48	04/15/19 13:15	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**22.6**	%	0.10	0.10	1		04/05/19 13:32		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**52.0**	ug/kg	12.9	0.53	1	04/04/19 09:08	04/05/19 18:41	83-32-9	
Acenaphthylene	**18.4**	ug/kg	12.9	0.64	1	04/04/19 09:08	04/05/19 18:41	208-96-8	
Anthracene	**174**	ug/kg	12.9	0.60	1	04/04/19 09:08	04/05/19 18:41	120-12-7	
Benzo(a)anthracene	**271**	ug/kg	12.9	1.4	1	04/04/19 09:08	04/05/19 18:41	56-55-3	
Benzo(a)pyrene	**257**	ug/kg	12.9	0.89	1	04/04/19 09:08	04/05/19 18:41	50-32-8	
Benzo(b)fluoranthene	**267**	ug/kg	12.9	0.48	1	04/04/19 09:08	04/05/19 18:41	205-99-2	
Benzo(e)pyrene	**159**	ug/kg	12.9	0.93	1	04/04/19 09:08	04/05/19 18:41	192-97-2	N2
Benzo(g,h,i)perylene	**174**	ug/kg	12.9	0.82	1	04/04/19 09:08	04/05/19 18:41	191-24-2	
Benzo(k)fluoranthene	**158**	ug/kg	12.9	1.1	1	04/04/19 09:08	04/05/19 18:41	207-08-9	
Chrysene	**237**	ug/kg	12.9	1.8	1	04/04/19 09:08	04/05/19 18:41	218-01-9	
Dibenz(a,h)anthracene	**49.0**	ug/kg	12.9	0.59	1	04/04/19 09:08	04/05/19 18:41	53-70-3	
Fluoranthene	**668**	ug/kg	64.5	2.8	5	04/04/19 09:08	04/08/19 12:42	206-44-0	
Fluorene	**83.1**	ug/kg	12.9	0.40	1	04/04/19 09:08	04/05/19 18:41	86-73-7	
Indeno(1,2,3-cd)pyrene	**152**	ug/kg	12.9	0.86	1	04/04/19 09:08	04/05/19 18:41	193-39-5	
Naphthalene	**49.2**	ug/kg	12.9	0.99	1	04/04/19 09:08	04/05/19 18:41	91-20-3	
Phenanthrene	**503**	ug/kg	64.5	12.4	5	04/04/19 09:08	04/08/19 12:42	85-01-8	
Pyrene	**508**	ug/kg	64.5	9.9	5	04/04/19 09:08	04/08/19 12:42	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	72	%.	30-125		1	04/04/19 09:08	04/05/19 18:41	321-60-8	
p-Terphenyl-d14 (S)	73	%.	30-125		1	04/04/19 09:08	04/05/19 18:41	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<417**	ug/kg	1340	417	1	04/04/19 12:06	04/04/19 16:03	67-64-1	
Allyl chloride	**<56.2**	ug/kg	268	56.2	1	04/04/19 12:06	04/04/19 16:03	107-05-1	
Benzene	**4.8J**	ug/kg	26.8	3.8	1	04/04/19 12:06	04/04/19 16:03	71-43-2	
Bromobenzene	**<4.1**	ug/kg	67.1	4.1	1	04/04/19 12:06	04/04/19 16:03	108-86-1	
Bromochloromethane	**<23.2**	ug/kg	67.1	23.2	1	04/04/19 12:06	04/04/19 16:03	74-97-5	
Bromodichloromethane	**<22.9**	ug/kg	67.1	22.9	1	04/04/19 12:06	04/04/19 16:03	75-27-4	
Bromoform	**<102**	ug/kg	268	102	1	04/04/19 12:06	04/04/19 16:03	75-25-2	
Bromomethane	**<78.5**	ug/kg	671	78.5	1	04/04/19 12:06	04/04/19 16:03	74-83-9	
2-Butanone (MEK)	**<35.7**	ug/kg	335	35.7	1	04/04/19 12:06	04/04/19 16:03	78-93-3	
n-Butylbenzene	**<31.9**	ug/kg	67.1	31.9	1	04/04/19 12:06	04/04/19 16:03	104-51-8	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-03 (0-6.5ft) **Lab ID: 10469445003** Collected: 04/02/19 10:25 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
sec-Butylbenzene	**<12.8**	ug/kg	67.1	12.8	1	04/04/19 12:06	04/04/19 16:03	135-98-8	
tert-Butylbenzene	**<12.9**	ug/kg	67.1	12.9	1	04/04/19 12:06	04/04/19 16:03	98-06-6	
Carbon tetrachloride	**<32.1**	ug/kg	268	32.1	1	04/04/19 12:06	04/04/19 16:03	56-23-5	
Chlorobenzene	**<3.8**	ug/kg	67.1	3.8	1	04/04/19 12:06	04/04/19 16:03	108-90-7	
Chloroethane	**<34.9**	ug/kg	671	34.9	1	04/04/19 12:06	04/04/19 16:03	75-00-3	
Chloroform	**<33.5**	ug/kg	67.1	33.5	1	04/04/19 12:06	04/04/19 16:03	67-66-3	
Chloromethane	**<16.1**	ug/kg	268	16.1	1	04/04/19 12:06	04/04/19 16:03	74-87-3	
2-Chlorotoluene	**<3.3**	ug/kg	67.1	3.3	1	04/04/19 12:06	04/04/19 16:03	95-49-8	
4-Chlorotoluene	**<3.4**	ug/kg	67.1	3.4	1	04/04/19 12:06	04/04/19 16:03	106-43-4	
1,2-Dibromo-3-chloropropane	**<233**	ug/kg	671	233	1	04/04/19 12:06	04/04/19 16:03	96-12-8	
Dibromochloromethane	**<7.8**	ug/kg	268	7.8	1	04/04/19 12:06	04/04/19 16:03	124-48-1	
1,2-Dibromoethane (EDB)	**<7.1**	ug/kg	67.1	7.1	1	04/04/19 12:06	04/04/19 16:03	106-93-4	
Dibromomethane	**<12.3**	ug/kg	67.1	12.3	1	04/04/19 12:06	04/04/19 16:03	74-95-3	
1,2-Dichlorobenzene	**<2.7**	ug/kg	67.1	2.7	1	04/04/19 12:06	04/04/19 16:03	95-50-1	
1,3-Dichlorobenzene	**<2.4**	ug/kg	67.1	2.4	1	04/04/19 12:06	04/04/19 16:03	541-73-1	
1,4-Dichlorobenzene	**<4.2**	ug/kg	67.1	4.2	1	04/04/19 12:06	04/04/19 16:03	106-46-7	
Dichlorodifluoromethane	**<21.7**	ug/kg	268	21.7	1	04/04/19 12:06	04/04/19 16:03	75-71-8	
1,1-Dichloroethane	**<7.5**	ug/kg	67.1	7.5	1	04/04/19 12:06	04/04/19 16:03	75-34-3	
1,2-Dichloroethane	**<7.4**	ug/kg	67.1	7.4	1	04/04/19 12:06	04/04/19 16:03	107-06-2	
1,1-Dichloroethene	**<20.1**	ug/kg	67.1	20.1	1	04/04/19 12:06	04/04/19 16:03	75-35-4	
cis-1,2-Dichloroethene	**<11.1**	ug/kg	67.1	11.1	1	04/04/19 12:06	04/04/19 16:03	156-59-2	
trans-1,2-Dichloroethene	**<31.4**	ug/kg	67.1	31.4	1	04/04/19 12:06	04/04/19 16:03	156-60-5	
Dichlorofluoromethane	**<92.7**	ug/kg	671	92.7	1	04/04/19 12:06	04/04/19 16:03	75-43-4	N2
1,2-Dichloropropane	**<11.6**	ug/kg	67.1	11.6	1	04/04/19 12:06	04/04/19 16:03	78-87-5	
1,3-Dichloropropane	**<9.3**	ug/kg	67.1	9.3	1	04/04/19 12:06	04/04/19 16:03	142-28-9	
2,2-Dichloropropane	**<8.4**	ug/kg	268	8.4	1	04/04/19 12:06	04/04/19 16:03	594-20-7	
1,1-Dichloropropene	**<31.0**	ug/kg	67.1	31.0	1	04/04/19 12:06	04/04/19 16:03	563-58-6	
cis-1,3-Dichloropropene	**<9.6**	ug/kg	67.1	9.6	1	04/04/19 12:06	04/04/19 16:03	10061-01-5	
trans-1,3-Dichloropropene	**<9.3**	ug/kg	67.1	9.3	1	04/04/19 12:06	04/04/19 16:03	10061-02-6	
Diethyl ether (Ethyl ether)	**<41.0**	ug/kg	268	41.0	1	04/04/19 12:06	04/04/19 16:03	60-29-7	
Ethylbenzene	**<3.6**	ug/kg	67.1	3.6	1	04/04/19 12:06	04/04/19 16:03	100-41-4	
Hexachloro-1,3-butadiene	**<16.4**	ug/kg	335	16.4	1	04/04/19 12:06	04/04/19 16:03	87-68-3	
Isopropylbenzene (Cumene)	**<3.0**	ug/kg	67.1	3.0	1	04/04/19 12:06	04/04/19 16:03	98-82-8	
p-Isopropyltoluene	**<20.4**	ug/kg	67.1	20.4	1	04/04/19 12:06	04/04/19 16:03	99-87-6	
Methylene Chloride	**<126**	ug/kg	268	126	1	04/04/19 12:06	04/04/19 16:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<13.9**	ug/kg	335	13.9	1	04/04/19 12:06	04/04/19 16:03	108-10-1	
Methyl-tert-butyl ether	**<8.0**	ug/kg	67.1	8.0	1	04/04/19 12:06	04/04/19 16:03	1634-04-4	
Naphthalene	**<62.8**	ug/kg	268	62.8	1	04/04/19 12:06	04/04/19 16:03	91-20-3	
n-Propylbenzene	**<3.6**	ug/kg	67.1	3.6	1	04/04/19 12:06	04/04/19 16:03	103-65-1	
Styrene	**<3.1**	ug/kg	67.1	3.1	1	04/04/19 12:06	04/04/19 16:03	100-42-5	
1,1,1,2-Tetrachloroethane	**<21.1**	ug/kg	67.1	21.1	1	04/04/19 12:06	04/04/19 16:03	630-20-6	
1,1,2,2-Tetrachloroethane	**<11.8**	ug/kg	67.1	11.8	1	04/04/19 12:06	04/04/19 16:03	79-34-5	
Tetrachloroethene	**<23.6**	ug/kg	67.1	23.6	1	04/04/19 12:06	04/04/19 16:03	127-18-4	
Tetrahydrofuran	**<97.5**	ug/kg	2680	97.5	1	04/04/19 12:06	04/04/19 16:03	109-99-9	
Toluene	**<16.4**	ug/kg	67.1	16.4	1	04/04/19 12:06	04/04/19 16:03	108-88-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-03 (0-6.5ft) **Lab ID: 10469445003** Collected: 04/02/19 10:25 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,2,3-Trichlorobenzene	**<10.7**	ug/kg	67.1	10.7	1	04/04/19 12:06	04/04/19 16:03	87-61-6	
1,2,4-Trichlorobenzene	**<14.9**	ug/kg	67.1	14.9	1	04/04/19 12:06	04/04/19 16:03	120-82-1	
1,1,1-Trichloroethane	**<31.3**	ug/kg	67.1	31.3	1	04/04/19 12:06	04/04/19 16:03	71-55-6	
1,1,2-Trichloroethane	**<8.0**	ug/kg	67.1	8.0	1	04/04/19 12:06	04/04/19 16:03	79-00-5	
Trichloroethene	**<10.3**	ug/kg	67.1	10.3	1	04/04/19 12:06	04/04/19 16:03	79-01-6	
Trichlorofluoromethane	**<117**	ug/kg	268	117	1	04/04/19 12:06	04/04/19 16:03	75-69-4	
1,2,3-Trichloropropane	**<17.6**	ug/kg	268	17.6	1	04/04/19 12:06	04/04/19 16:03	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<77.8**	ug/kg	268	77.8	1	04/04/19 12:06	04/04/19 16:03	76-13-1	
1,2,4-Trimethylbenzene	**<13.4**	ug/kg	67.1	13.4	1	04/04/19 12:06	04/04/19 16:03	95-63-6	
1,3,5-Trimethylbenzene	**<10.7**	ug/kg	67.1	10.7	1	04/04/19 12:06	04/04/19 16:03	108-67-8	
Vinyl chloride	**<13.2**	ug/kg	26.8	13.2	1	04/04/19 12:06	04/04/19 16:03	75-01-4	
Xylene (Total)	**<15.6**	ug/kg	201	15.6	1	04/04/19 12:06	04/04/19 16:03	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-125		1	04/04/19 12:06	04/04/19 16:03	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1	04/04/19 12:06	04/04/19 16:03	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	04/04/19 12:06	04/04/19 16:03	460-00-4	

Sample: FL-SB-04 (0-2ft) **Lab ID: 10469445004** Collected: 04/02/19 10:45 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**94.9**	mg/kg	45.5	11.8	5	04/04/19 08:23	04/05/19 16:19		T6
Surrogates									
n-Triacontane (S)	102	%.	50-150		5	04/04/19 08:23	04/05/19 16:19	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.7**	mg/kg	13.1	1.7	1	04/11/19 13:33	04/12/19 03:51		
Surrogates									
a,a,a-Trifluorotoluene (S)	101	%.	80-150		1	04/11/19 13:33	04/12/19 03:51	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**66.0**	mg/kg	0.60	0.050	1	04/05/19 11:58	04/09/19 13:30	7440-39-3	
Silver	**0.046J**	mg/kg	0.60	0.044	1	04/05/19 11:58	04/09/19 13:30	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**3.7**	mg/kg	0.60	0.21	20	04/05/19 11:58	04/15/19 23:20	7440-38-2	
Cadmium	**0.23**	mg/kg	0.096	0.032	20	04/05/19 11:58	04/15/19 23:20	7440-43-9	
Chromium	**12.8**	mg/kg	0.60	0.15	20	04/05/19 11:58	04/15/19 23:20	7440-47-3	
Lead	**20.9**	mg/kg	0.24	0.069	20	04/05/19 11:58	04/15/19 23:20	7439-92-1	
Selenium	**1.2**	mg/kg	0.60	0.17	20	04/05/19 11:58	04/15/19 23:20	7782-49-2	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-04 (0-2ft) **Lab ID: 10469445004** Collected: 04/02/19 10:45 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.030**	mg/kg	0.025	0.010	1	04/05/19 12:48	04/15/19 13:17	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**22.7**	%	0.10	0.10	1		04/05/19 13:32		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**153**	ug/kg	64.7	2.6	5	04/04/19 09:08	04/05/19 19:02	83-32-9	
Acenaphthylene	**<3.2**	ug/kg	64.7	3.2	5	04/04/19 09:08	04/05/19 19:02	208-96-8	
Anthracene	**442**	ug/kg	64.7	3.0	5	04/04/19 09:08	04/05/19 19:02	120-12-7	
Benzo(a)anthracene	**756**	ug/kg	64.7	7.0	5	04/04/19 09:08	04/05/19 19:02	56-55-3	
Benzo(a)pyrene	**692**	ug/kg	64.7	4.4	5	04/04/19 09:08	04/05/19 19:02	50-32-8	
Benzo(b)fluoranthene	**873**	ug/kg	64.7	2.4	5	04/04/19 09:08	04/05/19 19:02	205-99-2	
Benzo(e)pyrene	**438**	ug/kg	64.7	4.6	5	04/04/19 09:08	04/05/19 19:02	192-97-2	N2
Benzo(g,h,i)perylene	**464**	ug/kg	64.7	4.1	5	04/04/19 09:08	04/05/19 19:02	191-24-2	
Benzo(k)fluoranthene	**368**	ug/kg	64.7	5.5	5	04/04/19 09:08	04/05/19 19:02	207-08-9	
Chrysene	**754**	ug/kg	64.7	8.8	5	04/04/19 09:08	04/05/19 19:02	218-01-9	
Dibenz(a,h)anthracene	**134**	ug/kg	64.7	3.0	5	04/04/19 09:08	04/05/19 19:02	53-70-3	
Fluoranthene	**2220**	ug/kg	129	5.5	10	04/04/19 09:08	04/08/19 13:03	206-44-0	
Fluorene	**163**	ug/kg	64.7	2.0	5	04/04/19 09:08	04/05/19 19:02	86-73-7	
Indeno(1,2,3-cd)pyrene	**404**	ug/kg	64.7	4.3	5	04/04/19 09:08	04/05/19 19:02	193-39-5	
Naphthalene	**25.4J**	ug/kg	64.7	5.0	5	04/04/19 09:08	04/05/19 19:02	91-20-3	
Phenanthrene	**1610**	ug/kg	64.7	12.4	5	04/04/19 09:08	04/05/19 19:02	85-01-8	
Pyrene	**1410**	ug/kg	64.7	9.9	5	04/04/19 09:08	04/05/19 19:02	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	85	%.	30-125		5	04/04/19 09:08	04/05/19 19:02	321-60-8	
p-Terphenyl-d14 (S)	79	%.	30-125		5	04/04/19 09:08	04/05/19 19:02	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<408**	ug/kg	1310	408	1	04/04/19 12:06	04/04/19 15:09	67-64-1	
Allyl chloride	**<55.0**	ug/kg	263	55.0	1	04/04/19 12:06	04/04/19 15:09	107-05-1	
Benzene	**3.8J**	ug/kg	26.3	3.7	1	04/04/19 12:06	04/04/19 15:09	71-43-2	
Bromobenzene	**<4.0**	ug/kg	65.7	4.0	1	04/04/19 12:06	04/04/19 15:09	108-86-1	
Bromochloromethane	**<22.7**	ug/kg	65.7	22.7	1	04/04/19 12:06	04/04/19 15:09	74-97-5	
Bromodichloromethane	**<22.5**	ug/kg	65.7	22.5	1	04/04/19 12:06	04/04/19 15:09	75-27-4	
Bromoform	**<99.4**	ug/kg	263	99.4	1	04/04/19 12:06	04/04/19 15:09	75-25-2	
Bromomethane	**<76.8**	ug/kg	657	76.8	1	04/04/19 12:06	04/04/19 15:09	74-83-9	
2-Butanone (MEK)	**<34.9**	ug/kg	328	34.9	1	04/04/19 12:06	04/04/19 15:09	78-93-3	
n-Butylbenzene	**<31.3**	ug/kg	65.7	31.3	1	04/04/19 12:06	04/04/19 15:09	104-51-8	
sec-Butylbenzene	**<12.6**	ug/kg	65.7	12.6	1	04/04/19 12:06	04/04/19 15:09	135-98-8	
tert-Butylbenzene	**<12.6**	ug/kg	65.7	12.6	1	04/04/19 12:06	04/04/19 15:09	98-06-6	
Carbon tetrachloride	**<31.4**	ug/kg	263	31.4	1	04/04/19 12:06	04/04/19 15:09	56-23-5	
Chlorobenzene	**<3.7**	ug/kg	65.7	3.7	1	04/04/19 12:06	04/04/19 15:09	108-90-7	
Chloroethane	**<34.1**	ug/kg	657	34.1	1	04/04/19 12:06	04/04/19 15:09	75-00-3	
Chloroform	**<32.8**	ug/kg	65.7	32.8	1	04/04/19 12:06	04/04/19 15:09	67-66-3	
Chloromethane	**<15.8**	ug/kg	263	15.8	1	04/04/19 12:06	04/04/19 15:09	74-87-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL

Pace Project No.: 10469445

Sample: FL-SB-04 (0-2ft) **Lab ID: 10469445004** Collected: 04/02/19 10:45 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
2-Chlorotoluene	**<3.2**	ug/kg	65.7	3.2	1	04/04/19 12:06	04/04/19 15:09	95-49-8	
4-Chlorotoluene	**<3.4**	ug/kg	65.7	3.4	1	04/04/19 12:06	04/04/19 15:09	106-43-4	
1,2-Dibromo-3-chloropropane	**<228**	ug/kg	657	228	1	04/04/19 12:06	04/04/19 15:09	96-12-8	
Dibromochloromethane	**<7.6**	ug/kg	263	7.6	1	04/04/19 12:06	04/04/19 15:09	124-48-1	
1,2-Dibromoethane (EDB)	**<6.9**	ug/kg	65.7	6.9	1	04/04/19 12:06	04/04/19 15:09	106-93-4	
Dibromomethane	**<12.0**	ug/kg	65.7	12.0	1	04/04/19 12:06	04/04/19 15:09	74-95-3	
1,2-Dichlorobenzene	**<2.7**	ug/kg	65.7	2.7	1	04/04/19 12:06	04/04/19 15:09	95-50-1	
1,3-Dichlorobenzene	**<2.4**	ug/kg	65.7	2.4	1	04/04/19 12:06	04/04/19 15:09	541-73-1	
1,4-Dichlorobenzene	**<4.1**	ug/kg	65.7	4.1	1	04/04/19 12:06	04/04/19 15:09	106-46-7	
Dichlorodifluoromethane	**<21.3**	ug/kg	263	21.3	1	04/04/19 12:06	04/04/19 15:09	75-71-8	
1,1-Dichloroethane	**<7.4**	ug/kg	65.7	7.4	1	04/04/19 12:06	04/04/19 15:09	75-34-3	
1,2-Dichloroethane	**<7.2**	ug/kg	65.7	7.2	1	04/04/19 12:06	04/04/19 15:09	107-06-2	
1,1-Dichloroethene	**<19.7**	ug/kg	65.7	19.7	1	04/04/19 12:06	04/04/19 15:09	75-35-4	
cis-1,2-Dichloroethene	**<10.9**	ug/kg	65.7	10.9	1	04/04/19 12:06	04/04/19 15:09	156-59-2	
trans-1,2-Dichloroethene	**<30.7**	ug/kg	65.7	30.7	1	04/04/19 12:06	04/04/19 15:09	156-60-5	
Dichlorofluoromethane	**<90.7**	ug/kg	657	90.7	1	04/04/19 12:06	04/04/19 15:09	75-43-4	N2
1,2-Dichloropropane	**<11.3**	ug/kg	65.7	11.3	1	04/04/19 12:06	04/04/19 15:09	78-87-5	
1,3-Dichloropropane	**<9.1**	ug/kg	65.7	9.1	1	04/04/19 12:06	04/04/19 15:09	142-28-9	
2,2-Dichloropropane	**<8.2**	ug/kg	263	8.2	1	04/04/19 12:06	04/04/19 15:09	594-20-7	
1,1-Dichloropropene	**<30.3**	ug/kg	65.7	30.3	1	04/04/19 12:06	04/04/19 15:09	563-58-6	
cis-1,3-Dichloropropene	**<9.4**	ug/kg	65.7	9.4	1	04/04/19 12:06	04/04/19 15:09	10061-01-5	
trans-1,3-Dichloropropene	**<9.1**	ug/kg	65.7	9.1	1	04/04/19 12:06	04/04/19 15:09	10061-02-6	
Diethyl ether (Ethyl ether)	**<40.2**	ug/kg	263	40.2	1	04/04/19 12:06	04/04/19 15:09	60-29-7	
Ethylbenzene	**<3.6**	ug/kg	65.7	3.6	1	04/04/19 12:06	04/04/19 15:09	100-41-4	
Hexachloro-1,3-butadiene	**<16.0**	ug/kg	328	16.0	1	04/04/19 12:06	04/04/19 15:09	87-68-3	
Isopropylbenzene (Cumene)	**<2.9**	ug/kg	65.7	2.9	1	04/04/19 12:06	04/04/19 15:09	98-82-8	
p-Isopropyltoluene	**<20.0**	ug/kg	65.7	20.0	1	04/04/19 12:06	04/04/19 15:09	99-87-6	
Methylene Chloride	**<124**	ug/kg	263	124	1	04/04/19 12:06	04/04/19 15:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<13.7**	ug/kg	328	13.7	1	04/04/19 12:06	04/04/19 15:09	108-10-1	
Methyl-tert-butyl ether	**<7.8**	ug/kg	65.7	7.8	1	04/04/19 12:06	04/04/19 15:09	1634-04-4	
Naphthalene	**<61.5**	ug/kg	263	61.5	1	04/04/19 12:06	04/04/19 15:09	91-20-3	
n-Propylbenzene	**<3.5**	ug/kg	65.7	3.5	1	04/04/19 12:06	04/04/19 15:09	103-65-1	
Styrene	**<3.0**	ug/kg	65.7	3.0	1	04/04/19 12:06	04/04/19 15:09	100-42-5	
1,1,1,2-Tetrachloroethane	**<20.6**	ug/kg	65.7	20.6	1	04/04/19 12:06	04/04/19 15:09	630-20-6	
1,1,2,2-Tetrachloroethane	**<11.6**	ug/kg	65.7	11.6	1	04/04/19 12:06	04/04/19 15:09	79-34-5	
Tetrachloroethene	**<23.1**	ug/kg	65.7	23.1	1	04/04/19 12:06	04/04/19 15:09	127-18-4	
Tetrahydrofuran	**<95.5**	ug/kg	2630	95.5	1	04/04/19 12:06	04/04/19 15:09	109-99-9	
Toluene	**<16.0**	ug/kg	65.7	16.0	1	04/04/19 12:06	04/04/19 15:09	108-88-3	
1,2,3-Trichlorobenzene	**<10.5**	ug/kg	65.7	10.5	1	04/04/19 12:06	04/04/19 15:09	87-61-6	
1,2,4-Trichlorobenzene	**<14.6**	ug/kg	65.7	14.6	1	04/04/19 12:06	04/04/19 15:09	120-82-1	
1,1,1-Trichloroethane	**<30.6**	ug/kg	65.7	30.6	1	04/04/19 12:06	04/04/19 15:09	71-55-6	
1,1,2-Trichloroethane	**<7.9**	ug/kg	65.7	7.9	1	04/04/19 12:06	04/04/19 15:09	79-00-5	
Trichloroethene	**<10.1**	ug/kg	65.7	10.1	1	04/04/19 12:06	04/04/19 15:09	79-01-6	
Trichlorofluoromethane	**<115**	ug/kg	263	115	1	04/04/19 12:06	04/04/19 15:09	75-69-4	
1,2,3-Trichloropropane	**<17.2**	ug/kg	263	17.2	1	04/04/19 12:06	04/04/19 15:09	96-18-4	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-04 (0-2ft) **Lab ID: 10469445004** Collected: 04/02/19 10:45 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,2-Trichlorotrifluoroethane	**<76.2**	ug/kg	263	76.2	1	04/04/19 12:06	04/04/19 15:09	76-13-1	
1,2,4-Trimethylbenzene	**<13.1**	ug/kg	65.7	13.1	1	04/04/19 12:06	04/04/19 15:09	95-63-6	
1,3,5-Trimethylbenzene	**<10.5**	ug/kg	65.7	10.5	1	04/04/19 12:06	04/04/19 15:09	108-67-8	
Vinyl chloride	**<12.9**	ug/kg	26.3	12.9	1	04/04/19 12:06	04/04/19 15:09	75-01-4	
Xylene (Total)	**<15.2**	ug/kg	197	15.2	1	04/04/19 12:06	04/04/19 15:09	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%.	75-125		1	04/04/19 12:06	04/04/19 15:09	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1	04/04/19 12:06	04/04/19 15:09	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1	04/04/19 12:06	04/04/19 15:09	460-00-4	

Sample: FL-SB-05 (0-6.5ft) **Lab ID: 10469445005** Collected: 04/02/19 11:15 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**8.0J**	mg/kg	8.3	2.2	1	04/04/19 08:23	04/05/19 14:20		
Surrogates									
n-Triacontane (S)	89	%.	50-150		1	04/04/19 08:23	04/05/19 14:20	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.5**	mg/kg	11.8	1.5	1	04/11/19 13:33	04/12/19 04:18		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%.	80-150		1	04/11/19 13:33	04/12/19 04:18	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**57.2**	mg/kg	0.60	0.050	1	04/05/19 11:58	04/09/19 13:33	7440-39-3	
Silver	**<0.044**	mg/kg	0.60	0.044	1	04/05/19 11:58	04/09/19 13:33	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**3.1**	mg/kg	0.57	0.20	20	04/05/19 11:58	04/15/19 23:25	7440-38-2	
Cadmium	**0.084J**	mg/kg	0.091	0.030	20	04/05/19 11:58	04/15/19 23:25	7440-43-9	
Chromium	**12.5**	mg/kg	0.57	0.14	20	04/05/19 11:58	04/15/19 23:25	7440-47-3	
Lead	**8.1**	mg/kg	0.23	0.065	20	04/05/19 11:58	04/15/19 23:25	7439-92-1	
Selenium	**0.53J**	mg/kg	0.57	0.17	20	04/05/19 11:58	04/15/19 23:25	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.027**	mg/kg	0.022	0.0089	1	04/05/19 12:48	04/15/19 13:19	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**18.0**	%	0.10	0.10	1		04/05/19 13:32		

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-05 (0-6.5ft) **Lab ID: 10469445005** Collected: 04/02/19 11:15 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<0.50**	ug/kg	12.2	0.50	1	04/04/19 09:08	04/05/19 19:23	83-32-9	
Acenaphthylene	**<0.60**	ug/kg	12.2	0.60	1	04/04/19 09:08	04/05/19 19:23	208-96-8	
Anthracene	**<0.57**	ug/kg	12.2	0.57	1	04/04/19 09:08	04/05/19 19:23	120-12-7	
Benzo(a)anthracene	**12.0J**	ug/kg	12.2	1.3	1	04/04/19 09:08	04/05/19 19:23	56-55-3	
Benzo(a)pyrene	**14.7**	ug/kg	12.2	0.84	1	04/04/19 09:08	04/05/19 19:23	50-32-8	
Benzo(b)fluoranthene	**17.5**	ug/kg	12.2	0.45	1	04/04/19 09:08	04/05/19 19:23	205-99-2	
Benzo(e)pyrene	**<0.88**	ug/kg	12.2	0.88	1	04/04/19 09:08	04/05/19 19:23	192-97-2	N2
Benzo(g,h,i)perylene	**<0.77**	ug/kg	12.2	0.77	1	04/04/19 09:08	04/05/19 19:23	191-24-2	
Benzo(k)fluoranthene	**<1.0**	ug/kg	12.2	1.0	1	04/04/19 09:08	04/05/19 19:23	207-08-9	
Chrysene	**14.8**	ug/kg	12.2	1.7	1	04/04/19 09:08	04/05/19 19:23	218-01-9	
Dibenz(a,h)anthracene	**<0.56**	ug/kg	12.2	0.56	1	04/04/19 09:08	04/05/19 19:23	53-70-3	
Fluoranthene	**25.8**	ug/kg	12.2	0.52	1	04/04/19 09:08	04/05/19 19:23	206-44-0	
Fluorene	**<0.38**	ug/kg	12.2	0.38	1	04/04/19 09:08	04/05/19 19:23	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.82**	ug/kg	12.2	0.82	1	04/04/19 09:08	04/05/19 19:23	193-39-5	
Naphthalene	**<0.94**	ug/kg	12.2	0.94	1	04/04/19 09:08	04/05/19 19:23	91-20-3	
Phenanthrene	**<2.3**	ug/kg	12.2	2.3	1	04/04/19 09:08	04/05/19 19:23	85-01-8	
Pyrene	**21.9**	ug/kg	12.2	1.9	1	04/04/19 09:08	04/05/19 19:23	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	78	%.	30-125		1	04/04/19 09:08	04/05/19 19:23	321-60-8	
p-Terphenyl-d14 (S)	74	%.	30-125		1	04/04/19 09:08	04/05/19 19:23	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<365**	ug/kg	1180	365	1	04/04/19 12:06	04/04/19 16:21	67-64-1	
Allyl chloride	**<49.2**	ug/kg	235	49.2	1	04/04/19 12:06	04/04/19 16:21	107-05-1	
Benzene	**<3.3**	ug/kg	23.5	3.3	1	04/04/19 12:06	04/04/19 16:21	71-43-2	
Bromobenzene	**<3.6**	ug/kg	58.8	3.6	1	04/04/19 12:06	04/04/19 16:21	108-86-1	
Bromochloromethane	**<20.3**	ug/kg	58.8	20.3	1	04/04/19 12:06	04/04/19 16:21	74-97-5	
Bromodichloromethane	**<20.1**	ug/kg	58.8	20.1	1	04/04/19 12:06	04/04/19 16:21	75-27-4	
Bromoform	**<89.0**	ug/kg	235	89.0	1	04/04/19 12:06	04/04/19 16:21	75-25-2	
Bromomethane	**<68.7**	ug/kg	588	68.7	1	04/04/19 12:06	04/04/19 16:21	74-83-9	
2-Butanone (MEK)	**<31.3**	ug/kg	294	31.3	1	04/04/19 12:06	04/04/19 16:21	78-93-3	
n-Butylbenzene	**<28.0**	ug/kg	58.8	28.0	1	04/04/19 12:06	04/04/19 16:21	104-51-8	
sec-Butylbenzene	**<11.3**	ug/kg	58.8	11.3	1	04/04/19 12:06	04/04/19 16:21	135-98-8	
tert-Butylbenzene	**<11.3**	ug/kg	58.8	11.3	1	04/04/19 12:06	04/04/19 16:21	98-06-6	
Carbon tetrachloride	**<28.1**	ug/kg	235	28.1	1	04/04/19 12:06	04/04/19 16:21	56-23-5	
Chlorobenzene	**<3.3**	ug/kg	58.8	3.3	1	04/04/19 12:06	04/04/19 16:21	108-90-7	
Chloroethane	**<30.6**	ug/kg	588	30.6	1	04/04/19 12:06	04/04/19 16:21	75-00-3	
Chloroform	**<29.4**	ug/kg	58.8	29.4	1	04/04/19 12:06	04/04/19 16:21	67-66-3	
Chloromethane	**<14.1**	ug/kg	235	14.1	1	04/04/19 12:06	04/04/19 16:21	74-87-3	
2-Chlorotoluene	**<2.9**	ug/kg	58.8	2.9	1	04/04/19 12:06	04/04/19 16:21	95-49-8	
4-Chlorotoluene	**<3.0**	ug/kg	58.8	3.0	1	04/04/19 12:06	04/04/19 16:21	106-43-4	
1,2-Dibromo-3-chloropropane	**<204**	ug/kg	588	204	1	04/04/19 12:06	04/04/19 16:21	96-12-8	
Dibromochloromethane	**<6.8**	ug/kg	235	6.8	1	04/04/19 12:06	04/04/19 16:21	124-48-1	
1,2-Dibromoethane (EDB)	**<6.2**	ug/kg	58.8	6.2	1	04/04/19 12:06	04/04/19 16:21	106-93-4	
Dibromomethane	**<10.8**	ug/kg	58.8	10.8	1	04/04/19 12:06	04/04/19 16:21	74-95-3	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-05 (0-6.5ft) **Lab ID: 10469445005** Collected: 04/02/19 11:15 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,2-Dichlorobenzene	**<2.4**	ug/kg	58.8	2.4	1	04/04/19 12:06	04/04/19 16:21	95-50-1	
1,3-Dichlorobenzene	**<2.1**	ug/kg	58.8	2.1	1	04/04/19 12:06	04/04/19 16:21	541-73-1	
1,4-Dichlorobenzene	**<3.6**	ug/kg	58.8	3.6	1	04/04/19 12:06	04/04/19 16:21	106-46-7	
Dichlorodifluoromethane	**<19.0**	ug/kg	235	19.0	1	04/04/19 12:06	04/04/19 16:21	75-71-8	
1,1-Dichloroethane	**<6.6**	ug/kg	58.8	6.6	1	04/04/19 12:06	04/04/19 16:21	75-34-3	
1,2-Dichloroethane	**<6.5**	ug/kg	58.8	6.5	1	04/04/19 12:06	04/04/19 16:21	107-06-2	
1,1-Dichloroethene	**<17.6**	ug/kg	58.8	17.6	1	04/04/19 12:06	04/04/19 16:21	75-35-4	
cis-1,2-Dichloroethene	**<9.7**	ug/kg	58.8	9.7	1	04/04/19 12:06	04/04/19 16:21	156-59-2	
trans-1,2-Dichloroethene	**<27.5**	ug/kg	58.8	27.5	1	04/04/19 12:06	04/04/19 16:21	156-60-5	
Dichlorofluoromethane	**<81.2**	ug/kg	588	81.2	1	04/04/19 12:06	04/04/19 16:21	75-43-4	N2
1,2-Dichloropropane	**<10.1**	ug/kg	58.8	10.1	1	04/04/19 12:06	04/04/19 16:21	78-87-5	
1,3-Dichloropropane	**<8.1**	ug/kg	58.8	8.1	1	04/04/19 12:06	04/04/19 16:21	142-28-9	
2,2-Dichloropropane	**<7.3**	ug/kg	235	7.3	1	04/04/19 12:06	04/04/19 16:21	594-20-7	
1,1-Dichloropropene	**<27.1**	ug/kg	58.8	27.1	1	04/04/19 12:06	04/04/19 16:21	563-58-6	
cis-1,3-Dichloropropene	**<8.4**	ug/kg	58.8	8.4	1	04/04/19 12:06	04/04/19 16:21	10061-01-5	
trans-1,3-Dichloropropene	**<8.2**	ug/kg	58.8	8.2	1	04/04/19 12:06	04/04/19 16:21	10061-02-6	
Diethyl ether (Ethyl ether)	**<36.0**	ug/kg	235	36.0	1	04/04/19 12:06	04/04/19 16:21	60-29-7	
Ethylbenzene	**<3.2**	ug/kg	58.8	3.2	1	04/04/19 12:06	04/04/19 16:21	100-41-4	
Hexachloro-1,3-butadiene	**<14.3**	ug/kg	294	14.3	1	04/04/19 12:06	04/04/19 16:21	87-68-3	
Isopropylbenzene (Cumene)	**<2.6**	ug/kg	58.8	2.6	1	04/04/19 12:06	04/04/19 16:21	98-82-8	
p-Isopropyltoluene	**<17.9**	ug/kg	58.8	17.9	1	04/04/19 12:06	04/04/19 16:21	99-87-6	
Methylene Chloride	**<111**	ug/kg	235	111	1	04/04/19 12:06	04/04/19 16:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<12.2**	ug/kg	294	12.2	1	04/04/19 12:06	04/04/19 16:21	108-10-1	
Methyl-tert-butyl ether	**<7.0**	ug/kg	58.8	7.0	1	04/04/19 12:06	04/04/19 16:21	1634-04-4	
Naphthalene	**<55.0**	ug/kg	235	55.0	1	04/04/19 12:06	04/04/19 16:21	91-20-3	
n-Propylbenzene	**<3.1**	ug/kg	58.8	3.1	1	04/04/19 12:06	04/04/19 16:21	103-65-1	
Styrene	**<2.7**	ug/kg	58.8	2.7	1	04/04/19 12:06	04/04/19 16:21	100-42-5	
1,1,1,2-Tetrachloroethane	**<18.5**	ug/kg	58.8	18.5	1	04/04/19 12:06	04/04/19 16:21	630-20-6	
1,1,2,2-Tetrachloroethane	**<10.4**	ug/kg	58.8	10.4	1	04/04/19 12:06	04/04/19 16:21	79-34-5	
Tetrachloroethene	**<20.7**	ug/kg	58.8	20.7	1	04/04/19 12:06	04/04/19 16:21	127-18-4	
Tetrahydrofuran	**<85.4**	ug/kg	2350	85.4	1	04/04/19 12:06	04/04/19 16:21	109-99-9	
Toluene	**<14.3**	ug/kg	58.8	14.3	1	04/04/19 12:06	04/04/19 16:21	108-88-3	
1,2,3-Trichlorobenzene	**<9.4**	ug/kg	58.8	9.4	1	04/04/19 12:06	04/04/19 16:21	87-61-6	
1,2,4-Trichlorobenzene	**<13.0**	ug/kg	58.8	13.0	1	04/04/19 12:06	04/04/19 16:21	120-82-1	
1,1,1-Trichloroethane	**<27.4**	ug/kg	58.8	27.4	1	04/04/19 12:06	04/04/19 16:21	71-55-6	
1,1,2-Trichloroethane	**<7.0**	ug/kg	58.8	7.0	1	04/04/19 12:06	04/04/19 16:21	79-00-5	
Trichloroethene	**<9.1**	ug/kg	58.8	9.1	1	04/04/19 12:06	04/04/19 16:21	79-01-6	
Trichlorofluoromethane	**<102**	ug/kg	235	102	1	04/04/19 12:06	04/04/19 16:21	75-69-4	
1,2,3-Trichloropropane	**<15.4**	ug/kg	235	15.4	1	04/04/19 12:06	04/04/19 16:21	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<68.2**	ug/kg	235	68.2	1	04/04/19 12:06	04/04/19 16:21	76-13-1	
1,2,4-Trimethylbenzene	**<11.8**	ug/kg	58.8	11.8	1	04/04/19 12:06	04/04/19 16:21	95-63-6	
1,3,5-Trimethylbenzene	**<9.4**	ug/kg	58.8	9.4	1	04/04/19 12:06	04/04/19 16:21	108-67-8	
Vinyl chloride	**<11.6**	ug/kg	23.5	11.6	1	04/04/19 12:06	04/04/19 16:21	75-01-4	
Xylene (Total)	**<13.6**	ug/kg	176	13.6	1	04/04/19 12:06	04/04/19 16:21	1330-20-7	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-05 (0-6.5ft) **Lab ID: 10469445005** Collected: 04/02/19 11:15 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1	04/04/19 12:06	04/04/19 16:21	17060-07-0	
Toluene-d8 (S)	103	%.	75-125		1	04/04/19 12:06	04/04/19 16:21	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1	04/04/19 12:06	04/04/19 16:21	460-00-4	

Sample: FL-SB-06 (0-4.5ft) **Lab ID: 10469445006** Collected: 04/02/19 11:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**18.8**	mg/kg	10.0	2.6	1	04/04/19 08:23	04/05/19 14:27		T6
Surrogates									
n-Triacontane (S)	89	%.	50-150		1	04/04/19 08:23	04/05/19 14:27	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.5**	mg/kg	11.6	1.5	1	04/11/19 13:33	04/12/19 04:44		
Surrogates									
a,a,a-Trifluorotoluene (S)	101	%.	80-150		1	04/11/19 13:33	04/12/19 04:44	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**63.2**	mg/kg	0.56	0.047	1	04/05/19 11:58	04/09/19 13:36	7440-39-3	
Silver	**<0.041**	mg/kg	0.56	0.041	1	04/05/19 11:58	04/09/19 13:36	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**3.4**	mg/kg	0.55	0.19	20	04/05/19 11:58	04/16/19 00:09	7440-38-2	
Cadmium	**0.21**	mg/kg	0.088	0.029	20	04/05/19 11:58	04/16/19 00:09	7440-43-9	
Chromium	**9.7**	mg/kg	0.55	0.14	20	04/05/19 11:58	04/16/19 00:09	7440-47-3	
Lead	**7.0**	mg/kg	0.22	0.063	20	04/05/19 11:58	04/16/19 00:09	7439-92-1	
Selenium	**1.0**	mg/kg	0.55	0.16	20	04/05/19 11:58	04/16/19 00:09	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.020J**	mg/kg	0.021	0.0085	1	04/05/19 12:48	04/15/19 13:21	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**13.8**	%	0.10	0.10	1		04/05/19 13:32		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<0.47**	ug/kg	11.6	0.47	1	04/04/19 09:08	04/08/19 13:25	83-32-9	
Acenaphthylene	**<0.57**	ug/kg	11.6	0.57	1	04/04/19 09:08	04/08/19 13:25	208-96-8	
Anthracene	**<0.54**	ug/kg	11.6	0.54	1	04/04/19 09:08	04/08/19 13:25	120-12-7	
Benzo(a)anthracene	**18.5**	ug/kg	11.6	1.2	1	04/04/19 09:08	04/08/19 13:25	56-55-3	
Benzo(a)pyrene	**21.3**	ug/kg	11.6	0.79	1	04/04/19 09:08	04/08/19 13:25	50-32-8	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-06 (0-4.5ft) **Lab ID: 10469445006** Collected: 04/02/19 11:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Benzo(b)fluoranthene	**27.0**	ug/kg	11.6	0.43	1	04/04/19 09:08	04/08/19 13:25	205-99-2	
Benzo(e)pyrene	**14.6**	ug/kg	11.6	0.83	1	04/04/19 09:08	04/08/19 13:25	192-97-2	N2
Benzo(g,h,i)perylene	**17.3**	ug/kg	11.6	0.73	1	04/04/19 09:08	04/08/19 13:25	191-24-2	
Benzo(k)fluoranthene	**16.1**	ug/kg	11.6	0.98	1	04/04/19 09:08	04/08/19 13:25	207-08-9	
Chrysene	**22.5**	ug/kg	11.6	1.6	1	04/04/19 09:08	04/08/19 13:25	218-01-9	
Dibenz(a,h)anthracene	**<0.53**	ug/kg	11.6	0.53	1	04/04/19 09:08	04/08/19 13:25	53-70-3	
Fluoranthene	**41.2**	ug/kg	11.6	0.50	1	04/04/19 09:08	04/08/19 13:25	206-44-0	
Fluorene	**2.5J**	ug/kg	11.6	0.36	1	04/04/19 09:08	04/08/19 13:25	86-73-7	
Indeno(1,2,3-cd)pyrene	**12.4**	ug/kg	11.6	0.77	1	04/04/19 09:08	04/08/19 13:25	193-39-5	
Naphthalene	**<0.89**	ug/kg	11.6	0.89	1	04/04/19 09:08	04/08/19 13:25	91-20-3	
Phenanthrene	**19.6**	ug/kg	11.6	2.2	1	04/04/19 09:08	04/08/19 13:25	85-01-8	
Pyrene	**34.4**	ug/kg	11.6	1.8	1	04/04/19 09:08	04/08/19 13:25	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	83	%.	30-125		1	04/04/19 09:08	04/08/19 13:25	321-60-8	
p-Terphenyl-d14 (S)	78	%.	30-125		1	04/04/19 09:08	04/08/19 13:25	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<380**	ug/kg	1220	380	1	04/04/19 12:06	04/04/19 16:39	67-64-1	
Allyl chloride	**<51.2**	ug/kg	244	51.2	1	04/04/19 12:06	04/04/19 16:39	107-05-1	
Benzene	**<3.4**	ug/kg	24.4	3.4	1	04/04/19 12:06	04/04/19 16:39	71-43-2	
Bromobenzene	**<3.8**	ug/kg	61.1	3.8	1	04/04/19 12:06	04/04/19 16:39	108-86-1	
Bromochloromethane	**<21.1**	ug/kg	61.1	21.1	1	04/04/19 12:06	04/04/19 16:39	74-97-5	
Bromodichloromethane	**<20.9**	ug/kg	61.1	20.9	1	04/04/19 12:06	04/04/19 16:39	75-27-4	
Bromoform	**<92.5**	ug/kg	244	92.5	1	04/04/19 12:06	04/04/19 16:39	75-25-2	
Bromomethane	**<71.5**	ug/kg	611	71.5	1	04/04/19 12:06	04/04/19 16:39	74-83-9	
2-Butanone (MEK)	**<32.5**	ug/kg	306	32.5	1	04/04/19 12:06	04/04/19 16:39	78-93-3	
n-Butylbenzene	**<29.1**	ug/kg	61.1	29.1	1	04/04/19 12:06	04/04/19 16:39	104-51-8	
sec-Butylbenzene	**<11.7**	ug/kg	61.1	11.7	1	04/04/19 12:06	04/04/19 16:39	135-98-8	
tert-Butylbenzene	**<11.7**	ug/kg	61.1	11.7	1	04/04/19 12:06	04/04/19 16:39	98-06-6	
Carbon tetrachloride	**<29.2**	ug/kg	244	29.2	1	04/04/19 12:06	04/04/19 16:39	56-23-5	
Chlorobenzene	**<3.4**	ug/kg	61.1	3.4	1	04/04/19 12:06	04/04/19 16:39	108-90-7	
Chloroethane	**<31.8**	ug/kg	611	31.8	1	04/04/19 12:06	04/04/19 16:39	75-00-3	
Chloroform	**<30.6**	ug/kg	61.1	30.6	1	04/04/19 12:06	04/04/19 16:39	67-66-3	
Chloromethane	**<14.7**	ug/kg	244	14.7	1	04/04/19 12:06	04/04/19 16:39	74-87-3	
2-Chlorotoluene	**<3.0**	ug/kg	61.1	3.0	1	04/04/19 12:06	04/04/19 16:39	95-49-8	
4-Chlorotoluene	**<3.1**	ug/kg	61.1	3.1	1	04/04/19 12:06	04/04/19 16:39	106-43-4	
1,2-Dibromo-3-chloropropane	**<213**	ug/kg	611	213	1	04/04/19 12:06	04/04/19 16:39	96-12-8	
Dibromochloromethane	**<7.1**	ug/kg	244	7.1	1	04/04/19 12:06	04/04/19 16:39	124-48-1	
1,2-Dibromoethane (EDB)	**<6.4**	ug/kg	61.1	6.4	1	04/04/19 12:06	04/04/19 16:39	106-93-4	
Dibromomethane	**<11.2**	ug/kg	61.1	11.2	1	04/04/19 12:06	04/04/19 16:39	74-95-3	
1,2-Dichlorobenzene	**<2.5**	ug/kg	61.1	2.5	1	04/04/19 12:06	04/04/19 16:39	95-50-1	
1,3-Dichlorobenzene	**<2.2**	ug/kg	61.1	2.2	1	04/04/19 12:06	04/04/19 16:39	541-73-1	
1,4-Dichlorobenzene	**<3.8**	ug/kg	61.1	3.8	1	04/04/19 12:06	04/04/19 16:39	106-46-7	
Dichlorodifluoromethane	**<19.8**	ug/kg	244	19.8	1	04/04/19 12:06	04/04/19 16:39	75-71-8	
1,1-Dichloroethane	**<6.9**	ug/kg	61.1	6.9	1	04/04/19 12:06	04/04/19 16:39	75-34-3	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-06 (0-4.5ft) **Lab ID: 10469445006** Collected: 04/02/19 11:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,2-Dichloroethane	**<6.7**	ug/kg	61.1	6.7	1	04/04/19 12:06	04/04/19 16:39	107-06-2	
1,1-Dichloroethene	**<18.3**	ug/kg	61.1	18.3	1	04/04/19 12:06	04/04/19 16:39	75-35-4	
cis-1,2-Dichloroethene	**<10.1**	ug/kg	61.1	10.1	1	04/04/19 12:06	04/04/19 16:39	156-59-2	
trans-1,2-Dichloroethene	**<28.6**	ug/kg	61.1	28.6	1	04/04/19 12:06	04/04/19 16:39	156-60-5	
Dichlorofluoromethane	**<84.5**	ug/kg	611	84.5	1	04/04/19 12:06	04/04/19 16:39	75-43-4	N2
1,2-Dichloropropane	**<10.5**	ug/kg	61.1	10.5	1	04/04/19 12:06	04/04/19 16:39	78-87-5	
1,3-Dichloropropane	**<8.5**	ug/kg	61.1	8.5	1	04/04/19 12:06	04/04/19 16:39	142-28-9	
2,2-Dichloropropane	**<7.6**	ug/kg	244	7.6	1	04/04/19 12:06	04/04/19 16:39	594-20-7	
1,1-Dichloropropene	**<28.2**	ug/kg	61.1	28.2	1	04/04/19 12:06	04/04/19 16:39	563-58-6	
cis-1,3-Dichloropropene	**<8.8**	ug/kg	61.1	8.8	1	04/04/19 12:06	04/04/19 16:39	10061-01-5	
trans-1,3-Dichloropropene	**<8.5**	ug/kg	61.1	8.5	1	04/04/19 12:06	04/04/19 16:39	10061-02-6	
Diethyl ether (Ethyl ether)	**<37.4**	ug/kg	244	37.4	1	04/04/19 12:06	04/04/19 16:39	60-29-7	
Ethylbenzene	**<3.3**	ug/kg	61.1	3.3	1	04/04/19 12:06	04/04/19 16:39	100-41-4	
Hexachloro-1,3-butadiene	**<14.9**	ug/kg	306	14.9	1	04/04/19 12:06	04/04/19 16:39	87-68-3	
Isopropylbenzene (Cumene)	**<2.7**	ug/kg	61.1	2.7	1	04/04/19 12:06	04/04/19 16:39	98-82-8	
p-Isopropyltoluene	**<18.6**	ug/kg	61.1	18.6	1	04/04/19 12:06	04/04/19 16:39	99-87-6	
Methylene Chloride	**<115**	ug/kg	244	115	1	04/04/19 12:06	04/04/19 16:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<12.7**	ug/kg	306	12.7	1	04/04/19 12:06	04/04/19 16:39	108-10-1	
Methyl-tert-butyl ether	**<7.3**	ug/kg	61.1	7.3	1	04/04/19 12:06	04/04/19 16:39	1634-04-4	
Naphthalene	**<57.2**	ug/kg	244	57.2	1	04/04/19 12:06	04/04/19 16:39	91-20-3	
n-Propylbenzene	**<3.3**	ug/kg	61.1	3.3	1	04/04/19 12:06	04/04/19 16:39	103-65-1	
Styrene	**<2.8**	ug/kg	61.1	2.8	1	04/04/19 12:06	04/04/19 16:39	100-42-5	
1,1,1,2-Tetrachloroethane	**<19.2**	ug/kg	61.1	19.2	1	04/04/19 12:06	04/04/19 16:39	630-20-6	
1,1,2,2-Tetrachloroethane	**<10.8**	ug/kg	61.1	10.8	1	04/04/19 12:06	04/04/19 16:39	79-34-5	
Tetrachloroethene	**<21.5**	ug/kg	61.1	21.5	1	04/04/19 12:06	04/04/19 16:39	127-18-4	
Tetrahydrofuran	**<88.9**	ug/kg	2440	88.9	1	04/04/19 12:06	04/04/19 16:39	109-99-9	
Toluene	**<14.9**	ug/kg	61.1	14.9	1	04/04/19 12:06	04/04/19 16:39	108-88-3	
1,2,3-Trichlorobenzene	**<9.8**	ug/kg	61.1	9.8	1	04/04/19 12:06	04/04/19 16:39	87-61-6	
1,2,4-Trichlorobenzene	**<13.6**	ug/kg	61.1	13.6	1	04/04/19 12:06	04/04/19 16:39	120-82-1	
1,1,1-Trichloroethane	**<28.5**	ug/kg	61.1	28.5	1	04/04/19 12:06	04/04/19 16:39	71-55-6	
1,1,2-Trichloroethane	**<7.3**	ug/kg	61.1	7.3	1	04/04/19 12:06	04/04/19 16:39	79-00-5	
Trichloroethene	**<9.4**	ug/kg	61.1	9.4	1	04/04/19 12:06	04/04/19 16:39	79-01-6	
Trichlorofluoromethane	**<107**	ug/kg	244	107	1	04/04/19 12:06	04/04/19 16:39	75-69-4	
1,2,3-Trichloropropane	**<16.0**	ug/kg	244	16.0	1	04/04/19 12:06	04/04/19 16:39	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<70.9**	ug/kg	244	70.9	1	04/04/19 12:06	04/04/19 16:39	76-13-1	
1,2,4-Trimethylbenzene	**<12.2**	ug/kg	61.1	12.2	1	04/04/19 12:06	04/04/19 16:39	95-63-6	
1,3,5-Trimethylbenzene	**<9.7**	ug/kg	61.1	9.7	1	04/04/19 12:06	04/04/19 16:39	108-67-8	
Vinyl chloride	**<12.0**	ug/kg	24.4	12.0	1	04/04/19 12:06	04/04/19 16:39	75-01-4	
Xylene (Total)	**<14.2**	ug/kg	183	14.2	1	04/04/19 12:06	04/04/19 16:39	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125		1	04/04/19 12:06	04/04/19 16:39	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1	04/04/19 12:06	04/04/19 16:39	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	04/04/19 12:06	04/04/19 16:39	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-07 (0-4.5ft) **Lab ID: 10469445007** Collected: 04/02/19 12:20 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**35.4**	mg/kg	19.6	5.1	2	04/04/19 08:23	04/05/19 14:14		T6
Surrogates									
n-Triacontane (S)	116	%.	50-150		2	04/04/19 08:23	04/05/19 14:14	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**2.7J**	mg/kg	13.6	1.7	1	04/12/19 15:21	04/12/19 23:35		
Surrogates									
a,a,a-Trifluorotoluene (S)	94	%.	80-150		1	04/12/19 15:21	04/12/19 23:35	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**67.1**	mg/kg	0.58	0.048	1	04/05/19 11:58	04/09/19 13:39	7440-39-3	
Silver	**<0.042**	mg/kg	0.58	0.042	1	04/05/19 11:58	04/09/19 13:39	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**4.5**	mg/kg	0.59	0.21	20	04/05/19 11:58	04/16/19 00:13	7440-38-2	
Cadmium	**0.81**	mg/kg	0.094	0.031	20	04/05/19 11:58	04/16/19 00:13	7440-43-9	
Chromium	**14.7**	mg/kg	0.59	0.15	20	04/05/19 11:58	04/16/19 00:13	7440-47-3	
Lead	**26.2**	mg/kg	0.23	0.067	20	04/05/19 11:58	04/16/19 00:13	7439-92-1	
Selenium	**1.3**	mg/kg	0.59	0.17	20	04/05/19 11:58	04/16/19 00:13	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.036**	mg/kg	0.022	0.0090	1	04/05/19 12:48	04/15/19 13:27	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**16.4**	%	0.10	0.10	1		04/05/19 13:32		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<2.4**	ug/kg	59.4	2.4	5	04/04/19 09:08	04/05/19 20:06	83-32-9	
Acenaphthylene	**<2.9**	ug/kg	59.4	2.9	5	04/04/19 09:08	04/05/19 20:06	208-96-8	
Anthracene	**175**	ug/kg	59.4	2.8	5	04/04/19 09:08	04/05/19 20:06	120-12-7	
Benzo(a)anthracene	**953**	ug/kg	59.4	6.4	5	04/04/19 09:08	04/05/19 20:06	56-55-3	
Benzo(a)pyrene	**1100**	ug/kg	59.4	4.1	5	04/04/19 09:08	04/05/19 20:06	50-32-8	
Benzo(b)fluoranthene	**1230**	ug/kg	59.4	2.2	5	04/04/19 09:08	04/05/19 20:06	205-99-2	
Benzo(e)pyrene	**779**	ug/kg	59.4	4.3	5	04/04/19 09:08	04/05/19 20:06	192-97-2	N2
Benzo(g,h,i)perylene	**858**	ug/kg	59.4	3.8	5	04/04/19 09:08	04/05/19 20:06	191-24-2	
Benzo(k)fluoranthene	**507**	ug/kg	59.4	5.0	5	04/04/19 09:08	04/05/19 20:06	207-08-9	
Chrysene	**989**	ug/kg	59.4	8.1	5	04/04/19 09:08	04/05/19 20:06	218-01-9	
Dibenz(a,h)anthracene	**228**	ug/kg	59.4	2.7	5	04/04/19 09:08	04/05/19 20:06	53-70-3	
Fluoranthene	**1420**	ug/kg	59.4	2.5	5	04/04/19 09:08	04/05/19 20:06	206-44-0	
Fluorene	**<1.9**	ug/kg	59.4	1.9	5	04/04/19 09:08	04/05/19 20:06	86-73-7	
Indeno(1,2,3-cd)pyrene	**645**	ug/kg	59.4	4.0	5	04/04/19 09:08	04/05/19 20:06	193-39-5	
Naphthalene	**<4.6**	ug/kg	59.4	4.6	5	04/04/19 09:08	04/05/19 20:06	91-20-3	
Phenanthrene	**514**	ug/kg	59.4	11.4	5	04/04/19 09:08	04/05/19 20:06	85-01-8	
Pyrene	**1220**	ug/kg	59.4	9.1	5	04/04/19 09:08	04/05/19 20:06	129-00-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-07 (0-4.5ft) **Lab ID: 10469445007** Collected: 04/02/19 12:20 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Surrogates									
2-Fluorobiphenyl (S)	82	%.	30-125		5	04/04/19 09:08	04/05/19 20:06	321-60-8	
p-Terphenyl-d14 (S)	80	%.	30-125		5	04/04/19 09:08	04/05/19 20:06	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<403**	ug/kg	1300	403	1	04/04/19 12:06	04/04/19 16:57	67-64-1	
Allyl chloride	**<54.3**	ug/kg	259	54.3	1	04/04/19 12:06	04/04/19 16:57	107-05-1	
Benzene	**<3.7**	ug/kg	25.9	3.7	1	04/04/19 12:06	04/04/19 16:57	71-43-2	
Bromobenzene	**<4.0**	ug/kg	64.8	4.0	1	04/04/19 12:06	04/04/19 16:57	108-86-1	
Bromochloromethane	**<22.4**	ug/kg	64.8	22.4	1	04/04/19 12:06	04/04/19 16:57	74-97-5	
Bromodichloromethane	**<22.2**	ug/kg	64.8	22.2	1	04/04/19 12:06	04/04/19 16:57	75-27-4	
Bromoform	**<98.1**	ug/kg	259	98.1	1	04/04/19 12:06	04/04/19 16:57	75-25-2	
Bromomethane	**<75.8**	ug/kg	648	75.8	1	04/04/19 12:06	04/04/19 16:57	74-83-9	
2-Butanone (MEK)	**<34.5**	ug/kg	324	34.5	1	04/04/19 12:06	04/04/19 16:57	78-93-3	
n-Butylbenzene	**<30.8**	ug/kg	64.8	30.8	1	04/04/19 12:06	04/04/19 16:57	104-51-8	
sec-Butylbenzene	**<12.4**	ug/kg	64.8	12.4	1	04/04/19 12:06	04/04/19 16:57	135-98-8	
tert-Butylbenzene	**<12.4**	ug/kg	64.8	12.4	1	04/04/19 12:06	04/04/19 16:57	98-06-6	
Carbon tetrachloride	**<31.0**	ug/kg	259	31.0	1	04/04/19 12:06	04/04/19 16:57	56-23-5	
Chlorobenzene	**<3.7**	ug/kg	64.8	3.7	1	04/04/19 12:06	04/04/19 16:57	108-90-7	
Chloroethane	**<33.7**	ug/kg	648	33.7	1	04/04/19 12:06	04/04/19 16:57	75-00-3	
Chloroform	**<32.4**	ug/kg	64.8	32.4	1	04/04/19 12:06	04/04/19 16:57	67-66-3	
Chloromethane	**<15.5**	ug/kg	259	15.5	1	04/04/19 12:06	04/04/19 16:57	74-87-3	
2-Chlorotoluene	**<3.2**	ug/kg	64.8	3.2	1	04/04/19 12:06	04/04/19 16:57	95-49-8	
4-Chlorotoluene	**<3.3**	ug/kg	64.8	3.3	1	04/04/19 12:06	04/04/19 16:57	106-43-4	
1,2-Dibromo-3-chloropropane	**<225**	ug/kg	648	225	1	04/04/19 12:06	04/04/19 16:57	96-12-8	
Dibromochloromethane	**<7.5**	ug/kg	259	7.5	1	04/04/19 12:06	04/04/19 16:57	124-48-1	
1,2-Dibromoethane (EDB)	**<6.8**	ug/kg	64.8	6.8	1	04/04/19 12:06	04/04/19 16:57	106-93-4	
Dibromomethane	**<11.9**	ug/kg	64.8	11.9	1	04/04/19 12:06	04/04/19 16:57	74-95-3	
1,2-Dichlorobenzene	**<2.6**	ug/kg	64.8	2.6	1	04/04/19 12:06	04/04/19 16:57	95-50-1	
1,3-Dichlorobenzene	**<2.4**	ug/kg	64.8	2.4	1	04/04/19 12:06	04/04/19 16:57	541-73-1	
1,4-Dichlorobenzene	**<4.0**	ug/kg	64.8	4.0	1	04/04/19 12:06	04/04/19 16:57	106-46-7	
Dichlorodifluoromethane	**<21.0**	ug/kg	259	21.0	1	04/04/19 12:06	04/04/19 16:57	75-71-8	
1,1-Dichloroethane	**<7.3**	ug/kg	64.8	7.3	1	04/04/19 12:06	04/04/19 16:57	75-34-3	
1,2-Dichloroethane	**<7.1**	ug/kg	64.8	7.1	1	04/04/19 12:06	04/04/19 16:57	107-06-2	
1,1-Dichloroethene	**<19.4**	ug/kg	64.8	19.4	1	04/04/19 12:06	04/04/19 16:57	75-35-4	
cis-1,2-Dichloroethene	**<10.7**	ug/kg	64.8	10.7	1	04/04/19 12:06	04/04/19 16:57	156-59-2	
trans-1,2-Dichloroethene	**<30.3**	ug/kg	64.8	30.3	1	04/04/19 12:06	04/04/19 16:57	156-60-5	
Dichlorofluoromethane	**<89.5**	ug/kg	648	89.5	1	04/04/19 12:06	04/04/19 16:57	75-43-4	N2
1,2-Dichloropropane	**<11.2**	ug/kg	64.8	11.2	1	04/04/19 12:06	04/04/19 16:57	78-87-5	
1,3-Dichloropropane	**<9.0**	ug/kg	64.8	9.0	1	04/04/19 12:06	04/04/19 16:57	142-28-9	
2,2-Dichloropropane	**<8.1**	ug/kg	259	8.1	1	04/04/19 12:06	04/04/19 16:57	594-20-7	
1,1-Dichloropropene	**<29.9**	ug/kg	64.8	29.9	1	04/04/19 12:06	04/04/19 16:57	563-58-6	
cis-1,3-Dichloropropene	**<9.3**	ug/kg	64.8	9.3	1	04/04/19 12:06	04/04/19 16:57	10061-01-5	
trans-1,3-Dichloropropene	**<9.0**	ug/kg	64.8	9.0	1	04/04/19 12:06	04/04/19 16:57	10061-02-6	
Diethyl ether (Ethyl ether)	**<39.6**	ug/kg	259	39.6	1	04/04/19 12:06	04/04/19 16:57	60-29-7	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-07 (0-4.5ft) **Lab ID: 10469445007** Collected: 04/02/19 12:20 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Ethylbenzene	**<3.5**	ug/kg	64.8	3.5	1	04/04/19 12:06	04/04/19 16:57	100-41-4	
Hexachloro-1,3-butadiene	**<15.8**	ug/kg	324	15.8	1	04/04/19 12:06	04/04/19 16:57	87-68-3	
Isopropylbenzene (Cumene)	**<2.9**	ug/kg	64.8	2.9	1	04/04/19 12:06	04/04/19 16:57	98-82-8	
p-Isopropyltoluene	**<19.7**	ug/kg	64.8	19.7	1	04/04/19 12:06	04/04/19 16:57	99-87-6	
Methylene Chloride	**<122**	ug/kg	259	122	1	04/04/19 12:06	04/04/19 16:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<13.5**	ug/kg	324	13.5	1	04/04/19 12:06	04/04/19 16:57	108-10-1	
Methyl-tert-butyl ether	**<7.7**	ug/kg	64.8	7.7	1	04/04/19 12:06	04/04/19 16:57	1634-04-4	
Naphthalene	**<60.6**	ug/kg	259	60.6	1	04/04/19 12:06	04/04/19 16:57	91-20-3	
n-Propylbenzene	**<3.5**	ug/kg	64.8	3.5	1	04/04/19 12:06	04/04/19 16:57	103-65-1	
Styrene	**<3.0**	ug/kg	64.8	3.0	1	04/04/19 12:06	04/04/19 16:57	100-42-5	
1,1,1,2-Tetrachloroethane	**<20.3**	ug/kg	64.8	20.3	1	04/04/19 12:06	04/04/19 16:57	630-20-6	
1,1,2,2-Tetrachloroethane	**<11.4**	ug/kg	64.8	11.4	1	04/04/19 12:06	04/04/19 16:57	79-34-5	
Tetrachloroethene	**<22.8**	ug/kg	64.8	22.8	1	04/04/19 12:06	04/04/19 16:57	127-18-4	
Tetrahydrofuran	**<94.2**	ug/kg	2590	94.2	1	04/04/19 12:06	04/04/19 16:57	109-99-9	
Toluene	**<15.8**	ug/kg	64.8	15.8	1	04/04/19 12:06	04/04/19 16:57	108-88-3	
1,2,3-Trichlorobenzene	**<10.4**	ug/kg	64.8	10.4	1	04/04/19 12:06	04/04/19 16:57	87-61-6	
1,2,4-Trichlorobenzene	**<14.4**	ug/kg	64.8	14.4	1	04/04/19 12:06	04/04/19 16:57	120-82-1	
1,1,1-Trichloroethane	**<30.2**	ug/kg	64.8	30.2	1	04/04/19 12:06	04/04/19 16:57	71-55-6	
1,1,2-Trichloroethane	**<7.7**	ug/kg	64.8	7.7	1	04/04/19 12:06	04/04/19 16:57	79-00-5	
Trichloroethene	**<10**	ug/kg	64.8	10	1	04/04/19 12:06	04/04/19 16:57	79-01-6	
Trichlorofluoromethane	**<113**	ug/kg	259	113	1	04/04/19 12:06	04/04/19 16:57	75-69-4	
1,2,3-Trichloropropane	**<17.0**	ug/kg	259	17.0	1	04/04/19 12:06	04/04/19 16:57	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<75.1**	ug/kg	259	75.1	1	04/04/19 12:06	04/04/19 16:57	76-13-1	
1,2,4-Trimethylbenzene	**<13.0**	ug/kg	64.8	13.0	1	04/04/19 12:06	04/04/19 16:57	95-63-6	
1,3,5-Trimethylbenzene	**<10.3**	ug/kg	64.8	10.3	1	04/04/19 12:06	04/04/19 16:57	108-67-8	
Vinyl chloride	**<12.7**	ug/kg	25.9	12.7	1	04/04/19 12:06	04/04/19 16:57	75-01-4	
Xylene (Total)	**<15.0**	ug/kg	194	15.0	1	04/04/19 12:06	04/04/19 16:57	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1	04/04/19 12:06	04/04/19 16:57	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1	04/04/19 12:06	04/04/19 16:57	2037-26-5	
4-Bromofluorobenzene (S)	105	%.	75-125		1	04/04/19 12:06	04/04/19 16:57	460-00-4	

Sample: FL-SB-08 (0-5ft) **Lab ID: 10469445008** Collected: 04/02/19 13:20 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**27.9**	mg/kg	11.6	3.0	1	04/04/19 17:58	04/06/19 12:29		T6
Surrogates									
n-Triacontane (S)	96	%.	50-150		1	04/04/19 17:58	04/06/19 12:29	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.7**	mg/kg	13.5	1.7	1	04/12/19 15:21	04/13/19 01:35		

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-08 (0-5ft) **Lab ID: 10469445008** Collected: 04/02/19 13:20 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%.	80-150		1	04/12/19 15:21	04/13/19 01:35	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**93.5**	mg/kg	0.63	0.052	1	04/05/19 11:58	04/09/19 13:42	7440-39-3	
Silver	**0.061J**	mg/kg	0.63	0.046	1	04/05/19 11:58	04/09/19 13:42	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**6.5**	mg/kg	0.63	0.22	20	04/05/19 11:58	04/16/19 00:18	7440-38-2	
Cadmium	**5.2**	mg/kg	0.10	0.033	20	04/05/19 11:58	04/16/19 00:18	7440-43-9	
Chromium	**20.3**	mg/kg	0.63	0.16	20	04/05/19 11:58	04/16/19 00:18	7440-47-3	
Lead	**29.9**	mg/kg	0.25	0.072	20	04/05/19 11:58	04/16/19 00:18	7439-92-1	
Selenium	**1.8**	mg/kg	0.63	0.18	20	04/05/19 11:58	04/16/19 00:18	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.056**	mg/kg	0.025	0.0099	1	04/05/19 12:48	04/15/19 13:29	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**21.1**	%	0.10	0.10	1		04/05/19 13:33		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<0.52**	ug/kg	12.7	0.52	1	04/04/19 09:08	04/08/19 13:46	83-32-9	
Acenaphthylene	**<0.63**	ug/kg	12.7	0.63	1	04/04/19 09:08	04/08/19 13:46	208-96-8	
Anthracene	**14.4**	ug/kg	12.7	0.59	1	04/04/19 09:08	04/08/19 13:46	120-12-7	
Benzo(a)anthracene	**55.7**	ug/kg	12.7	1.4	1	04/04/19 09:08	04/08/19 13:46	56-55-3	
Benzo(a)pyrene	**88.3**	ug/kg	12.7	0.87	1	04/04/19 09:08	04/08/19 13:46	50-32-8	
Benzo(b)fluoranthene	**99.8**	ug/kg	12.7	0.47	1	04/04/19 09:08	04/08/19 13:46	205-99-2	
Benzo(e)pyrene	**69.4**	ug/kg	12.7	0.91	1	04/04/19 09:08	04/08/19 13:46	192-97-2	N2
Benzo(g,h,i)perylene	**75.8**	ug/kg	12.7	0.80	1	04/04/19 09:08	04/08/19 13:46	191-24-2	
Benzo(k)fluoranthene	**58.2**	ug/kg	12.7	1.1	1	04/04/19 09:08	04/08/19 13:46	207-08-9	
Chrysene	**79.9**	ug/kg	12.7	1.7	1	04/04/19 09:08	04/08/19 13:46	218-01-9	
Dibenz(a,h)anthracene	**<0.58**	ug/kg	12.7	0.58	1	04/04/19 09:08	04/08/19 13:46	53-70-3	
Fluoranthene	**145**	ug/kg	12.7	0.54	1	04/04/19 09:08	04/08/19 13:46	206-44-0	
Fluorene	**<0.40**	ug/kg	12.7	0.40	1	04/04/19 09:08	04/08/19 13:46	86-73-7	
Indeno(1,2,3-cd)pyrene	**51.5**	ug/kg	12.7	0.85	1	04/04/19 09:08	04/08/19 13:46	193-39-5	
Naphthalene	**<0.98**	ug/kg	12.7	0.98	1	04/04/19 09:08	04/08/19 13:46	91-20-3	
Phenanthrene	**50.9**	ug/kg	12.7	2.4	1	04/04/19 09:08	04/08/19 13:46	85-01-8	
Pyrene	**120**	ug/kg	12.7	1.9	1	04/04/19 09:08	04/08/19 13:46	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	73	%.	30-125		1	04/04/19 09:08	04/08/19 13:46	321-60-8	
p-Terphenyl-d14 (S)	63	%.	30-125		1	04/04/19 09:08	04/08/19 13:46	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<432**	ug/kg	1390	432	1	04/04/19 12:06	04/04/19 17:15	67-64-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-08 (0-5ft) **Lab ID: 10469445008** Collected: 04/02/19 13:20 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Allyl chloride	**<58.2**	ug/kg	278	58.2	1	04/04/19 12:06	04/04/19 17:15	107-05-1	
Benzene	**<3.9**	ug/kg	27.8	3.9	1	04/04/19 12:06	04/04/19 17:15	71-43-2	
Bromobenzene	**<4.3**	ug/kg	69.5	4.3	1	04/04/19 12:06	04/04/19 17:15	108-86-1	
Bromochloromethane	**<24.0**	ug/kg	69.5	24.0	1	04/04/19 12:06	04/04/19 17:15	74-97-5	
Bromodichloromethane	**<23.8**	ug/kg	69.5	23.8	1	04/04/19 12:06	04/04/19 17:15	75-27-4	
Bromoform	**<105**	ug/kg	278	105	1	04/04/19 12:06	04/04/19 17:15	75-25-2	
Bromomethane	**<81.3**	ug/kg	695	81.3	1	04/04/19 12:06	04/04/19 17:15	74-83-9	
2-Butanone (MEK)	**<37.0**	ug/kg	347	37.0	1	04/04/19 12:06	04/04/19 17:15	78-93-3	
n-Butylbenzene	**<33.1**	ug/kg	69.5	33.1	1	04/04/19 12:06	04/04/19 17:15	104-51-8	
sec-Butylbenzene	**<13.3**	ug/kg	69.5	13.3	1	04/04/19 12:06	04/04/19 17:15	135-98-8	
tert-Butylbenzene	**<13.3**	ug/kg	69.5	13.3	1	04/04/19 12:06	04/04/19 17:15	98-06-6	
Carbon tetrachloride	**<33.2**	ug/kg	278	33.2	1	04/04/19 12:06	04/04/19 17:15	56-23-5	
Chlorobenzene	**<3.9**	ug/kg	69.5	3.9	1	04/04/19 12:06	04/04/19 17:15	108-90-7	
Chloroethane	**<36.1**	ug/kg	695	36.1	1	04/04/19 12:06	04/04/19 17:15	75-00-3	
Chloroform	**<34.7**	ug/kg	69.5	34.7	1	04/04/19 12:06	04/04/19 17:15	67-66-3	
Chloromethane	**<16.7**	ug/kg	278	16.7	1	04/04/19 12:06	04/04/19 17:15	74-87-3	
2-Chlorotoluene	**<3.4**	ug/kg	69.5	3.4	1	04/04/19 12:06	04/04/19 17:15	95-49-8	
4-Chlorotoluene	**<3.6**	ug/kg	69.5	3.6	1	04/04/19 12:06	04/04/19 17:15	106-43-4	
1,2-Dibromo-3-chloropropane	**<242**	ug/kg	695	242	1	04/04/19 12:06	04/04/19 17:15	96-12-8	
Dibromochloromethane	**<8.1**	ug/kg	278	8.1	1	04/04/19 12:06	04/04/19 17:15	124-48-1	
1,2-Dibromoethane (EDB)	**<7.3**	ug/kg	69.5	7.3	1	04/04/19 12:06	04/04/19 17:15	106-93-4	
Dibromomethane	**<12.7**	ug/kg	69.5	12.7	1	04/04/19 12:06	04/04/19 17:15	74-95-3	
1,2-Dichlorobenzene	**<2.8**	ug/kg	69.5	2.8	1	04/04/19 12:06	04/04/19 17:15	95-50-1	
1,3-Dichlorobenzene	**<2.5**	ug/kg	69.5	2.5	1	04/04/19 12:06	04/04/19 17:15	541-73-1	
1,4-Dichlorobenzene	**<4.3**	ug/kg	69.5	4.3	1	04/04/19 12:06	04/04/19 17:15	106-46-7	
Dichlorodifluoromethane	**<22.5**	ug/kg	278	22.5	1	04/04/19 12:06	04/04/19 17:15	75-71-8	
1,1-Dichloroethane	**<7.8**	ug/kg	69.5	7.8	1	04/04/19 12:06	04/04/19 17:15	75-34-3	
1,2-Dichloroethane	**<7.6**	ug/kg	69.5	7.6	1	04/04/19 12:06	04/04/19 17:15	107-06-2	
1,1-Dichloroethene	**<20.8**	ug/kg	69.5	20.8	1	04/04/19 12:06	04/04/19 17:15	75-35-4	
cis-1,2-Dichloroethene	**<11.5**	ug/kg	69.5	11.5	1	04/04/19 12:06	04/04/19 17:15	156-59-2	
trans-1,2-Dichloroethene	**<32.5**	ug/kg	69.5	32.5	1	04/04/19 12:06	04/04/19 17:15	156-60-5	
Dichlorofluoromethane	**<96.0**	ug/kg	695	96.0	1	04/04/19 12:06	04/04/19 17:15	75-43-4	N2
1,2-Dichloropropane	**<12.0**	ug/kg	69.5	12.0	1	04/04/19 12:06	04/04/19 17:15	78-87-5	
1,3-Dichloropropane	**<9.6**	ug/kg	69.5	9.6	1	04/04/19 12:06	04/04/19 17:15	142-28-9	
2,2-Dichloropropane	**<8.7**	ug/kg	278	8.7	1	04/04/19 12:06	04/04/19 17:15	594-20-7	
1,1-Dichloropropene	**<32.1**	ug/kg	69.5	32.1	1	04/04/19 12:06	04/04/19 17:15	563-58-6	
cis-1,3-Dichloropropene	**<9.9**	ug/kg	69.5	9.9	1	04/04/19 12:06	04/04/19 17:15	10061-01-5	
trans-1,3-Dichloropropene	**<9.7**	ug/kg	69.5	9.7	1	04/04/19 12:06	04/04/19 17:15	10061-02-6	
Diethyl ether (Ethyl ether)	**<42.5**	ug/kg	278	42.5	1	04/04/19 12:06	04/04/19 17:15	60-29-7	
Ethylbenzene	**<3.8**	ug/kg	69.5	3.8	1	04/04/19 12:06	04/04/19 17:15	100-41-4	
Hexachloro-1,3-butadiene	**<17.0**	ug/kg	347	17.0	1	04/04/19 12:06	04/04/19 17:15	87-68-3	
Isopropylbenzene (Cumene)	**<3.1**	ug/kg	69.5	3.1	1	04/04/19 12:06	04/04/19 17:15	98-82-8	
p-Isopropyltoluene	**<21.1**	ug/kg	69.5	21.1	1	04/04/19 12:06	04/04/19 17:15	99-87-6	
Methylene Chloride	**<131**	ug/kg	278	131	1	04/04/19 12:06	04/04/19 17:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<14.4**	ug/kg	347	14.4	1	04/04/19 12:06	04/04/19 17:15	108-10-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-08 (0-5ft) **Lab ID: 10469445008** Collected: 04/02/19 13:20 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Methyl-tert-butyl ether	**<8.3**	ug/kg	69.5	8.3	1	04/04/19 12:06	04/04/19 17:15	1634-04-4	
Naphthalene	**<65.0**	ug/kg	278	65.0	1	04/04/19 12:06	04/04/19 17:15	91-20-3	
n-Propylbenzene	**<3.7**	ug/kg	69.5	3.7	1	04/04/19 12:06	04/04/19 17:15	103-65-1	
Styrene	**<3.2**	ug/kg	69.5	3.2	1	04/04/19 12:06	04/04/19 17:15	100-42-5	
1,1,1,2-Tetrachloroethane	**<21.8**	ug/kg	69.5	21.8	1	04/04/19 12:06	04/04/19 17:15	630-20-6	
1,1,2,2-Tetrachloroethane	**<12.2**	ug/kg	69.5	12.2	1	04/04/19 12:06	04/04/19 17:15	79-34-5	
Tetrachloroethene	**<24.5**	ug/kg	69.5	24.5	1	04/04/19 12:06	04/04/19 17:15	127-18-4	
Tetrahydrofuran	**<101**	ug/kg	2780	101	1	04/04/19 12:06	04/04/19 17:15	109-99-9	
Toluene	**<17.0**	ug/kg	69.5	17.0	1	04/04/19 12:06	04/04/19 17:15	108-88-3	
1,2,3-Trichlorobenzene	**<11.1**	ug/kg	69.5	11.1	1	04/04/19 12:06	04/04/19 17:15	87-61-6	
1,2,4-Trichlorobenzene	**<15.4**	ug/kg	69.5	15.4	1	04/04/19 12:06	04/04/19 17:15	120-82-1	
1,1,1-Trichloroethane	**<32.4**	ug/kg	69.5	32.4	1	04/04/19 12:06	04/04/19 17:15	71-55-6	
1,1,2-Trichloroethane	**<8.3**	ug/kg	69.5	8.3	1	04/04/19 12:06	04/04/19 17:15	79-00-5	
Trichloroethene	**<10.7**	ug/kg	69.5	10.7	1	04/04/19 12:06	04/04/19 17:15	79-01-6	
Trichlorofluoromethane	**<121**	ug/kg	278	121	1	04/04/19 12:06	04/04/19 17:15	75-69-4	
1,2,3-Trichloropropane	**<18.2**	ug/kg	278	18.2	1	04/04/19 12:06	04/04/19 17:15	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<80.6**	ug/kg	278	80.6	1	04/04/19 12:06	04/04/19 17:15	76-13-1	
1,2,4-Trimethylbenzene	**<13.9**	ug/kg	69.5	13.9	1	04/04/19 12:06	04/04/19 17:15	95-63-6	
1,3,5-Trimethylbenzene	**<11.1**	ug/kg	69.5	11.1	1	04/04/19 12:06	04/04/19 17:15	108-67-8	
Vinyl chloride	**<13.7**	ug/kg	27.8	13.7	1	04/04/19 12:06	04/04/19 17:15	75-01-4	
Xylene (Total)	**<16.1**	ug/kg	208	16.1	1	04/04/19 12:06	04/04/19 17:15	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	109	%.	75-125		1	04/04/19 12:06	04/04/19 17:15	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1	04/04/19 12:06	04/04/19 17:15	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125		1	04/04/19 12:06	04/04/19 17:15	460-00-4	

Sample: FL-SB-09 (0-8ft) **Lab ID: 10469445009** Collected: 04/02/19 14:30 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**53.1**	mg/kg	15.5	4.0	2	04/04/19 17:58	04/05/19 17:38		T6
Surrogates									
n-Triacontane (S)	130	%.	50-150		2	04/04/19 17:58	04/05/19 17:38	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.5**	mg/kg	11.3	1.5	1	04/12/19 15:21	04/13/19 01:59		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%.	80-150		1	04/12/19 15:21	04/13/19 01:59	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**61.2**	mg/kg	0.52	0.043	1	04/05/19 11:58	04/09/19 13:51	7440-39-3	
Silver	**<0.038**	mg/kg	0.52	0.038	1	04/05/19 11:58	04/09/19 13:51	7440-22-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-09 (0-8ft) **Lab ID: 10469445009** Collected: 04/02/19 14:30 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**3.6**	mg/kg	0.57	0.20	20	04/05/19 11:58	04/16/19 00:22	7440-38-2	
Cadmium	**0.19**	mg/kg	0.091	0.030	20	04/05/19 11:58	04/16/19 00:22	7440-43-9	
Chromium	**12.4**	mg/kg	0.57	0.14	20	04/05/19 11:58	04/16/19 00:22	7440-47-3	
Lead	**19.2**	mg/kg	0.23	0.065	20	04/05/19 11:58	04/16/19 00:22	7439-92-1	
Selenium	**0.92**	mg/kg	0.57	0.17	20	04/05/19 11:58	04/16/19 00:22	7782-49-2	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.031**	mg/kg	0.021	0.0084	1	04/05/19 12:48	04/15/19 13:31	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**12.6**	%	0.10	0.10	1		04/05/19 13:33		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**96.0**	ug/kg	56.9	2.3	5	04/04/19 09:08	04/05/19 20:48	83-32-9	
Acenaphthylene	**188**	ug/kg	56.9	2.8	5	04/04/19 09:08	04/05/19 20:48	208-96-8	
Anthracene	**361**	ug/kg	56.9	2.7	5	04/04/19 09:08	04/05/19 20:48	120-12-7	
Benzo(a)anthracene	**807**	ug/kg	56.9	6.1	5	04/04/19 09:08	04/05/19 20:48	56-55-3	
Benzo(a)pyrene	**797**	ug/kg	56.9	3.9	5	04/04/19 09:08	04/05/19 20:48	50-32-8	
Benzo(b)fluoranthene	**829**	ug/kg	56.9	2.1	5	04/04/19 09:08	04/05/19 20:48	205-99-2	
Benzo(e)pyrene	**485**	ug/kg	56.9	4.1	5	04/04/19 09:08	04/05/19 20:48	192-97-2	N2
Benzo(g,h,i)perylene	**499**	ug/kg	56.9	3.6	5	04/04/19 09:08	04/05/19 20:48	191-24-2	
Benzo(k)fluoranthene	**437**	ug/kg	56.9	4.8	5	04/04/19 09:08	04/05/19 20:48	207-08-9	
Chrysene	**718**	ug/kg	56.9	7.7	5	04/04/19 09:08	04/05/19 20:48	218-01-9	
Dibenz(a,h)anthracene	**182**	ug/kg	56.9	2.6	5	04/04/19 09:08	04/05/19 20:48	53-70-3	
Fluoranthene	**1640**	ug/kg	56.9	2.4	5	04/04/19 09:08	04/05/19 20:48	206-44-0	
Fluorene	**165**	ug/kg	56.9	1.8	5	04/04/19 09:08	04/05/19 20:48	86-73-7	
Indeno(1,2,3-cd)pyrene	**427**	ug/kg	56.9	3.8	5	04/04/19 09:08	04/05/19 20:48	193-39-5	
Naphthalene	**<4.4**	ug/kg	56.9	4.4	5	04/04/19 09:08	04/05/19 20:48	91-20-3	
Phenanthrene	**673**	ug/kg	56.9	10.9	5	04/04/19 09:08	04/05/19 20:48	85-01-8	
Pyrene	**1100**	ug/kg	56.9	8.7	5	04/04/19 09:08	04/05/19 20:48	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	83	%.	30-125		5	04/04/19 09:08	04/05/19 20:48	321-60-8	
p-Terphenyl-d14 (S)	77	%.	30-125		5	04/04/19 09:08	04/05/19 20:48	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<369**	ug/kg	1180	369	1	04/04/19 12:06	04/04/19 17:33	67-64-1	
Allyl chloride	**<49.6**	ug/kg	237	49.6	1	04/04/19 12:06	04/04/19 17:33	107-05-1	
Benzene	**<3.3**	ug/kg	23.7	3.3	1	04/04/19 12:06	04/04/19 17:33	71-43-2	
Bromobenzene	**<3.6**	ug/kg	59.2	3.6	1	04/04/19 12:06	04/04/19 17:33	108-86-1	
Bromochloromethane	**<20.5**	ug/kg	59.2	20.5	1	04/04/19 12:06	04/04/19 17:33	74-97-5	
Bromodichloromethane	**<20.3**	ug/kg	59.2	20.3	1	04/04/19 12:06	04/04/19 17:33	75-27-4	
Bromoform	**<89.7**	ug/kg	237	89.7	1	04/04/19 12:06	04/04/19 17:33	75-25-2	
Bromomethane	**<69.3**	ug/kg	592	69.3	1	04/04/19 12:06	04/04/19 17:33	74-83-9	
2-Butanone (MEK)	**<31.5**	ug/kg	296	31.5	1	04/04/19 12:06	04/04/19 17:33	78-93-3	
n-Butylbenzene	**<28.2**	ug/kg	59.2	28.2	1	04/04/19 12:06	04/04/19 17:33	104-51-8	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-09 (0-8ft) **Lab ID: 10469445009** Collected: 04/02/19 14:30 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
sec-Butylbenzene	**<11.4**	ug/kg	59.2	11.4	1	04/04/19 12:06	04/04/19 17:33	135-98-8	
tert-Butylbenzene	**<11.4**	ug/kg	59.2	11.4	1	04/04/19 12:06	04/04/19 17:33	98-06-6	
Carbon tetrachloride	**<28.3**	ug/kg	237	28.3	1	04/04/19 12:06	04/04/19 17:33	56-23-5	
Chlorobenzene	**<3.3**	ug/kg	59.2	3.3	1	04/04/19 12:06	04/04/19 17:33	108-90-7	
Chloroethane	**<30.8**	ug/kg	592	30.8	1	04/04/19 12:06	04/04/19 17:33	75-00-3	
Chloroform	**<29.6**	ug/kg	59.2	29.6	1	04/04/19 12:06	04/04/19 17:33	67-66-3	
Chloromethane	**<14.2**	ug/kg	237	14.2	1	04/04/19 12:06	04/04/19 17:33	74-87-3	
2-Chlorotoluene	**<2.9**	ug/kg	59.2	2.9	1	04/04/19 12:06	04/04/19 17:33	95-49-8	
4-Chlorotoluene	**<3.0**	ug/kg	59.2	3.0	1	04/04/19 12:06	04/04/19 17:33	106-43-4	
1,2-Dibromo-3-chloropropane	**<206**	ug/kg	592	206	1	04/04/19 12:06	04/04/19 17:33	96-12-8	
Dibromochloromethane	**<6.9**	ug/kg	237	6.9	1	04/04/19 12:06	04/04/19 17:33	124-48-1	
1,2-Dibromoethane (EDB)	**<6.2**	ug/kg	59.2	6.2	1	04/04/19 12:06	04/04/19 17:33	106-93-4	
Dibromomethane	**<10.9**	ug/kg	59.2	10.9	1	04/04/19 12:06	04/04/19 17:33	74-95-3	
1,2-Dichlorobenzene	**<2.4**	ug/kg	59.2	2.4	1	04/04/19 12:06	04/04/19 17:33	95-50-1	
1,3-Dichlorobenzene	**<2.2**	ug/kg	59.2	2.2	1	04/04/19 12:06	04/04/19 17:33	541-73-1	
1,4-Dichlorobenzene	**<3.7**	ug/kg	59.2	3.7	1	04/04/19 12:06	04/04/19 17:33	106-46-7	
Dichlorodifluoromethane	**<19.2**	ug/kg	237	19.2	1	04/04/19 12:06	04/04/19 17:33	75-71-8	
1,1-Dichloroethane	**<6.6**	ug/kg	59.2	6.6	1	04/04/19 12:06	04/04/19 17:33	75-34-3	
1,2-Dichloroethane	**<6.5**	ug/kg	59.2	6.5	1	04/04/19 12:06	04/04/19 17:33	107-06-2	
1,1-Dichloroethene	**<17.8**	ug/kg	59.2	17.8	1	04/04/19 12:06	04/04/19 17:33	75-35-4	
cis-1,2-Dichloroethene	**<9.8**	ug/kg	59.2	9.8	1	04/04/19 12:06	04/04/19 17:33	156-59-2	
trans-1,2-Dichloroethene	**<27.7**	ug/kg	59.2	27.7	1	04/04/19 12:06	04/04/19 17:33	156-60-5	
Dichlorofluoromethane	**<81.9**	ug/kg	592	81.9	1	04/04/19 12:06	04/04/19 17:33	75-43-4	N2
1,2-Dichloropropane	**<10.2**	ug/kg	59.2	10.2	1	04/04/19 12:06	04/04/19 17:33	78-87-5	
1,3-Dichloropropane	**<8.2**	ug/kg	59.2	8.2	1	04/04/19 12:06	04/04/19 17:33	142-28-9	
2,2-Dichloropropane	**<7.4**	ug/kg	237	7.4	1	04/04/19 12:06	04/04/19 17:33	594-20-7	
1,1-Dichloropropene	**<27.4**	ug/kg	59.2	27.4	1	04/04/19 12:06	04/04/19 17:33	563-58-6	
cis-1,3-Dichloropropene	**<8.5**	ug/kg	59.2	8.5	1	04/04/19 12:06	04/04/19 17:33	10061-01-5	
trans-1,3-Dichloropropene	**<8.2**	ug/kg	59.2	8.2	1	04/04/19 12:06	04/04/19 17:33	10061-02-6	
Diethyl ether (Ethyl ether)	**<36.3**	ug/kg	237	36.3	1	04/04/19 12:06	04/04/19 17:33	60-29-7	
Ethylbenzene	**<3.2**	ug/kg	59.2	3.2	1	04/04/19 12:06	04/04/19 17:33	100-41-4	
Hexachloro-1,3-butadiene	**<14.5**	ug/kg	296	14.5	1	04/04/19 12:06	04/04/19 17:33	87-68-3	
Isopropylbenzene (Cumene)	**<2.6**	ug/kg	59.2	2.6	1	04/04/19 12:06	04/04/19 17:33	98-82-8	
p-Isopropyltoluene	**<18.0**	ug/kg	59.2	18.0	1	04/04/19 12:06	04/04/19 17:33	99-87-6	
Methylene Chloride	**<112**	ug/kg	237	112	1	04/04/19 12:06	04/04/19 17:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<12.3**	ug/kg	296	12.3	1	04/04/19 12:06	04/04/19 17:33	108-10-1	
Methyl-tert-butyl ether	**<7.1**	ug/kg	59.2	7.1	1	04/04/19 12:06	04/04/19 17:33	1634-04-4	
Naphthalene	**62.1J**	ug/kg	237	55.5	1	04/04/19 12:06	04/04/19 17:33	91-20-3	
n-Propylbenzene	**<3.2**	ug/kg	59.2	3.2	1	04/04/19 12:06	04/04/19 17:33	103-65-1	
Styrene	**<2.7**	ug/kg	59.2	2.7	1	04/04/19 12:06	04/04/19 17:33	100-42-5	
1,1,1,2-Tetrachloroethane	**<18.6**	ug/kg	59.2	18.6	1	04/04/19 12:06	04/04/19 17:33	630-20-6	
1,1,2,2-Tetrachloroethane	**<10.4**	ug/kg	59.2	10.4	1	04/04/19 12:06	04/04/19 17:33	79-34-5	
Tetrachloroethene	**<20.9**	ug/kg	59.2	20.9	1	04/04/19 12:06	04/04/19 17:33	127-18-4	
Tetrahydrofuran	**<86.1**	ug/kg	2370	86.1	1	04/04/19 12:06	04/04/19 17:33	109-99-9	
Toluene	**<14.5**	ug/kg	59.2	14.5	1	04/04/19 12:06	04/04/19 17:33	108-88-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-09 (0-8ft) **Lab ID: 10469445009** Collected: 04/02/19 14:30 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,2,3-Trichlorobenzene	**<9.5**	ug/kg	59.2	9.5	1	04/04/19 12:06	04/04/19 17:33	87-61-6	
1,2,4-Trichlorobenzene	**<13.2**	ug/kg	59.2	13.2	1	04/04/19 12:06	04/04/19 17:33	120-82-1	
1,1,1-Trichloroethane	**<27.6**	ug/kg	59.2	27.6	1	04/04/19 12:06	04/04/19 17:33	71-55-6	
1,1,2-Trichloroethane	**<7.1**	ug/kg	59.2	7.1	1	04/04/19 12:06	04/04/19 17:33	79-00-5	
Trichloroethene	**<9.1**	ug/kg	59.2	9.1	1	04/04/19 12:06	04/04/19 17:33	79-01-6	
Trichlorofluoromethane	**<103**	ug/kg	237	103	1	04/04/19 12:06	04/04/19 17:33	75-69-4	
1,2,3-Trichloropropane	**<15.5**	ug/kg	237	15.5	1	04/04/19 12:06	04/04/19 17:33	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<68.7**	ug/kg	237	68.7	1	04/04/19 12:06	04/04/19 17:33	76-13-1	
1,2,4-Trimethylbenzene	**<11.8**	ug/kg	59.2	11.8	1	04/04/19 12:06	04/04/19 17:33	95-63-6	
1,3,5-Trimethylbenzene	**<9.4**	ug/kg	59.2	9.4	1	04/04/19 12:06	04/04/19 17:33	108-67-8	
Vinyl chloride	**<11.7**	ug/kg	23.7	11.7	1	04/04/19 12:06	04/04/19 17:33	75-01-4	
Xylene (Total)	**<13.7**	ug/kg	178	13.7	1	04/04/19 12:06	04/04/19 17:33	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%.	75-125		1	04/04/19 12:06	04/04/19 17:33	17060-07-0	
Toluene-d8 (S)	107	%.	75-125		1	04/04/19 12:06	04/04/19 17:33	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1	04/04/19 12:06	04/04/19 17:33	460-00-4	

Sample: FL-SB-10 (0-25ft) **Lab ID: 10469445010** Collected: 04/02/19 15:15 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**56.4**	mg/kg	8.9	2.3	1	04/04/19 17:58	04/06/19 12:22		T6
Surrogates									
n-Triacontane (S)	124	%.	50-150		1	04/04/19 17:58	04/06/19 12:22	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.5**	mg/kg	11.9	1.5	1	04/12/19 15:21	04/12/19 21:06		
Surrogates									
a,a,a-Trifluorotoluene (S)	96	%.	80-150		1	04/12/19 15:21	04/12/19 21:06	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**50.1**	mg/kg	0.56	0.047	1	04/05/19 11:58	04/09/19 13:54	7440-39-3	
Silver	**<0.041**	mg/kg	0.56	0.041	1	04/05/19 11:58	04/09/19 13:54	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**4.1**	mg/kg	0.55	0.19	20	04/05/19 11:58	04/16/19 00:26	7440-38-2	
Cadmium	**0.11**	mg/kg	0.087	0.029	20	04/05/19 11:58	04/16/19 00:26	7440-43-9	
Chromium	**14.0**	mg/kg	0.55	0.14	20	04/05/19 11:58	04/16/19 00:26	7440-47-3	
Lead	**13.9**	mg/kg	0.22	0.063	20	04/05/19 11:58	04/16/19 00:26	7439-92-1	
Selenium	**0.89**	mg/kg	0.55	0.16	20	04/05/19 11:58	04/16/19 00:26	7782-49-2	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-10 (0-25ft) **Lab ID: 10469445010** Collected: 04/02/19 15:15 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.013J**	mg/kg	0.020	0.0080	1	04/05/19 12:48	04/15/19 13:33	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**10.9**	%	0.10	0.10	1		04/05/19 13:33		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**83.3**	ug/kg	56.1	2.3	5	04/04/19 09:08	04/05/19 21:09	83-32-9	
Acenaphthylene	**277**	ug/kg	56.1	2.8	5	04/04/19 09:08	04/05/19 21:09	208-96-8	
Anthracene	**655**	ug/kg	56.1	2.6	5	04/04/19 09:08	04/05/19 21:09	120-12-7	
Benzo(a)anthracene	**1040**	ug/kg	56.1	6.1	5	04/04/19 09:08	04/05/19 21:09	56-55-3	
Benzo(a)pyrene	**842**	ug/kg	56.1	3.9	5	04/04/19 09:08	04/05/19 21:09	50-32-8	
Benzo(b)fluoranthene	**965**	ug/kg	56.1	2.1	5	04/04/19 09:08	04/05/19 21:09	205-99-2	
Benzo(e)pyrene	**526**	ug/kg	56.1	4.0	5	04/04/19 09:08	04/05/19 21:09	192-97-2	N2
Benzo(g,h,i)perylene	**503**	ug/kg	56.1	3.6	5	04/04/19 09:08	04/05/19 21:09	191-24-2	
Benzo(k)fluoranthene	**570**	ug/kg	56.1	4.7	5	04/04/19 09:08	04/05/19 21:09	207-08-9	
Chrysene	**893**	ug/kg	56.1	7.6	5	04/04/19 09:08	04/05/19 21:09	218-01-9	
Dibenz(a,h)anthracene	**180**	ug/kg	56.1	2.6	5	04/04/19 09:08	04/05/19 21:09	53-70-3	
Fluoranthene	**2920**	ug/kg	280	12.0	25	04/04/19 09:08	04/08/19 14:07	206-44-0	
Fluorene	**415**	ug/kg	56.1	1.8	5	04/04/19 09:08	04/05/19 21:09	86-73-7	
Indeno(1,2,3-cd)pyrene	**472**	ug/kg	56.1	3.8	5	04/04/19 09:08	04/05/19 21:09	193-39-5	
Naphthalene	**107**	ug/kg	56.1	4.3	5	04/04/19 09:08	04/05/19 21:09	91-20-3	
Phenanthrene	**2170**	ug/kg	280	53.8	25	04/04/19 09:08	04/08/19 14:07	85-01-8	
Pyrene	**1680**	ug/kg	56.1	8.6	5	04/04/19 09:08	04/05/19 21:09	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	94	%.	30-125		5	04/04/19 09:08	04/05/19 21:09	321-60-8	
p-Terphenyl-d14 (S)	84	%.	30-125		5	04/04/19 09:08	04/05/19 21:09	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<335**	ug/kg	1080	335	1	04/04/19 12:06	04/04/19 17:52	67-64-1	
Allyl chloride	**<45.2**	ug/kg	216	45.2	1	04/04/19 12:06	04/04/19 17:52	107-05-1	
Benzene	**<3.0**	ug/kg	21.6	3.0	1	04/04/19 12:06	04/04/19 17:52	71-43-2	
Bromobenzene	**<3.3**	ug/kg	53.9	3.3	1	04/04/19 12:06	04/04/19 17:52	108-86-1	
Bromochloromethane	**<18.7**	ug/kg	53.9	18.7	1	04/04/19 12:06	04/04/19 17:52	74-97-5	
Bromodichloromethane	**<18.4**	ug/kg	53.9	18.4	1	04/04/19 12:06	04/04/19 17:52	75-27-4	
Bromoform	**<81.6**	ug/kg	216	81.6	1	04/04/19 12:06	04/04/19 17:52	75-25-2	
Bromomethane	**<63.1**	ug/kg	539	63.1	1	04/04/19 12:06	04/04/19 17:52	74-83-9	
2-Butanone (MEK)	**<28.7**	ug/kg	270	28.7	1	04/04/19 12:06	04/04/19 17:52	78-93-3	
n-Butylbenzene	**<25.7**	ug/kg	53.9	25.7	1	04/04/19 12:06	04/04/19 17:52	104-51-8	
sec-Butylbenzene	**<10.3**	ug/kg	53.9	10.3	1	04/04/19 12:06	04/04/19 17:52	135-98-8	
tert-Butylbenzene	**<10.4**	ug/kg	53.9	10.4	1	04/04/19 12:06	04/04/19 17:52	98-06-6	
Carbon tetrachloride	**<25.8**	ug/kg	216	25.8	1	04/04/19 12:06	04/04/19 17:52	56-23-5	
Chlorobenzene	**<3.0**	ug/kg	53.9	3.0	1	04/04/19 12:06	04/04/19 17:52	108-90-7	
Chloroethane	**<28.0**	ug/kg	539	28.0	1	04/04/19 12:06	04/04/19 17:52	75-00-3	
Chloroform	**<27.0**	ug/kg	53.9	27.0	1	04/04/19 12:06	04/04/19 17:52	67-66-3	
Chloromethane	**<12.9**	ug/kg	216	12.9	1	04/04/19 12:06	04/04/19 17:52	74-87-3	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-10 (0-25ft) **Lab ID: 10469445010** Collected: 04/02/19 15:15 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
2-Chlorotoluene	**<2.7**	ug/kg	53.9	2.7	1	04/04/19 12:06	04/04/19 17:52	95-49-8	
4-Chlorotoluene	**<2.8**	ug/kg	53.9	2.8	1	04/04/19 12:06	04/04/19 17:52	106-43-4	
1,2-Dibromo-3-chloropropane	**<188**	ug/kg	539	188	1	04/04/19 12:06	04/04/19 17:52	96-12-8	
Dibromochloromethane	**<6.3**	ug/kg	216	6.3	1	04/04/19 12:06	04/04/19 17:52	124-48-1	
1,2-Dibromoethane (EDB)	**<5.7**	ug/kg	53.9	5.7	1	04/04/19 12:06	04/04/19 17:52	106-93-4	
Dibromomethane	**<9.9**	ug/kg	53.9	9.9	1	04/04/19 12:06	04/04/19 17:52	74-95-3	
1,2-Dichlorobenzene	**<2.2**	ug/kg	53.9	2.2	1	04/04/19 12:06	04/04/19 17:52	95-50-1	
1,3-Dichlorobenzene	**<2.0**	ug/kg	53.9	2.0	1	04/04/19 12:06	04/04/19 17:52	541-73-1	
1,4-Dichlorobenzene	**<3.3**	ug/kg	53.9	3.3	1	04/04/19 12:06	04/04/19 17:52	106-46-7	
Dichlorodifluoromethane	**<17.5**	ug/kg	216	17.5	1	04/04/19 12:06	04/04/19 17:52	75-71-8	
1,1-Dichloroethane	**<6.1**	ug/kg	53.9	6.1	1	04/04/19 12:06	04/04/19 17:52	75-34-3	
1,2-Dichloroethane	**<5.9**	ug/kg	53.9	5.9	1	04/04/19 12:06	04/04/19 17:52	107-06-2	
1,1-Dichloroethene	**<16.2**	ug/kg	53.9	16.2	1	04/04/19 12:06	04/04/19 17:52	75-35-4	
cis-1,2-Dichloroethene	**<8.9**	ug/kg	53.9	8.9	1	04/04/19 12:06	04/04/19 17:52	156-59-2	
trans-1,2-Dichloroethene	**<25.2**	ug/kg	53.9	25.2	1	04/04/19 12:06	04/04/19 17:52	156-60-5	
Dichlorofluoromethane	**<74.5**	ug/kg	539	74.5	1	04/04/19 12:06	04/04/19 17:52	75-43-4	N2
1,2-Dichloropropane	**<9.3**	ug/kg	53.9	9.3	1	04/04/19 12:06	04/04/19 17:52	78-87-5	
1,3-Dichloropropane	**<7.5**	ug/kg	53.9	7.5	1	04/04/19 12:06	04/04/19 17:52	142-28-9	
2,2-Dichloropropane	**<6.7**	ug/kg	216	6.7	1	04/04/19 12:06	04/04/19 17:52	594-20-7	
1,1-Dichloropropene	**<24.9**	ug/kg	53.9	24.9	1	04/04/19 12:06	04/04/19 17:52	563-58-6	
cis-1,3-Dichloropropene	**<7.7**	ug/kg	53.9	7.7	1	04/04/19 12:06	04/04/19 17:52	10061-01-5	
trans-1,3-Dichloropropene	**<7.5**	ug/kg	53.9	7.5	1	04/04/19 12:06	04/04/19 17:52	10061-02-6	
Diethyl ether (Ethyl ether)	**<33.0**	ug/kg	216	33.0	1	04/04/19 12:06	04/04/19 17:52	60-29-7	
Ethylbenzene	**<2.9**	ug/kg	53.9	2.9	1	04/04/19 12:06	04/04/19 17:52	100-41-4	
Hexachloro-1,3-butadiene	**<13.2**	ug/kg	270	13.2	1	04/04/19 12:06	04/04/19 17:52	87-68-3	
Isopropylbenzene (Cumene)	**<2.4**	ug/kg	53.9	2.4	1	04/04/19 12:06	04/04/19 17:52	98-82-8	
p-Isopropyltoluene	**<16.4**	ug/kg	53.9	16.4	1	04/04/19 12:06	04/04/19 17:52	99-87-6	
Methylene Chloride	**<101**	ug/kg	216	101	1	04/04/19 12:06	04/04/19 17:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<11.2**	ug/kg	270	11.2	1	04/04/19 12:06	04/04/19 17:52	108-10-1	
Methyl-tert-butyl ether	**<6.4**	ug/kg	53.9	6.4	1	04/04/19 12:06	04/04/19 17:52	1634-04-4	
Naphthalene	**115J**	ug/kg	216	50.5	1	04/04/19 12:06	04/04/19 17:52	91-20-3	
n-Propylbenzene	**<2.9**	ug/kg	53.9	2.9	1	04/04/19 12:06	04/04/19 17:52	103-65-1	
Styrene	**<2.5**	ug/kg	53.9	2.5	1	04/04/19 12:06	04/04/19 17:52	100-42-5	
1,1,1,2-Tetrachloroethane	**<16.9**	ug/kg	53.9	16.9	1	04/04/19 12:06	04/04/19 17:52	630-20-6	
1,1,2,2-Tetrachloroethane	**<9.5**	ug/kg	53.9	9.5	1	04/04/19 12:06	04/04/19 17:52	79-34-5	
Tetrachloroethene	**<19.0**	ug/kg	53.9	19.0	1	04/04/19 12:06	04/04/19 17:52	127-18-4	
Tetrahydrofuran	**<78.4**	ug/kg	2160	78.4	1	04/04/19 12:06	04/04/19 17:52	109-99-9	
Toluene	**<13.2**	ug/kg	53.9	13.2	1	04/04/19 12:06	04/04/19 17:52	108-88-3	
1,2,3-Trichlorobenzene	**<8.6**	ug/kg	53.9	8.6	1	04/04/19 12:06	04/04/19 17:52	87-61-6	
1,2,4-Trichlorobenzene	**<12.0**	ug/kg	53.9	12.0	1	04/04/19 12:06	04/04/19 17:52	120-82-1	
1,1,1-Trichloroethane	**<25.1**	ug/kg	53.9	25.1	1	04/04/19 12:06	04/04/19 17:52	71-55-6	
1,1,2-Trichloroethane	**<6.4**	ug/kg	53.9	6.4	1	04/04/19 12:06	04/04/19 17:52	79-00-5	
Trichloroethene	**<8.3**	ug/kg	53.9	8.3	1	04/04/19 12:06	04/04/19 17:52	79-01-6	
Trichlorofluoromethane	**<94.0**	ug/kg	216	94.0	1	04/04/19 12:06	04/04/19 17:52	75-69-4	
1,2,3-Trichloropropane	**<14.1**	ug/kg	216	14.1	1	04/04/19 12:06	04/04/19 17:52	96-18-4	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-10 (0-25ft) **Lab ID: 10469445010** Collected: 04/02/19 15:15 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,2-Trichlorotrifluoroethane	**<62.6**	ug/kg	216	62.6	1	04/04/19 12:06	04/04/19 17:52	76-13-1	
1,2,4-Trimethylbenzene	**<10.8**	ug/kg	53.9	10.8	1	04/04/19 12:06	04/04/19 17:52	95-63-6	
1,3,5-Trimethylbenzene	**<8.6**	ug/kg	53.9	8.6	1	04/04/19 12:06	04/04/19 17:52	108-67-8	
Vinyl chloride	**<10.6**	ug/kg	21.6	10.6	1	04/04/19 12:06	04/04/19 17:52	75-01-4	
Xylene (Total)	**<12.5**	ug/kg	162	12.5	1	04/04/19 12:06	04/04/19 17:52	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	110	%.	75-125		1	04/04/19 12:06	04/04/19 17:52	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1	04/04/19 12:06	04/04/19 17:52	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1	04/04/19 12:06	04/04/19 17:52	460-00-4	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**7.0**	%	0.10	0.10	1		04/16/19 09:11		
Total Organic Carbon	**8980**	mg/kg	6380	1910	1		04/16/19 09:11	7440-44-0	
Total Organic Carbon	**9630**	mg/kg	6610	1980	1		04/16/19 09:17	7440-44-0	
Mean Total Organic Carbon	**9300**	mg/kg	6490	1950	1		04/16/19 09:11	7440-44-0	

Sample: FL-SB-11 (0-20ft) **Lab ID: 10469445011** Collected: 04/02/19 16:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**28.9**	mg/kg	10.0	2.6	1	04/04/19 17:58	04/05/19 17:45		T6
Surrogates									
n-Triacontane (S)	99	%.	50-150		1	04/04/19 17:58	04/05/19 17:45	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.6**	mg/kg	12.5	1.6	1	04/12/19 15:21	04/13/19 02:22		
Surrogates									
a,a,a-Trifluorotoluene (S)	94	%.	80-150		1	04/12/19 15:21	04/13/19 02:22	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**47.8**	mg/kg	0.58	0.048	1	04/05/19 11:58	04/09/19 13:57	7440-39-3	
Silver	**<0.042**	mg/kg	0.58	0.042	1	04/05/19 11:58	04/09/19 13:57	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**3.9**	mg/kg	0.53	0.19	20	04/05/19 11:58	04/16/19 00:31	7440-38-2	
Cadmium	**0.14**	mg/kg	0.084	0.028	20	04/05/19 11:58	04/16/19 00:31	7440-43-9	
Chromium	**15.2**	mg/kg	0.53	0.13	20	04/05/19 11:58	04/16/19 00:31	7440-47-3	
Lead	**16.0**	mg/kg	0.21	0.061	20	04/05/19 11:58	04/16/19 00:31	7439-92-1	
Selenium	**0.98**	mg/kg	0.53	0.15	20	04/05/19 11:58	04/16/19 00:31	7782-49-2	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-11 (0-20ft) **Lab ID: 10469445011** Collected: 04/02/19 16:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.017J**	mg/kg	0.022	0.0088	1	04/05/19 12:48	04/15/19 13:35	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**13.9**	%	0.10	0.10	1		04/05/19 13:33		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**359**	ug/kg	57.6	2.4	5	04/04/19 09:08	04/05/19 21:30	83-32-9	
Acenaphthylene	**<2.8**	ug/kg	57.6	2.8	5	04/04/19 09:08	04/05/19 21:30	208-96-8	
Anthracene	**334**	ug/kg	57.6	2.7	5	04/04/19 09:08	04/05/19 21:30	120-12-7	
Benzo(a)anthracene	**108**	ug/kg	57.6	6.2	5	04/04/19 09:08	04/05/19 21:30	56-55-3	
Benzo(a)pyrene	**78.6**	ug/kg	57.6	4.0	5	04/04/19 09:08	04/05/19 21:30	50-32-8	
Benzo(b)fluoranthene	**89.5**	ug/kg	57.6	2.1	5	04/04/19 09:08	04/05/19 21:30	205-99-2	
Benzo(e)pyrene	**55.2J**	ug/kg	57.6	4.1	5	04/04/19 09:08	04/05/19 21:30	192-97-2	N2
Benzo(g,h,i)perylene	**55.0J**	ug/kg	57.6	3.6	5	04/04/19 09:08	04/05/19 21:30	191-24-2	
Benzo(k)fluoranthene	**50.7J**	ug/kg	57.6	4.9	5	04/04/19 09:08	04/05/19 21:30	207-08-9	
Chrysene	**118**	ug/kg	57.6	7.8	5	04/04/19 09:08	04/05/19 21:30	218-01-9	
Dibenz(a,h)anthracene	**<2.7**	ug/kg	57.6	2.7	5	04/04/19 09:08	04/05/19 21:30	53-70-3	
Fluoranthene	**523**	ug/kg	57.6	2.5	5	04/04/19 09:08	04/05/19 21:30	206-44-0	
Fluorene	**278**	ug/kg	57.6	1.8	5	04/04/19 09:08	04/05/19 21:30	86-73-7	
Indeno(1,2,3-cd)pyrene	**<3.9**	ug/kg	57.6	3.9	5	04/04/19 09:08	04/05/19 21:30	193-39-5	
Naphthalene	**170**	ug/kg	57.6	4.4	5	04/04/19 09:08	04/05/19 21:30	91-20-3	
Phenanthrene	**876**	ug/kg	57.6	11.1	5	04/04/19 09:08	04/05/19 21:30	85-01-8	
Pyrene	**340**	ug/kg	57.6	8.8	5	04/04/19 09:08	04/05/19 21:30	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	90	%.	30-125		5	04/04/19 09:08	04/05/19 21:30	321-60-8	
p-Terphenyl-d14 (S)	83	%.	30-125		5	04/04/19 09:08	04/05/19 21:30	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<392**	ug/kg	1260	392	1	04/04/19 12:06	04/04/19 18:09	67-64-1	
Allyl chloride	**<52.8**	ug/kg	252	52.8	1	04/04/19 12:06	04/04/19 18:09	107-05-1	
Benzene	**<3.6**	ug/kg	25.2	3.6	1	04/04/19 12:06	04/04/19 18:09	71-43-2	
Bromobenzene	**<3.9**	ug/kg	63.0	3.9	1	04/04/19 12:06	04/04/19 18:09	108-86-1	
Bromochloromethane	**<21.8**	ug/kg	63.0	21.8	1	04/04/19 12:06	04/04/19 18:09	74-97-5	
Bromodichloromethane	**<21.5**	ug/kg	63.0	21.5	1	04/04/19 12:06	04/04/19 18:09	75-27-4	
Bromoform	**<95.4**	ug/kg	252	95.4	1	04/04/19 12:06	04/04/19 18:09	75-25-2	
Bromomethane	**<73.7**	ug/kg	630	73.7	1	04/04/19 12:06	04/04/19 18:09	74-83-9	
2-Butanone (MEK)	**<33.5**	ug/kg	315	33.5	1	04/04/19 12:06	04/04/19 18:09	78-93-3	
n-Butylbenzene	**<30.0**	ug/kg	63.0	30.0	1	04/04/19 12:06	04/04/19 18:09	104-51-8	
sec-Butylbenzene	**<12.1**	ug/kg	63.0	12.1	1	04/04/19 12:06	04/04/19 18:09	135-98-8	
tert-Butylbenzene	**<12.1**	ug/kg	63.0	12.1	1	04/04/19 12:06	04/04/19 18:09	98-06-6	
Carbon tetrachloride	**<30.1**	ug/kg	252	30.1	1	04/04/19 12:06	04/04/19 18:09	56-23-5	
Chlorobenzene	**<3.6**	ug/kg	63.0	3.6	1	04/04/19 12:06	04/04/19 18:09	108-90-7	
Chloroethane	**<32.8**	ug/kg	630	32.8	1	04/04/19 12:06	04/04/19 18:09	75-00-3	
Chloroform	**<31.5**	ug/kg	63.0	31.5	1	04/04/19 12:06	04/04/19 18:09	67-66-3	
Chloromethane	**<15.1**	ug/kg	252	15.1	1	04/04/19 12:06	04/04/19 18:09	74-87-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-11 (0-20ft) **Lab ID: 10469445011** Collected: 04/02/19 16:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
2-Chlorotoluene	**<3.1**	ug/kg	63.0	3.1	1	04/04/19 12:06	04/04/19 18:09	95-49-8	
4-Chlorotoluene	**<3.2**	ug/kg	63.0	3.2	1	04/04/19 12:06	04/04/19 18:09	106-43-4	
1,2-Dibromo-3-chloropropane	**<219**	ug/kg	630	219	1	04/04/19 12:06	04/04/19 18:09	96-12-8	
Dibromochloromethane	**<7.3**	ug/kg	252	7.3	1	04/04/19 12:06	04/04/19 18:09	124-48-1	
1,2-Dibromoethane (EDB)	**<6.6**	ug/kg	63.0	6.6	1	04/04/19 12:06	04/04/19 18:09	106-93-4	
Dibromomethane	**<11.6**	ug/kg	63.0	11.6	1	04/04/19 12:06	04/04/19 18:09	74-95-3	
1,2-Dichlorobenzene	**<2.5**	ug/kg	63.0	2.5	1	04/04/19 12:06	04/04/19 18:09	95-50-1	
1,3-Dichlorobenzene	**<2.3**	ug/kg	63.0	2.3	1	04/04/19 12:06	04/04/19 18:09	541-73-1	
1,4-Dichlorobenzene	**<3.9**	ug/kg	63.0	3.9	1	04/04/19 12:06	04/04/19 18:09	106-46-7	
Dichlorodifluoromethane	**<20.4**	ug/kg	252	20.4	1	04/04/19 12:06	04/04/19 18:09	75-71-8	
1,1-Dichloroethane	**<7.1**	ug/kg	63.0	7.1	1	04/04/19 12:06	04/04/19 18:09	75-34-3	
1,2-Dichloroethane	**<6.9**	ug/kg	63.0	6.9	1	04/04/19 12:06	04/04/19 18:09	107-06-2	
1,1-Dichloroethene	**<18.9**	ug/kg	63.0	18.9	1	04/04/19 12:06	04/04/19 18:09	75-35-4	
cis-1,2-Dichloroethene	**<10.4**	ug/kg	63.0	10.4	1	04/04/19 12:06	04/04/19 18:09	156-59-2	
trans-1,2-Dichloroethene	**<29.5**	ug/kg	63.0	29.5	1	04/04/19 12:06	04/04/19 18:09	156-60-5	
Dichlorofluoromethane	**<87.1**	ug/kg	630	87.1	1	04/04/19 12:06	04/04/19 18:09	75-43-4	N2
1,2-Dichloropropane	**<10.9**	ug/kg	63.0	10.9	1	04/04/19 12:06	04/04/19 18:09	78-87-5	
1,3-Dichloropropane	**<8.7**	ug/kg	63.0	8.7	1	04/04/19 12:06	04/04/19 18:09	142-28-9	
2,2-Dichloropropane	**<7.9**	ug/kg	252	7.9	1	04/04/19 12:06	04/04/19 18:09	594-20-7	
1,1-Dichloropropene	**<29.1**	ug/kg	63.0	29.1	1	04/04/19 12:06	04/04/19 18:09	563-58-6	
cis-1,3-Dichloropropene	**<9.0**	ug/kg	63.0	9.0	1	04/04/19 12:06	04/04/19 18:09	10061-01-5	
trans-1,3-Dichloropropene	**<8.8**	ug/kg	63.0	8.8	1	04/04/19 12:06	04/04/19 18:09	10061-02-6	
Diethyl ether (Ethyl ether)	**<38.6**	ug/kg	252	38.6	1	04/04/19 12:06	04/04/19 18:09	60-29-7	
Ethylbenzene	**<3.4**	ug/kg	63.0	3.4	1	04/04/19 12:06	04/04/19 18:09	100-41-4	
Hexachloro-1,3-butadiene	**<15.4**	ug/kg	315	15.4	1	04/04/19 12:06	04/04/19 18:09	87-68-3	
Isopropylbenzene (Cumene)	**<2.8**	ug/kg	63.0	2.8	1	04/04/19 12:06	04/04/19 18:09	98-82-8	
p-Isopropyltoluene	**<19.2**	ug/kg	63.0	19.2	1	04/04/19 12:06	04/04/19 18:09	99-87-6	
Methylene Chloride	**<119**	ug/kg	252	119	1	04/04/19 12:06	04/04/19 18:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<13.1**	ug/kg	315	13.1	1	04/04/19 12:06	04/04/19 18:09	108-10-1	
Methyl-tert-butyl ether	**<7.5**	ug/kg	63.0	7.5	1	04/04/19 12:06	04/04/19 18:09	1634-04-4	
Naphthalene	**1320**	ug/kg	252	59.0	1	04/04/19 12:06	04/04/19 18:09	91-20-3	
n-Propylbenzene	**<3.4**	ug/kg	63.0	3.4	1	04/04/19 12:06	04/04/19 18:09	103-65-1	
Styrene	**<2.9**	ug/kg	63.0	2.9	1	04/04/19 12:06	04/04/19 18:09	100-42-5	
1,1,1,2-Tetrachloroethane	**<19.8**	ug/kg	63.0	19.8	1	04/04/19 12:06	04/04/19 18:09	630-20-6	
1,1,2,2-Tetrachloroethane	**<11.1**	ug/kg	63.0	11.1	1	04/04/19 12:06	04/04/19 18:09	79-34-5	
Tetrachloroethene	**<22.2**	ug/kg	63.0	22.2	1	04/04/19 12:06	04/04/19 18:09	127-18-4	
Tetrahydrofuran	**<91.6**	ug/kg	2520	91.6	1	04/04/19 12:06	04/04/19 18:09	109-99-9	
Toluene	**<15.4**	ug/kg	63.0	15.4	1	04/04/19 12:06	04/04/19 18:09	108-88-3	
1,2,3-Trichlorobenzene	**<10.1**	ug/kg	63.0	10.1	1	04/04/19 12:06	04/04/19 18:09	87-61-6	
1,2,4-Trichlorobenzene	**<14.0**	ug/kg	63.0	14.0	1	04/04/19 12:06	04/04/19 18:09	120-82-1	
1,1,1-Trichloroethane	**<29.4**	ug/kg	63.0	29.4	1	04/04/19 12:06	04/04/19 18:09	71-55-6	
1,1,2-Trichloroethane	**<7.5**	ug/kg	63.0	7.5	1	04/04/19 12:06	04/04/19 18:09	79-00-5	
Trichloroethene	**<9.7**	ug/kg	63.0	9.7	1	04/04/19 12:06	04/04/19 18:09	79-01-6	
Trichlorofluoromethane	**<110**	ug/kg	252	110	1	04/04/19 12:06	04/04/19 18:09	75-69-4	
1,2,3-Trichloropropane	**<16.5**	ug/kg	252	16.5	1	04/04/19 12:06	04/04/19 18:09	96-18-4	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-11 (0-20ft) **Lab ID: 10469445011** Collected: 04/02/19 16:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,2-Trichlorotrifluoroethane	**<73.1**	ug/kg	252	73.1	1	04/04/19 12:06	04/04/19 18:09	76-13-1	
1,2,4-Trimethylbenzene	**<12.6**	ug/kg	63.0	12.6	1	04/04/19 12:06	04/04/19 18:09	95-63-6	
1,3,5-Trimethylbenzene	**<10.0**	ug/kg	63.0	10.0	1	04/04/19 12:06	04/04/19 18:09	108-67-8	
Vinyl chloride	**<12.4**	ug/kg	25.2	12.4	1	04/04/19 12:06	04/04/19 18:09	75-01-4	
Xylene (Total)	**<14.6**	ug/kg	189	14.6	1	04/04/19 12:06	04/04/19 18:09	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	108	%.	75-125		1	04/04/19 12:06	04/04/19 18:09	17060-07-0	
Toluene-d8 (S)	108	%.	75-125		1	04/04/19 12:06	04/04/19 18:09	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1	04/04/19 12:06	04/04/19 18:09	460-00-4	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**11.5**	%	0.10	0.10	1		04/16/19 10:04		
Total Organic Carbon	**14700**	mg/kg	10900	3280	1		04/16/19 10:04	7440-44-0	
Total Organic Carbon	**16500**	mg/kg	10600	3180	1		04/16/19 10:09	7440-44-0	
Mean Total Organic Carbon	**15600**	mg/kg	10800	3230	1		04/16/19 10:04	7440-44-0	

Sample: FL-SB-12 (0-10ft) **Lab ID: 10469445012** Collected: 04/02/19 16:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**10.9**	mg/kg	9.2	2.4	1	04/04/19 17:58	04/05/19 17:51		T6
Surrogates									
n-Triacontane (S)	87	%.	50-150		1	04/04/19 17:58	04/05/19 17:51	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.5**	mg/kg	11.3	1.5	1	04/12/19 15:21	04/13/19 02:46		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%.	80-150		1	04/12/19 15:21	04/13/19 02:46	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**110**	mg/kg	0.55	0.046	1	04/05/19 11:58	04/09/19 13:59	7440-39-3	
Silver	**<0.040**	mg/kg	0.55	0.040	1	04/05/19 11:58	04/09/19 13:59	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**4.8**	mg/kg	0.56	0.20	20	04/05/19 11:58	04/16/19 00:35	7440-38-2	
Cadmium	**0.40**	mg/kg	0.090	0.030	20	04/05/19 11:58	04/16/19 00:35	7440-43-9	
Chromium	**16.4**	mg/kg	0.56	0.14	20	04/05/19 11:58	04/16/19 00:35	7440-47-3	
Lead	**12.1**	mg/kg	0.23	0.065	20	04/05/19 11:58	04/16/19 00:35	7439-92-1	
Selenium	**1.7**	mg/kg	0.56	0.16	20	04/05/19 11:58	04/16/19 00:35	7782-49-2	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-12 (0-10ft) **Lab ID: 10469445012** Collected: 04/02/19 16:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.015J**	mg/kg	0.021	0.0086	1	04/05/19 12:48	04/15/19 13:38	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**15.4**	%	0.10	0.10	1		04/05/19 13:33		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<0.48**	ug/kg	11.8	0.48	1	04/04/19 09:08	04/08/19 14:28	83-32-9	
Acenaphthylene	**<0.58**	ug/kg	11.8	0.58	1	04/04/19 09:08	04/08/19 14:28	208-96-8	
Anthracene	**31.7**	ug/kg	11.8	0.55	1	04/04/19 09:08	04/08/19 14:28	120-12-7	
Benzo(a)anthracene	**53.3**	ug/kg	11.8	1.3	1	04/04/19 09:08	04/08/19 14:28	56-55-3	
Benzo(a)pyrene	**58.6**	ug/kg	11.8	0.81	1	04/04/19 09:08	04/08/19 14:28	50-32-8	
Benzo(b)fluoranthene	**66.0**	ug/kg	11.8	0.44	1	04/04/19 09:08	04/08/19 14:28	205-99-2	
Benzo(e)pyrene	**41.6**	ug/kg	11.8	0.85	1	04/04/19 09:08	04/08/19 14:28	192-97-2	N2
Benzo(g,h,i)perylene	**52.6**	ug/kg	11.8	0.75	1	04/04/19 09:08	04/08/19 14:28	191-24-2	
Benzo(k)fluoranthene	**39.3**	ug/kg	11.8	1.0	1	04/04/19 09:08	04/08/19 14:28	207-08-9	
Chrysene	**59.9**	ug/kg	11.8	1.6	1	04/04/19 09:08	04/08/19 14:28	218-01-9	
Dibenz(a,h)anthracene	**<0.54**	ug/kg	11.8	0.54	1	04/04/19 09:08	04/08/19 14:28	53-70-3	
Fluoranthene	**153**	ug/kg	11.8	0.51	1	04/04/19 09:08	04/08/19 14:28	206-44-0	
Fluorene	**14.0**	ug/kg	11.8	0.37	1	04/04/19 09:08	04/08/19 14:28	86-73-7	
Indeno(1,2,3-cd)pyrene	**33.9**	ug/kg	11.8	0.79	1	04/04/19 09:08	04/08/19 14:28	193-39-5	
Naphthalene	**<0.91**	ug/kg	11.8	0.91	1	04/04/19 09:08	04/08/19 14:28	91-20-3	
Phenanthrene	**106**	ug/kg	11.8	2.3	1	04/04/19 09:08	04/08/19 14:28	85-01-8	
Pyrene	**110**	ug/kg	11.8	1.8	1	04/04/19 09:08	04/08/19 14:28	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	84	%.	30-125		1	04/04/19 09:08	04/08/19 14:28	321-60-8	
p-Terphenyl-d14 (S)	74	%.	30-125		1	04/04/19 09:08	04/08/19 14:28	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<352**	ug/kg	1130	352	1	04/04/19 12:06	04/04/19 18:28	67-64-1	
Allyl chloride	**<47.4**	ug/kg	226	47.4	1	04/04/19 12:06	04/04/19 18:28	107-05-1	
Benzene	**<3.2**	ug/kg	22.6	3.2	1	04/04/19 12:06	04/04/19 18:28	71-43-2	
Bromobenzene	**<3.5**	ug/kg	56.6	3.5	1	04/04/19 12:06	04/04/19 18:28	108-86-1	
Bromochloromethane	**<19.6**	ug/kg	56.6	19.6	1	04/04/19 12:06	04/04/19 18:28	74-97-5	
Bromodichloromethane	**<19.3**	ug/kg	56.6	19.3	1	04/04/19 12:06	04/04/19 18:28	75-27-4	
Bromoform	**<85.6**	ug/kg	226	85.6	1	04/04/19 12:06	04/04/19 18:28	75-25-2	
Bromomethane	**<66.2**	ug/kg	566	66.2	1	04/04/19 12:06	04/04/19 18:28	74-83-9	
2-Butanone (MEK)	**<30.1**	ug/kg	283	30.1	1	04/04/19 12:06	04/04/19 18:28	78-93-3	
n-Butylbenzene	**<26.9**	ug/kg	56.6	26.9	1	04/04/19 12:06	04/04/19 18:28	104-51-8	
sec-Butylbenzene	**<10.8**	ug/kg	56.6	10.8	1	04/04/19 12:06	04/04/19 18:28	135-98-8	
tert-Butylbenzene	**<10.9**	ug/kg	56.6	10.9	1	04/04/19 12:06	04/04/19 18:28	98-06-6	
Carbon tetrachloride	**<27.0**	ug/kg	226	27.0	1	04/04/19 12:06	04/04/19 18:28	56-23-5	
Chlorobenzene	**<3.2**	ug/kg	56.6	3.2	1	04/04/19 12:06	04/04/19 18:28	108-90-7	
Chloroethane	**<29.4**	ug/kg	566	29.4	1	04/04/19 12:06	04/04/19 18:28	75-00-3	
Chloroform	**<28.3**	ug/kg	56.6	28.3	1	04/04/19 12:06	04/04/19 18:28	67-66-3	
Chloromethane	**<13.6**	ug/kg	226	13.6	1	04/04/19 12:06	04/04/19 18:28	74-87-3	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-12 (0-10ft) **Lab ID: 10469445012** Collected: 04/02/19 16:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
2-Chlorotoluene	**<2.8**	ug/kg	56.6	2.8	1	04/04/19 12:06	04/04/19 18:28	95-49-8	
4-Chlorotoluene	**<2.9**	ug/kg	56.6	2.9	1	04/04/19 12:06	04/04/19 18:28	106-43-4	
1,2-Dibromo-3-chloropropane	**<197**	ug/kg	566	197	1	04/04/19 12:06	04/04/19 18:28	96-12-8	
Dibromochloromethane	**<6.6**	ug/kg	226	6.6	1	04/04/19 12:06	04/04/19 18:28	124-48-1	
1,2-Dibromoethane (EDB)	**<5.9**	ug/kg	56.6	5.9	1	04/04/19 12:06	04/04/19 18:28	106-93-4	
Dibromomethane	**<10.4**	ug/kg	56.6	10.4	1	04/04/19 12:06	04/04/19 18:28	74-95-3	
1,2-Dichlorobenzene	**<2.3**	ug/kg	56.6	2.3	1	04/04/19 12:06	04/04/19 18:28	95-50-1	
1,3-Dichlorobenzene	**<2.1**	ug/kg	56.6	2.1	1	04/04/19 12:06	04/04/19 18:28	541-73-1	
1,4-Dichlorobenzene	**<3.5**	ug/kg	56.6	3.5	1	04/04/19 12:06	04/04/19 18:28	106-46-7	
Dichlorodifluoromethane	**<18.3**	ug/kg	226	18.3	1	04/04/19 12:06	04/04/19 18:28	75-71-8	
1,1-Dichloroethane	**<6.3**	ug/kg	56.6	6.3	1	04/04/19 12:06	04/04/19 18:28	75-34-3	
1,2-Dichloroethane	**<6.2**	ug/kg	56.6	6.2	1	04/04/19 12:06	04/04/19 18:28	107-06-2	
1,1-Dichloroethene	**<17.0**	ug/kg	56.6	17.0	1	04/04/19 12:06	04/04/19 18:28	75-35-4	
cis-1,2-Dichloroethene	**<9.4**	ug/kg	56.6	9.4	1	04/04/19 12:06	04/04/19 18:28	156-59-2	
trans-1,2-Dichloroethene	**<26.5**	ug/kg	56.6	26.5	1	04/04/19 12:06	04/04/19 18:28	156-60-5	
Dichlorofluoromethane	**<78.2**	ug/kg	566	78.2	1	04/04/19 12:06	04/04/19 18:28	75-43-4	N2
1,2-Dichloropropane	**<9.7**	ug/kg	56.6	9.7	1	04/04/19 12:06	04/04/19 18:28	78-87-5	
1,3-Dichloropropane	**<7.8**	ug/kg	56.6	7.8	1	04/04/19 12:06	04/04/19 18:28	142-28-9	
2,2-Dichloropropane	**<7.1**	ug/kg	226	7.1	1	04/04/19 12:06	04/04/19 18:28	594-20-7	
1,1-Dichloropropene	**<26.1**	ug/kg	56.6	26.1	1	04/04/19 12:06	04/04/19 18:28	563-58-6	
cis-1,3-Dichloropropene	**<8.1**	ug/kg	56.6	8.1	1	04/04/19 12:06	04/04/19 18:28	10061-01-5	
trans-1,3-Dichloropropene	**<7.9**	ug/kg	56.6	7.9	1	04/04/19 12:06	04/04/19 18:28	10061-02-6	
Diethyl ether (Ethyl ether)	**<34.6**	ug/kg	226	34.6	1	04/04/19 12:06	04/04/19 18:28	60-29-7	
Ethylbenzene	**<3.1**	ug/kg	56.6	3.1	1	04/04/19 12:06	04/04/19 18:28	100-41-4	
Hexachloro-1,3-butadiene	**<13.8**	ug/kg	283	13.8	1	04/04/19 12:06	04/04/19 18:28	87-68-3	
Isopropylbenzene (Cumene)	**<2.5**	ug/kg	56.6	2.5	1	04/04/19 12:06	04/04/19 18:28	98-82-8	
p-Isopropyltoluene	**<17.2**	ug/kg	56.6	17.2	1	04/04/19 12:06	04/04/19 18:28	99-87-6	
Methylene Chloride	**<106**	ug/kg	226	106	1	04/04/19 12:06	04/04/19 18:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<11.8**	ug/kg	283	11.8	1	04/04/19 12:06	04/04/19 18:28	108-10-1	
Methyl-tert-butyl ether	**<6.7**	ug/kg	56.6	6.7	1	04/04/19 12:06	04/04/19 18:28	1634-04-4	
Naphthalene	**<52.9**	ug/kg	226	52.9	1	04/04/19 12:06	04/04/19 18:28	91-20-3	
n-Propylbenzene	**<3.0**	ug/kg	56.6	3.0	1	04/04/19 12:06	04/04/19 18:28	103-65-1	
Styrene	**<2.6**	ug/kg	56.6	2.6	1	04/04/19 12:06	04/04/19 18:28	100-42-5	
1,1,1,2-Tetrachloroethane	**<17.8**	ug/kg	56.6	17.8	1	04/04/19 12:06	04/04/19 18:28	630-20-6	
1,1,2,2-Tetrachloroethane	**<10**	ug/kg	56.6	10	1	04/04/19 12:06	04/04/19 18:28	79-34-5	
Tetrachloroethene	**<19.9**	ug/kg	56.6	19.9	1	04/04/19 12:06	04/04/19 18:28	127-18-4	
Tetrahydrofuran	**<82.2**	ug/kg	2260	82.2	1	04/04/19 12:06	04/04/19 18:28	109-99-9	
Toluene	**<13.8**	ug/kg	56.6	13.8	1	04/04/19 12:06	04/04/19 18:28	108-88-3	
1,2,3-Trichlorobenzene	**<9.0**	ug/kg	56.6	9.0	1	04/04/19 12:06	04/04/19 18:28	87-61-6	
1,2,4-Trichlorobenzene	**<12.6**	ug/kg	56.6	12.6	1	04/04/19 12:06	04/04/19 18:28	120-82-1	
1,1,1-Trichloroethane	**<26.4**	ug/kg	56.6	26.4	1	04/04/19 12:06	04/04/19 18:28	71-55-6	
1,1,2-Trichloroethane	**<6.8**	ug/kg	56.6	6.8	1	04/04/19 12:06	04/04/19 18:28	79-00-5	
Trichloroethene	**<8.7**	ug/kg	56.6	8.7	1	04/04/19 12:06	04/04/19 18:28	79-01-6	
Trichlorofluoromethane	**<98.6**	ug/kg	226	98.6	1	04/04/19 12:06	04/04/19 18:28	75-69-4	
1,2,3-Trichloropropane	**<14.8**	ug/kg	226	14.8	1	04/04/19 12:06	04/04/19 18:28	96-18-4	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-12 (0-10ft) **Lab ID: 10469445012** Collected: 04/02/19 16:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,2-Trichlorotrifluoroethane	**<65.6**	ug/kg	226	65.6	1	04/04/19 12:06	04/04/19 18:28	76-13-1	
1,2,4-Trimethylbenzene	**<11.3**	ug/kg	56.6	11.3	1	04/04/19 12:06	04/04/19 18:28	95-63-6	
1,3,5-Trimethylbenzene	**<9.0**	ug/kg	56.6	9.0	1	04/04/19 12:06	04/04/19 18:28	108-67-8	
Vinyl chloride	**<11.1**	ug/kg	22.6	11.1	1	04/04/19 12:06	04/04/19 18:28	75-01-4	
Xylene (Total)	**<13.1**	ug/kg	170	13.1	1	04/04/19 12:06	04/04/19 18:28	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-125		1	04/04/19 12:06	04/04/19 18:28	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1	04/04/19 12:06	04/04/19 18:28	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125		1	04/04/19 12:06	04/04/19 18:28	460-00-4	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**13.7**	%	0.10	0.10	1		04/16/19 10:38		
Total Organic Carbon	**14100**	mg/kg	7500	2250	1		04/16/19 10:38	7440-44-0	
Total Organic Carbon	**12300**	mg/kg	7700	2310	1		04/16/19 10:44	7440-44-0	
Mean Total Organic Carbon	**13200**	mg/kg	7600	2280	1		04/16/19 10:38	7440-44-0	

Sample: FL-SB-13 (0-6ft) **Lab ID: 10469445013** Collected: 04/02/19 17:10 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**458**	mg/kg	441	115	10	04/04/19 17:58	04/06/19 12:03		T6
Surrogates									
n-Triacontane (S)	0	%.	50-150		10	04/04/19 17:58	04/06/19 12:03	638-68-6	P3,S4
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.5**	mg/kg	12.1	1.5	1	04/12/19 15:21	04/13/19 03:11		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%.	80-150		1	04/12/19 15:21	04/13/19 03:11	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**48.7**	mg/kg	0.55	0.046	1	04/05/19 11:58	04/09/19 14:02	7440-39-3	
Silver	**<0.040**	mg/kg	0.55	0.040	1	04/05/19 11:58	04/09/19 14:02	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**3.1**	mg/kg	0.54	0.19	20	04/05/19 11:58	04/16/19 00:40	7440-38-2	
Cadmium	**0.19**	mg/kg	0.087	0.029	20	04/05/19 11:58	04/16/19 00:40	7440-43-9	
Chromium	**10.7**	mg/kg	0.54	0.13	20	04/05/19 11:58	04/16/19 00:40	7440-47-3	
Lead	**34.7**	mg/kg	0.22	0.062	20	04/05/19 11:58	04/16/19 00:40	7439-92-1	
Selenium	**0.72**	mg/kg	0.54	0.16	20	04/05/19 11:58	04/16/19 00:40	7782-49-2	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-13 (0-6ft) **Lab ID: 10469445013** Collected: 04/02/19 17:10 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.018J**	mg/kg	0.019	0.0078	1	04/05/19 12:48	04/15/19 13:40	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**9.5**	%	0.10	0.10	1		04/09/19 14:20		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<4.5**	ug/kg	110	4.5	1	04/04/19 09:08	04/08/19 14:50	83-32-9	
Acenaphthylene	**<5.4**	ug/kg	110	5.4	1	04/04/19 09:08	04/08/19 14:50	208-96-8	
Anthracene	**209**	ug/kg	110	5.1	1	04/04/19 09:08	04/08/19 14:50	120-12-7	
Benzo(a)anthracene	**485**	ug/kg	110	11.9	1	04/04/19 09:08	04/08/19 14:50	56-55-3	
Benzo(a)pyrene	**479**	ug/kg	110	7.5	1	04/04/19 09:08	04/08/19 14:50	50-32-8	
Benzo(b)fluoranthene	**481**	ug/kg	110	4.1	1	04/04/19 09:08	04/08/19 14:50	205-99-2	
Benzo(e)pyrene	**335**	ug/kg	110	7.9	1	04/04/19 09:08	04/08/19 14:50	192-97-2	N2
Benzo(g,h,i)perylene	**375**	ug/kg	110	7.0	1	04/04/19 09:08	04/08/19 14:50	191-24-2	
Benzo(k)fluoranthene	**296**	ug/kg	110	9.3	1	04/04/19 09:08	04/08/19 14:50	207-08-9	
Chrysene	**507**	ug/kg	110	14.9	1	04/04/19 09:08	04/08/19 14:50	218-01-9	
Dibenz(a,h)anthracene	**<5.1**	ug/kg	110	5.1	1	04/04/19 09:08	04/08/19 14:50	53-70-3	
Fluoranthene	**1030**	ug/kg	110	4.7	1	04/04/19 09:08	04/08/19 14:50	206-44-0	
Fluorene	**118**	ug/kg	110	3.4	1	04/04/19 09:08	04/08/19 14:50	86-73-7	
Indeno(1,2,3-cd)pyrene	**234**	ug/kg	110	7.4	1	04/04/19 09:08	04/08/19 14:50	193-39-5	
Naphthalene	**<8.5**	ug/kg	110	8.5	1	04/04/19 09:08	04/08/19 14:50	91-20-3	
Phenanthrene	**762**	ug/kg	110	21.1	1	04/04/19 09:08	04/08/19 14:50	85-01-8	
Pyrene	**864**	ug/kg	110	16.8	1	04/04/19 09:08	04/08/19 14:50	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%.	30-125		1	04/04/19 09:08	04/08/19 14:50	321-60-8	P3,S0
p-Terphenyl-d14 (S)	0	%.	30-125		1	04/04/19 09:08	04/08/19 14:50	1718-51-0	S0
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<370**	ug/kg	1190	370	1	04/04/19 12:06	04/04/19 18:45	67-64-1	
Allyl chloride	**<49.8**	ug/kg	238	49.8	1	04/04/19 12:06	04/04/19 18:45	107-05-1	
Benzene	**32.9**	ug/kg	23.8	3.4	1	04/04/19 12:06	04/04/19 18:45	71-43-2	
Bromobenzene	**<3.6**	ug/kg	59.4	3.6	1	04/04/19 12:06	04/04/19 18:45	108-86-1	
Bromochloromethane	**<20.6**	ug/kg	59.4	20.6	1	04/04/19 12:06	04/04/19 18:45	74-97-5	
Bromodichloromethane	**<20.3**	ug/kg	59.4	20.3	1	04/04/19 12:06	04/04/19 18:45	75-27-4	
Bromoform	**<90.0**	ug/kg	238	90.0	1	04/04/19 12:06	04/04/19 18:45	75-25-2	
Bromomethane	**<69.5**	ug/kg	594	69.5	1	04/04/19 12:06	04/04/19 18:45	74-83-9	
2-Butanone (MEK)	**<31.6**	ug/kg	297	31.6	1	04/04/19 12:06	04/04/19 18:45	78-93-3	
n-Butylbenzene	**<28.3**	ug/kg	59.4	28.3	1	04/04/19 12:06	04/04/19 18:45	104-51-8	
sec-Butylbenzene	**<11.4**	ug/kg	59.4	11.4	1	04/04/19 12:06	04/04/19 18:45	135-98-8	
tert-Butylbenzene	**<11.4**	ug/kg	59.4	11.4	1	04/04/19 12:06	04/04/19 18:45	98-06-6	
Carbon tetrachloride	**<28.4**	ug/kg	238	28.4	1	04/04/19 12:06	04/04/19 18:45	56-23-5	
Chlorobenzene	**<3.4**	ug/kg	59.4	3.4	1	04/04/19 12:06	04/04/19 18:45	108-90-7	
Chloroethane	**<30.9**	ug/kg	594	30.9	1	04/04/19 12:06	04/04/19 18:45	75-00-3	
Chloroform	**<29.7**	ug/kg	59.4	29.7	1	04/04/19 12:06	04/04/19 18:45	67-66-3	
Chloromethane	**<14.3**	ug/kg	238	14.3	1	04/04/19 12:06	04/04/19 18:45	74-87-3	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-13 (0-6ft) **Lab ID: 10469445013** Collected: 04/02/19 17:10 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
2-Chlorotoluene	**<2.9**	ug/kg	59.4	2.9	1	04/04/19 12:06	04/04/19 18:45	95-49-8	
4-Chlorotoluene	**<3.0**	ug/kg	59.4	3.0	1	04/04/19 12:06	04/04/19 18:45	106-43-4	
1,2-Dibromo-3-chloropropane	**<207**	ug/kg	594	207	1	04/04/19 12:06	04/04/19 18:45	96-12-8	
Dibromochloromethane	**<6.9**	ug/kg	238	6.9	1	04/04/19 12:06	04/04/19 18:45	124-48-1	
1,2-Dibromoethane (EDB)	**<6.3**	ug/kg	59.4	6.3	1	04/04/19 12:06	04/04/19 18:45	106-93-4	
Dibromomethane	**<10.9**	ug/kg	59.4	10.9	1	04/04/19 12:06	04/04/19 18:45	74-95-3	
1,2-Dichlorobenzene	**<2.4**	ug/kg	59.4	2.4	1	04/04/19 12:06	04/04/19 18:45	95-50-1	
1,3-Dichlorobenzene	**<2.2**	ug/kg	59.4	2.2	1	04/04/19 12:06	04/04/19 18:45	541-73-1	
1,4-Dichlorobenzene	**<3.7**	ug/kg	59.4	3.7	1	04/04/19 12:06	04/04/19 18:45	106-46-7	
Dichlorodifluoromethane	**<19.3**	ug/kg	238	19.3	1	04/04/19 12:06	04/04/19 18:45	75-71-8	
1,1-Dichloroethane	**<6.7**	ug/kg	59.4	6.7	1	04/04/19 12:06	04/04/19 18:45	75-34-3	
1,2-Dichloroethane	**<6.5**	ug/kg	59.4	6.5	1	04/04/19 12:06	04/04/19 18:45	107-06-2	
1,1-Dichloroethene	**<17.8**	ug/kg	59.4	17.8	1	04/04/19 12:06	04/04/19 18:45	75-35-4	
cis-1,2-Dichloroethene	**<9.9**	ug/kg	59.4	9.9	1	04/04/19 12:06	04/04/19 18:45	156-59-2	
trans-1,2-Dichloroethene	**<27.8**	ug/kg	59.4	27.8	1	04/04/19 12:06	04/04/19 18:45	156-60-5	
Dichlorofluoromethane	**<82.1**	ug/kg	594	82.1	1	04/04/19 12:06	04/04/19 18:45	75-43-4	N2
1,2-Dichloropropane	**<10.2**	ug/kg	59.4	10.2	1	04/04/19 12:06	04/04/19 18:45	78-87-5	
1,3-Dichloropropane	**<8.2**	ug/kg	59.4	8.2	1	04/04/19 12:06	04/04/19 18:45	142-28-9	
2,2-Dichloropropane	**<7.4**	ug/kg	238	7.4	1	04/04/19 12:06	04/04/19 18:45	594-20-7	
1,1-Dichloropropene	**<27.5**	ug/kg	59.4	27.5	1	04/04/19 12:06	04/04/19 18:45	563-58-6	
cis-1,3-Dichloropropene	**<8.5**	ug/kg	59.4	8.5	1	04/04/19 12:06	04/04/19 18:45	10061-01-5	
trans-1,3-Dichloropropene	**<8.3**	ug/kg	59.4	8.3	1	04/04/19 12:06	04/04/19 18:45	10061-02-6	
Diethyl ether (Ethyl ether)	**<36.4**	ug/kg	238	36.4	1	04/04/19 12:06	04/04/19 18:45	60-29-7	
Ethylbenzene	**7.2J**	ug/kg	59.4	3.2	1	04/04/19 12:06	04/04/19 18:45	100-41-4	
Hexachloro-1,3-butadiene	**<14.5**	ug/kg	297	14.5	1	04/04/19 12:06	04/04/19 18:45	87-68-3	
Isopropylbenzene (Cumene)	**23.3J**	ug/kg	59.4	2.6	1	04/04/19 12:06	04/04/19 18:45	98-82-8	
p-Isopropyltoluene	**<18.1**	ug/kg	59.4	18.1	1	04/04/19 12:06	04/04/19 18:45	99-87-6	
Methylene Chloride	**<112**	ug/kg	238	112	1	04/04/19 12:06	04/04/19 18:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<12.4**	ug/kg	297	12.4	1	04/04/19 12:06	04/04/19 18:45	108-10-1	
Methyl-tert-butyl ether	**<7.1**	ug/kg	59.4	7.1	1	04/04/19 12:06	04/04/19 18:45	1634-04-4	
Naphthalene	**133J**	ug/kg	238	55.6	1	04/04/19 12:06	04/04/19 18:45	91-20-3	
n-Propylbenzene	**14.4J**	ug/kg	59.4	3.2	1	04/04/19 12:06	04/04/19 18:45	103-65-1	
Styrene	**<2.7**	ug/kg	59.4	2.7	1	04/04/19 12:06	04/04/19 18:45	100-42-5	
1,1,1,2-Tetrachloroethane	**<18.7**	ug/kg	59.4	18.7	1	04/04/19 12:06	04/04/19 18:45	630-20-6	
1,1,2,2-Tetrachloroethane	**<10.5**	ug/kg	59.4	10.5	1	04/04/19 12:06	04/04/19 18:45	79-34-5	
Tetrachloroethene	**<20.9**	ug/kg	59.4	20.9	1	04/04/19 12:06	04/04/19 18:45	127-18-4	
Tetrahydrofuran	**<86.4**	ug/kg	2380	86.4	1	04/04/19 12:06	04/04/19 18:45	109-99-9	
Toluene	**<14.5**	ug/kg	59.4	14.5	1	04/04/19 12:06	04/04/19 18:45	108-88-3	
1,2,3-Trichlorobenzene	**<9.5**	ug/kg	59.4	9.5	1	04/04/19 12:06	04/04/19 18:45	87-61-6	
1,2,4-Trichlorobenzene	**<13.2**	ug/kg	59.4	13.2	1	04/04/19 12:06	04/04/19 18:45	120-82-1	
1,1,1-Trichloroethane	**<27.7**	ug/kg	59.4	27.7	1	04/04/19 12:06	04/04/19 18:45	71-55-6	
1,1,2-Trichloroethane	**<7.1**	ug/kg	59.4	7.1	1	04/04/19 12:06	04/04/19 18:45	79-00-5	
Trichloroethene	**<9.2**	ug/kg	59.4	9.2	1	04/04/19 12:06	04/04/19 18:45	79-01-6	
Trichlorofluoromethane	**<104**	ug/kg	238	104	1	04/04/19 12:06	04/04/19 18:45	75-69-4	
1,2,3-Trichloropropane	**<15.6**	ug/kg	238	15.6	1	04/04/19 12:06	04/04/19 18:45	96-18-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-13 (0-6ft) **Lab ID: 10469445013** Collected: 04/02/19 17:10 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,2-Trichlorotrifluoroethane	**<68.9**	ug/kg	238	68.9	1	04/04/19 12:06	04/04/19 18:45	76-13-1	
1,2,4-Trimethylbenzene	**15.8J**	ug/kg	59.4	11.9	1	04/04/19 12:06	04/04/19 18:45	95-63-6	
1,3,5-Trimethylbenzene	**<9.5**	ug/kg	59.4	9.5	1	04/04/19 12:06	04/04/19 18:45	108-67-8	
Vinyl chloride	**<11.7**	ug/kg	23.8	11.7	1	04/04/19 12:06	04/04/19 18:45	75-01-4	
Xylene (Total)	**128J**	ug/kg	178	13.8	1	04/04/19 12:06	04/04/19 18:45	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	111	%.	75-125		1	04/04/19 12:06	04/04/19 18:45	17060-07-0	
Toluene-d8 (S)	105	%.	75-125		1	04/04/19 12:06	04/04/19 18:45	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125		1	04/04/19 12:06	04/04/19 18:45	460-00-4	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**12.5**	%	0.10	0.10	1		04/16/19 10:49		
Total Organic Carbon	**22000**	mg/kg	6420	1930	1		04/16/19 10:49	7440-44-0	
Total Organic Carbon	**19400**	mg/kg	6310	1890	1		04/16/19 10:55	7440-44-0	
Mean Total Organic Carbon	**20700**	mg/kg	6370	1910	1		04/16/19 10:49	7440-44-0	

Sample: FL-SB-14 (0-10ft) **Lab ID: 10469445014** Collected: 04/02/19 17:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
WDRO C10-C28	**19.6**	mg/kg	10.6	2.8	1	04/04/19 17:58	04/05/19 17:58		T6
Surrogates									
n-Triacontane (S)	87	%.	50-150		1	04/04/19 17:58	04/05/19 17:58	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.8**	mg/kg	14.1	1.8	1	04/12/19 15:21	04/13/19 03:35		
Surrogates									
a,a,a-Trifluorotoluene (S)	96	%.	80-150		1	04/12/19 15:21	04/13/19 03:35	98-08-8	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050								
Barium	**78.0**	mg/kg	0.62	0.051	1	04/05/19 11:58	04/09/19 14:05	7440-39-3	
Silver	**<0.045**	mg/kg	0.62	0.045	1	04/05/19 11:58	04/09/19 14:05	7440-22-4	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050								
Arsenic	**4.2**	mg/kg	0.58	0.20	20	04/05/19 11:58	04/16/19 00:44	7440-38-2	
Cadmium	**0.27**	mg/kg	0.092	0.031	20	04/05/19 11:58	04/16/19 00:44	7440-43-9	
Chromium	**17.0**	mg/kg	0.58	0.14	20	04/05/19 11:58	04/16/19 00:44	7440-47-3	
Lead	**19.9**	mg/kg	0.23	0.066	20	04/05/19 11:58	04/16/19 00:44	7439-92-1	
Selenium	**1.4**	mg/kg	0.58	0.17	20	04/05/19 11:58	04/16/19 00:44	7782-49-2	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-14 (0-10ft) **Lab ID: 10469445014** Collected: 04/02/19 17:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.047**	mg/kg	0.022	0.0089	1	04/05/19 12:48	04/15/19 13:42	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
Percent Moisture	**20.5**	%	0.10	0.10	1		04/09/19 14:21		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<2.6**	ug/kg	62.8	2.6	5	04/04/19 09:08	04/05/19 22:34	83-32-9	
Acenaphthylene	**<3.1**	ug/kg	62.8	3.1	5	04/04/19 09:08	04/05/19 22:34	208-96-8	
Anthracene	**<2.9**	ug/kg	62.8	2.9	5	04/04/19 09:08	04/05/19 22:34	120-12-7	
Benzo(a)anthracene	**163**	ug/kg	62.8	6.8	5	04/04/19 09:08	04/05/19 22:34	56-55-3	
Benzo(a)pyrene	**201**	ug/kg	62.8	4.3	5	04/04/19 09:08	04/05/19 22:34	50-32-8	
Benzo(b)fluoranthene	**236**	ug/kg	62.8	2.3	5	04/04/19 09:08	04/05/19 22:34	205-99-2	
Benzo(e)pyrene	**129**	ug/kg	62.8	4.5	5	04/04/19 09:08	04/05/19 22:34	192-97-2	N2
Benzo(g,h,i)perylene	**157**	ug/kg	62.8	4.0	5	04/04/19 09:08	04/05/19 22:34	191-24-2	
Benzo(k)fluoranthene	**115**	ug/kg	62.8	5.3	5	04/04/19 09:08	04/05/19 22:34	207-08-9	
Chrysene	**173**	ug/kg	62.8	8.5	5	04/04/19 09:08	04/05/19 22:34	218-01-9	
Dibenz(a,h)anthracene	**<2.9**	ug/kg	62.8	2.9	5	04/04/19 09:08	04/05/19 22:34	53-70-3	
Fluoranthene	**316**	ug/kg	62.8	2.7	5	04/04/19 09:08	04/05/19 22:34	206-44-0	
Fluorene	**<2.0**	ug/kg	62.8	2.0	5	04/04/19 09:08	04/05/19 22:34	86-73-7	
Indeno(1,2,3-cd)pyrene	**131**	ug/kg	62.8	4.2	5	04/04/19 09:08	04/05/19 22:34	193-39-5	
Naphthalene	**<4.8**	ug/kg	62.8	4.8	5	04/04/19 09:08	04/05/19 22:34	91-20-3	
Phenanthrene	**101**	ug/kg	62.8	12.1	5	04/04/19 09:08	04/05/19 22:34	85-01-8	
Pyrene	**250**	ug/kg	62.8	9.6	5	04/04/19 09:08	04/05/19 22:34	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	85	%.	30-125		5	04/04/19 09:08	04/05/19 22:34	321-60-8	
p-Terphenyl-d14 (S)	79	%.	30-125		5	04/04/19 09:08	04/05/19 22:34	1718-51-0	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<428**	ug/kg	1380	428	1	04/04/19 12:06	04/04/19 19:03	67-64-1	
Allyl chloride	**<57.7**	ug/kg	275	57.7	1	04/04/19 12:06	04/04/19 19:03	107-05-1	
Benzene	**<3.9**	ug/kg	27.5	3.9	1	04/04/19 12:06	04/04/19 19:03	71-43-2	
Bromobenzene	**<4.2**	ug/kg	68.8	4.2	1	04/04/19 12:06	04/04/19 19:03	108-86-1	
Bromochloromethane	**<23.8**	ug/kg	68.8	23.8	1	04/04/19 12:06	04/04/19 19:03	74-97-5	
Bromodichloromethane	**<23.5**	ug/kg	68.8	23.5	1	04/04/19 12:06	04/04/19 19:03	75-27-4	
Bromoform	**<104**	ug/kg	275	104	1	04/04/19 12:06	04/04/19 19:03	75-25-2	
Bromomethane	**<80.5**	ug/kg	688	80.5	1	04/04/19 12:06	04/04/19 19:03	74-83-9	
2-Butanone (MEK)	**<36.6**	ug/kg	344	36.6	1	04/04/19 12:06	04/04/19 19:03	78-93-3	
n-Butylbenzene	**<32.8**	ug/kg	68.8	32.8	1	04/04/19 12:06	04/04/19 19:03	104-51-8	
sec-Butylbenzene	**<13.2**	ug/kg	68.8	13.2	1	04/04/19 12:06	04/04/19 19:03	135-98-8	
tert-Butylbenzene	**<13.2**	ug/kg	68.8	13.2	1	04/04/19 12:06	04/04/19 19:03	98-06-6	
Carbon tetrachloride	**<32.9**	ug/kg	275	32.9	1	04/04/19 12:06	04/04/19 19:03	56-23-5	
Chlorobenzene	**<3.9**	ug/kg	68.8	3.9	1	04/04/19 12:06	04/04/19 19:03	108-90-7	
Chloroethane	**<35.8**	ug/kg	688	35.8	1	04/04/19 12:06	04/04/19 19:03	75-00-3	
Chloroform	**<34.4**	ug/kg	68.8	34.4	1	04/04/19 12:06	04/04/19 19:03	67-66-3	
Chloromethane	**<16.5**	ug/kg	275	16.5	1	04/04/19 12:06	04/04/19 19:03	74-87-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-14 (0-10ft) **Lab ID: 10469445014** Collected: 04/02/19 17:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
2-Chlorotoluene	**<3.4**	ug/kg	68.8	3.4	1	04/04/19 12:06	04/04/19 19:03	95-49-8	
4-Chlorotoluene	**<3.5**	ug/kg	68.8	3.5	1	04/04/19 12:06	04/04/19 19:03	106-43-4	
1,2-Dibromo-3-chloropropane	**<240**	ug/kg	688	240	1	04/04/19 12:06	04/04/19 19:03	96-12-8	
Dibromochloromethane	**<8.0**	ug/kg	275	8.0	1	04/04/19 12:06	04/04/19 19:03	124-48-1	
1,2-Dibromoethane (EDB)	**<7.2**	ug/kg	68.8	7.2	1	04/04/19 12:06	04/04/19 19:03	106-93-4	
Dibromomethane	**<12.6**	ug/kg	68.8	12.6	1	04/04/19 12:06	04/04/19 19:03	74-95-3	
1,2-Dichlorobenzene	**<2.8**	ug/kg	68.8	2.8	1	04/04/19 12:06	04/04/19 19:03	95-50-1	
1,3-Dichlorobenzene	**<2.5**	ug/kg	68.8	2.5	1	04/04/19 12:06	04/04/19 19:03	541-73-1	
1,4-Dichlorobenzene	**<4.3**	ug/kg	68.8	4.3	1	04/04/19 12:06	04/04/19 19:03	106-46-7	
Dichlorodifluoromethane	**<22.3**	ug/kg	275	22.3	1	04/04/19 12:06	04/04/19 19:03	75-71-8	
1,1-Dichloroethane	**<7.7**	ug/kg	68.8	7.7	1	04/04/19 12:06	04/04/19 19:03	75-34-3	
1,2-Dichloroethane	**<7.6**	ug/kg	68.8	7.6	1	04/04/19 12:06	04/04/19 19:03	107-06-2	
1,1-Dichloroethene	**<20.6**	ug/kg	68.8	20.6	1	04/04/19 12:06	04/04/19 19:03	75-35-4	
cis-1,2-Dichloroethene	**<11.4**	ug/kg	68.8	11.4	1	04/04/19 12:06	04/04/19 19:03	156-59-2	
trans-1,2-Dichloroethene	**<32.2**	ug/kg	68.8	32.2	1	04/04/19 12:06	04/04/19 19:03	156-60-5	
Dichlorofluoromethane	**<95.1**	ug/kg	688	95.1	1	04/04/19 12:06	04/04/19 19:03	75-43-4	N2
1,2-Dichloropropane	**<11.9**	ug/kg	68.8	11.9	1	04/04/19 12:06	04/04/19 19:03	78-87-5	
1,3-Dichloropropane	**<9.5**	ug/kg	68.8	9.5	1	04/04/19 12:06	04/04/19 19:03	142-28-9	
2,2-Dichloropropane	**<8.6**	ug/kg	275	8.6	1	04/04/19 12:06	04/04/19 19:03	594-20-7	
1,1-Dichloropropene	**<31.8**	ug/kg	68.8	31.8	1	04/04/19 12:06	04/04/19 19:03	563-58-6	
cis-1,3-Dichloropropene	**<9.9**	ug/kg	68.8	9.9	1	04/04/19 12:06	04/04/19 19:03	10061-01-5	
trans-1,3-Dichloropropene	**<9.6**	ug/kg	68.8	9.6	1	04/04/19 12:06	04/04/19 19:03	10061-02-6	
Diethyl ether (Ethyl ether)	**<42.1**	ug/kg	275	42.1	1	04/04/19 12:06	04/04/19 19:03	60-29-7	
Ethylbenzene	**<3.7**	ug/kg	68.8	3.7	1	04/04/19 12:06	04/04/19 19:03	100-41-4	
Hexachloro-1,3-butadiene	**<16.8**	ug/kg	344	16.8	1	04/04/19 12:06	04/04/19 19:03	87-68-3	
Isopropylbenzene (Cumene)	**<3.1**	ug/kg	68.8	3.1	1	04/04/19 12:06	04/04/19 19:03	98-82-8	
p-Isopropyltoluene	**<20.9**	ug/kg	68.8	20.9	1	04/04/19 12:06	04/04/19 19:03	99-87-6	
Methylene Chloride	**<130**	ug/kg	275	130	1	04/04/19 12:06	04/04/19 19:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<14.3**	ug/kg	344	14.3	1	04/04/19 12:06	04/04/19 19:03	108-10-1	
Methyl-tert-butyl ether	**<8.2**	ug/kg	68.8	8.2	1	04/04/19 12:06	04/04/19 19:03	1634-04-4	
Naphthalene	**<64.4**	ug/kg	275	64.4	1	04/04/19 12:06	04/04/19 19:03	91-20-3	
n-Propylbenzene	**<3.7**	ug/kg	68.8	3.7	1	04/04/19 12:06	04/04/19 19:03	103-65-1	
Styrene	**<3.1**	ug/kg	68.8	3.1	1	04/04/19 12:06	04/04/19 19:03	100-42-5	
1,1,1,2-Tetrachloroethane	**<21.6**	ug/kg	68.8	21.6	1	04/04/19 12:06	04/04/19 19:03	630-20-6	
1,1,2,2-Tetrachloroethane	**<12.1**	ug/kg	68.8	12.1	1	04/04/19 12:06	04/04/19 19:03	79-34-5	
Tetrachloroethene	**<24.2**	ug/kg	68.8	24.2	1	04/04/19 12:06	04/04/19 19:03	127-18-4	
Tetrahydrofuran	**<100**	ug/kg	2750	100	1	04/04/19 12:06	04/04/19 19:03	109-99-9	
Toluene	**<16.8**	ug/kg	68.8	16.8	1	04/04/19 12:06	04/04/19 19:03	108-88-3	
1,2,3-Trichlorobenzene	**<11.0**	ug/kg	68.8	11.0	1	04/04/19 12:06	04/04/19 19:03	87-61-6	
1,2,4-Trichlorobenzene	**<15.3**	ug/kg	68.8	15.3	1	04/04/19 12:06	04/04/19 19:03	120-82-1	
1,1,1-Trichloroethane	**<32.1**	ug/kg	68.8	32.1	1	04/04/19 12:06	04/04/19 19:03	71-55-6	
1,1,2-Trichloroethane	**<8.2**	ug/kg	68.8	8.2	1	04/04/19 12:06	04/04/19 19:03	79-00-5	
Trichloroethene	**<10.6**	ug/kg	68.8	10.6	1	04/04/19 12:06	04/04/19 19:03	79-01-6	
Trichlorofluoromethane	**<120**	ug/kg	275	120	1	04/04/19 12:06	04/04/19 19:03	75-69-4	
1,2,3-Trichloropropane	**<18.0**	ug/kg	275	18.0	1	04/04/19 12:06	04/04/19 19:03	96-18-4	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: FL-SB-14 (0-10ft) **Lab ID: 10469445014** Collected: 04/02/19 17:40 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,1,2-Trichlorotrifluoroethane	**<79.8**	ug/kg	275	79.8	1	04/04/19 12:06	04/04/19 19:03	76-13-1	
1,2,4-Trimethylbenzene	**<13.8**	ug/kg	68.8	13.8	1	04/04/19 12:06	04/04/19 19:03	95-63-6	
1,3,5-Trimethylbenzene	**<11.0**	ug/kg	68.8	11.0	1	04/04/19 12:06	04/04/19 19:03	108-67-8	
Vinyl chloride	**<13.5**	ug/kg	27.5	13.5	1	04/04/19 12:06	04/04/19 19:03	75-01-4	
Xylene (Total)	**<16.0**	ug/kg	206	16.0	1	04/04/19 12:06	04/04/19 19:03	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	110	%.	75-125		1	04/04/19 12:06	04/04/19 19:03	17060-07-0	
Toluene-d8 (S)	106	%.	75-125		1	04/04/19 12:06	04/04/19 19:03	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125		1	04/04/19 12:06	04/04/19 19:03	460-00-4	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**3.7**	%	0.10	0.10	1		04/16/19 11:15		
Total Organic Carbon	**22300**	mg/kg	7220	2170	1		04/16/19 11:15	7440-44-0	
Total Organic Carbon	**23100**	mg/kg	7200	2160	1		04/16/19 11:22	7440-44-0	
Mean Total Organic Carbon	**22700**	mg/kg	7210	2160	1		04/16/19 11:15	7440-44-0	

Sample: Trip Blank **Lab ID: 10469445015** Collected: 04/02/19 00:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Gasoline Range Organics	**<1.3**	mg/kg	10.0	1.3	1	04/12/19 15:21	04/13/19 00:22		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%.	80-150		1	04/12/19 15:21	04/13/19 00:22	98-08-8	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Acetone	**<311**	ug/kg	1000	311	1	04/04/19 12:06	04/04/19 14:51	67-64-1	
Allyl chloride	**<41.9**	ug/kg	200	41.9	1	04/04/19 12:06	04/04/19 14:51	107-05-1	
Benzene	**<2.8**	ug/kg	20.0	2.8	1	04/04/19 12:06	04/04/19 14:51	71-43-2	
Bromobenzene	**<3.1**	ug/kg	50.0	3.1	1	04/04/19 12:06	04/04/19 14:51	108-86-1	
Bromochloromethane	**<17.3**	ug/kg	50.0	17.3	1	04/04/19 12:06	04/04/19 14:51	74-97-5	
Bromodichloromethane	**<17.1**	ug/kg	50.0	17.1	1	04/04/19 12:06	04/04/19 14:51	75-27-4	
Bromoform	**<75.7**	ug/kg	200	75.7	1	04/04/19 12:06	04/04/19 14:51	75-25-2	
Bromomethane	**<58.5**	ug/kg	500	58.5	1	04/04/19 12:06	04/04/19 14:51	74-83-9	
2-Butanone (MEK)	**<26.6**	ug/kg	250	26.6	1	04/04/19 12:06	04/04/19 14:51	78-93-3	
n-Butylbenzene	**<23.8**	ug/kg	50.0	23.8	1	04/04/19 12:06	04/04/19 14:51	104-51-8	
sec-Butylbenzene	**<9.6**	ug/kg	50.0	9.6	1	04/04/19 12:06	04/04/19 14:51	135-98-8	
tert-Butylbenzene	**<9.6**	ug/kg	50.0	9.6	1	04/04/19 12:06	04/04/19 14:51	98-06-6	
Carbon tetrachloride	**<23.9**	ug/kg	200	23.9	1	04/04/19 12:06	04/04/19 14:51	56-23-5	
Chlorobenzene	**<2.8**	ug/kg	50.0	2.8	1	04/04/19 12:06	04/04/19 14:51	108-90-7	
Chloroethane	**<26.0**	ug/kg	500	26.0	1	04/04/19 12:06	04/04/19 14:51	75-00-3	
Chloroform	**<25.0**	ug/kg	50.0	25.0	1	04/04/19 12:06	04/04/19 14:51	67-66-3	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: Trip Blank **Lab ID: 10469445015** Collected: 04/02/19 00:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
Chloromethane	**<12.0**	ug/kg	200	12.0	1	04/04/19 12:06	04/04/19 14:51	74-87-3	
2-Chlorotoluene	**<2.5**	ug/kg	50.0	2.5	1	04/04/19 12:06	04/04/19 14:51	95-49-8	
4-Chlorotoluene	**<2.6**	ug/kg	50.0	2.6	1	04/04/19 12:06	04/04/19 14:51	106-43-4	
1,2-Dibromo-3-chloropropane	**<174**	ug/kg	500	174	1	04/04/19 12:06	04/04/19 14:51	96-12-8	
Dibromochloromethane	**<5.8**	ug/kg	200	5.8	1	04/04/19 12:06	04/04/19 14:51	124-48-1	
1,2-Dibromoethane (EDB)	**<5.3**	ug/kg	50.0	5.3	1	04/04/19 12:06	04/04/19 14:51	106-93-4	
Dibromomethane	**<9.2**	ug/kg	50.0	9.2	1	04/04/19 12:06	04/04/19 14:51	74-95-3	
1,2-Dichlorobenzene	**<2.0**	ug/kg	50.0	2.0	1	04/04/19 12:06	04/04/19 14:51	95-50-1	
1,3-Dichlorobenzene	**<1.8**	ug/kg	50.0	1.8	1	04/04/19 12:06	04/04/19 14:51	541-73-1	
1,4-Dichlorobenzene	**<3.1**	ug/kg	50.0	3.1	1	04/04/19 12:06	04/04/19 14:51	106-46-7	
Dichlorodifluoromethane	**<16.2**	ug/kg	200	16.2	1	04/04/19 12:06	04/04/19 14:51	75-71-8	
1,1-Dichloroethane	**<5.6**	ug/kg	50.0	5.6	1	04/04/19 12:06	04/04/19 14:51	75-34-3	
1,2-Dichloroethane	**<5.5**	ug/kg	50.0	5.5	1	04/04/19 12:06	04/04/19 14:51	107-06-2	
1,1-Dichloroethene	**<15.0**	ug/kg	50.0	15.0	1	04/04/19 12:06	04/04/19 14:51	75-35-4	
cis-1,2-Dichloroethene	**<8.3**	ug/kg	50.0	8.3	1	04/04/19 12:06	04/04/19 14:51	156-59-2	
trans-1,2-Dichloroethene	**<23.4**	ug/kg	50.0	23.4	1	04/04/19 12:06	04/04/19 14:51	156-60-5	
Dichlorofluoromethane	**<69.1**	ug/kg	500	69.1	1	04/04/19 12:06	04/04/19 14:51	75-43-4	N2
1,2-Dichloropropane	**<8.6**	ug/kg	50.0	8.6	1	04/04/19 12:06	04/04/19 14:51	78-87-5	
1,3-Dichloropropane	**<6.9**	ug/kg	50.0	6.9	1	04/04/19 12:06	04/04/19 14:51	142-28-9	
2,2-Dichloropropane	**<6.2**	ug/kg	200	6.2	1	04/04/19 12:06	04/04/19 14:51	594-20-7	
1,1-Dichloropropene	**<23.1**	ug/kg	50.0	23.1	1	04/04/19 12:06	04/04/19 14:51	563-58-6	
cis-1,3-Dichloropropene	**<7.2**	ug/kg	50.0	7.2	1	04/04/19 12:06	04/04/19 14:51	10061-01-5	
trans-1,3-Dichloropropene	**<7.0**	ug/kg	50.0	7.0	1	04/04/19 12:06	04/04/19 14:51	10061-02-6	
Diethyl ether (Ethyl ether)	**<30.6**	ug/kg	200	30.6	1	04/04/19 12:06	04/04/19 14:51	60-29-7	
Ethylbenzene	**<2.7**	ug/kg	50.0	2.7	1	04/04/19 12:06	04/04/19 14:51	100-41-4	
Hexachloro-1,3-butadiene	**<12.2**	ug/kg	250	12.2	1	04/04/19 12:06	04/04/19 14:51	87-68-3	
Isopropylbenzene (Cumene)	**<2.2**	ug/kg	50.0	2.2	1	04/04/19 12:06	04/04/19 14:51	98-82-8	
p-Isopropyltoluene	**<15.2**	ug/kg	50.0	15.2	1	04/04/19 12:06	04/04/19 14:51	99-87-6	
Methylene Chloride	**<94.1**	ug/kg	200	94.1	1	04/04/19 12:06	04/04/19 14:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<10.4**	ug/kg	250	10.4	1	04/04/19 12:06	04/04/19 14:51	108-10-1	
Methyl-tert-butyl ether	**<6.0**	ug/kg	50.0	6.0	1	04/04/19 12:06	04/04/19 14:51	1634-04-4	
Naphthalene	**<46.8**	ug/kg	200	46.8	1	04/04/19 12:06	04/04/19 14:51	91-20-3	
n-Propylbenzene	**<2.7**	ug/kg	50.0	2.7	1	04/04/19 12:06	04/04/19 14:51	103-65-1	
Styrene	**<2.3**	ug/kg	50.0	2.3	1	04/04/19 12:06	04/04/19 14:51	100-42-5	
1,1,1,2-Tetrachloroethane	**<15.7**	ug/kg	50.0	15.7	1	04/04/19 12:06	04/04/19 14:51	630-20-6	
1,1,2,2-Tetrachloroethane	**<8.8**	ug/kg	50.0	8.8	1	04/04/19 12:06	04/04/19 14:51	79-34-5	
Tetrachloroethene	**<17.6**	ug/kg	50.0	17.6	1	04/04/19 12:06	04/04/19 14:51	127-18-4	
Tetrahydrofuran	**<72.7**	ug/kg	2000	72.7	1	04/04/19 12:06	04/04/19 14:51	109-99-9	
Toluene	**<12.2**	ug/kg	50.0	12.2	1	04/04/19 12:06	04/04/19 14:51	108-88-3	
1,2,3-Trichlorobenzene	**<8.0**	ug/kg	50.0	8.0	1	04/04/19 12:06	04/04/19 14:51	87-61-6	
1,2,4-Trichlorobenzene	**<11.1**	ug/kg	50.0	11.1	1	04/04/19 12:06	04/04/19 14:51	120-82-1	
1,1,1-Trichloroethane	**<23.3**	ug/kg	50.0	23.3	1	04/04/19 12:06	04/04/19 14:51	71-55-6	
1,1,2-Trichloroethane	**<6.0**	ug/kg	50.0	6.0	1	04/04/19 12:06	04/04/19 14:51	79-00-5	
Trichloroethene	**<7.7**	ug/kg	50.0	7.7	1	04/04/19 12:06	04/04/19 14:51	79-01-6	
Trichlorofluoromethane	**<87.2**	ug/kg	200	87.2	1	04/04/19 12:06	04/04/19 14:51	75-69-4	

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ANALYTICAL RESULTS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Sample: Trip Blank **Lab ID: 10469445015** Collected: 04/02/19 00:00 Received: 04/03/19 16:04 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B								
1,2,3-Trichloropropane	**<13.1**	ug/kg	200	13.1	1	04/04/19 12:06	04/04/19 14:51	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<58.0**	ug/kg	200	58.0	1	04/04/19 12:06	04/04/19 14:51	76-13-1	
1,2,4-Trimethylbenzene	**<10.0**	ug/kg	50.0	10.0	1	04/04/19 12:06	04/04/19 14:51	95-63-6	
1,3,5-Trimethylbenzene	**<8.0**	ug/kg	50.0	8.0	1	04/04/19 12:06	04/04/19 14:51	108-67-8	
Vinyl chloride	**<9.8**	ug/kg	20.0	9.8	1	04/04/19 12:06	04/04/19 14:51	75-01-4	
Xylene (Total)	**<11.6**	ug/kg	150	11.6	1	04/04/19 12:06	04/04/19 14:51	1330-20-7	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%.	75-125		1	04/04/19 12:06	04/04/19 14:51	17060-07-0	
Toluene-d8 (S)	104	%.	75-125		1	04/04/19 12:06	04/04/19 14:51	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125		1	04/04/19 12:06	04/04/19 14:51	460-00-4	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 598941 Analysis Method: WI MOD GRO
QC Batch Method: EPA 5030 Medium Soil Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006

METHOD BLANK: 3238090 Matrix: Solid
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	<1.3	10.0	1.3	04/11/19 18:44	
a,a,a-Trifluorotoluene (S)	%.	101	80-150		04/11/19 18:44	

LABORATORY CONTROL SAMPLE & LCSD: 3238091 3238092

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	50	55.2	48.7	110	97	80-120	13	20	
a,a,a-Trifluorotoluene (S)	%.				100	105	80-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3238294 3238295

Parameter	Units	10469975003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	<1.5	59.5	60.4	79.4	79.7	134	132	80-120	0	20	M1
a,a,a-Trifluorotoluene (S)	%.						100	100	80-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 599232 Analysis Method: WI MOD GRO
QC Batch Method: EPA 5030 Medium Soil Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014, 10469445015

METHOD BLANK: 3239710 Matrix: Solid
Associated Lab Samples: 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014, 10469445015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	<1.3	10.0	1.3	04/12/19 18:35	
a,a,a-Trifluorotoluene (S)	%.	98	80-150		04/12/19 18:35	

LABORATORY CONTROL SAMPLE & LCSD: 3239711 3239712

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	50	40.6	47.2	81	94	80-120	15	20	
a,a,a-Trifluorotoluene (S)	%.				100	97	80-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3239780 3239781

Parameter	Units	10469445010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	<1.5	57.1	56.4	59.4	60.7	104	108	80-120	2	20	
a,a,a-Trifluorotoluene (S)	%.						99	100	80-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 597552 | Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B | Analysis Description: 7471B Mercury Solids

Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

METHOD BLANK: 3231391 Matrix: Solid

Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.0073	0.018	0.0073	04/15/19 13:02	

LABORATORY CONTROL SAMPLE: 3231392

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.45	0.46	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231393 3231394

Parameter	Units	10469445001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.025	0.58	0.56	0.62	0.60	101	103	80-120	2	20	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 597548 Analysis Method: EPA 6010D
QC Batch Method: EPA 3050 Analysis Description: 6010D Solids
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

METHOD BLANK: 3231375 Matrix: Solid
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	mg/kg	<0.039	0.47	0.039	04/09/19 12:58	
Silver	mg/kg	<0.034	0.47	0.034	04/09/19 12:58	

LABORATORY CONTROL SAMPLE: 3231376

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/kg	49	49.3	101	80-120	
Silver	mg/kg	24.5	23.2	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231377 3231378

Parameter	Units	10469445001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/kg	63.7	56.6	54.5	161	106	171	77	75-125	41	20	M1,R1
Silver	mg/kg	<0.040	28.4	27.3	24.9	23.8	88	87	75-125	5	20	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 597550 Analysis Method: EPA 6020B
QC Batch Method: EPA 3050 Analysis Description: 6020B Solids UPD5
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

METHOD BLANK: 3231383 Matrix: Solid
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	<0.17	0.50	0.17	04/15/19 23:07	
Cadmium	mg/kg	<0.026	0.079	0.026	04/15/19 23:07	
Chromium	mg/kg	<0.12	0.50	0.12	04/15/19 23:07	
Lead	mg/kg	<0.057	0.20	0.057	04/15/19 23:07	
Selenium	mg/kg	<0.14	0.50	0.14	04/15/19 23:07	

LABORATORY CONTROL SAMPLE: 3231384

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	45.9	46.7	102	80-120	
Cadmium	mg/kg	45.9	47.5	104	80-120	
Chromium	mg/kg	45.9	49.7	108	80-120	
Lead	mg/kg	45.9	50.7	111	80-120	
Selenium	mg/kg	45.9	46.2	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231385 3231386

Parameter	Units	10469445001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	3.6	53.1	55.1	53.5	56.9	94	97	75-125	6	20	
Cadmium	mg/kg	0.21	53.1	55.1	49.9	53.7	94	97	75-125	7	20	
Chromium	mg/kg	13.6	53.1	55.1	72.9	72.3	112	107	75-125	1	20	
Lead	mg/kg	25.7	53.1	55.1	63.8	73.1	72	86	75-125	14	20	M6
Selenium	mg/kg	0.85	53.1	55.1	50.7	53.3	94	95	75-125	5	20	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 597866 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012

SAMPLE DUPLICATE: 3232778

Parameter	Units	10469445012 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.4	14.1	9	30	

SAMPLE DUPLICATE: 3232951

Parameter	Units	10469445002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	22.2	21.4	4	30	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 598370 — Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 — Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10469445013, 10469445014

SAMPLE DUPLICATE: 3235202

Parameter	Units	10469918022 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.2	13.8	3	30	

SAMPLE DUPLICATE: 3235203

Parameter	Units	10469455009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	5.5	5.3	3	30	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 597598 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014, 10469445015

METHOD BLANK: 3231503 Matrix: Solid
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014, 10469445015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	<15.7	50.0	15.7	04/04/19 14:33	
1,1,1-Trichloroethane	ug/kg	<23.3	50.0	23.3	04/04/19 14:33	
1,1,2,2-Tetrachloroethane	ug/kg	<8.8	50.0	8.8	04/04/19 14:33	
1,1,2-Trichloroethane	ug/kg	<6.0	50.0	6.0	04/04/19 14:33	
1,1,2-Trichlorotrifluoroethane	ug/kg	<58.0	200	58.0	04/04/19 14:33	
1,1-Dichloroethane	ug/kg	<5.6	50.0	5.6	04/04/19 14:33	
1,1-Dichloroethene	ug/kg	<15.0	50.0	15.0	04/04/19 14:33	
1,1-Dichloropropene	ug/kg	<23.1	50.0	23.1	04/04/19 14:33	
1,2,3-Trichlorobenzene	ug/kg	<8.0	50.0	8.0	04/04/19 14:33	
1,2,3-Trichloropropane	ug/kg	<13.1	200	13.1	04/04/19 14:33	
1,2,4-Trichlorobenzene	ug/kg	<11.1	50.0	11.1	04/04/19 14:33	
1,2,4-Trimethylbenzene	ug/kg	<10.0	50.0	10.0	04/04/19 14:33	
1,2-Dibromo-3-chloropropane	ug/kg	<174	500	174	04/04/19 14:33	
1,2-Dibromoethane (EDB)	ug/kg	<5.3	50.0	5.3	04/04/19 14:33	
1,2-Dichlorobenzene	ug/kg	<2.0	50.0	2.0	04/04/19 14:33	
1,2-Dichloroethane	ug/kg	<5.5	50.0	5.5	04/04/19 14:33	
1,2-Dichloropropane	ug/kg	<8.6	50.0	8.6	04/04/19 14:33	
1,3,5-Trimethylbenzene	ug/kg	<8.0	50.0	8.0	04/04/19 14:33	
1,3-Dichlorobenzene	ug/kg	<1.8	50.0	1.8	04/04/19 14:33	
1,3-Dichloropropane	ug/kg	<6.9	50.0	6.9	04/04/19 14:33	
1,4-Dichlorobenzene	ug/kg	<3.1	50.0	3.1	04/04/19 14:33	
2,2-Dichloropropane	ug/kg	<6.2	200	6.2	04/04/19 14:33	
2-Butanone (MEK)	ug/kg	<26.6	250	26.6	04/04/19 14:33	
2-Chlorotoluene	ug/kg	<2.5	50.0	2.5	04/04/19 14:33	
4-Chlorotoluene	ug/kg	<2.6	50.0	2.6	04/04/19 14:33	
4-Methyl-2-pentanone (MIBK)	ug/kg	<10.4	250	10.4	04/04/19 14:33	
Acetone	ug/kg	<311	1000	311	04/04/19 14:33	
Allyl chloride	ug/kg	<41.9	200	41.9	04/04/19 14:33	
Benzene	ug/kg	4.4J	20.0	2.8	04/04/19 14:33	
Bromobenzene	ug/kg	<3.1	50.0	3.1	04/04/19 14:33	
Bromochloromethane	ug/kg	<17.3	50.0	17.3	04/04/19 14:33	
Bromodichloromethane	ug/kg	<17.1	50.0	17.1	04/04/19 14:33	
Bromoform	ug/kg	<75.7	200	75.7	04/04/19 14:33	
Bromomethane	ug/kg	<58.5	500	58.5	04/04/19 14:33	
Carbon tetrachloride	ug/kg	<23.9	200	23.9	04/04/19 14:33	MN
Chlorobenzene	ug/kg	<2.8	50.0	2.8	04/04/19 14:33	
Chloroethane	ug/kg	<26.0	500	26.0	04/04/19 14:33	
Chloroform	ug/kg	<25.0	50.0	25.0	04/04/19 14:33	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

METHOD BLANK: 3231503 Matrix: Solid

Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014, 10469445015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloromethane	ug/kg	<12.0	200	12.0	04/04/19 14:33	
cis-1,2-Dichloroethene	ug/kg	<8.3	50.0	8.3	04/04/19 14:33	
cis-1,3-Dichloropropene	ug/kg	<7.2	50.0	7.2	04/04/19 14:33	
Dibromochloromethane	ug/kg	<5.8	200	5.8	04/04/19 14:33	
Dibromomethane	ug/kg	<9.2	50.0	9.2	04/04/19 14:33	
Dichlorodifluoromethane	ug/kg	<16.2	200	16.2	04/04/19 14:33	
Dichlorofluoromethane	ug/kg	<69.1	500	69.1	04/04/19 14:33	N2
Diethyl ether (Ethyl ether)	ug/kg	<30.6	200	30.6	04/04/19 14:33	
Ethylbenzene	ug/kg	<2.7	50.0	2.7	04/04/19 14:33	
Hexachloro-1,3-butadiene	ug/kg	<12.2	250	12.2	04/04/19 14:33	
Isopropylbenzene (Cumene)	ug/kg	<2.2	50.0	2.2	04/04/19 14:33	
Methyl-tert-butyl ether	ug/kg	<6.0	50.0	6.0	04/04/19 14:33	
Methylene Chloride	ug/kg	<94.1	200	94.1	04/04/19 14:33	
n-Butylbenzene	ug/kg	<23.8	50.0	23.8	04/04/19 14:33	
n-Propylbenzene	ug/kg	<2.7	50.0	2.7	04/04/19 14:33	
Naphthalene	ug/kg	<46.8	200	46.8	04/04/19 14:33	
p-Isopropyltoluene	ug/kg	<15.2	50.0	15.2	04/04/19 14:33	
sec-Butylbenzene	ug/kg	<9.6	50.0	9.6	04/04/19 14:33	
Styrene	ug/kg	<2.3	50.0	2.3	04/04/19 14:33	
tert-Butylbenzene	ug/kg	<9.6	50.0	9.6	04/04/19 14:33	
Tetrachloroethene	ug/kg	<17.6	50.0	17.6	04/04/19 14:33	
Tetrahydrofuran	ug/kg	<72.7	2000	72.7	04/04/19 14:33	
Toluene	ug/kg	<12.2	50.0	12.2	04/04/19 14:33	
trans-1,2-Dichloroethene	ug/kg	<23.4	50.0	23.4	04/04/19 14:33	
trans-1,3-Dichloropropene	ug/kg	<7.0	50.0	7.0	04/04/19 14:33	
Trichloroethene	ug/kg	<7.7	50.0	7.7	04/04/19 14:33	
Trichlorofluoromethane	ug/kg	<87.2	200	87.2	04/04/19 14:33	
Vinyl chloride	ug/kg	<9.8	20.0	9.8	04/04/19 14:33	
Xylene (Total)	ug/kg	<11.6	150	11.6	04/04/19 14:33	
1,2-Dichloroethane-d4 (S)	%.	102	75-125		04/04/19 14:33	
4-Bromofluorobenzene (S)	%.	104	75-125		04/04/19 14:33	
Toluene-d8 (S)	%.	104	75-125		04/04/19 14:33	

LABORATORY CONTROL SAMPLE: 3231504

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1000	626	63	53-125	
1,1,1-Trichloroethane	ug/kg	1000	671	67	53-146	
1,1,2,2-Tetrachloroethane	ug/kg	1000	588	59	51-125	
1,1,2-Trichloroethane	ug/kg	1000	583	58	55-125	
1,1,2-Trichlorotrifluoroethane	ug/kg	1000	709	71	49-150	
1,1-Dichloroethane	ug/kg	1000	626	63	56-125	

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

LABORATORY CONTROL SAMPLE: 3231504

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/kg	1000	680	68	48-148	
1,1-Dichloropropene	ug/kg	1000	709	71	55-142	
1,2,3-Trichlorobenzene	ug/kg	1000	618	62	47-125	
1,2,3-Trichloropropane	ug/kg	1000	608	61	52-125	
1,2,4-Trichlorobenzene	ug/kg	1000	627	63	48-125	
1,2,4-Trimethylbenzene	ug/kg	1000	684	68	51-126	
1,2-Dibromo-3-chloropropane	ug/kg	2500	1470	59	50-125	
1,2-Dibromoethane (EDB)	ug/kg	1000	605	61	52-125	
1,2-Dichlorobenzene	ug/kg	1000	638	64	50-125	
1,2-Dichloroethane	ug/kg	1000	573	57	51-125	
1,2-Dichloropropane	ug/kg	1000	606	61	57-125	
1,3,5-Trimethylbenzene	ug/kg	1000	681	68	52-127	
1,3-Dichlorobenzene	ug/kg	1000	651	65	50-128	
1,3-Dichloropropane	ug/kg	1000	595	60	55-125	
1,4-Dichlorobenzene	ug/kg	1000	621	62	51-125	
2,2-Dichloropropane	ug/kg	1000	656	66	41-136	
2-Butanone (MEK)	ug/kg	5000	2690	54	43-125	
2-Chlorotoluene	ug/kg	1000	651	65	52-126	
4-Chlorotoluene	ug/kg	1000	654	65	53-126	
4-Methyl-2-pentanone (MIBK)	ug/kg	5000	2850	57	39-125	
Acetone	ug/kg	5000	3110	62	46-136	
Allyl chloride	ug/kg	1000	585	58	48-130	
Benzene	ug/kg	1000	607	61	48-125	
Bromobenzene	ug/kg	1000	654	65	51-125	
Bromochloromethane	ug/kg	1000	639	64	52-125	
Bromodichloromethane	ug/kg	1000	605	61	51-131	
Bromoform	ug/kg	1000	589	59	52-125	
Bromomethane	ug/kg	1000	814	81	30-150	
Carbon tetrachloride	ug/kg	1000	679	68	59-129	
Chlorobenzene	ug/kg	1000	621	62	54-125	
Chloroethane	ug/kg	1000	878	88	61-132	
Chloroform	ug/kg	1000	655	66	52-125	
Chloromethane	ug/kg	1000	788	79	46-125	
cis-1,2-Dichloroethene	ug/kg	1000	632	63	54-127	
cis-1,3-Dichloropropene	ug/kg	1000	614	61	50-134	
Dibromochloromethane	ug/kg	1000	646	65	54-125	
Dibromomethane	ug/kg	1000	594	59	51-125	
Dichlorodifluoromethane	ug/kg	1000	780	78	42-125	
Dichlorofluoromethane	ug/kg	1000	786	79	30-150	N2
Diethyl ether (Ethyl ether)	ug/kg	1000	549	55	50-127	
Ethylbenzene	ug/kg	1000	650	65	51-125	
Hexachloro-1,3-butadiene	ug/kg	1000	657	66	41-133	
Isopropylbenzene (Cumene)	ug/kg	1000	686	69	54-134	
Methyl-tert-butyl ether	ug/kg	1000	613	61	53-125	
Methylene Chloride	ug/kg	1000	627	63	48-125	
n-Butylbenzene	ug/kg	1000	684	68	49-135	
n-Propylbenzene	ug/kg	1000	702	70	55-129	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

LABORATORY CONTROL SAMPLE: 3231504

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/kg	1000	599	60	51-125	
p-Isopropyltoluene	ug/kg	1000	733	73	53-134	
sec-Butylbenzene	ug/kg	1000	732	73	52-134	
Styrene	ug/kg	1000	661	66	53-128	
tert-Butylbenzene	ug/kg	1000	689	69	51-133	
Tetrachloroethene	ug/kg	1000	686	69	54-131	
Tetrahydrofuran	ug/kg	10000	6000	60	42-145	
Toluene	ug/kg	1000	633	63	51-125	
trans-1,2-Dichloroethene	ug/kg	1000	648	65	50-130	
trans-1,3-Dichloropropene	ug/kg	1000	653	65	52-125	
Trichloroethene	ug/kg	1000	650	65	55-131	
Trichlorofluoromethane	ug/kg	1000	918	92	30-150	
Vinyl chloride	ug/kg	1000	833	83	58-125	
Xylene (Total)	ug/kg	3000	1980	66	52-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			101	75-125	
Toluene-d8 (S)	%.			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231505 3231506

Parameter	Units	10469445004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/kg	<20.6	1320	1280	1510	1480	114	116	68-150	2	30	
1,1,1-Trichloroethane	ug/kg	<30.6	1320	1280	1510	1490	114	117	63-150	1	30	
1,1,2,2-Tetrachloroethane	ug/kg	<11.6	1320	1280	1460	1400	111	110	60-146	4	30	
1,1,2-Trichloroethane	ug/kg	<7.9	1320	1280	1470	1400	112	110	63-143	5	30	
1,1,2-Trichlorotrifluoroethane	ug/kg	<76.2	1320	1280	1420	1390	108	109	30-150	2	30	
1,1-Dichloroethane	ug/kg	<7.4	1320	1280	1390	1350	105	105	63-144	3	30	
1,1-Dichloroethene	ug/kg	<19.7	1320	1280	1400	1430	106	112	30-150	2	30	
1,1-Dichloropropene	ug/kg	<30.3	1320	1280	1580	1590	120	124	54-150	0	30	
1,2,3-Trichlorobenzene	ug/kg	<10.5	1320	1280	1500	1440	114	113	63-142	4	30	
1,2,3-Trichloropropane	ug/kg	<17.2	1320	1280	1490	1390	113	109	59-147	7	30	
1,2,4-Trichlorobenzene	ug/kg	<14.6	1320	1280	1470	1400	111	110	66-142	4	30	
1,2,4-Trimethylbenzene	ug/kg	<13.1	1320	1280	1580	1590	119	124	65-145	1	30	
1,2-Dibromo-3-chloropropane	ug/kg	<228	3300	3190	3810	3600	115	113	60-142	6	30	
1,2-Dibromoethane (EDB)	ug/kg	<6.9	1320	1280	1480	1420	112	111	67-135	4	30	
1,2-Dichlorobenzene	ug/kg	<2.7	1320	1280	1420	1470	108	115	68-141	4	30	
1,2-Dichloroethane	ug/kg	<7.2	1320	1280	1270	1270	96	99	56-132	0	30	
1,2-Dichloropropane	ug/kg	<11.3	1320	1280	1360	1350	103	106	58-150	0	30	
1,3,5-Trimethylbenzene	ug/kg	<10.5	1320	1280	1570	1560	119	122	66-148	1	30	
1,3-Dichlorobenzene	ug/kg	<2.4	1320	1280	1470	1480	112	116	63-148	0	30	
1,3-Dichloropropane	ug/kg	<9.1	1320	1280	1460	1420	111	111	63-142	3	30	
1,4-Dichlorobenzene	ug/kg	<4.1	1320	1280	1400	1390	106	109	68-140	1	30	
2,2-Dichloropropane	ug/kg	<8.2	1320	1280	1490	1480	113	116	62-143	0	30	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231505 3231506

Parameter	Units	10469445004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Butanone (MEK)	ug/kg	<34.9	6600	6390	7650	7470	116	117	53-138	2	30	
2-Chlorotoluene	ug/kg	<3.2	1320	1280	1490	1480	113	116	64-145	1	30	
4-Chlorotoluene	ug/kg	<3.4	1320	1280	1480	1510	112	118	63-149	2	30	
4-Methyl-2-pentanone (MIBK)	ug/kg	<13.7	6600	6390	7730	7040	117	110	47-150	9	30	
Acetone	ug/kg	<408	6600	6390	8280	7880	125	123	64-150	5	30	
Allyl chloride	ug/kg	<55.0	1320	1280	1280	1270	97	100	49-146	1	30	
Benzene	ug/kg	3.8J	1320	1280	1350	1370	102	107	63-136	1	30	
Bromobenzene	ug/kg	<4.0	1320	1280	1460	1450	111	114	63-142	1	30	
Bromochloromethane	ug/kg	<22.7	1320	1280	1400	1350	106	106	61-139	4	30	
Bromodichloromethane	ug/kg	<22.5	1320	1280	1420	1380	108	108	63-150	3	30	
Bromoform	ug/kg	<99.4	1320	1280	1440	1410	109	111	64-140	2	30	
Bromomethane	ug/kg	<76.8	1320	1280	1280	1060	95	80	56-148	19	30	
Carbon tetrachloride	ug/kg	<31.4	1320	1280	1460	1490	111	117	75-148	2	30	
Chlorobenzene	ug/kg	<3.7	1320	1280	1430	1380	108	108	62-147	4	30	
Chloroethane	ug/kg	<34.1	1320	1280	1260	1130	95	88	37-150	11	30	
Chloroform	ug/kg	<32.8	1320	1280	1440	1440	109	112	66-130	0	30	
Chloromethane	ug/kg	<15.8	1320	1280	1140	987	86	77	35-131	14	30	
cis-1,2-Dichloroethene	ug/kg	<10.9	1320	1280	1390	1390	105	109	63-143	0	30	
cis-1,3-Dichloropropene	ug/kg	<9.4	1320	1280	1440	1390	109	109	60-150	4	30	
Dibromochloromethane	ug/kg	<7.6	1320	1280	1510	1510	115	118	64-144	0	30	
Dibromomethane	ug/kg	<12.0	1320	1280	1400	1390	106	109	59-148	0	30	
Dichlorodifluoromethane	ug/kg	<21.3	1320	1280	1080	886	82	69	30-125	20	30	
Dichlorofluoromethane	ug/kg	<90.7	1320	1280	1260	1040	96	81	39-150	20	30	N2
Diethyl ether (Ethyl ether)	ug/kg	<40.2	1320	1280	1250	1210	95	95	59-149	3	30	
Ethylbenzene	ug/kg	<3.6	1320	1280	1480	1450	112	114	64-142	2	30	
Hexachloro-1,3-butadiene	ug/kg	<16.0	1320	1280	1590	1550	120	121	58-150	2	30	
Isopropylbenzene (Cumene)	ug/kg	<2.9	1320	1280	1630	1620	123	126	67-150	1	30	
Methyl-tert-butyl ether	ug/kg	<7.8	1320	1280	1430	1370	108	108	69-134	4	30	
Methylene Chloride	ug/kg	<124	1320	1280	1360	1320	103	103	56-134	3	30	
n-Butylbenzene	ug/kg	<31.3	1320	1280	1620	1600	123	125	64-150	1	30	
n-Propylbenzene	ug/kg	<3.5	1320	1280	1580	1570	120	123	65-150	0	30	
Naphthalene	ug/kg	<61.5	1320	1280	1510	1480	113	115	63-148	2	30	
p-Isopropyltoluene	ug/kg	<20.0	1320	1280	1700	1680	129	131	69-150	2	30	
sec-Butylbenzene	ug/kg	<12.6	1320	1280	1720	1700	130	133	69-150	1	30	
Styrene	ug/kg	<3.0	1320	1280	1570	1550	119	121	63-150	1	30	
tert-Butylbenzene	ug/kg	<12.6	1320	1280	1590	1600	120	125	67-150	1	30	
Tetrachloroethene	ug/kg	<23.1	1320	1280	1580	1560	120	122	62-150	2	30	
Tetrahydrofuran	ug/kg	<95.5	13200	12800	14200	13800	108	108	53-150	3	30	
Toluene	ug/kg	<16.0	1320	1280	1470	1440	110	112	61-141	1	30	
trans-1,2-Dichloroethene	ug/kg	<30.7	1320	1280	1420	1390	107	109	52-148	2	30	
trans-1,3-Dichloropropene	ug/kg	<9.1	1320	1280	1540	1450	117	114	62-142	6	30	
Trichloroethene	ug/kg	<10.1	1320	1280	1450	1420	110	112	59-150	2	30	
Trichlorofluoromethane	ug/kg	<115	1320	1280	1340	1160	101	91	30-150	14	30	
Vinyl chloride	ug/kg	<12.9	1320	1280	1260	1030	95	81	44-144	20	30	
Xylene (Total)	ug/kg	<15.2	3960	3830	4560	4570	115	119	67-145	0	30	

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231505 3231506

Parameter	Units	10469445004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane-d4 (S)	%.						99	100	75-125			
4-Bromofluorobenzene (S)	%.						100	102	75-125			
Toluene-d8 (S)	%.						104	104	75-125			

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 597590 | Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3550 | Analysis Description: 8270D Solid PAH by SIM MSSV
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

METHOD BLANK: 3231475 | Matrix: Solid
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007, 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Acenaphthene	ug/kg	<0.41	10.0	0.41	04/05/19 14:27	
Acenaphthylene	ug/kg	<0.50	10.0	0.50	04/05/19 14:27	
Anthracene	ug/kg	<0.47	10.0	0.47	04/05/19 14:27	
Benzo(a)anthracene	ug/kg	<1.1	10.0	1.1	04/05/19 14:27	
Benzo(a)pyrene	ug/kg	<0.69	10.0	0.69	04/05/19 14:27	
Benzo(b)fluoranthene	ug/kg	<0.37	10.0	0.37	04/05/19 14:27	
Benzo(e)pyrene	ug/kg	<0.72	10.0	0.72	04/05/19 14:27	N2
Benzo(g,h,i)perylene	ug/kg	<0.63	10.0	0.63	04/05/19 14:27	
Benzo(k)fluoranthene	ug/kg	<0.84	10.0	0.84	04/05/19 14:27	
Chrysene	ug/kg	<1.4	10.0	1.4	04/05/19 14:27	
Dibenz(a,h)anthracene	ug/kg	<0.46	10.0	0.46	04/05/19 14:27	
Fluoranthene	ug/kg	<0.43	10.0	0.43	04/05/19 14:27	
Fluorene	ug/kg	<0.31	10.0	0.31	04/05/19 14:27	
Indeno(1,2,3-cd)pyrene	ug/kg	<0.67	10.0	0.67	04/05/19 14:27	
Naphthalene	ug/kg	<0.77	10.0	0.77	04/05/19 14:27	
Phenanthrene	ug/kg	<1.9	10.0	1.9	04/05/19 14:27	
Pyrene	ug/kg	<1.5	10.0	1.5	04/05/19 14:27	
2-Fluorobiphenyl (S)	%.	78	30-125		04/05/19 14:27	
p-Terphenyl-d14 (S)	%.	83	30-125		04/05/19 14:27	

LABORATORY CONTROL SAMPLE: 3231476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	33.3	26.1	78	46-125	
Acenaphthylene	ug/kg	33.3	28.3	85	44-125	
Anthracene	ug/kg	33.3	28.7	86	62-125	
Benzo(a)anthracene	ug/kg	33.3	27.2	82	53-125	
Benzo(a)pyrene	ug/kg	33.3	30.2	90	62-125	
Benzo(b)fluoranthene	ug/kg	33.3	24.4	73	51-125	
Benzo(e)pyrene	ug/kg	33.3	29.0	87	64-125	N2
Benzo(g,h,i)perylene	ug/kg	33.3	28.3	85	58-125	
Benzo(k)fluoranthene	ug/kg	33.3	31.4	94	59-125	
Chrysene	ug/kg	33.3	29.8	89	59-125	
Dibenz(a,h)anthracene	ug/kg	33.3	28.6	86	60-125	
Fluoranthene	ug/kg	33.3	32.0	96	67-125	
Fluorene	ug/kg	33.3	28.0	84	51-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	28.9	87	59-125	
Naphthalene	ug/kg	33.3	27.1	81	47-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

LABORATORY CONTROL SAMPLE: 3231476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/kg	33.3	26.5	80	61-125	
Pyrene	ug/kg	33.3	27.7	83	52-125	
2-Fluorobiphenyl (S)	%.			80	30-125	
p-Terphenyl-d14 (S)	%.			85	30-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231477 3231478

Parameter	Units	10469413001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	ug/kg	ND	38	38	36.4	37.5	96	99	30-125	3	30	
Acenaphthylene	ug/kg	ND	38	38	30.8	30.9	81	81	30-125	0	30	
Anthracene	ug/kg	ND	38	38	27.2	31.8	72	84	30-131	15	30	
Benzo(a)anthracene	ug/kg	ND	38	38	29.5	29.1	78	76	30-126	1	30	
Benzo(a)pyrene	ug/kg	ND	38	38	33.1	31.8	87	83	30-150	4	30	
Benzo(b)fluoranthene	ug/kg	ND	38	38	26.1	25.4	69	67	30-150	3	30	
Benzo(e)pyrene	ug/kg	ND	38	38	31.9	30.7	84	81	30-150	4	30	N2
Benzo(g,h,i)perylene	ug/kg	ND	38	38	31.3	30.4	82	80	30-150	3	30	
Benzo(k)fluoranthene	ug/kg	ND	38	38	34.9	34.6	92	91	30-150	1	30	
Chrysene	ug/kg	ND	38	38	34.2	32.6	90	86	30-150	5	30	
Dibenz(a,h)anthracene	ug/kg	ND	38	38	31.3	30.1	82	79	30-143	4	30	
Fluoranthene	ug/kg	ND	38	38	38.7	36.6	102	96	30-143	6	30	
Fluorene	ug/kg	ND	38	38	44.9	50.0	118	131	30-138	11	30	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	38	38	31.7	30.5	83	80	30-150	4	30	
Naphthalene	ug/kg	ND	38	38	35.1	37.4	92	98	30-125	7	30	
Phenanthrene	ug/kg	0.019 mg/kg	38	38	54.3	61.6	92	111	30-142	13	30	
Pyrene	ug/kg	ND	38	38	31.8	31.7	83	83	30-149	0	30	
2-Fluorobiphenyl (S)	%.						80	80	30-125			
p-Terphenyl-d14 (S)	%.						82	83	30-125			

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 597558 — Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO — Analysis Description: WIDRO GCS
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007

METHOD BLANK: 3231416 — Matrix: Solid
Associated Lab Samples: 10469445001, 10469445002, 10469445003, 10469445004, 10469445005, 10469445006, 10469445007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
WDRO C10-C28	mg/kg	<2.6	10.0	2.6	04/05/19 13:08	
n-Triacontane (S)	%.	93	50-150		04/05/19 13:08	

LABORATORY CONTROL SAMPLE & LCSD: 3231417 3231418

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
WDRO C10-C28	mg/kg	80	73.2	74.3	91	93	70-120	2	20	
n-Triacontane (S)	%.				99	99	50-150			

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 597688 | Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO | Analysis Description: WIDRO GCS
Associated Lab Samples: 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

METHOD BLANK: 3231846 | Matrix: Solid
Associated Lab Samples: 10469445008, 10469445009, 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
WDRO C10-C28	mg/kg	<2.6	10.0	2.6	04/05/19 16:45	
n-Triacontane (S)	%.	86	50-150		04/05/19 16:45	

LABORATORY CONTROL SAMPLE & LCSD: 3231847 | 3231848

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
WDRO C10-C28	mg/kg	80	70.7	71.3	88	89	70-120	1	20	
n-Triacontane (S)	%.				97	90	50-150			

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QUALITY CONTROL DATA

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

QC Batch: 318468 Analysis Method: EPA 9060 Modified
QC Batch Method: EPA 9060 Modified Analysis Description: 9060 TOC Average
Associated Lab Samples: 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

METHOD BLANK: 1850946 Matrix: Solid
Associated Lab Samples: 10469445010, 10469445011, 10469445012, 10469445013, 10469445014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/kg	<200	668	200	04/16/19 08:46	

LABORATORY CONTROL SAMPLE: 1850947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/kg	120000	119000	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1850948 1850949

Parameter	Units	10469445010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mean Total Organic Carbon	mg/kg	9300	60900	59700	64600	70600	91	103	50-150	9	30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1850950 1850951

Parameter	Units	10469445011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mean Total Organic Carbon	mg/kg	15600	94000	95200	103000	93500	93	82	50-150	10	30	

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QUALIFIERS

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay
PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

G+	Late peaks present outside the GRO window.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P3	Sample extract could not be concentrated to the routine final volume, resulting in elevated reporting limits.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.
T6	High boiling point hydrocarbons are present in the sample.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10469445001	**FL-SB-01-(0-10ft)**	WI MOD DRO	597558	WI MOD DRO	597925
10469445002	**FL-SB-02 (0-6ft)**	WI MOD DRO	597558	WI MOD DRO	597925
10469445003	**FL-SB-03 (0-6.5ft)**	WI MOD DRO	597558	WI MOD DRO	597925
10469445004	**FL-SB-04 (0-2ft)**	WI MOD DRO	597558	WI MOD DRO	597925
10469445005	**FL-SB-05 (0-6.5ft)**	WI MOD DRO	597558	WI MOD DRO	597925
10469445006	**FL-SB-06 (0-4.5ft)**	WI MOD DRO	597558	WI MOD DRO	597925
10469445007	**FL-SB-07 (0-4.5ft)**	WI MOD DRO	597558	WI MOD DRO	597925
10469445008	**FL-SB-08 (0-5ft)**	WI MOD DRO	597688	WI MOD DRO	597965
10469445009	**FL-SB-09 (0-8ft)**	WI MOD DRO	597688	WI MOD DRO	597965
10469445010	**FL-SB-10 (0-25ft)**	WI MOD DRO	597688	WI MOD DRO	597965
10469445011	**FL-SB-11 (0-20ft)**	WI MOD DRO	597688	WI MOD DRO	597965
10469445012	**FL-SB-12 (0-10ft)**	WI MOD DRO	597688	WI MOD DRO	597965
10469445013	**FL-SB-13 (0-6ft)**	WI MOD DRO	597688	WI MOD DRO	597965
10469445014	**FL-SB-14 (0-10ft)**	WI MOD DRO	597688	WI MOD DRO	597965
10469445001	**FL-SB-01-(0-10ft)**	EPA 5030 Medium Soil	598941	WI MOD GRO	599016
10469445002	**FL-SB-02 (0-6ft)**	EPA 5030 Medium Soil	598941	WI MOD GRO	599016
10469445003	**FL-SB-03 (0-6.5ft)**	EPA 5030 Medium Soil	598941	WI MOD GRO	599016
10469445004	**FL-SB-04 (0-2ft)**	EPA 5030 Medium Soil	598941	WI MOD GRO	599016
10469445005	**FL-SB-05 (0-6.5ft)**	EPA 5030 Medium Soil	598941	WI MOD GRO	599016
10469445006	**FL-SB-06 (0-4.5ft)**	EPA 5030 Medium Soil	598941	WI MOD GRO	599016
10469445007	**FL-SB-07 (0-4.5ft)**	EPA 5030 Medium Soil	599232	WI MOD GRO	599268
10469445008	**FL-SB-08 (0-5ft)**	EPA 5030 Medium Soil	599232	WI MOD GRO	599268
10469445009	**FL-SB-09 (0-8ft)**	EPA 5030 Medium Soil	599232	WI MOD GRO	599268
10469445010	**FL-SB-10 (0-25ft)**	EPA 5030 Medium Soil	599232	WI MOD GRO	599268
10469445011	**FL-SB-11 (0-20ft)**	EPA 5030 Medium Soil	599232	WI MOD GRO	599268
10469445012	**FL-SB-12 (0-10ft)**	EPA 5030 Medium Soil	599232	WI MOD GRO	599268
10469445013	**FL-SB-13 (0-6ft)**	EPA 5030 Medium Soil	599232	WI MOD GRO	599268
10469445014	**FL-SB-14 (0-10ft)**	EPA 5030 Medium Soil	599232	WI MOD GRO	599268
10469445015	**Trip Blank**	EPA 5030 Medium Soil	599232	WI MOD GRO	599268
10469445001	**FL-SB-01-(0-10ft)**	EPA 3050	597548	EPA 6010D	598094
10469445002	**FL-SB-02 (0-6ft)**	EPA 3050	597548	EPA 6010D	598094
10469445003	**FL-SB-03 (0-6.5ft)**	EPA 3050	597548	EPA 6010D	598094
10469445004	**FL-SB-04 (0-2ft)**	EPA 3050	597548	EPA 6010D	598094
10469445005	**FL-SB-05 (0-6.5ft)**	EPA 3050	597548	EPA 6010D	598094
10469445006	**FL-SB-06 (0-4.5ft)**	EPA 3050	597548	EPA 6010D	598094
10469445007	**FL-SB-07 (0-4.5ft)**	EPA 3050	597548	EPA 6010D	598094
10469445008	**FL-SB-08 (0-5ft)**	EPA 3050	597548	EPA 6010D	598094
10469445009	**FL-SB-09 (0-8ft)**	EPA 3050	597548	EPA 6010D	598094
10469445010	**FL-SB-10 (0-25ft)**	EPA 3050	597548	EPA 6010D	598094
10469445011	**FL-SB-11 (0-20ft)**	EPA 3050	597548	EPA 6010D	598094
10469445012	**FL-SB-12 (0-10ft)**	EPA 3050	597548	EPA 6010D	598094
10469445013	**FL-SB-13 (0-6ft)**	EPA 3050	597548	EPA 6010D	598094
10469445014	**FL-SB-14 (0-10ft)**	EPA 3050	597548	EPA 6010D	598094
10469445001	**FL-SB-01-(0-10ft)**	EPA 3050	597550	EPA 6020B	599032
10469445002	**FL-SB-02 (0-6ft)**	EPA 3050	597550	EPA 6020B	599032
10469445003	**FL-SB-03 (0-6.5ft)**	EPA 3050	597550	EPA 6020B	599032

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10469445004	**FL-SB-04 (0-2ft)**	EPA 3050	597550	EPA 6020B	599032
10469445005	**FL-SB-05 (0-6.5ft)**	EPA 3050	597550	EPA 6020B	599032
10469445006	**FL-SB-06 (0-4.5ft)**	EPA 3050	597550	EPA 6020B	599032
10469445007	**FL-SB-07 (0-4.5ft)**	EPA 3050	597550	EPA 6020B	599032
10469445008	**FL-SB-08 (0-5ft)**	EPA 3050	597550	EPA 6020B	599032
10469445009	**FL-SB-09 (0-8ft)**	EPA 3050	597550	EPA 6020B	599032
10469445010	**FL-SB-10 (0-25ft)**	EPA 3050	597550	EPA 6020B	599032
10469445011	**FL-SB-11 (0-20ft)**	EPA 3050	597550	EPA 6020B	599032
10469445012	**FL-SB-12 (0-10ft)**	EPA 3050	597550	EPA 6020B	599032
10469445013	**FL-SB-13 (0-6ft)**	EPA 3050	597550	EPA 6020B	599032
10469445014	**FL-SB-14 (0-10ft)**	EPA 3050	597550	EPA 6020B	599032
10469445001	**FL-SB-01-(0-10ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445002	**FL-SB-02 (0-6ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445003	**FL-SB-03 (0-6.5ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445004	**FL-SB-04 (0-2ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445005	**FL-SB-05 (0-6.5ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445006	**FL-SB-06 (0-4.5ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445007	**FL-SB-07 (0-4.5ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445008	**FL-SB-08 (0-5ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445009	**FL-SB-09 (0-8ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445010	**FL-SB-10 (0-25ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445011	**FL-SB-11 (0-20ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445012	**FL-SB-12 (0-10ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445013	**FL-SB-13 (0-6ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445014	**FL-SB-14 (0-10ft)**	EPA 7471B	597552	EPA 7471B	597976
10469445001	**FL-SB-01-(0-10ft)**	ASTM D2974	597866		
10469445002	**FL-SB-02 (0-6ft)**	ASTM D2974	597866		
10469445003	**FL-SB-03 (0-6.5ft)**	ASTM D2974	597866		
10469445004	**FL-SB-04 (0-2ft)**	ASTM D2974	597866		
10469445005	**FL-SB-05 (0-6.5ft)**	ASTM D2974	597866		
10469445006	**FL-SB-06 (0-4.5ft)**	ASTM D2974	597866		
10469445007	**FL-SB-07 (0-4.5ft)**	ASTM D2974	597866		
10469445008	**FL-SB-08 (0-5ft)**	ASTM D2974	597866		
10469445009	**FL-SB-09 (0-8ft)**	ASTM D2974	597866		
10469445010	**FL-SB-10 (0-25ft)**	ASTM D2974	597866		
10469445011	**FL-SB-11 (0-20ft)**	ASTM D2974	597866		
10469445012	**FL-SB-12 (0-10ft)**	ASTM D2974	597866		
10469445013	**FL-SB-13 (0-6ft)**	ASTM D2974	598370		
10469445014	**FL-SB-14 (0-10ft)**	ASTM D2974	598370		
10469445001	**FL-SB-01-(0-10ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445002	**FL-SB-02 (0-6ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445003	**FL-SB-03 (0-6.5ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445004	**FL-SB-04 (0-2ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445005	**FL-SB-05 (0-6.5ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445006	**FL-SB-06 (0-4.5ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445007	**FL-SB-07 (0-4.5ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445008	**FL-SB-08 (0-5ft)**	EPA 3550	597590	EPA 8270D by SIM	597870

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 19-01567 MPCA Freeway LF 19 SL
Pace Project No.: 10469445

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10469445009	**FL-SB-09 (0-8ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445010	**FL-SB-10 (0-25ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445011	**FL-SB-11 (0-20ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445012	**FL-SB-12 (0-10ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445013	**FL-SB-13 (0-6ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445014	**FL-SB-14 (0-10ft)**	EPA 3550	597590	EPA 8270D by SIM	597870
10469445001	**FL-SB-01-(0-10ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445002	**FL-SB-02 (0-6ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445003	**FL-SB-03 (0-6.5ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445004	**FL-SB-04 (0-2ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445005	**FL-SB-05 (0-6.5ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445006	**FL-SB-06 (0-4.5ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445007	**FL-SB-07 (0-4.5ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445008	**FL-SB-08 (0-5ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445009	**FL-SB-09 (0-8ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445010	**FL-SB-10 (0-25ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445011	**FL-SB-11 (0-20ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445012	**FL-SB-12 (0-10ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445013	**FL-SB-13 (0-6ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445014	**FL-SB-14 (0-10ft)**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445015	**Trip Blank**	EPA 5035/5030B	597598	EPA 8260B	597673
10469445010	**FL-SB-10 (0-25ft)**	EPA 9060 Modified	318468		
10469445010	**FL-SB-10 (0-25ft)**	EPA 9060 Modified	318469		
10469445011	**FL-SB-11 (0-20ft)**	EPA 9060 Modified	318468		
10469445011	**FL-SB-11 (0-20ft)**	EPA 9060 Modified	318469		
10469445012	**FL-SB-12 (0-10ft)**	EPA 9060 Modified	318468		
10469445012	**FL-SB-12 (0-10ft)**	EPA 9060 Modified	318469		
10469445013	**FL-SB-13 (0-6ft)**	EPA 9060 Modified	318468		
10469445013	**FL-SB-13 (0-6ft)**	EPA 9060 Modified	318469		
10469445014	**FL-SB-14 (0-10ft)**	EPA 9060 Modified	318468		
10469445014	**FL-SB-14 (0-10ft)**	EPA 9060 Modified	318469		

Minnesota Pollution Control Agency

Chain-of-Custody Form revison 2013.0909

WO#: 10469445

Work Order Number:	
Turnaround Time:	

of 2

FOR LAB USE ONLY

Lab Work Order Sticker

PROJECT/CLIENT INFO

Facility Code:	MNSW-057	Program Code (MDH Lab Only):	
Project Name:	19-01567 MPCA Freeway LF 2019 Soils/Solids	Project Task Code:	PRJ07786
Project Manager:	Brad Jacobson 612-607-6375	EPIC PROFILE #:	38716 Line 1
Potential Hazard?	If yes, add information to Sampler Comments Section		

Lab Name:

Address: 1700 SE Elm Street

Minneapolis MN 55414

Phone No: 612-607-6400

SAMPLE DETAILS

SAMPLE TYPE CODES
Sample=Routine Sample
S-IVP=Integrated Vertical Profile Sample
S-CWOP=Composite Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample

LAB MATRIX CODES
DW=Drinking Water
NW=Non-potable Water
SD=Soil/Solid
WP=Wipe
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRIX CODES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample

ANALYSIS REQUESTED

Location Identifier	Sample Type	Date	Time	Start Depth, in meters	End Depth, in meters	Grab (G) or Composite (C) Sample	Lab Matrix Code	Field Matrix Code	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	PRESERV. / ANALYSIS	Metals 6020/6010 / Mercury 7471 - QAPP Table 3b	8260 MLS / GRO - QAPP Table 3b	8270PAH / DRO - QAPP Table 3b	TOC 9060A	Grain Size ASTM D422 Sieve & Hydrometer		Lab Sample No.	#
FL-SB-01 (0-10 ft)	Sample	4/2/19	0925			C	SD		N		8		X	X	X				001	1
FL-SB-02 (0-6 ft)	Sample	4/2/19	1000			C	SD		N		8		X	X	X				002	2
FL-SB-03 (0-6.5 ft)	Sample	4/2/19	1025			C	SD		N		8		X	X	X				003	3
FL-SB-04 (0-2 ft)	Sample	4/2/19	1045			C	SD		N		8		X	X	X				004	4
FL-SB-05 (0-6.5 ft)	Sample	4/2/19	1115			C	SD		N		8		X	X	X				005	5
FL-SB-06 (0-4.5 ft)	Sample	4/2/19	1140			C	SD		N		8		X	X	X				006	6
FL-SB-07 (0-4.5 ft)	Sample	4/2/19	1220			C	SD		N		8		X	X	X				007	7
FL-SB-08 (0-5 ft)	Sample	4/2/19	1320			C	SD		N		8		X	X	X				008	8
FL-SB-09 (0-8 ft)	Sample	4/2/19	1430			C	SD		N		8		X	X	X				009	9
FL-SB-10 (0-25 ft)	Sample	4/2/19	1515			C	SD		N	(2) Extra 4 oz Jars	10		X	X	X	X	X[1]		010	10

Sampled By: Dave Anderson / Chris Pelosi

Sampler's Signature: David Anderson

Phone #:

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/ Affiliation	Date/Time
(Sampler) David Anderson / Pace Analytical	4/3/19	[illegible]	4/3/19 1004

[1] Run ASTM D422 if (1) 4 oz Jar is sufficient sample volume.

T= 6.5, 4.2, 1.6

Minnesota Pollution Control Agency

Chain-of-Custody Form revision 2013.0909

Work Order Number: | **COC Type:** | **Page:** 2 of 2

Turnaround Time: | **COC ID:**

FOR LAB USE ONLY

Lab Work Order Sticker

PROJECT/CLIENT INFO

Facility Code:	MNSW-057 — Program Code (MDH Lab Only):
Project Name:	19-01567 MPCA Freeway LF 2019 Soils/Solids — Project Task Code: PRJ07786
Project Manager:	Brad Jacobson 612-607-6375 — EPIC PROFILE #: 38716 Line 1
Potential Hazard?	If yes, add information to Sampler Comments Section

LABORATORY

Lab Name:	Pace Analytical - Minneapolis, MN
Address:	1700 SE Elm Street
	Minneapolis MN 55414
Phone No:	612-607-6400

SAMPLE DETAILS

SAMPLE TYPE CODES
Sample=Routine Sample
S-IVP=Integrated Vertical Profile Sample
S-CWOP=Composite Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample

LAB MATRIX CODES
DW=Drinking Water
NW=Non-potable Water
SD=Soil/Solid
WP=Wipe
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRIX CODES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample

ANALYSIS REQUESTED

Location Identifier	Sample Type	Date	Time	Start Depth, in meters	End Depth, in meters	Grab (G) or Composite (C) Sample	Lab Matrix Code	Field Matrix Code	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	PRESERV. / ANALYSIS	Metals 6020/6010 / Mercury 7471 - QAPP Table 3b	8260 MLS / GRO - QAPP Table 3b	8270PAH / DRO - QAPP Table 3b	TOC 9060A	Grain Size ASTM D422 Sieve & Hydrometer		Lab Sample No.	#
FL-SB-11 (0-20 ft)	Sample	4/2/19	1600			C	SD		N	(2) Extra 4 oz Jars (1) Bag for ASTM D422	11		X	X	X	X	X		011	1
FL-SB-12 (0-10 ft)	Sample	4/2/19	1640			C	SD		N	(2) Extra 4 oz Jars (1) Bag for ASTM D422	11		X	X	X	X	X		012	2
FL-SB-13 (0-6 ft)	Sample	4/2/19	1710			C	SD		N	(2) Extra 4 oz Jars (1) Bag for ASTM D422	11		X	X	X	X	X		013	3
FL-SB-14 (0-10 ft)	Sample	4/2/19	1740			C	SD		N	(2) Extra 4 oz Jars (1) bag for ASTM D422	11		X	X	X	X	X		014	4
									N											5
									N											6
									N											7
									N											8
									N											9
									N											10

DA 4/3/19

Sampled By: Dave Anderson / Chris Pelosi — **Sampler's Signature:** Dave Anderson — **Phone #:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/ Affiliation	Date/Time
(Sampler) Dave Anderson / Pace Analytical	4/3/19	[illegible]	4/3/19 1604

T-6.5/4.2/1.6

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 06Feb2019 Page 1 of 1
	Document No.: **F-MN-L-213-rev.25**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Field/MPCA

Project #: WO#: 10469445
PM: JMA Due Date: 04/17/19
CLIENT: PASI-MNFLD

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Pace ☐ SpeeDee ☐ Commercial See Exception ☐

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ G87A9155100842 ☑ G87A9170600254 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 4.2, 1.6 FE 4/3/19 °C

Correction Factor: TMC **Cooler Temp Corrected w/temp blank:** 6.5 FE 4/3/19 4.2, 1.6 °C

Average Corrected Temp (no temp blank only): (4.2)(6.5) °C See Exceptions ☐

USDA Regulated Soil: (☐ N/A, water sample/Other:)

Date/Initials of Person Examining Contents: FE 4/3/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☐ Yes	☐ No		8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☑ Soil ☐ Oil ☐ Other	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** See Exception ☐
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample # ☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☑ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No See Exception ☐
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	13. See Exception ☐
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	14.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	Pace Trip Blank Lot # (if purchased): 11218-3

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution: Temp okay for plastic bag containers received over 6 degrees C. - Grain Size analysis only.

Project Manager Review: J Andrews **Date:** 04/04/2019

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: CLF

Pace Analytical	Document Name: SCUR Exception Form – Coolers Above 6°C	Document Revised: 04Feb2019 Page 1 of 1
	Document No.: F-MN-C-298-Rev.01	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers
FL-SB-11 (0-20ft)	PB	1
FL-SB-12 (0-10ft)	"	1
FL-SB-13 (0-6ft)	"	1
FL-SB-14 (0-10ft)	"	1

PM Notified? ☑ Yes ☐ No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.
Notified upon login

Multiple Cooler Project? ☑ Yes ☐ No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp
5.6		6.5
5.5		
7.4		
7.5		

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

Tracking Number	

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions: **Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp
3.2		4.2
4.9		
4.2		
4.3		

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

Tracking Number	

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

WO#: 12123315

PM: CLJ Due Date: 04/17/19

CLIENT: PACE MPLS

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: MN

Cert. Needed: ☒ Yes ☐ N

Workorder: 10469445 Workorder Name: 19-01567 MPCA Freeway LF 19 SL

Owner Received Date: 4/3/2019 Results Requested By: 4/17/2019

Report To	Subcontract To
Jennifer Anderson Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-6436	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Preserved Containers / Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Unpreserved 1GFU	TOC by 9060	LAB USE ONLY
1	FL-SB-10 (0-25ft)	PS	4/2/2019 15:15	10469445010	Solid	1	X	
2	FL-SB-11 (0-20ft)	PS	4/2/2019 16:00	10469445011	Solid	1	X	
3	FL-SB-12 (0-10ft)	PS	4/2/2019 16:40	10469445012	Solid	1	X	
4	FL-SB-13 (0-6ft)	PS	4/2/2019 17:10	10469445013	Solid	1	X	
5	FL-SB-14 (0-10ft)	PS	4/2/2019 17:40	10469445014	Solid	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] Pace	4/4/19 1245	[signature]	4/4/19 1230
2	[signature]	4/4/19 1510	Peggy Donahue	4/4/19 1510
3	Peggy Donahue	4/5/19 950	Katie Richards	4/5/19 9:50

Comments

Cooler Temperature on Receipt 2.1 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Katie Richards 4/5/19 11:32

Received By: [signature] 4/5/19 11:32 2.6°C

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 03Apr2019 Page 1 of 1
	Document No.: F-VM-C-001-Rev.12	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #:

WO#: 12123315

12123315

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other: ________

Tracking Number: ________

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: ________ Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.3 Cooler Temp Corrected °C: 2.6 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: RH 4/5/19

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: SL				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☐ No	☒ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): ________				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: ________ Date/Time: ________

Comments/Resolution: ________

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Katie Richards Date: 4/5/2019

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

40185570

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

Pace Analytical® www.pacelabs.com

State Of Origin: MN
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 4/3/2019 Results Requested By: 4/17/2019

Workorder: 10469445 Workorder Name: 19-01567 MPCA Freeway LF 19 SL

Report To	Subcontract To
Jennifer Anderson Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-6436	Pace Analytical Green Bay 1241 Bellevue Street Suite 9 Green Bay, WI 54302 Phone (920)469-2436

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved (GEU)	Requested Analysis: TOC by 9060A	LAB USE ONLY
1	FL-SB-10 (0-25ft)	PS	4/2/2019 15:15	10469445010	Solid	1	X	001
2	FL-SB-11 (0-20ft)	PS	4/2/2019 16:00	10469445011	Solid	1	X	002
3	FL-SB-12 (0-10ft)	PS	4/2/2019 16:40	10469445012	Solid	1	X	003
4	FL-SB-13 (0-6ft)	PS	4/2/2019 17:10	10469445013	Solid	1	X	004
5	FL-SB-14 (0-10ft)	PS	4/2/2019 17:40	10469445014	Solid	1	X	005

Transfers	Released By	Date/Time	Received By	Date/Time
1	Katie Rhaads	4/9/19 14:35		
2	FedEx	4/10/19 1030		
3			[illegible]	4/10/19 1030

Comments

Cooler Temperature on Receipt 2 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Tuesday, April 09, 2019 1:39:15 PM

FMT-ALL-C-002rev.00 24March2009

Pace Analytical Services, LLC
1241 Bellevue Street, Suite
Green Bay, WI 5430

Sample Preservation Receipt Form

Client Name: Pace Mn

Project # 40185570

All containers needing preservation have been checked and noted below: □Yes □No ☑N/A

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Initial when completed:

Date/ Time:

Pace Lab #	Glass: AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	Plastic: BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	Vials: DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	WGFU	WPFU	General: SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																																	2.5 / 5 / 10
002																																	2.5 / 5 / 10
003																																	2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

11/10/19 RP

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: ________ Headspace in VOA Vials (>6mm) : □Yes □No ☑N/A *If yes look in headspace column

Code	Description	Code	Description	Code	Description	Code	Description
AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40185570

40185570

Client Name: Pace Mn

Courier: ☐ CS Logistics ☑ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other:

Tracking #: 7749 2566 9800

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - 38 **Type of Ice:** Wet Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 2 /Corr: 2

Temp Blank Present: ☑ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 4-10-19
Initials: JK

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☐No ☑N/A	4. J RWO 4-10-19 JK
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD:	☐Yes ☑No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☐Yes ☐No ☑N/A	
-Pace IR Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: S	☐Yes ☑No ☐N/A	12. Original client no times 4-10-19 JK
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Uke **Date:** 4/10/19

GZ260406-001, FL-SB-11 GS ChartReport.pdf

GZ260406-001, FL-SB-11 GS TestData.pdf

GZ260406-002, FL-SB-12 GS ChartReport.pdf

GZ260406-002, FL-SB-12 GS TestData.pdf

GZ260406-003, FL-SB-13 GS ChartReport.pdf

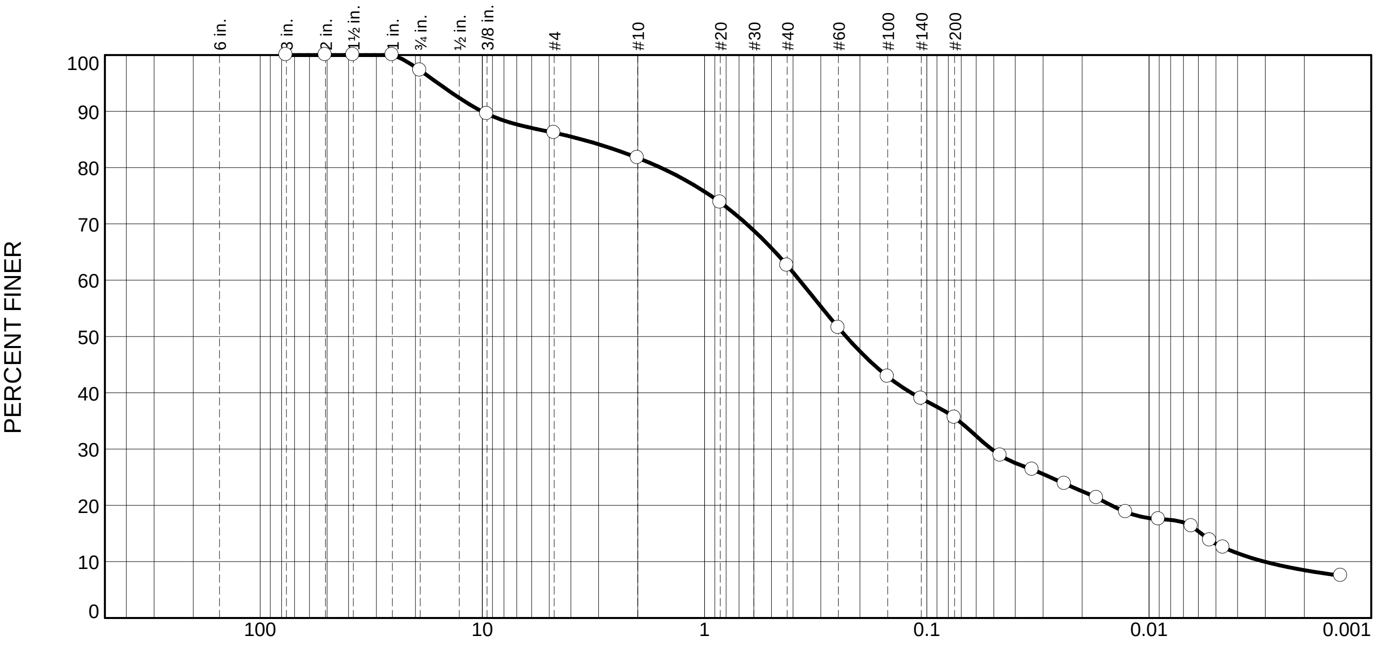
GZ260406-003, FL-SB-13 GS TestData.pdf

GZ260406-004, FL-SB-14 GS ChartReport.pdf

GZ260406-004, FL-SB-14 GS TestData.pdf

260406 COC.pdf

ASTM D6913 / ASTM D7928



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	11	4	19	27	23	13

TEST RESULTS (ASTM D6913/D7928)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100		
2	100		
1.5	100		
1	100		
.75	97		
.375	90		
#4	86		
#10	82		
#20	74		
#40	63		
#60	52		
#100	43		
#140	39		
#200	36		
0.0467 mm.	29		
0.0335 mm.	26		
0.0240 mm.	24		
0.0172 mm.	21		
0.0127 mm.	19		
0.0090 mm.	18		
0.0064 mm.	16		
0.0053 mm.	14		
0.0046 mm.	13		
0.0014 mm.	7.5		

* (no specification provided)

Material Description

silty sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 10.0638 D_{85}= 3.5709 D_{60}= 0.3739
D_{50}= 0.2310 D_{30}= 0.0512 D_{15}= 0.0058
D_{10}= 0.0030 C_u= 123.51 C_c= 2.32

Remarks

Water Content (ASTM D2216): 16.1%
F.M.=2.00

Date Received: 4/9/19 **Date Tested:** 4/15/19

Tested By: GMK & RRW

Checked By: Gina Koski

Title: Lab Analyst

Location: FL-SB-11 (0-20')
Sample Number: 260406-001

Date Sampled: 4/2/19

Northeast Technical Services

Virginia, MN

Client: Pace Analytical MPLS
Project: 19-01567 MPCA Freeway LF 19 SL

Project No: 10613-2019 **Figure**

ASTM D7928 Hydrometer analyzed upon client request.

GRAIN SIZE DISTRIBUTION TEST DATA

4/16/2019

Client: Pace Analytical MPLS
Project: 19-01567 MPCA Freeway LF 19 SL
Project Number: 10613-2019
Location: FL-SB-11 (0-20')
Sample Number: 260406-001
Material Description: silty sand
Sample Date: 4/2/19
Date Received: 4/9/19 **PL:** NP **LL:** NV
USCS Classification: SM **AASHTO Classification:** A-4(0)
Grain Size Test Method: ASTM D6913/D7928
Testing Remarks: Water Content (ASTM D2216): 16.1%
Tested By: GMK & RRW **Test Date:** 4/15/19
Checked By: Gina Koski **Title:** Lab Analyst

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
1098.20	536.30	3	0.00	0.00	100
		2	0.00	0.00	100
		1.5	0.00	0.00	100
		1	0.00	0.00	100
		.75	15.40	0.00	97
		.375	43.40	0.00	90
		#4	18.80	0.00	86
		#10	25.10	0.00	82
65.00	0.00	#20	6.30	0.00	74
		#40	8.90	0.00	63
		#60	8.80	0.00	52
		#100	6.90	0.00	43
		#140	3.10	0.00	39
		#200	2.70	0.00	36

Northeast Technical Services

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 82
Weight of hydrometer sample =65.0
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -5
Meniscus correction only = 0.0
Specific gravity of solids = 2.65
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.0	28.0	23.0	0.0136	28.0	11.7	0.0467	28.9
2.00	20.0	26.0	21.0	0.0136	26.0	12.0	0.0335	26.4
4.00	20.0	24.0	19.0	0.0136	24.0	12.4	0.0240	23.8
8.00	20.0	22.0	17.0	0.0136	22.0	12.7	0.0172	21.3
15.00	20.0	20.0	15.0	0.0136	20.0	13.0	0.0127	18.8
30.00	20.0	19.0	14.0	0.0136	19.0	13.2	0.0090	17.6
60.00	20.0	18.0	13.0	0.0136	18.0	13.3	0.0064	16.3
90.00	20.0	16.0	11.0	0.0136	16.0	13.7	0.0053	13.8
120.00	20.0	15.0	10.0	0.0136	15.0	13.8	0.0046	12.5
1440.00	20.0	11.0	6.0	0.0136	11.0	14.5	0.0014	7.5

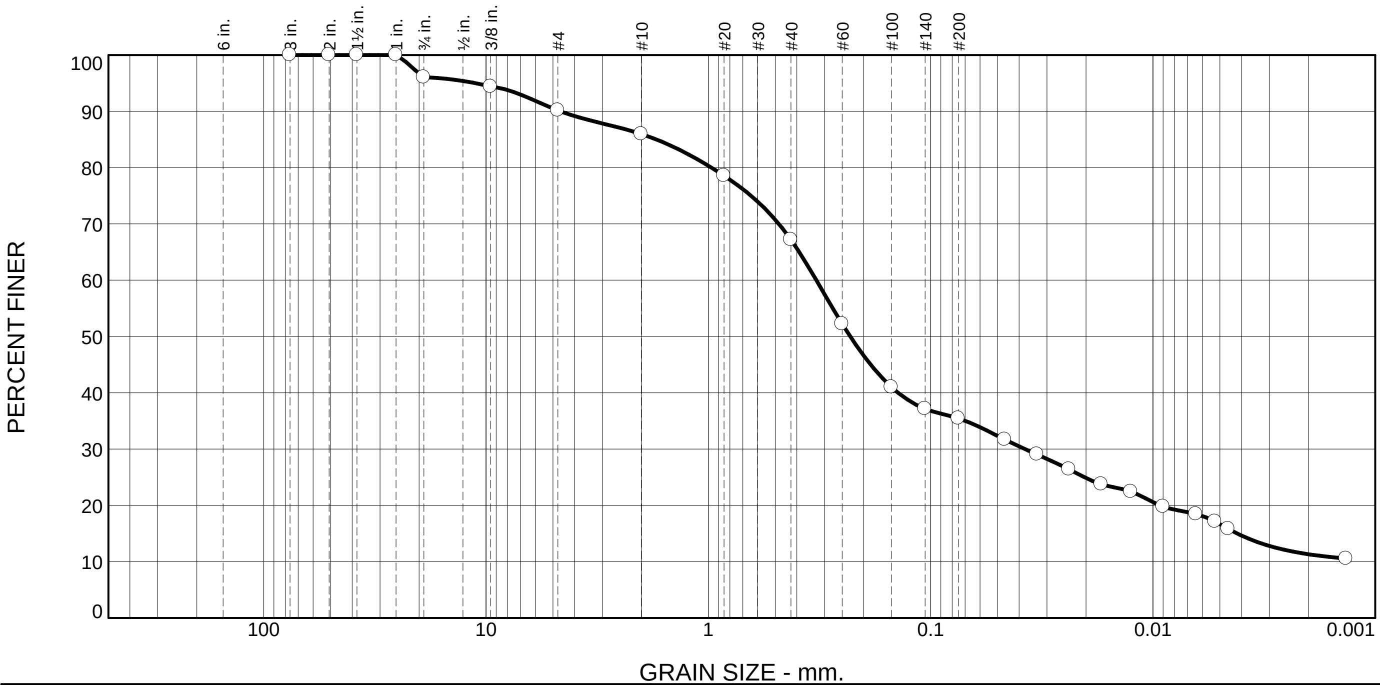
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	3	11	14	4	19	27	50	23	13	36

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0030	0.0058	0.0148	0.0512	0.1177	0.2310	0.3739	1.5779	3.5709	10.0638	15.8361

Fineness Modulus	C_u	C_c
2.00	123.51	2.32

ASTM D6913 / ASTM D7928



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	4	6	4	19	32	18	17

TEST RESULTS (ASTM D6913/D7928)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100		
2	100		
1.5	100		
1	100		
.75	96		
.375	94		
#4	90		
#10	86		
#20	79		
#40	67		
#60	52		
#100	41		
#140	37		
#200	35		
0.0464 mm.	32		
0.0332 mm.	29		
0.0238 mm.	26		
0.0171 mm.	24		
0.0125 mm.	22		
0.0090 mm.	20		
0.0064 mm.	18		
0.0053 mm.	17		
0.0046 mm.	16		
0.0014 mm.	11		

* (no specification provided)

Material Description

silty sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=** A-2-4(0)

Coefficients

D_{90}= 4.6358 D_{85}= 1.7158 D_{60}= 0.3268
D_{50}= 0.2300 D_{30}= 0.0377 D_{15}= 0.0042
D_{10}= C_u= C_c=

Remarks

Water Content (ASTM D2216): 21.5%
F.M.=1.78

Date Received: 4/9/19 **Date Tested:** 4/15/19

Tested By: GMK & RRW

Checked By: Gina Koski

Title: Lab Analyst

Location: FL-SB-12 (0-10')
Sample Number: 260406-002

Date Sampled: 4/2/19

Northeast Technical Services

Virginia, MN

Client: Pace Analytical MPLS
Project: 19-01567 MPCA Freeway LF 19 SL

Project No: 10613-2019 **Figure**

ASTM D7928 Hydrometer analyzed upon client request.

GRAIN SIZE DISTRIBUTION TEST DATA

4/16/2019

Client: Pace Analytical MPLS
Project: 19-01567 MPCA Freeway LF 19 SL
Project Number: 10613-2019
Location: FL-SB-12 (0-10')
Sample Number: 260406-002
Material Description: silty sand
Sample Date: 4/2/19
Date Received: 4/9/19 **PL:** NP **LL:** NV
USCS Classification: SM **AASHTO Classification:** A-2-4(0)
Grain Size Test Method: ASTM D6913/D7928
Testing Remarks: Water Content (ASTM D2216): 21.5%
Tested By: GMK & RRW **Test Date:** 4/15/19
Checked By: Gina Koski **Title:** Lab Analyst

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
941.00	515.30	3	0.00	0.00	100
		2	0.00	0.00	100
		1.5	0.00	0.00	100
		1	0.00	0.00	100
		.75	16.80	0.00	96
		.375	7.10	0.00	94
		#4	18.00	0.00	90
		#10	17.90	0.00	86
65.00	0.00	#20	5.60	0.00	79
		#40	8.60	0.00	67
		#60	11.30	0.00	52
		#100	8.50	0.00	41
		#140	2.90	0.00	37
		#200	1.30	0.00	35

Northeast Technical Services

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 86
Weight of hydrometer sample =65.0
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -5
Meniscus correction only = 0.0
Specific gravity of solids = 2.65
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 **-** 0.164 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.0	29.0	24.0	0.0136	29.0	11.5	0.0464	31.7
2.00	20.0	27.0	22.0	0.0136	27.0	11.9	0.0332	29.0
4.00	20.0	25.0	20.0	0.0136	25.0	12.2	0.0238	26.4
8.00	20.0	23.0	18.0	0.0136	23.0	12.5	0.0171	23.7
15.00	20.0	22.0	17.0	0.0136	22.0	12.7	0.0125	22.4
30.00	20.0	20.0	15.0	0.0136	20.0	13.0	0.0090	19.8
60.00	20.0	19.0	14.0	0.0136	19.0	13.2	0.0064	18.5
90.00	20.0	18.0	13.0	0.0136	18.0	13.3	0.0053	17.1
120.00	20.0	17.0	12.0	0.0136	17.0	13.5	0.0046	15.8
1443.00	20.0	13.0	8.0	0.0136	13.0	14.2	0.0014	10.5

Fractional Components

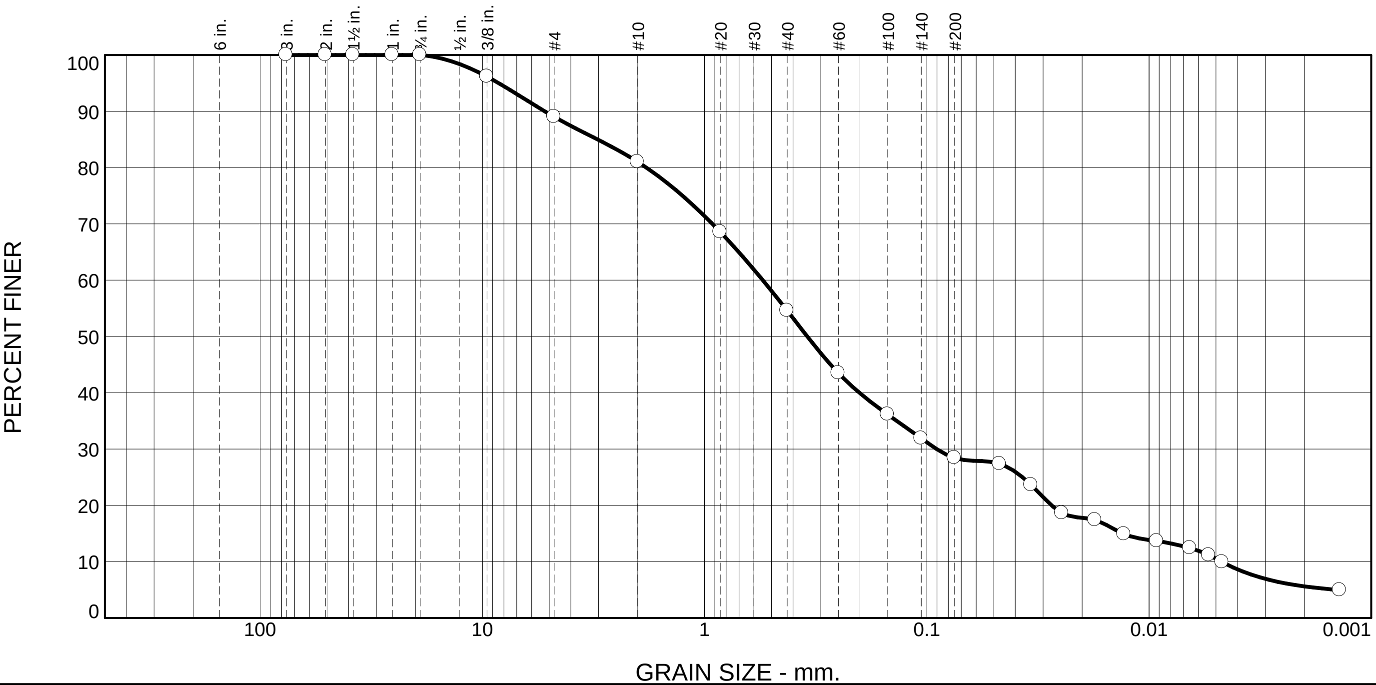
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	4	6	10	4	19	32	55	18	17	35

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0042	0.0093	0.0377	0.1402	0.2300	0.3268	0.9696	1.7158	4.6358	11.1903

Fineness Modulus
1.78

Northeast Technical Services

ASTM D6913 / ASTM D7928



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	11	8	26	27	17	11

TEST RESULTS (ASTM D6913/D7928)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100		
2	100		
1.5	100		
1	100		
.75	100		
.375	96		
#4	89		
#10	81		
#20	69		
#40	55		
#60	43		
#100	36		
#140	32		
#200	28		
0.0470 mm.	27		
0.0339 mm.	24		
0.0246 mm.	19		
0.0175 mm.	17		
0.0129 mm.	15		
0.0092 mm.	14		
0.0066 mm.	12		
0.0054 mm.	11		
0.0047 mm.	9.9		
0.0014 mm.	4.9		

* (no specification provided)

Material Description

silty sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=** A-2-4(0)

Coefficients

D_{90}= 5.2429 D_{85}= 3.0333 D_{60}= 0.5475
D_{50}= 0.3450 D_{30}= 0.0903 D_{15}= 0.0131
D_{10}= 0.0047 C_u= 115.77 C_c= 3.15

Remarks

Water Content (ASTM D2216): 12.4%
F.M.=2.13

Date Received: 4/9/19 **Date Tested:** 4/15/19

Tested By: GMK & RRW

Checked By: Gina Koski

Title: Lab Analyst

Location: FL-SB-13 (0-6')
Sample Number: 260406-003
Date Sampled: 4/2/19

Northeast Technical Services

Virginia, MN

Client: Pace Analytical MPLS
Project: 19-01567 MPCA Freeway LF 19 SL
Project No: 10613-2019 **Figure**

ASTM D7928 Hydrometer analyzed upon client request.

GRAIN SIZE DISTRIBUTION TEST DATA

4/16/2019

Client: Pace Analytical MPLS
Project: 19-01567 MPCA Freeway LF 19 SL
Project Number: 10613-2019
Location: FL-SB-13 (0-6')
Sample Number: 260406-003
Material Description: silty sand
Sample Date: 4/2/19
Date Received: 4/9/19 **PL:** NP **LL:** NV
USCS Classification: SM **AASHTO Classification:** A-2-4(0)
Grain Size Test Method: ASTM D6913/D7928
Testing Remarks: Water Content (ASTM D2216): 12.4%
Tested By: GMK & RRW **Test Date:** 4/15/19
Checked By: Gina Koski **Title:** Lab Analyst

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
952.40	528.40	3	0.00	0.00	100
		2	0.00	0.00	100
		1.5	0.00	0.00	100
		1	0.00	0.00	100
		.75	0.00	0.00	100
		.375	16.30	0.00	96
		#4	30.30	0.00	89
		#10	33.90	0.00	81
65.00	0.00	#20	10.00	0.00	69
		#40	11.20	0.00	55
		#60	8.90	0.00	43
		#100	5.90	0.00	36
		#140	3.40	0.00	32
		#200	2.80	0.00	28

Northeast Technical Services

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 81
Weight of hydrometer sample =65.0
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -5
Meniscus correction only = 0.0
Specific gravity of solids = 2.65
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 **-** 0.164 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.0	27.0	22.0	0.0136	27.0	11.9	0.0470	27.4
2.00	20.0	24.0	19.0	0.0136	24.0	12.4	0.0339	23.6
4.00	20.0	20.0	15.0	0.0136	20.0	13.0	0.0246	18.6
8.00	20.0	19.0	14.0	0.0136	19.0	13.2	0.0175	17.4
15.00	20.0	17.0	12.0	0.0136	17.0	13.5	0.0129	14.9
30.00	20.0	16.0	11.0	0.0136	16.0	13.7	0.0092	13.7
60.00	20.0	15.0	10.0	0.0136	15.0	13.8	0.0066	12.4
90.00	20.0	14.0	9.0	0.0136	14.0	14.0	0.0054	11.2
120.00	20.0	13.0	8.0	0.0136	13.0	14.2	0.0047	9.9
1438.00	20.0	9.0	4.0	0.0136	9.0	14.8	0.0014	4.9

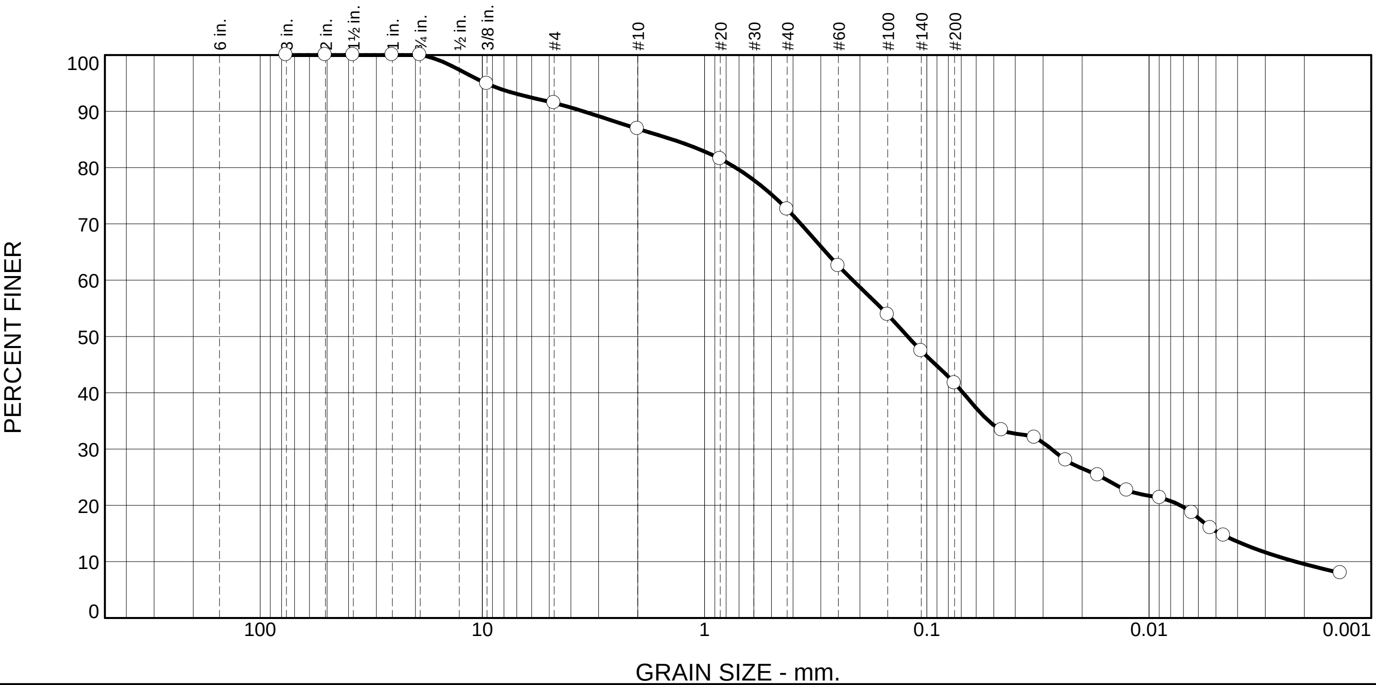
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	11	11	8	26	27	61	17	11	28

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0014	0.0047	0.0131	0.0274	0.0903	0.2010	0.3450	0.5475	1.8289	3.0333	5.2429	8.4397

Fineness Modulus	C_u	C_c
2.13	115.77	3.15

ASTM D6913 / ASTM D7928



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	9	4	14	31	27	15

TEST RESULTS (ASTM D6913/D7928)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100		
2	100		
1.5	100		
1	100		
.75	100		
.375	95		
#4	91		
#10	87		
#20	82		
#40	73		
#60	63		
#100	54		
#140	47		
#200	42		
0.0460 mm.	33		
0.0328 mm.	32		
0.0237 mm.	28		
0.0170 mm.	25		
0.0125 mm.	23		
0.0089 mm.	21		
0.0064 mm.	19		
0.0053 mm.	16		
0.0046 mm.	15		
0.0014 mm.	8.0		

* (no specification provided)

Material Description

silty sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=**

Classification

USCS (D 2487)= SM **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 3.5146 D_{85}= 1.4010 D_{60}= 0.2156
D_{50}= 0.1220 D_{30}= 0.0275 D_{15}= 0.0048
D_{10}= 0.0022 C_u= 98.47 C_c= 1.60

Remarks

Water Content (ASTM D2216): 26.4%
F.M.=1.44

Date Received: 4/9/19 **Date Tested:** 4/15/19
Tested By: GMK & RRW
Checked By: Gina Koski
Title: Lab Analyst

Location: FL-SB-14 (0-10')
Sample Number: 260406-004
Date Sampled: 4/2/19

Northeast Technical Services

Virginia, MN

Client: Pace Analytical MPLS
Project: 19-01567 MPCA Freeway LF 19 SL
Project No: 10613-2019 **Figure**

ASTM D7928 Hydrometer analyzed upon client request.

GRAIN SIZE DISTRIBUTION TEST DATA

4/16/2019

Client: Pace Analytical MPLS
Project: 19-01567 MPCA Freeway LF 19 SL
Project Number: 10613-2019
Location: FL-SB-14 (0-10')
Sample Number: 260406-004
Material Description: silty sand
Sample Date: 4/2/19
Date Received: 4/9/19 **PL:** NP **LL:** NV
USCS Classification: SM **AASHTO Classification:** A-4(0)
Grain Size Test Method: ASTM D6913/D7928
Testing Remarks: Water Content (ASTM D2216): 26.4%
Tested By: GMK & RRW **Test Date:** 4/15/19
Checked By: Gina Koski **Title:** Lab Analyst

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
926.40	523.00	3	0.00	0.00	100
		2	0.00	0.00	100
		1.5	0.00	0.00	100
		1	0.00	0.00	100
		.75	0.00	0.00	100
		.375	20.60	0.00	95
		#4	13.80	0.00	91
		#10	18.50	0.00	87
65.00	0.00	#20	4.00	0.00	82
		#40	6.70	0.00	73
		#60	7.50	0.00	63
		#100	6.50	0.00	54
		#140	4.80	0.00	47
		#200	4.30	0.00	42

Northeast Technical Services

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 87
Weight of hydrometer sample =65.0
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -5
Meniscus correction only = 0.0
Specific gravity of solids = 2.65
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 **-** 0.164 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.0	30.0	25.0	0.0136	30.0	11.4	0.0460	33.4
2.00	20.0	29.0	24.0	0.0136	29.0	11.5	0.0328	32.0
4.00	20.0	26.0	21.0	0.0136	26.0	12.0	0.0237	28.0
8.00	20.0	24.0	19.0	0.0136	24.0	12.4	0.0170	25.3
15.00	20.0	22.0	17.0	0.0136	22.0	12.7	0.0125	22.7
30.00	20.0	21.0	16.0	0.0136	21.0	12.9	0.0089	21.3
60.00	20.0	19.0	14.0	0.0136	19.0	13.2	0.0064	18.7
90.00	20.0	17.0	12.0	0.0136	17.0	13.5	0.0053	16.0
120.00	20.0	16.0	11.0	0.0136	16.0	13.7	0.0046	14.6
1430.00	20.0	11.0	6.0	0.0136	11.0	14.5	0.0014	8.0

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	9	9	4	14	31	49	27	15	42

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0022	0.0048	0.0072	0.0275	0.0687	0.1220	0.2156	0.7256	1.4010	3.5146	9.6592

Fineness Modulus	C_u	C_c
1.44	98.47	1.60

Northeast Technical Services

260406

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10469445 **Workorder Name:** 19-01567 MPCA Freeway LF 19 SL **Results Requested By:** 4/17/2019

Report / Invoice To

Jennifer Anderson
Pace Analytical Minnesota
1700 Elm Street
Suite 200
Minneapolis, MN 55414
Phone (612)607-6436
Email: jennifer.anderson@pacelabs.com

Subcontract To

NTS
526 Chestnut St.
Virginia, MN 55792

P.O. 10469445

State of Sample Origin: MN

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved ZPLU	Requested Analysis: ASTM D422 Grain Size + Hydrometer	LAB USE ONLY
1	FL-SB-11 (0-20ft)	4/2/2019 16:00	10469445011	Solid	1	X	001 ✓
2	FL-SB-12 (0-10ft)	4/2/2019 16:40	10469445012	Solid	1	X	002 ✓
3	FL-SB-13 (0-6ft)	4/2/2019 17:10	10469445013	Solid	1	X	003 ✓
4	FL-SB-14 (0-10ft)	4/2/2019 17:40	10469445014	Solid	1	X	004 ✓
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] / Pace	4/4/19 1235	[illegible]	4/4/19 1230
2	[illegible]	4/4/19 1510	Peggy Donahue	4/4/19 1510
3	Peggy Donahue	4/5/19 930	Katie Rhanoe	4/5/19 930

Comments

Cooler Temperature on Receipt 2.1 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

Katie Rhand 4/5/19 11:32

A Koski 4-9-19 10:00

Received By: [illegible] 4/5/19 11:32 2.6°C

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

May 14, 2019

Mr. Brad Jacobson
Pace Analytical Services, LLC..
1700 Elm Street
Suite 200
Minneapolis, MN 55414

RE: Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Dear Mr. Jacobson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Anderson
jennifer.anderson@pacelabs.com
(612)607-6436
Project Manager

Enclosures

cc: Tom Halverson, Pace Analytical Field Services
Chris Pelosi, Pace Analytical Services - Field Services

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project:	19-01567 Freeway LF Bedrock
Pace Project No.:	10471713

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Florida: Cert E871149 SEKS WET
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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CERTIFICATIONS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Pennsylvania Certification IDs

KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268
Illinois Certification #: 200074
Indiana Certification #: C-49-06
Kansas/NELAP Certification #: E-10177
Kentucky UST Certification #: 80226
Kentucky WW Certification #: 98019
Michigan Department of Environmental Quality, Laboratory #9050
Ohio VAP Certification #: CL0065
Oklahoma Certification #: 2018-101
Texas Certification #: T104704355
West Virginia Certification #: 330
Wisconsin Certification #: 999788130
USDA Soil Permit #: P330-16-00257

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10471713001	**FL-MW-E2 (33-35 ft)**	Solid	04/02/19 00:00	04/22/19 14:32
10471713002	**FL-MW-D2 (27-29.5 ft)**	Solid	04/02/19 00:00	04/22/19 14:32

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 8082A	RAG	12	PASI-M
		EPA 6010D	IP	8	PASI-M
		EPA 6020B	BWB	12	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D	STB	72	PASI-M
		EPA 8260B	CD2	70	PASI-M
		EPA 8260B Mod.	CL	3	PASI-C
		EPA 9310	NEG	2	PASI-PA
		EPA 7196A	TPD	1	PASI-I
		EPA 350.1	DMB	1	PASI-V
		EPA 9012B	DAW	1	PASI-G
		EPA 9056A	ZJT	1	PASI-V
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 8082A	RAG	12	PASI-M
		EPA 6010D	IP	8	PASI-M
		EPA 6020B	BWB	12	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D	STB	72	PASI-M
		EPA 8260B	CD2	70	PASI-M
		EPA 8260B Mod.	CL	3	PASI-C
		EPA 9310	NEG	2	PASI-PA
		EPA 7196A	TPD	1	PASI-I
		EPA 350.1	DMB	1	PASI-V
		EPA 9012B	DAW	1	PASI-G
		EPA 9056A	ZJT	1	PASI-V

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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-E2 (33-35 ft) **Lab ID: 10471713001** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3550							
PCB-1016 (Aroclor 1016)	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	11100-14-4	
PCB, Total	ND	ug/kg	37.0	1	04/24/19 17:28	04/25/19 12:03	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	87	%.	57-125	1	04/24/19 17:28	04/25/19 12:03	877-09-8	
Decachlorobiphenyl (S)	90	%.	49-125	1	04/24/19 17:28	04/25/19 12:03	2051-24-3	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050							
Aluminum	**1340**	mg/kg	53.2	5	04/24/19 06:46	04/25/19 13:02	7429-90-5	
Barium	**8.4**	mg/kg	2.7	5	04/24/19 06:46	04/25/19 13:02	7440-39-3	
Copper	**34.3**	mg/kg	2.7	5	04/24/19 06:46	04/25/19 13:02	7440-50-8	
Manganese	**998**	mg/kg	1.3	5	04/24/19 06:46	04/25/19 13:02	7439-96-5	
Nickel	**10.0**	mg/kg	5.3	5	04/24/19 06:46	04/25/19 13:02	7440-02-0	
Silver	ND	mg/kg	2.7	5	04/24/19 06:46	04/25/19 13:02	7440-22-4	D3
Tin	ND	mg/kg	20.0	5	04/24/19 06:46	04/25/19 13:02	7440-31-5	D3
Zinc	**14.2**	mg/kg	5.3	5	04/24/19 06:46	04/25/19 13:02	7440-66-6	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050							
Antimony	ND	mg/kg	0.56	20	04/26/19 06:58	05/02/19 11:54	7440-36-0	
Arsenic	**3.4**	mg/kg	0.56	20	04/26/19 06:58	05/02/19 11:54	7440-38-2	
Beryllium	ND	mg/kg	0.23	20	04/26/19 06:58	05/02/19 11:54	7440-41-7	
Boron	ND	mg/kg	11.3	20	04/26/19 06:58	05/02/19 11:54	7440-42-8	
Cadmium	**0.14**	mg/kg	0.090	20	04/26/19 06:58	05/02/19 11:54	7440-43-9	
Chromium	**8.2**	mg/kg	0.56	20	04/26/19 06:58	05/02/19 11:54	7440-47-3	
Cobalt	**2.5**	mg/kg	0.56	20	04/26/19 06:58	05/02/19 11:54	7440-48-4	
Lead	**3.1**	mg/kg	0.23	20	04/26/19 06:58	05/02/19 11:54	7439-92-1	
Selenium	ND	mg/kg	0.56	20	04/26/19 06:58	05/02/19 11:54	7782-49-2	
Thallium	**0.16**	mg/kg	0.11	20	04/26/19 06:58	05/02/19 11:54	7440-28-0	
Uranium-238	**0.66**	mg/kg	0.56	20	04/26/19 06:58	05/02/19 11:54	7440-61-1	
Vanadium	**17.4**	mg/kg	1.1	20	04/26/19 06:58	05/02/19 11:54	7440-62-2	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974							
Percent Moisture	**11.4**	%	0.10	1		05/08/19 13:53		
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	83-32-9	H3
Acenaphthylene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	208-96-8	H3
Anthracene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	120-12-7	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-E2 (33-35 ft) **Lab ID: 10471713001** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550							
Benzo(a)anthracene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	56-55-3	H3
Benzo(a)pyrene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	50-32-8	H3
Benzo(b)fluoranthene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	205-99-2	H3
Benzo(g,h,i)perylene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	191-24-2	H3
Benzo(k)fluoranthene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	207-08-9	H3
4-Bromophenylphenyl ether	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	101-55-3	H3
Butylbenzylphthalate	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	85-68-7	H3
Carbazole	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	86-74-8	H3
4-Chloro-3-methylphenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	59-50-7	H3
4-Chloroaniline	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	106-47-8	H3
bis(2-Chloroethoxy)methane	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	111-91-1	H3
bis(2-Chloroethyl) ether	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	111-44-4	H3
bis(2-Chloroisopropyl) ether	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	108-60-1	H3
2-Chloronaphthalene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	91-58-7	H3
2-Chlorophenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	95-57-8	H3
4-Chlorophenylphenyl ether	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	7005-72-3	H3
Chrysene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	218-01-9	H3
Dibenz(a,h)anthracene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	53-70-3	H3
Dibenzofuran	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	132-64-9	H3
1,2-Dichlorobenzene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	95-50-1	H3
1,3-Dichlorobenzene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	541-73-1	H3
1,4-Dichlorobenzene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	106-46-7	H3
3,3'-Dichlorobenzidine	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	91-94-1	H3
2,4-Dichlorophenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	120-83-2	H3
Diethylphthalate	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	84-66-2	H3
2,4-Dimethylphenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	105-67-9	H3
Dimethylphthalate	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	131-11-3	H3
Di-n-butylphthalate	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	84-74-2	H3
4,6-Dinitro-2-methylphenol	ND	ug/kg	1920	1	04/23/19 14:32	04/25/19 13:22	534-52-1	H3
2,4-Dinitrophenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	51-28-5	H3
2,4-Dinitrotoluene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	121-14-2	H3
2,6-Dinitrotoluene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	606-20-2	H3
Di-n-octylphthalate	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	117-84-0	H3
1,2-Diphenylhydrazine	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	122-66-7	H3
bis(2-Ethylhexyl)phthalate	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	117-81-7	H3
Fluoranthene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	206-44-0	H3
Fluorene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	86-73-7	H3
Hexachloro-1,3-butadiene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	87-68-3	H3
Hexachlorobenzene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	118-74-1	H3
Hexachloroethane	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	67-72-1	H3
Indeno(1,2,3-cd)pyrene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	193-39-5	H3
Isophorone	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	78-59-1	H3
1-Methylnaphthalene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	90-12-0	H3
2-Methylnaphthalene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	91-57-6	H3
2-Methylphenol(o-Cresol)	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	95-48-7	H3
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	745	1	04/23/19 14:32	04/25/19 13:22		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-E2 (33-35 ft) **Lab ID: 10471713001** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550							
Naphthalene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	91-20-3	H3
2-Nitroaniline	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	88-74-4	H3
3-Nitroaniline	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	99-09-2	H3
4-Nitroaniline	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	100-01-6	H3
Nitrobenzene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	98-95-3	H3
2-Nitrophenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	88-75-5	H3
4-Nitrophenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	100-02-7	H3
N-Nitrosodimethylamine	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	62-75-9	H3
N-Nitroso-di-n-propylamine	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	621-64-7	H3
N-Nitrosodiphenylamine	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	86-30-6	H3
Pentachlorophenol	ND	ug/kg	756	1	04/23/19 14:32	04/25/19 13:22	87-86-5	H3
Phenanthrene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	85-01-8	H3
Phenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	108-95-2	H3
Pyrene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	129-00-0	H3
1,2,4-Trichlorobenzene	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	120-82-1	H3
2,4,5-Trichlorophenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	95-95-4	H3
2,4,6-Trichlorophenol	ND	ug/kg	372	1	04/23/19 14:32	04/25/19 13:22	88-06-2	H3
Surrogates								
Nitrobenzene-d5 (S)	53	%.	47-125	1	04/23/19 14:32	04/25/19 13:22	4165-60-0	
2-Fluorobiphenyl (S)	61	%.	54-125	1	04/23/19 14:32	04/25/19 13:22	321-60-8	
p-Terphenyl-d14 (S)	76	%.	58-125	1	04/23/19 14:32	04/25/19 13:22	1718-51-0	
Phenol-d6 (S)	61	%.	48-125	1	04/23/19 14:32	04/25/19 13:22	13127-88-3	
2-Fluorophenol (S)	58	%.	41-125	1	04/23/19 14:32	04/25/19 13:22	367-12-4	
2,4,6-Tribromophenol (S)	70	%.	30-125	1	04/23/19 14:32	04/25/19 13:22	118-79-6	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
Acetone	ND	ug/kg	1180	1	04/23/19 10:41	04/23/19 18:21	67-64-1	
Allyl chloride	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	107-05-1	
Benzene	ND	ug/kg	23.7	1	04/23/19 10:41	04/23/19 18:21	71-43-2	
Bromobenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	108-86-1	
Bromochloromethane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	74-97-5	
Bromodichloromethane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	75-27-4	
Bromoform	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	75-25-2	
Bromomethane	ND	ug/kg	591	1	04/23/19 10:41	04/23/19 18:21	74-83-9	
2-Butanone (MEK)	ND	ug/kg	296	1	04/23/19 10:41	04/23/19 18:21	78-93-3	
n-Butylbenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	104-51-8	
sec-Butylbenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	135-98-8	
tert-Butylbenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	98-06-6	
Carbon tetrachloride	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	56-23-5	
Chlorobenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	108-90-7	
Chloroethane	ND	ug/kg	591	1	04/23/19 10:41	04/23/19 18:21	75-00-3	
Chloroform	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	67-66-3	
Chloromethane	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	74-87-3	
2-Chlorotoluene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	95-49-8	
4-Chlorotoluene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	591	1	04/23/19 10:41	04/23/19 18:21	96-12-8	

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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-E2 (33-35 ft) **Lab ID: 10471713001** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
Dibromochloromethane	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	106-93-4	
Dibromomethane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	75-71-8	
1,1-Dichloroethane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	75-34-3	
1,2-Dichloroethane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	107-06-2	
1,1-Dichloroethene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	156-60-5	
Dichlorofluoromethane	ND	ug/kg	591	1	04/23/19 10:41	04/23/19 18:21	75-43-4	N2
1,2-Dichloropropane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	78-87-5	
1,3-Dichloropropane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	142-28-9	
2,2-Dichloropropane	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	594-20-7	
1,1-Dichloropropene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	60-29-7	
Ethylbenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	296	1	04/23/19 10:41	04/23/19 18:21	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	98-82-8	
p-Isopropyltoluene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	99-87-6	
Methylene Chloride	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	296	1	04/23/19 10:41	04/23/19 18:21	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	1634-04-4	
Naphthalene	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	91-20-3	
n-Propylbenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	103-65-1	
Styrene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	79-34-5	
Tetrachloroethene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	127-18-4	
Tetrahydrofuran	ND	ug/kg	2370	1	04/23/19 10:41	04/23/19 18:21	109-99-9	
Toluene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	79-00-5	
Trichloroethene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	79-01-6	
Trichlorofluoromethane	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	237	1	04/23/19 10:41	04/23/19 18:21	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	59.1	1	04/23/19 10:41	04/23/19 18:21	108-67-8	
Vinyl chloride	ND	ug/kg	23.7	1	04/23/19 10:41	04/23/19 18:21	75-01-4	

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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-E2 (33-35 ft) **Lab ID: 10471713001** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
Xylene (Total)	ND	ug/kg	177	1	04/23/19 10:41	04/23/19 18:21	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1	04/23/19 10:41	04/23/19 18:21	17060-07-0	H3
Toluene-d8 (S)	100	%.	75-125	1	04/23/19 10:41	04/23/19 18:21	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125	1	04/23/19 10:41	04/23/19 18:21	460-00-4	
8260 MSV SIM Soil	Analytical Method: EPA 8260B Mod. Preparation Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/kg	9.8	1	04/26/19 17:01	04/27/19 19:11	123-91-1	H3
Surrogates								
1,2-Dichloroethane-d4 (S)	86	%	50-150	1	04/26/19 17:01	04/27/19 19:11	17060-07-0	
Toluene-d8 (S)	99	%	50-150	1	04/26/19 17:01	04/27/19 19:11	2037-26-5	
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A							
Chromium, Hexavalent	ND	mg/kg	2.3	1	05/01/19 10:45	05/02/19 09:20	18540-29-9	
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
Nitrogen, Ammonia	**30.5**	mg/kg	3.4	1	04/25/19 11:42	04/26/19 08:55	7664-41-7	M1
9012 Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B							
Cyanide	ND	mg/kg	0.41	1	04/29/19 10:30	04/29/19 13:28	57-12-5	H3
9056 IC Anions	Analytical Method: EPA 9056A Preparation Method: EPA 300.0							
Chloride	**44.4**	mg/kg	10.0	1	04/29/19 14:13	04/29/19 18:48	16887-00-6	

Sample: FL-MW-D2 (27-29.5 ft) **Lab ID: 10471713002** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3550							
PCB-1016 (Aroclor 1016)	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	11100-14-4	
PCB, Total	ND	ug/kg	34.8	1	04/24/19 17:28	04/25/19 12:18	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	84	%.	57-125	1	04/24/19 17:28	04/25/19 12:18	877-09-8	
Decachlorobiphenyl (S)	90	%.	49-125	1	04/24/19 17:28	04/25/19 12:18	2051-24-3	

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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-D2 (27-29.5 ft) **Lab ID: 10471713002** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050							
Aluminum	**1680**	mg/kg	49.3	5	04/24/19 06:46	04/25/19 13:05	7429-90-5	
Barium	**12.8**	mg/kg	2.5	5	04/24/19 06:46	04/25/19 13:05	7440-39-3	
Copper	**18.4**	mg/kg	2.5	5	04/24/19 06:46	04/25/19 13:05	7440-50-8	
Manganese	**1500**	mg/kg	1.2	5	04/24/19 06:46	04/25/19 13:05	7439-96-5	
Nickel	**10.6**	mg/kg	4.9	5	04/24/19 06:46	04/25/19 13:05	7440-02-0	
Silver	ND	mg/kg	2.5	5	04/24/19 06:46	04/25/19 13:05	7440-22-4	D3
Tin	ND	mg/kg	18.5	5	04/24/19 06:46	04/25/19 13:05	7440-31-5	D3
Zinc	**13.4**	mg/kg	4.9	5	04/24/19 06:46	04/25/19 13:05	7440-66-6	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050							
Antimony	ND	mg/kg	0.50	20	04/26/19 06:58	05/02/19 12:00	7440-36-0	
Arsenic	**2.8**	mg/kg	0.50	20	04/26/19 06:58	05/02/19 12:00	7440-38-2	
Beryllium	ND	mg/kg	0.20	20	04/26/19 06:58	05/02/19 12:00	7440-41-7	
Boron	ND	mg/kg	10.0	20	04/26/19 06:58	05/02/19 12:00	7440-42-8	
Cadmium	ND	mg/kg	0.080	20	04/26/19 06:58	05/02/19 12:00	7440-43-9	
Chromium	**7.9**	mg/kg	0.50	20	04/26/19 06:58	05/02/19 12:00	7440-47-3	
Cobalt	**3.7**	mg/kg	0.50	20	04/26/19 06:58	05/02/19 12:00	7440-48-4	
Lead	**3.0**	mg/kg	0.20	20	04/26/19 06:58	05/02/19 12:00	7439-92-1	
Selenium	ND	mg/kg	0.50	20	04/26/19 06:58	05/02/19 12:00	7782-49-2	
Thallium	ND	mg/kg	0.10	20	04/26/19 06:58	05/02/19 12:00	7440-28-0	
Uranium-238	**0.66**	mg/kg	0.50	20	04/26/19 06:58	05/02/19 12:00	7440-61-1	
Vanadium	**16.7**	mg/kg	1.0	20	04/26/19 06:58	05/02/19 12:00	7440-62-2	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974							
Percent Moisture	**5.2**	%	0.10	1		05/08/19 13:54		
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	83-32-9	H3
Acenaphthylene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	208-96-8	H3
Anthracene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	120-12-7	H3
Benzo(a)anthracene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	56-55-3	H3
Benzo(a)pyrene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	50-32-8	H3
Benzo(b)fluoranthene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	205-99-2	H3
Benzo(g,h,i)perylene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	191-24-2	H3
Benzo(k)fluoranthene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	207-08-9	H3
4-Bromophenylphenyl ether	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	101-55-3	H3
Butylbenzylphthalate	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	85-68-7	H3
Carbazole	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	86-74-8	H3
4-Chloro-3-methylphenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	59-50-7	H3
4-Chloroaniline	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	106-47-8	H3
bis(2-Chloroethoxy)methane	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	111-91-1	H3
bis(2-Chloroethyl) ether	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	111-44-4	H3
bis(2-Chloroisopropyl) ether	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	108-60-1	H3
2-Chloronaphthalene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	91-58-7	H3
2-Chlorophenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	95-57-8	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-D2 (27-29.5 ft) **Lab ID: 10471713002** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550							
4-Chlorophenylphenyl ether	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	7005-72-3	H3
Chrysene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	218-01-9	H3
Dibenz(a,h)anthracene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	53-70-3	H3
Dibenzofuran	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	132-64-9	H3
1,2-Dichlorobenzene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	95-50-1	H3
1,3-Dichlorobenzene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	541-73-1	H3
1,4-Dichlorobenzene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	106-46-7	H3
3,3'-Dichlorobenzidine	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	91-94-1	H3
2,4-Dichlorophenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	120-83-2	H3
Diethylphthalate	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	84-66-2	H3
2,4-Dimethylphenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	105-67-9	H3
Dimethylphthalate	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	131-11-3	H3
Di-n-butylphthalate	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	84-74-2	H3
4,6-Dinitro-2-methylphenol	ND	ug/kg	1790	1	04/23/19 14:32	04/25/19 14:52	534-52-1	H3
2,4-Dinitrophenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	51-28-5	H3
2,4-Dinitrotoluene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	121-14-2	H3
2,6-Dinitrotoluene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	606-20-2	H3
Di-n-octylphthalate	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	117-84-0	H3
1,2-Diphenylhydrazine	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	122-66-7	H3
bis(2-Ethylhexyl)phthalate	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	117-81-7	H3
Fluoranthene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	206-44-0	H3
Fluorene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	86-73-7	H3
Hexachloro-1,3-butadiene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	87-68-3	H3
Hexachlorobenzene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	118-74-1	H3
Hexachloroethane	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	67-72-1	H3
Indeno(1,2,3-cd)pyrene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	193-39-5	H3
Isophorone	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	78-59-1	H3
1-Methylnaphthalene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	90-12-0	H3
2-Methylnaphthalene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	91-57-6	H3
2-Methylphenol(o-Cresol)	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	95-48-7	H3
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	696	1	04/23/19 14:32	04/25/19 14:52		H3
Naphthalene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	91-20-3	H3
2-Nitroaniline	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	88-74-4	H3
3-Nitroaniline	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	99-09-2	H3
4-Nitroaniline	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	100-01-6	H3
Nitrobenzene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	98-95-3	H3
2-Nitrophenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	88-75-5	H3
4-Nitrophenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	100-02-7	H3
N-Nitrosodimethylamine	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	62-75-9	H3
N-Nitroso-di-n-propylamine	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	621-64-7	H3
N-Nitrosodiphenylamine	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	86-30-6	H3
Pentachlorophenol	ND	ug/kg	707	1	04/23/19 14:32	04/25/19 14:52	87-86-5	H3
Phenanthrene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	85-01-8	H3
Phenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	108-95-2	H3
Pyrene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	129-00-0	H3
1,2,4-Trichlorobenzene	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	120-82-1	H3

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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-D2 (27-29.5 ft) **Lab ID: 10471713002** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3550							
2,4,5-Trichlorophenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	95-95-4	H3
2,4,6-Trichlorophenol	ND	ug/kg	348	1	04/23/19 14:32	04/25/19 14:52	88-06-2	H3
Surrogates								
Nitrobenzene-d5 (S)	59	%.	47-125	1	04/23/19 14:32	04/25/19 14:52	4165-60-0	
2-Fluorobiphenyl (S)	61	%.	54-125	1	04/23/19 14:32	04/25/19 14:52	321-60-8	
p-Terphenyl-d14 (S)	73	%.	58-125	1	04/23/19 14:32	04/25/19 14:52	1718-51-0	
Phenol-d6 (S)	60	%.	48-125	1	04/23/19 14:32	04/25/19 14:52	13127-88-3	
2-Fluorophenol (S)	60	%.	41-125	1	04/23/19 14:32	04/25/19 14:52	367-12-4	
2,4,6-Tribromophenol (S)	70	%.	30-125	1	04/23/19 14:32	04/25/19 14:52	118-79-6	
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
Acetone	ND	ug/kg	1120	1	04/23/19 10:41	04/23/19 18:39	67-64-1	
Allyl chloride	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	107-05-1	
Benzene	ND	ug/kg	22.3	1	04/23/19 10:41	04/23/19 18:39	71-43-2	
Bromobenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	108-86-1	
Bromochloromethane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	74-97-5	
Bromodichloromethane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	75-27-4	
Bromoform	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	75-25-2	
Bromomethane	ND	ug/kg	559	1	04/23/19 10:41	04/23/19 18:39	74-83-9	
2-Butanone (MEK)	ND	ug/kg	279	1	04/23/19 10:41	04/23/19 18:39	78-93-3	
n-Butylbenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	104-51-8	
sec-Butylbenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	135-98-8	
tert-Butylbenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	98-06-6	
Carbon tetrachloride	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	56-23-5	
Chlorobenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	108-90-7	
Chloroethane	ND	ug/kg	559	1	04/23/19 10:41	04/23/19 18:39	75-00-3	
Chloroform	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	67-66-3	
Chloromethane	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	74-87-3	
2-Chlorotoluene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	95-49-8	
4-Chlorotoluene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	559	1	04/23/19 10:41	04/23/19 18:39	96-12-8	
Dibromochloromethane	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	106-93-4	
Dibromomethane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	75-71-8	
1,1-Dichloroethane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	75-34-3	
1,2-Dichloroethane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	107-06-2	
1,1-Dichloroethene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	156-60-5	
Dichlorofluoromethane	ND	ug/kg	559	1	04/23/19 10:41	04/23/19 18:39	75-43-4	N2
1,2-Dichloropropane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	78-87-5	
1,3-Dichloropropane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	142-28-9	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-D2 (27-29.5 ft) **Lab ID: 10471713002** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
2,2-Dichloropropane	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	594-20-7	
1,1-Dichloropropene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	60-29-7	
Ethylbenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	279	1	04/23/19 10:41	04/23/19 18:39	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	98-82-8	
p-Isopropyltoluene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	99-87-6	
Methylene Chloride	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	279	1	04/23/19 10:41	04/23/19 18:39	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	1634-04-4	
Naphthalene	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	91-20-3	
n-Propylbenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	103-65-1	
Styrene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	79-34-5	
Tetrachloroethene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	127-18-4	
Tetrahydrofuran	ND	ug/kg	2230	1	04/23/19 10:41	04/23/19 18:39	109-99-9	
Toluene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	79-00-5	
Trichloroethene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	79-01-6	
Trichlorofluoromethane	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	223	1	04/23/19 10:41	04/23/19 18:39	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	55.9	1	04/23/19 10:41	04/23/19 18:39	108-67-8	
Vinyl chloride	ND	ug/kg	22.3	1	04/23/19 10:41	04/23/19 18:39	75-01-4	
Xylene (Total)	ND	ug/kg	168	1	04/23/19 10:41	04/23/19 18:39	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1	04/23/19 10:41	04/23/19 18:39	17060-07-0	H3
Toluene-d8 (S)	99	%.	75-125	1	04/23/19 10:41	04/23/19 18:39	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1	04/23/19 10:41	04/23/19 18:39	460-00-4	
8260 MSV SIM Soil	Analytical Method: EPA 8260B Mod. Preparation Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/kg	9.4	1	04/26/19 17:01	04/27/19 19:30	123-91-1	H3
Surrogates								
1,2-Dichloroethane-d4 (S)	88	%	50-150	1	04/26/19 17:01	04/27/19 19:30	17060-07-0	
Toluene-d8 (S)	98	%	50-150	1	04/26/19 17:01	04/27/19 19:30	2037-26-5	
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A							
Chromium, Hexavalent	ND	mg/kg	2.1	1	05/01/19 10:45	05/02/19 09:20	18540-29-9	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-D2 (27-29.5 ft) **Lab ID: 10471713002** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
Nitrogen, Ammonia	**56.0**	mg/kg	3.2	1	04/25/19 11:42	04/26/19 09:05	7664-41-7	
9012 Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B							
Cyanide	ND	mg/kg	0.30	1	04/29/19 10:30	04/29/19 13:29	57-12-5	H3
9056 IC Anions	Analytical Method: EPA 9056A Preparation Method: EPA 300.0							
Chloride	**118**	mg/kg	10.0	1	04/29/19 14:13	04/29/19 20:33	16887-00-6	

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 601351 — Analysis Method: EPA 6010D
QC Batch Method: EPA 3050 — Analysis Description: 6010D Solids
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 3250161 — Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	mg/kg	ND	9.9	04/25/19 11:12	
Barium	mg/kg	ND	0.50	04/25/19 11:12	
Copper	mg/kg	ND	0.50	04/25/19 11:12	
Manganese	mg/kg	ND	0.25	04/25/19 11:12	
Nickel	mg/kg	ND	0.99	04/25/19 11:12	
Silver	mg/kg	ND	0.50	04/25/19 11:12	
Tin	mg/kg	ND	3.7	04/25/19 11:12	
Zinc	mg/kg	ND	0.99	04/25/19 11:12	

LABORATORY CONTROL SAMPLE: 3250162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/kg	952	992	104	80-120	
Barium	mg/kg	47.6	51.2	107	80-120	
Copper	mg/kg	47.6	49.8	105	80-120	
Manganese	mg/kg	47.6	52.4	110	80-120	
Nickel	mg/kg	47.6	49.9	105	80-120	
Silver	mg/kg	23.8	24.1	101	80-120	
Tin	mg/kg	47.6	50.8	107	80-120	
Zinc	mg/kg	47.6	48.8	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3250163 3250164

Parameter	Units	10471761002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/kg	2730	1060	1020	5330	5540	246	276	75-125	4	20	M1
Barium	mg/kg	27.0	53	51	90.2	86.7	119	117	75-125	4	20	
Copper	mg/kg	3.7	53	51	55.9	53.1	98	97	75-125	5	20	
Manganese	mg/kg	247	53	51	327	310	151	125	75-125	5	20	M1
Nickel	mg/kg	7.1	53	51	57.6	54.3	95	93	75-125	6	20	
Silver	mg/kg	ND	26.5	25.5	24.9	23.6	94	93	75-125	5	20	
Tin	mg/kg	ND	53	51	48.9	46.5	90	89	75-125	5	20	
Zinc	mg/kg	13.5	53	51	68.8	63.3	104	98	75-125	8	20	

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 601940 — Analysis Method: EPA 6020B
QC Batch Method: EPA 3050 — Analysis Description: 6020B Solids UPD5
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 3253817 — Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/kg	ND	0.50	05/02/19 11:13	
Arsenic	mg/kg	ND	0.50	05/02/19 11:13	
Beryllium	mg/kg	ND	0.20	05/02/19 11:13	
Boron	mg/kg	ND	10.0	05/02/19 11:13	
Cadmium	mg/kg	ND	0.080	05/02/19 11:13	
Chromium	mg/kg	ND	0.50	05/02/19 11:13	
Cobalt	mg/kg	ND	0.50	05/02/19 11:13	
Lead	mg/kg	ND	0.20	05/02/19 11:13	
Selenium	mg/kg	ND	0.50	05/02/19 11:13	
Thallium	mg/kg	ND	0.10	05/02/19 11:13	
Uranium-238	mg/kg	ND	0.50	05/02/19 11:13	
Vanadium	mg/kg	ND	1.0	05/02/19 11:13	

LABORATORY CONTROL SAMPLE: 3253818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	49	47.7	97	80-120	
Arsenic	mg/kg	49	48.6	99	80-120	
Beryllium	mg/kg	49	51.7	105	80-120	
Boron	mg/kg	49	51.4	105	80-120	
Cadmium	mg/kg	49	47.5	97	80-120	
Chromium	mg/kg	49	47.0	96	80-120	
Cobalt	mg/kg	49	48.5	99	80-120	
Lead	mg/kg	49	46.6	95	80-120	
Selenium	mg/kg	49	48.9	100	80-120	
Thallium	mg/kg	49	47.4	97	80-120	
Uranium-238	mg/kg	49	52.3	107	80-120	
Vanadium	mg/kg	49	49.3	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3253819 — 3253820

Parameter	Units	10472070001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/kg	<0.60	58.9	59.4	41.9	44.8	71	75	75-125	7	20	M6
Arsenic	mg/kg	4.6	58.9	59.4	63.5	62.9	100	98	75-125	1	20	
Beryllium	mg/kg	0.60	58.9	59.4	57.8	58.6	97	97	75-125	1	20	
Boron	mg/kg	<12.0	58.9	59.4	57.9	59.3	96	97	75-125	2	20	
Cadmium	mg/kg	<0.096	58.9	59.4	54.8	55.4	93	93	75-125	1	20	

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3253819 3253820

Parameter	Units	10472070001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/kg	10.5	58.9	59.4	71.2	68.7	103	98	75-125	4	20	
Cobalt	mg/kg	8.0	58.9	59.4	66.7	65.9	100	97	75-125	1	20	
Lead	mg/kg	6.7	58.9	59.4	60.8	63.8	92	96	75-125	5	20	
Selenium	mg/kg	<0.60	58.9	59.4	52.5	55.3	89	93	75-125	5	20	
Thallium	mg/kg	0.14	58.9	59.4	56.6	58.3	96	98	75-125	3	20	
Uranium-238	mg/kg	<0.60	58.9	59.4	61.8	62.5	104	104	75-125	1	20	
Vanadium	mg/kg	21.1	58.9	59.4	87.8	86.2	113	109	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 604542 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10471713001, 10471713002

SAMPLE DUPLICATE: 3268247

Parameter	Units	10472477010 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	25.0	19.6	24	30	

SAMPLE DUPLICATE: 3268248

Parameter	Units	10473242033 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.7	22.8	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 601121 | Analysis Method: EPA 8260B
QC Batch Method: EPA 5035/5030B | Analysis Description: 8260B MSV 5030 Med Level
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 3248996 | Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	50.0	04/23/19 17:09	
1,1,1-Trichloroethane	ug/kg	ND	50.0	04/23/19 17:09	
1,1,2,2-Tetrachloroethane	ug/kg	ND	50.0	04/23/19 17:09	
1,1,2-Trichloroethane	ug/kg	ND	50.0	04/23/19 17:09	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	200	04/23/19 17:09	
1,1-Dichloroethane	ug/kg	ND	50.0	04/23/19 17:09	
1,1-Dichloroethene	ug/kg	ND	50.0	04/23/19 17:09	
1,1-Dichloropropene	ug/kg	ND	50.0	04/23/19 17:09	
1,2,3-Trichlorobenzene	ug/kg	ND	50.0	04/23/19 17:09	
1,2,3-Trichloropropane	ug/kg	ND	200	04/23/19 17:09	
1,2,4-Trichlorobenzene	ug/kg	ND	50.0	04/23/19 17:09	
1,2,4-Trimethylbenzene	ug/kg	ND	50.0	04/23/19 17:09	
1,2-Dibromo-3-chloropropane	ug/kg	ND	500	04/23/19 17:09	
1,2-Dibromoethane (EDB)	ug/kg	ND	50.0	04/23/19 17:09	
1,2-Dichlorobenzene	ug/kg	ND	50.0	04/23/19 17:09	
1,2-Dichloroethane	ug/kg	ND	50.0	04/23/19 17:09	
1,2-Dichloropropane	ug/kg	ND	50.0	04/23/19 17:09	
1,3,5-Trimethylbenzene	ug/kg	ND	50.0	04/23/19 17:09	
1,3-Dichlorobenzene	ug/kg	ND	50.0	04/23/19 17:09	
1,3-Dichloropropane	ug/kg	ND	50.0	04/23/19 17:09	
1,4-Dichlorobenzene	ug/kg	ND	50.0	04/23/19 17:09	
2,2-Dichloropropane	ug/kg	ND	200	04/23/19 17:09	
2-Butanone (MEK)	ug/kg	ND	250	04/23/19 17:09	
2-Chlorotoluene	ug/kg	ND	50.0	04/23/19 17:09	
4-Chlorotoluene	ug/kg	ND	50.0	04/23/19 17:09	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	250	04/23/19 17:09	
Acetone	ug/kg	ND	1000	04/23/19 17:09	
Allyl chloride	ug/kg	ND	200	04/23/19 17:09	
Benzene	ug/kg	ND	20.0	04/23/19 17:09	
Bromobenzene	ug/kg	ND	50.0	04/23/19 17:09	
Bromochloromethane	ug/kg	ND	50.0	04/23/19 17:09	
Bromodichloromethane	ug/kg	ND	50.0	04/23/19 17:09	
Bromoform	ug/kg	ND	200	04/23/19 17:09	
Bromomethane	ug/kg	ND	500	04/23/19 17:09	
Carbon tetrachloride	ug/kg	ND	50.0	04/23/19 17:09	
Chlorobenzene	ug/kg	ND	50.0	04/23/19 17:09	
Chloroethane	ug/kg	ND	500	04/23/19 17:09	
Chloroform	ug/kg	ND	50.0	04/23/19 17:09	
Chloromethane	ug/kg	ND	200	04/23/19 17:09	
cis-1,2-Dichloroethene	ug/kg	ND	50.0	04/23/19 17:09	
cis-1,3-Dichloropropene	ug/kg	ND	50.0	04/23/19 17:09	

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

METHOD BLANK: 3248996 Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromochloromethane	ug/kg	ND	200	04/23/19 17:09	
Dibromomethane	ug/kg	ND	50.0	04/23/19 17:09	
Dichlorodifluoromethane	ug/kg	ND	200	04/23/19 17:09	
Dichlorofluoromethane	ug/kg	ND	500	04/23/19 17:09	N2
Diethyl ether (Ethyl ether)	ug/kg	ND	200	04/23/19 17:09	
Ethylbenzene	ug/kg	ND	50.0	04/23/19 17:09	
Hexachloro-1,3-butadiene	ug/kg	ND	250	04/23/19 17:09	
Isopropylbenzene (Cumene)	ug/kg	ND	50.0	04/23/19 17:09	
Methyl-tert-butyl ether	ug/kg	ND	50.0	04/23/19 17:09	
Methylene Chloride	ug/kg	ND	200	04/23/19 17:09	
n-Butylbenzene	ug/kg	ND	50.0	04/23/19 17:09	
n-Propylbenzene	ug/kg	ND	50.0	04/23/19 17:09	
Naphthalene	ug/kg	ND	200	04/23/19 17:09	
p-Isopropyltoluene	ug/kg	ND	50.0	04/23/19 17:09	
sec-Butylbenzene	ug/kg	ND	50.0	04/23/19 17:09	
Styrene	ug/kg	ND	50.0	04/23/19 17:09	
tert-Butylbenzene	ug/kg	ND	50.0	04/23/19 17:09	
Tetrachloroethene	ug/kg	ND	50.0	04/23/19 17:09	
Tetrahydrofuran	ug/kg	ND	2000	04/23/19 17:09	
Toluene	ug/kg	ND	50.0	04/23/19 17:09	
trans-1,2-Dichloroethene	ug/kg	ND	50.0	04/23/19 17:09	
trans-1,3-Dichloropropene	ug/kg	ND	50.0	04/23/19 17:09	
Trichloroethene	ug/kg	ND	50.0	04/23/19 17:09	
Trichlorofluoromethane	ug/kg	ND	200	04/23/19 17:09	
Vinyl chloride	ug/kg	ND	20.0	04/23/19 17:09	
Xylene (Total)	ug/kg	ND	150	04/23/19 17:09	
1,2-Dichloroethane-d4 (S)	%.	99	75-125	04/23/19 17:09	
4-Bromofluorobenzene (S)	%.	101	75-125	04/23/19 17:09	
Toluene-d8 (S)	%.	101	75-125	04/23/19 17:09	

LABORATORY CONTROL SAMPLE: 3248997

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1000	951	95	53-125	
1,1,1-Trichloroethane	ug/kg	1000	871	87	53-146	
1,1,2,2-Tetrachloroethane	ug/kg	1000	920	92	51-125	
1,1,2-Trichloroethane	ug/kg	1000	875	88	55-125	
1,1,2-Trichlorotrifluoroethane	ug/kg	1000	802	80	49-150	
1,1-Dichloroethane	ug/kg	1000	759	76	56-125	
1,1-Dichloroethene	ug/kg	1000	719	72	48-148	
1,1-Dichloropropene	ug/kg	1000	774	77	55-142	
1,2,3-Trichlorobenzene	ug/kg	1000	881	88	47-125	
1,2,3-Trichloropropane	ug/kg	1000	910	91	52-125	
1,2,4-Trichlorobenzene	ug/kg	1000	843	84	48-125	

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

LABORATORY CONTROL SAMPLE: 3248997

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1000	890	89	51-126	
1,2-Dibromo-3-chloropropane	ug/kg	2500	2360	94	50-125	
1,2-Dibromoethane (EDB)	ug/kg	1000	900	90	52-125	
1,2-Dichlorobenzene	ug/kg	1000	850	85	50-125	
1,2-Dichloroethane	ug/kg	1000	781	78	51-125	
1,2-Dichloropropane	ug/kg	1000	809	81	57-125	
1,3,5-Trimethylbenzene	ug/kg	1000	870	87	52-127	
1,3-Dichlorobenzene	ug/kg	1000	836	84	50-128	
1,3-Dichloropropane	ug/kg	1000	888	89	55-125	
1,4-Dichlorobenzene	ug/kg	1000	765	76	51-125	
2,2-Dichloropropane	ug/kg	1000	776	78	41-136	
2-Butanone (MEK)	ug/kg	5000	3910	78	43-125	
2-Chlorotoluene	ug/kg	1000	841	84	52-126	
4-Chlorotoluene	ug/kg	1000	854	85	53-126	
4-Methyl-2-pentanone (MIBK)	ug/kg	5000	4830	97	39-125	
Acetone	ug/kg	5000	4580	92	46-136	
Allyl chloride	ug/kg	1000	712	71	48-130	
Benzene	ug/kg	1000	739	74	48-125	
Bromobenzene	ug/kg	1000	806	81	51-125	
Bromochloromethane	ug/kg	1000	802	80	52-125	
Bromodichloromethane	ug/kg	1000	861	86	51-131	
Bromoform	ug/kg	1000	938	94	52-125	
Bromomethane	ug/kg	1000	824	82	30-150	
Carbon tetrachloride	ug/kg	1000	808	81	59-129	
Chlorobenzene	ug/kg	1000	814	81	54-125	
Chloroethane	ug/kg	1000	814	81	61-132	
Chloroform	ug/kg	1000	872	87	52-125	
Chloromethane	ug/kg	1000	690	69	46-125	
cis-1,2-Dichloroethene	ug/kg	1000	780	78	54-127	
cis-1,3-Dichloropropene	ug/kg	1000	873	87	50-134	
Dibromochloromethane	ug/kg	1000	984	98	54-125	
Dibromomethane	ug/kg	1000	816	82	51-125	
Dichlorodifluoromethane	ug/kg	1000	612	61	42-125	
Dichlorofluoromethane	ug/kg	1000	895	89	30-150	N2
Diethyl ether (Ethyl ether)	ug/kg	1000	763	76	50-127	
Ethylbenzene	ug/kg	1000	769	77	51-125	
Hexachloro-1,3-butadiene	ug/kg	1000	791	79	41-133	
Isopropylbenzene (Cumene)	ug/kg	1000	886	89	54-134	
Methyl-tert-butyl ether	ug/kg	1000	885	88	53-125	
Methylene Chloride	ug/kg	1000	734	73	48-125	
n-Butylbenzene	ug/kg	1000	853	85	49-135	
n-Propylbenzene	ug/kg	1000	851	85	55-129	
Naphthalene	ug/kg	1000	933	93	51-125	
p-Isopropyltoluene	ug/kg	1000	893	89	53-134	
sec-Butylbenzene	ug/kg	1000	907	91	52-134	
Styrene	ug/kg	1000	928	93	53-128	
tert-Butylbenzene	ug/kg	1000	907	91	51-133	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

LABORATORY CONTROL SAMPLE: 3248997

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/kg	1000	779	78	54-131	
Tetrahydrofuran	ug/kg	10000	9680	97	42-145	
Toluene	ug/kg	1000	745	75	51-125	
trans-1,2-Dichloroethene	ug/kg	1000	711	71	50-130	
trans-1,3-Dichloropropene	ug/kg	1000	900	90	52-125	
Trichloroethene	ug/kg	1000	797	80	55-131	
Trichlorofluoromethane	ug/kg	1000	893	89	30-150	
Vinyl chloride	ug/kg	1000	735	74	58-125	
Xylene (Total)	ug/kg	3000	2480	83	52-125	
1,2-Dichloroethane-d4 (S)	%.			92	75-125	
4-Bromofluorobenzene (S)	%.			98	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3248998 3248999

Parameter	Units	10471549013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/kg	ND	1170	1050	1160	1380	99	132	68-150	17	30	
1,1,1-Trichloroethane	ug/kg	ND	1170	1050	1080	1310	92	125	63-150	20	30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	1170	1050	1010	1330	86	127	60-146	27	30	
1,1,2-Trichloroethane	ug/kg	ND	1170	1050	1110	1280	95	123	63-143	14	30	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	1170	1050	916	1200	78	115	30-150	27	30	
1,1-Dichloroethane	ug/kg	ND	1170	1050	916	1170	78	112	63-144	24	30	
1,1-Dichloroethene	ug/kg	ND	1170	1050	849	1240	73	119	30-150	38	30	R1
1,1-Dichloropropene	ug/kg	ND	1170	1050	935	1300	80	125	54-150	33	30	R1
1,2,3-Trichlorobenzene	ug/kg	ND	1170	1050	1080	1270	92	121	63-142	16	30	
1,2,3-Trichloropropane	ug/kg	ND	1170	1050	1160	1350	99	129	59-147	15	30	
1,2,4-Trichlorobenzene	ug/kg	ND	1170	1050	1040	1280	90	122	66-142	20	30	
1,2,4-Trimethylbenzene	ug/kg	ND	1170	1050	1100	1410	94	135	65-145	25	30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	2910	2620	2940	3290	101	126	60-142	11	30	
1,2-Dibromoethane (EDB)	ug/kg	ND	1170	1050	1110	1370	95	131	67-135	21	30	
1,2-Dichlorobenzene	ug/kg	ND	1170	1050	1070	1290	92	123	68-141	18	30	
1,2-Dichloroethane	ug/kg	ND	1170	1050	978	1190	84	113	56-132	19	30	
1,2-Dichloropropane	ug/kg	ND	1170	1050	1020	1280	88	122	58-150	22	30	
1,3,5-Trimethylbenzene	ug/kg	ND	1170	1050	1080	1380	92	132	66-148	24	30	
1,3-Dichlorobenzene	ug/kg	ND	1170	1050	1030	1280	89	123	63-148	22	30	
1,3-Dichloropropane	ug/kg	ND	1170	1050	1120	1300	96	124	63-142	15	30	
1,4-Dichlorobenzene	ug/kg	ND	1170	1050	953	1170	82	112	68-140	21	30	
2,2-Dichloropropane	ug/kg	ND	1170	1050	955	1190	82	114	62-143	22	30	
2-Butanone (MEK)	ug/kg	ND	5840	5230	6130	6510	105	124	53-138	6	30	
2-Chlorotoluene	ug/kg	ND	1170	1050	1040	1320	89	126	64-145	23	30	
4-Chlorotoluene	ug/kg	ND	1170	1050	1050	1350	90	129	63-149	25	30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	5840	5230	6160	6890	106	132	47-150	11	30	

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3248998 3248999

Parameter	Units	10471549013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acetone	ug/kg	ND	5840	5230	7540	8590	129	164	64-150	13	30	M1
Allyl chloride	ug/kg	ND	1170	1050	840	1130	72	108	49-146	29	30	
Benzene	ug/kg	ND	1170	1050	946	1200	81	114	63-136	23	30	
Bromobenzene	ug/kg	ND	1170	1050	1000	1250	86	119	63-142	22	30	
Bromochloromethane	ug/kg	ND	1170	1050	1030	1270	89	121	61-139	20	30	
Bromodichloromethane	ug/kg	ND	1170	1050	1060	1270	91	121	63-150	18	30	
Bromoform	ug/kg	ND	1170	1050	1210	1350	104	129	64-140	11	30	
Bromomethane	ug/kg	ND	1170	1050	980	1080	84	103	56-148	10	30	
Carbon tetrachloride	ug/kg	ND	1170	1050	984	1280	84	123	75-148	27	30	
Chlorobenzene	ug/kg	ND	1170	1050	1040	1290	89	123	62-147	21	30	
Chloroethane	ug/kg	ND	1170	1050	979	1050	84	100	37-150	7	30	
Chloroform	ug/kg	ND	1170	1050	1080	1300	93	124	66-130	18	30	
Chloromethane	ug/kg	ND	1170	1050	812	841	70	80	35-131	3	30	
cis-1,2-Dichloroethene	ug/kg	ND	1170	1050	1020	1230	87	118	63-143	19	30	
cis-1,3-Dichloropropene	ug/kg	ND	1170	1050	1100	1310	95	125	60-150	17	30	
Dibromochloromethane	ug/kg	ND	1170	1050	1250	1390	107	133	64-144	11	30	
Dibromomethane	ug/kg	ND	1170	1050	1060	1320	91	126	59-148	22	30	
Dichlorodifluoromethane	ug/kg	ND	1170	1050	598	644	51	61	30-125	7	30	
Dichlorofluoromethane	ug/kg	ND	1170	1050	1080	1180	93	113	39-150	9	30	N2
Diethyl ether (Ethyl ether)	ug/kg	ND	1170	1050	928	1160	80	111	59-149	22	30	
Ethylbenzene	ug/kg	ND	1170	1050	992	1250	85	119	64-142	23	30	
Hexachloro-1,3-butadiene	ug/kg	ND	1170	1050	1010	1270	87	121	58-150	23	30	
Isopropylbenzene (Cumene)	ug/kg	ND	1170	1050	1100	1410	95	135	67-150	24	30	
Methyl-tert-butyl ether	ug/kg	ND	1170	1050	1090	1280	93	122	69-134	16	30	
Methylene Chloride	ug/kg	ND	1170	1050	936	1180	78	111	56-134	23	30	
n-Butylbenzene	ug/kg	ND	1170	1050	1040	1340	89	128	64-150	25	30	
n-Propylbenzene	ug/kg	ND	1170	1050	1030	1340	88	128	65-150	26	30	
Naphthalene	ug/kg	ND	1170	1050	1180	1400	101	133	63-148	17	30	
p-Isopropyltoluene	ug/kg	ND	1170	1050	1140	1430	97	136	69-150	23	30	
sec-Butylbenzene	ug/kg	ND	1170	1050	1110	1410	95	134	69-150	24	30	
Styrene	ug/kg	ND	1170	1050	1170	1450	101	138	63-150	21	30	
tert-Butylbenzene	ug/kg	ND	1170	1050	1130	1380	97	132	67-150	20	30	
Tetrachloroethene	ug/kg	ND	1170	1050	964	1340	83	128	62-150	33	30	R1
Tetrahydrofuran	ug/kg	ND	11700	10500	12200	15400	105	147	53-150	23	30	
Toluene	ug/kg	ND	1170	1050	925	1230	79	117	61-141	28	30	
trans-1,2-Dichloroethene	ug/kg	ND	1170	1050	900	1250	77	120	52-148	33	30	R1
trans-1,3-Dichloropropene	ug/kg	ND	1170	1050	1130	1350	97	129	62-142	18	30	
Trichloroethene	ug/kg	ND	1170	1050	1100	1300	94	124	59-150	16	30	
Trichlorofluoromethane	ug/kg	ND	1170	1050	989	1090	85	104	30-150	10	30	
Vinyl chloride	ug/kg	ND	1170	1050	846	894	73	85	44-144	5	30	
Xylene (Total)	ug/kg	ND	3500	3140	3120	4030	89	128	67-145	26	30	
1,2-Dichloroethane-d4 (S)	%.						96	91	75-125			
4-Bromofluorobenzene (S)	%.						100	100	75-125			
Toluene-d8 (S)	%.						99	99	75-125			

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 471790 Analysis Method: EPA 8260B Mod.
QC Batch Method: EPA 8260B Mod. Analysis Description: 8260 MSV Soil SIM
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 2560011 Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/kg	ND	10.0	04/27/19 13:57	
1,2-Dichloroethane-d4 (S)	%	97	50-150	04/27/19 13:57	
Toluene-d8 (S)	%	102	50-150	04/27/19 13:57	

LABORATORY CONTROL SAMPLE: 2560012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/kg	40	45.5	114	50-150	
1,2-Dichloroethane-d4 (S)	%			98	50-150	
Toluene-d8 (S)	%			101	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2560013 2560014

Parameter	Units	10471713002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/kg	ND	40.8	40	47.5	40.2	109	93	50-150	17	30	H3
1,2-Dichloroethane-d4 (S)	%						93	99	50-150		30	
Toluene-d8 (S)	%						101	100	50-150		30	

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 601500 Analysis Method: EPA 8082A
QC Batch Method: EPA 3550 Analysis Description: 8082A GCS PCB
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 3250697 Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	04/25/19 08:22	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	04/25/19 08:22	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	04/25/19 08:22	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	04/25/19 08:22	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	04/25/19 08:22	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	04/25/19 08:22	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	04/25/19 08:22	
PCB-1262 (Aroclor 1262)	ug/kg	ND	33.0	04/25/19 08:22	
PCB-1268 (Aroclor 1268)	ug/kg	ND	33.0	04/25/19 08:22	
Decachlorobiphenyl (S)	%.	94	49-125	04/25/19 08:22	
Tetrachloro-m-xylene (S)	%.	86	57-125	04/25/19 08:22	

LABORATORY CONTROL SAMPLE: 3250698

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	667	564	85	69-125	
PCB-1260 (Aroclor 1260)	ug/kg	667	578	87	63-125	
Decachlorobiphenyl (S)	%.			96	49-125	
Tetrachloro-m-xylene (S)	%.			91	57-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3250699 3250700

Parameter	Units	10471549017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	702	701	593	597	84	85	56-125	1	30	
PCB-1260 (Aroclor 1260)	ug/kg	ND	702	701	609	614	87	88	45-125	1	30	
Decachlorobiphenyl (S)	%.						94	92	49-125			
Tetrachloro-m-xylene (S)	%.						89	84	57-125			

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 601210 Analysis Method: EPA 8270D
QC Batch Method: EPA 3550 Analysis Description: 8270D Solid MSSV
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 3249286 Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	ND	330	04/25/19 10:54	
1,2-Dichlorobenzene	ug/kg	ND	330	04/25/19 10:54	
1,2-Diphenylhydrazine	ug/kg	ND	330	04/25/19 10:54	
1,3-Dichlorobenzene	ug/kg	ND	330	04/25/19 10:54	
1,4-Dichlorobenzene	ug/kg	ND	330	04/25/19 10:54	
1-Methylnaphthalene	ug/kg	ND	330	04/25/19 10:54	
2,4,5-Trichlorophenol	ug/kg	ND	330	04/25/19 10:54	
2,4,6-Trichlorophenol	ug/kg	ND	330	04/25/19 10:54	
2,4-Dichlorophenol	ug/kg	ND	330	04/25/19 10:54	
2,4-Dimethylphenol	ug/kg	ND	330	04/25/19 10:54	
2,4-Dinitrophenol	ug/kg	ND	330	04/25/19 10:54	
2,4-Dinitrotoluene	ug/kg	ND	330	04/25/19 10:54	
2,6-Dinitrotoluene	ug/kg	ND	330	04/25/19 10:54	
2-Chloronaphthalene	ug/kg	ND	330	04/25/19 10:54	
2-Chlorophenol	ug/kg	ND	330	04/25/19 10:54	
2-Methylnaphthalene	ug/kg	ND	330	04/25/19 10:54	
2-Methylphenol(o-Cresol)	ug/kg	ND	330	04/25/19 10:54	
2-Nitroaniline	ug/kg	ND	330	04/25/19 10:54	
2-Nitrophenol	ug/kg	ND	330	04/25/19 10:54	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	660	04/25/19 10:54	
3,3'-Dichlorobenzidine	ug/kg	ND	330	04/25/19 10:54	
3-Nitroaniline	ug/kg	ND	330	04/25/19 10:54	
4,6-Dinitro-2-methylphenol	ug/kg	ND	1700	04/25/19 10:54	
4-Bromophenylphenyl ether	ug/kg	ND	330	04/25/19 10:54	
4-Chloro-3-methylphenol	ug/kg	ND	330	04/25/19 10:54	
4-Chloroaniline	ug/kg	ND	330	04/25/19 10:54	
4-Chlorophenylphenyl ether	ug/kg	ND	330	04/25/19 10:54	
4-Nitroaniline	ug/kg	ND	330	04/25/19 10:54	
4-Nitrophenol	ug/kg	ND	330	04/25/19 10:54	
Acenaphthene	ug/kg	ND	330	04/25/19 10:54	
Acenaphthylene	ug/kg	ND	330	04/25/19 10:54	
Anthracene	ug/kg	ND	330	04/25/19 10:54	
Benzo(a)anthracene	ug/kg	ND	330	04/25/19 10:54	
Benzo(a)pyrene	ug/kg	ND	330	04/25/19 10:54	
Benzo(b)fluoranthene	ug/kg	ND	330	04/25/19 10:54	
Benzo(g,h,i)perylene	ug/kg	ND	330	04/25/19 10:54	
Benzo(k)fluoranthene	ug/kg	ND	330	04/25/19 10:54	
bis(2-Chloroethoxy)methane	ug/kg	ND	330	04/25/19 10:54	
bis(2-Chloroethyl) ether	ug/kg	ND	330	04/25/19 10:54	
bis(2-Chloroisopropyl) ether	ug/kg	ND	330	04/25/19 10:54	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	330	04/25/19 10:54	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

METHOD BLANK: 3249286 Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Butylbenzylphthalate	ug/kg	ND	330	04/25/19 10:54	
Carbazole	ug/kg	ND	330	04/25/19 10:54	
Chrysene	ug/kg	ND	330	04/25/19 10:54	
Di-n-butylphthalate	ug/kg	ND	330	04/25/19 10:54	
Di-n-octylphthalate	ug/kg	ND	330	04/25/19 10:54	
Dibenz(a,h)anthracene	ug/kg	ND	330	04/25/19 10:54	
Dibenzofuran	ug/kg	ND	330	04/25/19 10:54	
Diethylphthalate	ug/kg	ND	330	04/25/19 10:54	
Dimethylphthalate	ug/kg	ND	330	04/25/19 10:54	
Fluoranthene	ug/kg	ND	330	04/25/19 10:54	
Fluorene	ug/kg	ND	330	04/25/19 10:54	
Hexachloro-1,3-butadiene	ug/kg	ND	330	04/25/19 10:54	
Hexachlorobenzene	ug/kg	ND	330	04/25/19 10:54	
Hexachloroethane	ug/kg	ND	330	04/25/19 10:54	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330	04/25/19 10:54	
Isophorone	ug/kg	ND	330	04/25/19 10:54	
N-Nitroso-di-n-propylamine	ug/kg	ND	330	04/25/19 10:54	
N-Nitrosodimethylamine	ug/kg	ND	330	04/25/19 10:54	
N-Nitrosodiphenylamine	ug/kg	ND	330	04/25/19 10:54	
Naphthalene	ug/kg	ND	330	04/25/19 10:54	
Nitrobenzene	ug/kg	ND	330	04/25/19 10:54	
Pentachlorophenol	ug/kg	ND	670	04/25/19 10:54	
Phenanthrene	ug/kg	ND	330	04/25/19 10:54	
Phenol	ug/kg	ND	330	04/25/19 10:54	
Pyrene	ug/kg	ND	330	04/25/19 10:54	
2,4,6-Tribromophenol (S)	%.	70	30-125	04/25/19 10:54	
2-Fluorobiphenyl (S)	%.	68	54-125	04/25/19 10:54	
2-Fluorophenol (S)	%.	60	41-125	04/25/19 10:54	
Nitrobenzene-d5 (S)	%.	63	47-125	04/25/19 10:54	
p-Terphenyl-d14 (S)	%.	80	58-125	04/25/19 10:54	
Phenol-d6 (S)	%.	62	48-125	04/25/19 10:54	

LABORATORY CONTROL SAMPLE: 3249287

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	1670	1240	75	43-125	
1,2-Dichlorobenzene	ug/kg	1670	1210	73	41-125	
1,2-Diphenylhydrazine	ug/kg	1670	1380	83	59-125	
1,3-Dichlorobenzene	ug/kg	1670	1200	72	40-125	
1,4-Dichlorobenzene	ug/kg	1670	1220	73	40-125	
1-Methylnaphthalene	ug/kg	1670	1270	76	53-125	
2,4,5-Trichlorophenol	ug/kg	1670	1350	81	61-125	
2,4,6-Trichlorophenol	ug/kg	1670	1380	83	60-125	
2,4-Dichlorophenol	ug/kg	1670	1300	78	49-125	

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

LABORATORY CONTROL SAMPLE: 3249287

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dimethylphenol	ug/kg	1670	1240	74	30-125	
2,4-Dinitrophenol	ug/kg	1670	1030	62	30-125	
2,4-Dinitrotoluene	ug/kg	1670	1420	85	62-125	
2,6-Dinitrotoluene	ug/kg	1670	1390	83	61-125	
2-Chloronaphthalene	ug/kg	1670	1300	78	56-125	
2-Chlorophenol	ug/kg	1670	1230	74	42-125	
2-Methylnaphthalene	ug/kg	1670	1280	77	48-125	
2-Methylphenol(o-Cresol)	ug/kg	1670	1270	76	44-125	
2-Nitroaniline	ug/kg	1670	1380	83	60-125	
2-Nitrophenol	ug/kg	1670	1240	74	45-125	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1250	75	47-125	
3,3'-Dichlorobenzidine	ug/kg	1670	1240	75	34-125	
3-Nitroaniline	ug/kg	1670	1230	74	48-125	
4,6-Dinitro-2-methylphenol	ug/kg	1670	1200J	72	44-125	
4-Bromophenylphenyl ether	ug/kg	1670	1390	83	59-125	
4-Chloro-3-methylphenol	ug/kg	1670	1370	82	58-125	
4-Chloroaniline	ug/kg	1670	991	59	31-125	
4-Chlorophenylphenyl ether	ug/kg	1670	1380	83	61-125	
4-Nitroaniline	ug/kg	1670	1340	80	54-125	
4-Nitrophenol	ug/kg	1670	1390	83	53-125	
Acenaphthene	ug/kg	1670	1360	82	58-125	
Acenaphthylene	ug/kg	1670	1370	82	56-125	
Anthracene	ug/kg	1670	1440	87	59-125	
Benzo(a)anthracene	ug/kg	1670	1330	80	63-125	
Benzo(a)pyrene	ug/kg	1670	1400	84	65-125	
Benzo(b)fluoranthene	ug/kg	1670	1470	88	66-125	
Benzo(g,h,i)perylene	ug/kg	1670	1400	84	65-125	
Benzo(k)fluoranthene	ug/kg	1670	1390	84	64-125	
bis(2-Chloroethoxy)methane	ug/kg	1670	1280	77	46-125	
bis(2-Chloroethyl) ether	ug/kg	1670	1210	73	40-125	
bis(2-Chloroisopropyl) ether	ug/kg	1670	1210	73	35-125	
bis(2-Ethylhexyl)phthalate	ug/kg	1670	1410	85	63-125	
Butylbenzylphthalate	ug/kg	1670	1390	84	65-125	
Carbazole	ug/kg	1670	1430	86	61-125	
Chrysene	ug/kg	1670	1400	84	64-125	
Di-n-butylphthalate	ug/kg	1670	1460	88	64-125	
Di-n-octylphthalate	ug/kg	1670	1420	85	62-125	
Dibenz(a,h)anthracene	ug/kg	1670	1410	84	61-125	
Dibenzofuran	ug/kg	1670	1370	82	60-125	
Diethylphthalate	ug/kg	1670	1410	85	62-125	
Dimethylphthalate	ug/kg	1670	1380	83	62-125	
Fluoranthene	ug/kg	1670	1440	87	60-125	
Fluorene	ug/kg	1670	1400	84	62-125	
Hexachloro-1,3-butadiene	ug/kg	1670	1250	75	39-125	
Hexachlorobenzene	ug/kg	1670	1390	83	61-125	
Hexachloroethane	ug/kg	1670	1180	71	39-125	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1390	84	62-125	

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

LABORATORY CONTROL SAMPLE: 3249287

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isophorone	ug/kg	1670	1290	78	49-125	
N-Nitroso-di-n-propylamine	ug/kg	1670	1220	73	48-125	
N-Nitrosodimethylamine	ug/kg	1670	1100	66	34-125	
N-Nitrosodiphenylamine	ug/kg	1670	1420	85	53-125	
Naphthalene	ug/kg	1670	1310	79	44-125	
Nitrobenzene	ug/kg	1670	1250	75	44-125	
Pentachlorophenol	ug/kg	1670	1390	83	41-125	
Phenanthrene	ug/kg	1670	1440	86	61-125	
Phenol	ug/kg	1670	1220	73	45-125	
Pyrene	ug/kg	1670	1410	85	62-125	
2,4,6-Tribromophenol (S)	%.			78	30-125	
2-Fluorobiphenyl (S)	%.			71	54-125	
2-Fluorophenol (S)	%.			68	41-125	
Nitrobenzene-d5 (S)	%.			72	47-125	
p-Terphenyl-d14 (S)	%.			76	58-125	
Phenol-d6 (S)	%.			66	48-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3249288 3249289

Parameter	Units	10471713001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/kg	ND	1870	1870	1420	1400	76	74	41-125	2	30	H3
1,2-Dichlorobenzene	ug/kg	ND	1870	1870	1280	1310	68	70	37-125	2	30	H3
1,2-Diphenylhydrazine	ug/kg	ND	1870	1870	1630	1580	87	84	51-125	3	30	H3
1,3-Dichlorobenzene	ug/kg	ND	1870	1870	1240	1240	66	66	35-125	0	30	H3
1,4-Dichlorobenzene	ug/kg	ND	1870	1870	1250	1270	67	68	36-125	1	30	H3
1-Methylnaphthalene	ug/kg	ND	1870	1870	1480	1460	79	78	47-125	2	30	H3
2,4,5-Trichlorophenol	ug/kg	ND	1870	1870	1560	1520	83	81	52-125	2	30	H3
2,4,6-Trichlorophenol	ug/kg	ND	1870	1870	1610	1570	86	84	51-125	3	30	H3
2,4-Dichlorophenol	ug/kg	ND	1870	1870	1490	1470	80	79	51-125	1	30	H3
2,4-Dimethylphenol	ug/kg	ND	1870	1870	1550	1500	82	80	30-125	3	30	H3
2,4-Dinitrophenol	ug/kg	ND	1870	1870	1090	1150	58	61	30-125	6	30	H3
2,4-Dinitrotoluene	ug/kg	ND	1870	1870	1660	1650	88	88	30-125	0	30	H3
2,6-Dinitrotoluene	ug/kg	ND	1870	1870	1630	1570	87	84	31-125	4	30	H3
2-Chloronaphthalene	ug/kg	ND	1870	1870	1520	1490	81	80	55-125	2	30	H3
2-Chlorophenol	ug/kg	ND	1870	1870	1420	1410	76	75	41-125	1	30	H3
2-Methylnaphthalene	ug/kg	ND	1870	1870	1490	1430	79	76	47-125	4	30	H3
2-Methylphenol(o-Cresol)	ug/kg	ND	1870	1870	1460	1440	78	77	42-125	1	30	H3
2-Nitroaniline	ug/kg	ND	1870	1870	1630	1580	87	84	54-125	3	30	H3
2-Nitrophenol	ug/kg	ND	1870	1870	1520	1470	81	78	30-125	4	30	H3
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	1870	1870	1450	1430	77	76	47-125	2	30	H3
3,3'-Dichlorobenzidine	ug/kg	ND	1870	1870	1540	1540	82	82	30-125	0	30	H3
3-Nitroaniline	ug/kg	ND	1870	1870	1290	1380	69	74	30-149	7	30	H3
4,6-Dinitro-2-methylphenol	ug/kg	ND	1870	1870	1310J	1320J	70	70	30-125		30	H3

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3249288 3249289

Parameter	Units	10471713001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Bromophenylphenyl ether	ug/kg	ND	1870	1870	1610	1600	86	85	57-125	1	30	H3
4-Chloro-3-methylphenol	ug/kg	ND	1870	1870	1580	1550	84	82	55-125	2	30	H3
4-Chloroaniline	ug/kg	ND	1870	1870	1100	1170	59	62	30-125	6	30	H3
4-Chlorophenylphenyl ether	ug/kg	ND	1870	1870	1610	1560	86	83	58-125	3	30	H3
4-Nitroaniline	ug/kg	ND	1870	1870	1550	1540	83	82	41-125	1	30	H3
4-Nitrophenol	ug/kg	ND	1870	1870	1630	1600	87	85	30-131	1	30	H3
Acenaphthene	ug/kg	ND	1870	1870	1550	1530	83	81	51-125	2	30	H3
Acenaphthylene	ug/kg	ND	1870	1870	1580	1530	84	81	52-125	4	30	H3
Anthracene	ug/kg	ND	1870	1870	1670	1620	89	86	54-125	3	30	H3
Benzo(a)anthracene	ug/kg	ND	1870	1870	1560	1540	83	82	48-125	1	30	H3
Benzo(a)pyrene	ug/kg	ND	1870	1870	1660	1620	89	86	51-125	3	30	H3
Benzo(b)fluoranthene	ug/kg	ND	1870	1870	1710	1660	91	89	50-125	3	30	H3
Benzo(g,h,i)perylene	ug/kg	ND	1870	1870	1620	1590	86	85	48-125	2	30	H3
Benzo(k)fluoranthene	ug/kg	ND	1870	1870	1630	1590	87	85	48-125	3	30	H3
bis(2-Chloroethoxy)methane	ug/kg	ND	1870	1870	1490	1440	79	77	45-125	3	30	H3
bis(2-Chloroethyl) ether	ug/kg	ND	1870	1870	1380	1340	74	71	34-125	3	30	H3
bis(2-Chloroisopropyl) ether	ug/kg	ND	1870	1870	1380	1370	74	73	33-125	1	30	H3
bis(2-Ethylhexyl)phthalate	ug/kg	ND	1870	1870	1710	1700	91	90	52-125	1	30	H3
Butylbenzylphthalate	ug/kg	ND	1870	1870	1650	1610	88	86	53-125	2	30	H3
Carbazole	ug/kg	ND	1870	1870	1660	1610	89	86	54-125	4	30	H3
Chrysene	ug/kg	ND	1870	1870	1630	1640	87	87	49-125	0	30	H3
Di-n-butylphthalate	ug/kg	ND	1870	1870	1720	1690	92	90	60-125	2	30	H3
Di-n-octylphthalate	ug/kg	ND	1870	1870	1680	1680	90	89	52-125	0	30	H3
Dibenz(a,h)anthracene	ug/kg	ND	1870	1870	1670	1600	89	85	51-125	4	30	H3
Dibenzofuran	ug/kg	ND	1870	1870	1600	1550	85	82	55-125	3	30	H3
Diethylphthalate	ug/kg	ND	1870	1870	1630	1590	87	85	61-125	2	30	H3
Dimethylphthalate	ug/kg	ND	1870	1870	1620	1560	86	83	58-125	4	30	H3
Fluoranthene	ug/kg	ND	1870	1870	1670	1630	89	87	47-125	3	30	H3
Fluorene	ug/kg	ND	1870	1870	1610	1560	86	83	51-125	3	30	H3
Hexachloro-1,3-butadiene	ug/kg	ND	1870	1870	1370	1370	73	73	38-125	0	30	H3
Hexachlorobenzene	ug/kg	ND	1870	1870	1590	1610	85	86	52-125	1	30	H3
Hexachloroethane	ug/kg	ND	1870	1870	1220	1220	65	65	30-125	0	30	H3
Indeno(1,2,3-cd)pyrene	ug/kg	ND	1870	1870	1640	1590	88	85	47-125	4	30	H3
Isophorone	ug/kg	ND	1870	1870	1510	1470	81	79	46-125	2	30	H3
N-Nitroso-di-n-propylamine	ug/kg	ND	1870	1870	1390	1420	74	76	44-125	2	30	H3
N-Nitrosodimethylamine	ug/kg	ND	1870	1870	1330	1360	71	73	30-125	3	30	H3
N-Nitrosodiphenylamine	ug/kg	ND	1870	1870	1660	1610	88	86	40-125	3	30	H3
Naphthalene	ug/kg	ND	1870	1870	1480	1460	79	78	43-125	1	30	H3
Nitrobenzene	ug/kg	ND	1870	1870	1430	1440	76	77	42-125	0	30	H3
Pentachlorophenol	ug/kg	ND	1870	1870	1610	1590	86	85	30-129	1	30	H3
Phenanthrene	ug/kg	ND	1870	1870	1640	1610	88	86	50-125	2	30	H3
Phenol	ug/kg	ND	1870	1870	1410	1400	75	74	43-125	1	30	H3
Pyrene	ug/kg	ND	1870	1870	1640	1610	88	86	41-125	2	30	H3
2,4,6-Tribromophenol (S)	%.						81	78	30-125			
2-Fluorobiphenyl (S)	%.						73	70	54-125			

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3249288 3249289

Parameter	Units	10471713001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Fluorophenol (S)	%.						70	69	41-125			
Nitrobenzene-d5 (S)	%.						74	72	47-125			
p-Terphenyl-d14 (S)	%.						78	76	58-125			
Phenol-d6 (S)	%.						69	67	48-125			

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 497804 — Analysis Method: EPA 7196A
QC Batch Method: EPA 3060A — Analysis Description: 7196 Chromium, Hexavalent
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 2296303 — Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/kg	ND	2.0	05/02/19 09:07	

LABORATORY CONTROL SAMPLE: 2296304

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/kg	1080	1090	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2296306 2296307

Parameter	Units	50223332012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/kg	ND	1150	1060	1170	1110	102	105	75-125	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2296308 2296309

Parameter	Units	50223332012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/kg	ND	42.5	42.1	40.6	39.9	94	93	75-125	2	20	

SAMPLE DUPLICATE: 2296305

Parameter	Units	50223332010 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	mg/kg	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 164814 | Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 | Analysis Description: 350.1 Ammonia
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 649461 | Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	ND	2.7	04/26/19 08:54	

LABORATORY CONTROL SAMPLE: 649460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	143	144	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 649462 649463

Parameter	Units	10471713001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/kg	30.5	153	153	213	223	118	125	90-110	5	10	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 319695 — Analysis Method: EPA 9012B
QC Batch Method: EPA 9012B — Analysis Description: 9012 Cyanide
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 1857904 — Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/kg	ND	0.40	04/29/19 13:24	

LABORATORY CONTROL SAMPLE: 1857905

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	3	2.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1857906 1857907

Parameter	Units	40186327006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/kg	0.29J	2.75	2.75	2.9	2.8	94	90	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1857908 1857909

Parameter	Units	40186472002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/kg	0.41	2.91	3.02	2.7	3.2	77	92	80-120	18	20	M0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 165021 | Analysis Method: EPA 9056A
QC Batch Method: EPA 300.0 | Analysis Description: 9056 IC Anions, Soil
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 650204 | Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/kg	ND	10.0	04/29/19 15:40	

LABORATORY CONTROL SAMPLE: 650203

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/kg	498	528	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 650205 650206

Parameter	Units	10471713001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/kg	44.4	497	502	561	571	104	105	80-120	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Sample: FL-MW-E2 (33-35 ft) **Lab ID: 10471713001** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 9310	**1.49 ± 5.11 (12.1) C:NA T:NA**	pCi/g	05/01/19 08:00	12587-46-1	
Gross Beta	EPA 9310	**7.40 ± 3.51 (5.90) C:NA T:NA**	pCi/g	05/01/19 08:00	12587-47-2	

Sample: FL-MW-D2 (27-29.5 ft) **Lab ID: 10471713002** Collected: 04/02/19 00:00 Received: 04/22/19 14:32 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 9310	**4.91 ± 6.55 (13.7) C:NA T:NA**	pCi/g	05/01/19 08:00	12587-46-1	
Gross Beta	EPA 9310	**13.1 ± 4.33 (5.85) C:NA T:NA**	pCi/g	05/01/19 08:00	12587-47-2	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

QC Batch: 340285 | Analysis Method: EPA 9310
QC Batch Method: EPA 9310 | Analysis Description: 9310 Gross Alpha/Beta
Associated Lab Samples: 10471713001, 10471713002

METHOD BLANK: 1656100 | Matrix: Solid
Associated Lab Samples: 10471713001, 10471713002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.135 ± 0.109 (0.195) C:NA T:NA	pCi/g	05/01/19 07:59	
Gross Beta	0.084 ± 0.131 (0.279) C:NA T:NA	pCi/g	05/01/19 07:59	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte
PASI-G	Pace Analytical Services - Green Bay
PASI-I	Pace Analytical Services - Indianapolis
PASI-M	Pace Analytical Services - Minneapolis
PASI-PA	Pace Analytical Services - Greensburg
PASI-V	Pace Analytical Services - Virginia

WORKORDER QUALIFIERS

WO: 10471713

[1] The samples were received outside of required temperature range. Analysis was completed upon client approval.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
H3	Sample was received or analysis requested beyond the recognized method holding time.

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QUALIFIERS

Project:	19-01567 Freeway LF Bedrock
Pace Project No.:	10471713

ANALYTE QUALIFIERS

M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 19-01567 Freeway LF Bedrock
Pace Project No.: 10471713

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 3550	601500	EPA 8082A	601635
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 3550	601500	EPA 8082A	601635
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 3050	601351	EPA 6010D	601441
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 3050	601351	EPA 6010D	601441
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 3050	601940	EPA 6020B	602639
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 3050	601940	EPA 6020B	602639
10471713001	**FL-MW-E2 (33-35 ft)**	ASTM D2974	604542		
10471713002	**FL-MW-D2 (27-29.5 ft)**	ASTM D2974	604542		
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 3550	601210	EPA 8270D	601657
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 3550	601210	EPA 8270D	601657
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 5035/5030B	601121	EPA 8260B	601184
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 5035/5030B	601121	EPA 8260B	601184
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 8260B Mod.	471790	EPA 8260B Mod.	471887
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 8260B Mod.	471790	EPA 8260B Mod.	471887
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 9310	340285		
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 9310	340285		
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 3060A	497804	EPA 7196A	497954
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 3060A	497804	EPA 7196A	497954
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 350.1	164814	EPA 350.1	164842
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 350.1	164814	EPA 350.1	164842
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 9012B	319695	EPA 9012B	319753
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 9012B	319695	EPA 9012B	319753
10471713001	**FL-MW-E2 (33-35 ft)**	EPA 300.0	165021	EPA 9056A	165022
10471713002	**FL-MW-D2 (27-29.5 ft)**	EPA 300.0	165021	EPA 9056A	165022

Minnesota Pollution Control Agency

Chain-of-Custody Form revision 2013.0909

Work Order Number:		COC Type:	Page: 1 of 1
Turnaround Time:		COC ID:	FOR LAB USE ONLY

PROJECT/CLIENT INFO			LABORATORY	
Facility Code:	MNSW-057	Program Code (MDH Lab Only):	Lab Name:	Pace Analytical - Minneapolis, MN
Project Name:	19-01567 MPCA Freeway LF 2019 Bedrock	Project Task Code: PRJ07786	Address:	1700 SE Elm Street
Project Manager:	Brad Jacobson 612-607-6375	EPIC PROFILE #: 38716 Line 1		Minneapolis MN 55414
Potential Hazard?	If yes, add information to Sampler Comments Section		Phone No:	612-607-6400

WO#: 10471713

10471713

SAMPLE DETAILS

SAMPLE TYPE CODES
Sample=Routine Sample
S-IVP=Integrated Vertical Profile Sample
S-CWOP=Composite Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample

LAB MATRIX CODES
DW=Drinking Water
NW=Non-potable Water
SD=Soil/Solid
WP=Wipe
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRIX CODES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample

PRESERV.

ANALYSIS

Location Identifier	Sample Type	Date	Time	Start Depth, in meters	End Depth, in meters	Grab (G) or Composite (C) Sample	Lab Matrix Code	Field Matrix Code	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	Chloride (300.0) Ammonia-N (350.1), Total CN (9012), SVOCs (8270)	Metals 6010: Al, Ba, Cu, Mn, Ni, Ag, Sn, Zn	Metals 6020: Sb, As, Be, B, Cd, Cr, Co, Pb, Se, Tl, U, V	VOCs (8260B) Hex-Cr (7196), 1,4-Dioxane (8260)	Her/Pes. EPA 8151 MDA List I & II PCBs (8082)	Gross Alpha/Beta (9310)	Lab Sample No.	#
FL-MW-E2 (33-35 ft)	Sample	4/2/2019	---	---	---	C	SD		N	Bulk bedrock rec'vd from Barr 4/10/19		X	X	X	X	X	X	001	1
FL-MW-D2 (27-29.5 ft)	Sample	4/2/2019	---	---	---	C	SD		N	Bulk bedrock rec'vd from Barr 4/10/19		X	X	X	X	X	X	002	2
																			3
																			4
																			5
																			6
																			7
																			8
																			9
																			10

4/22/19
[illegible initials]

Sampled By: Barr Engineering Staff
Sampler's Signature: Not Available - Material received without COC
Phone #:

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/ Affiliation	Date/Time
(Sampler)*Pace staff containerizing crushed material: Daniel Gregor / Pace	4/22/19/1432	[illegible signature] PACE	4-22-19 1432

T=20.7°C

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 05Apr2019 Page 1 of 1
	Document No.: **F-MN-L-213-rev.27**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: MPCA / Bay West Engineering

Project #:

WO# : 10471713

PM: JMA **Due Date: 04/29/19**

CLIENT: PASI-MNFLD

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Pace ☐ SpeeDee ☐ Commercial ☐ See Exception

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☑ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☑ T5(0048) **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** ____ °C

Correction Factor: TR **Cooler Temp Corrected w/temp blank:** ____ °C

Average Corrected Temp (no temp blank only): 20.7 °C See Exceptions ☑

USDA Regulated Soil: (☐ N/A, water sample/Other: ____) **Date/Initials of Person Examining Contents:** TR 4/22/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No		8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☑ Soil ☐ Oil ☐ Other	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** No collection listed. See Exception ☐
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☑ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** See Exception ☐ Res. Chlorine / 0-6 Roll / 0-6 Strip / 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	13. See Exception ☐
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased): NA

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: ____ Date/Time: ____

Comments/Resolution: Confirmed with Brad to proceed out of hold and temperature.

Project Manager Review: J Anderson **Date:** 04/23/2019

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: TR

Pace Analytical	Document Name: **SCUR Exception Form – Coolers Above 6°C**	Document Revised: 08Apr2019 Page 1 of 1
	Document No.: **F-MN-C-298-Rev.02**	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions: **Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☑No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

On ice

Multiple Cooler Project? ☐Yes ☑No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp
20.9	20.9	20.7
20.6	20.6	
21.0	21.0	
20.4	20.4	

Tracking Number/Temperature	

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

WO#:12123960

12123960

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: MN
Cert. Needed: ☐ Yes ☐

Workorder: 10471713 **Workorder Name:** 19-01567 Freeway LF Bedrock **Owner Received Date:** 4/22/2019 **Results Requested By:** 5/13/2019

Report To	Subcontract To
Jennifer Anderson Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-6436	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved JGFU						Requested Analysis: 350.1 Ammonia	Chloride											LAB USE ONLY
1	FL-MW-E2 (33-35 ft)	PS	4/2/2019 00:00	10471713001	Solid	1						X	X											
2	FL-MW-D2 (27-29.5 ft)	PS	4/2/2019 00:00	10471713002	Solid	1						X	X											
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	W Elliott / Pace	4/23/19 1525	R C 4/23/19	1910
2	R C 4/23/19	2330	[illegible] 4/24/19	08:00
3				

Comments
Okay to proceed out of hold

Cooler Temperature on Receipt 0.9 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 03Apr2019 Page 1 of 1
	Document No.: F-VM-C-001-Rev.12	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace MN

Project #:

WO#: 12123960

PM: CLJ Due Date: 05/13/19

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other: ______

Tracking Number: ______

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: ______ Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.6 Cooler Temp Corrected °C: 0.9 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 4/23/19 DC

Comments: RH 4/24/19

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☐ No	☒ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): ______				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: ______ Date/Time: ______

Comments/Resolution: ______

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrie Jen Date: 4/24/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: MN
Cert. Needed: ☐ Yes ☐ No

Workorder: 10471713 **Workorder Name:** 19-01567 Freeway LF Bedrock **Owner Received Date:** 4/22/2019 **Results Requested By:** 5/13/2019

Report To	Subcontract To
Jennifer Anderson Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-6436	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3 & 4 Greensburg, PA 15601 Phone (724)850-5600

WO#: 30290914

30290914

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved JGFU						Requested Analysis: Gross Alpha/Beta												LAB USE ONLY
1	FL-MW-E2 (33-35 ft)	PS	4/2/2019 00:00	10471713001	Solid	1						X												001
2	FL-MW-D2 (27-29.5 ft)	PS	4/2/2019 00:00	10471713002	Solid	1						X												002
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature] /Pace	4/23/19 1750	[signature]	4/24/19 0930	Okay to proceed out of hold
2					
3	ET 4/24/19				

Cooler Temperature on Receipt ~~5.6~~ °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

5.7

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: Pace MN

Project # 30290914

Label	ET
LIMS Login	ET

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other ________

Tracking #: 4638 0196 0499

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Thermometer Used: 11 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 5.7 °C Correction Factor: 0.0 °C Final Temp: 5.7 °C

Temp should be above freezing to 6°C

pH paper Lot# 10D3581

Date and Initials of person examining contents: ET 4-24-19

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID Matrix: SL				
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used:		✓		
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix			✓	16.
All containers meet method preservation requirements.	✓			Initial when completed: ET / Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:		✓		18.
Trip Blank Custody Seals Present			✓	
Rad Samples Screened < 0.5 mrem/hr	✓			Initial when completed: ET / Date: 4-24-19

Client Notification/ Resolution:

Person Contacted: ______________ Date/Time: ______________ Contacted By: ______________

Comments/ Resolution: ______________

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

J:\QAQC\Master\Document Management\Sample Mgt\Sample Condition Upon Receipt Pittsburgh (C056-9 5April2019)

Chain of Custody

Pace Analytical® www.pacelabs.com

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: MN
Cert. Needed: ☐ Yes ☐ No

Workorder: 10471713 **Workorder Name:** 19-01567 Freeway LF Bedrock **Owner Received Date:** 4/22/2019 **Results Requested By:** 5/13/2019

Report To	Subcontract To
Jennifer Anderson Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-6436	Pace Analytical Indianapolis 7726 Moller Road Indianapolis, IN 46268 Phone (317)228-3100

Requested Analysis: 7196 Hex Cr

50223045

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved JGFU	7196 Hex Cr	LAB USE ONLY
1	FL-MW-E2 (33-35 ft)	PS	4/2/2019 00:00	10471713001	Solid	1	X	001
2	FL-MW-D2 (27-29.5 ft)	PS	4/2/2019 00:00	10471713002	Solid	1	X	002
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] / Pace	4/23/19 1430	Fed Ex	
2	Fed Ex		[signature]	4-24-19 0900
3				

Comments: Okay to proceed out of hold

Cooler Temperature on Receipt 6.0 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical

SAMPLE CONDITION UPON RECEIPT FORM

Project #: 50223045

Date/Time and Initials of person examining contents: ZL 4-24-19 16:56

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking #: 4638 0196 0769

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No   Seals Intact: ☑ Yes ☐ No

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer: 1 2 3 4 5 6 A B C D E F   Ice Type: ☑ Wet ☐ Blue ☐ None | Samples collected today and on ice: ☐ Yes ☐ No ☑ N/A

Cooler Temperature: 0.8/1.0   Ice Visible in Sample Containers?: ☐ Yes ☑ No ☐ N/A

(Initial/Corrected) Temp should be above freezing to 6°C   If temp. is Over 6°C or under 0°C, was the PM Notified?: ☐ Yes ☐ No ☑ N/A

All discrepancies will be written out in the comments section below.

	Yes	No
Are samples from West Virginia? Document any containers out of temp.		✓
USDA Regulated Soils? (ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓
Chain of Custody Present:	✓	
Chain of Custody Filled Out:	✓	
Short Hold Time Analysis (<72hr)?: Analysis:		✓
Time 5035A TC placed in Freezer or Short Holds To Lab:		
Rush TAT Requested:		✓
Containers Intact?:	✓	
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓	

	Yes	No	N/A
All containers needing acid/base pres. Have been checked?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted. Circle: HNO3 H2SO4 NaOH NaOH/ZnAc			✓
Dissolved Metals field filtered?:			✓
Headspace Wisconsin Sulfide			✓
	Present	Absent	N/A
Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Headspace in VOA Vials (>6mm):			✓
Trip Blank Present?:		✓	
Trip Blank Custody Seals?:		✓	

Comments:

WO# : 50223045

50223045

Sample Container Count

CLIENT: Pace MN

COC PAGE 1 of 1

COC ID# ________

Project # 50223045

Sample Line Item	DG9H VG9H	AG0U	AG1H	AG1U	AG2U	AG3S	WGFU	SP5T	BP1U	BP2N	BP2S	BP2U	BP3B	BP3N	BP3S	BP3U	SBS Di Bulk Kit R	JGFU			Matrix Sl/ (Soil/Water) Aqueous	pH <2	pH >9	pH>12
1																		1			SL			
2																		1			SL			
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Container Codes

Glass

DG9B	40mL Na Bisulfate amber vial	AG0U	100mL unpreserved amber glass
DG9H	40mL HCL amber voa vial	AG1H	1 liter HCL amber glass
DG9M	40mL MeOH clear vial	AG1S	1 liter H2SO4 amber glass
DG9P	40mL TSP amber vial	AG1T	1 liter Na Thiosulfate amber glass
DG9S	40mL H2SO4 amber vial	AG1U	1liter unpreserved amber glass
DG9T	40mL Na Thio amber vial	AG2N	500mL HNO3 amber glass
DG9U	40mL unpreserved **amber** vial	AG2S	500mL H2SO4 amber glass
VG9H	40mL HCL clear vial	AG2U	500mL unpreserved amber glass
VG9T	40mL Na Thio. clear vial	AG3S	250mL H2SO4 glass amber
VG9U	40mL unpreserved **clear** vial	AG3U	250mL unpreserved amber glass
VGFX	40mL w/hexane wipe vial	BG1H	1 liter HCL clear glass
VSG	Headspace septa vial & HCL	BG1S	1 liter H2SO4 clear glass
WGKU	8oz unpreserved clear jar	BG1T	1 liter Na Thiosulfate clear glass
WGFU	4oz clear soil jar	BG1U	1 liter unpreserved glass
JGFU	4oz unpreserved amber wide	BG3H	250mL HCl Clear Glass
		BG3U	250mL Unpreserved Clear Glass

Plastic / Misc.

BP1A	1 liter NaOH, Asc Acid plastic	BP3U	250mL unpreserved plastic
BP1N	1 liter HNO3 plastic	BP3Z	250mL NaOH, Zn Ac plastic
BP1S	1 liter H2SO4 plastic		
BP1U	1 liter unpreserved plastic	AF	Air Filter
BP1Z	1 liter NaOH, Zn, Ac	C	Air Cassettes
BP2A	500mL NaOH, Asc Acid plastic	R	Terra core kit
BP2N	500mL HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
BP2O	500mL NaOH plastic	U	Summa Can
BP2S	500mL H2SO4 plastic	ZPLC	Ziploc Bag
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3S	250mL H2SO4 plastic		

40186358

Chain of Custody

JV

☐ Samples were sent directly to the Subcontracting Laboratory.

Pace Analytical® www.pacelabs.com

State Of Origin: MN

Cert. Needed: ☐ Yes ☐ No

Workorder: 10471713 **Workorder Name:** 19-01567 Freeway LF Bedrock **Owner Received Date:** 4/22/2019 **Results Requested By:** 5/13/2019

Report To	Subcontract To
Jennifer Anderson Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-6436	Pace Analytical Green Bay 1241 Bellevue Street Suite 9 Green Bay, WI 54302 Phone (920)469-2436

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved JGFU						Requested Analysis: 9012 Cyanide											LAB USE ONLY
1	FL-MW-E2 (33-35 ft)	PS	4/2/2019 00:00	10471713001	Solid	1						X											001
2	FL-MW-D2 (27-29.5 ft)	PS	4/2/2019 00:00	10471713002	Solid	1						X											002
3																							
4																							
5																							

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature] / Pace	4/22/19 1500			Okay to proceed out of hold
2	Walter	4/24/19 0900	Susan L [signature] Pace	4-24-19 0900	
3					

Cooler Temperature on Receipt 2 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical Services, LLC
1241 Bellevue Street, Suite
Green Bay, WI 5430

Sample Preservation Receipt Form

Client Name: Pace, MN

Project #: 10186358

All containers needing preservation have been checked and noted below: □Yes □No ☑N/A

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Initial when completed:

Date/ Time:

	Glass							Plastic							Vials						Jars			General								
Pace Lab #	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU	SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																																	
002																																	2.5 / 5 / 10
003																																	2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10
																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:______ Headspace in VOA Vials (>6mm) : □Yes □No ☑N/A *If yes look in headspace column

AG1U	1 liter amber glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP2N	500 mL plastic HNO3
BP2Z	500 mL plastic NaOH, Znact
BP3U	250 mL plastic unpres
BP3C	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

DG9A	40 mL amber ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres

SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN:	

1250

Sample Condition Upon Receipt Form (SCUR)

Client Name: Pace, MN

Project #:

WO# : 40186358
40186358

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☒ Waltco ☐ Client ☐ Pace Other:

Tracking #: 2037573

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - 9 **Type of Ice:** Wet Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 1.5 /Corr: 2

Temp Blank Present: ☒ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 4-24-19
Initials: SW

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☐No ☒N/A	4. IRWO 4-24-19 SW
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No	MS/MSD: ☐Yes ☒No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☐Yes ☐No ☒N/A	
-Pace IR Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: S		
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: CW **Date:** 4/25/19

Chain of Custody

Pace Analytical® www.pacelabs.com

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: MN
Cert. Needed: ☐ Yes ☐ No

Workorder: 10471713 **Workorder Name:** 19-01567 Freeway LF Bedrock **Owner Received Date:** 4/22/2019 **Results Requested By:** 5/13/2019

Report To	Subcontract To
Jennifer Anderson Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-6436	Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved JGFU	Requested Analysis: 8260 1,4 Dioxane	LAB USE ONLY 42426553
1	FL-MW-E2 (33-35 ft)	PS	4/2/2019 00:00	10471713001	Solid	1	X	001
2	FL-MW-D2 (27-29.5 ft)	PS	4/2/2019 00:00	10471713002	Solid	1	X	002
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] / Pace	4/23/19 1420	[signature]	4-24-19 917
2				
3				

Comments
Okay to proceed out of hold

Cooler Temperature on Receipt 3.3 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Laboratory receiving samples:

Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐

Sample Condition Upon Receipt

Client Name: Duke Minnesota

Project #

WO# : 92426553

92426553

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:_____

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Date/Initials Person Examining Contents: TF 4-24-19

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☐ IR Gun ID: 92T048

Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 3.3 **Correction Factor:** Add/Subtract (°C) 0.0

Cooler Temp Corrected (°C): 3.3

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☐ Yes	☑ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: SL				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _______________ Date/Time: _______________

Project Manager SCURF Review: TC **Date:** 4/24/19

Project Manager SRF Review: TC **Date:** 4/24/19

Pace Analytical®	Document Name: **Sample Condition Upon Receipt(SCUR)**	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: **F-CAR-CS-033-Rev.06**	Issuing Authority: Pace Carolinas Quality Office

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottle**

Project # WO# : 92426553

PM: RWC Due Date: 05/13/19

CLIENT: Pasi-Minn

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1									1																			
2									1																			
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

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May 01, 2019

Jennifer Anderson
Pace Analytical
1700 Elm Street, Suite 200
Minneapolis, MN 55414

RE: 19-01567 Freeway LF Bedrock

Enclosed are the analytical results for the samples received by the laboratory on 04/24/2019.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAC Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser

Project Manager

Certification List			Expires
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2020
ILEPA	Illinois Secondary NELAP Accreditation	004366	04/30/2020
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2020
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2019
NCDEQ	North Carolina Dept. of Environmental Quality Accreditation	688	12/31/2019
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2019
ODEQ	Oklahoma Department of Environmental Quality Accreditation	2018-087	08/31/2019
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2019
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2019

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Pace Analytical	Project: 19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number: 10471713
Minneapolis MN, 55414	Project Manager: Jennifer Anderson

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL-MW-E2 (33-35 ft)	A191708-01	Solid	04/02/2019	04/24/2019
FL-MW-D2 (27-29.5 ft)	A191708-02	Solid	04/02/2019	04/24/2019

CASE NARRATIVE

Sample Receipt Information:
2 samples were received on 04/24/2019. Samples were received at 3.8 degrees Celsius. Samples were received in acceptable condition, with the exception of the hold time issues noted below.

Samples A191708-01 and A191708-02 were received past recommended hold time. Client instructed the lab to proceed with the analysis.

Please see the chain of custody (COC) document at the end of this report for additional information.

Laboratory Control Samples (LCS):
The E1 footnote on samples A191708-01 and A191708-02 indicates that there were quality control sample exceedances for MCPA. The LCS recovery was below acceptable limits. Please see the quality control section of the report for more information.

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Pace Analytical	Project:	19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number:	10471713
Minneapolis MN, 55414	Project Manager:	Jennifer Anderson

FL-MW-E2 (33-35 ft)

A191708-01 (Solid)

Date Sampled
04/02/2019 00:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Base Neutral Pesticides by Gas Chromatography/Mass Spectrometry					**Preparation Batch: A904219**			**H**
Acetochlor	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Alachlor	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Atrazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Chlorpyrifos	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Cyanazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Desethylatrazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Deisopropylatrazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Dimethenamid	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
EPTC	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Ethalfluralin	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Fonofos	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Metolachlor	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Metribuzin	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Pendimethalin	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Phorate	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Prometon	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Propachlor	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Propazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Simazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Terbufos	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Triallate	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Trifluralin	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 14:49	EPA 8270D	
Surrogate: Atrazine-d5		*86.2 %*	*52.6-121*		*04/29/2019*	*04/30/2019 14:49*	*EPA 8270D*	
Surrogate: Parathion-d10		*57.9 %*	*13.8-148*		*04/29/2019*	*04/30/2019 14:49*	*EPA 8270D*	
Surrogate: Triphenyl phosphate		*65.9 %*	*29.9-166*		*04/29/2019*	*04/30/2019 14:49*	*EPA 8270D*	
Acid Herbicides by High Performance Liquid Chromatography					**Preparation Batch: A904206**			**H**
2,4-D	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 01:36	EPA 8321B	
2,4-DB	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 01:36	EPA 8321B	
2,4,5-T	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 01:36	EPA 8321B	
2,4,5-TP	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 01:36	EPA 8321B	
Bentazon	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 01:36	EPA 8321B	
Dicamba	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 01:36	EPA 8321B	
MCPA	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 01:36	EPA 8321B	E1
Picloram	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 01:36	EPA 8321B	
Triclopyr	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 01:36	EPA 8321B	
Surrogate: DCAA		*85.7 %*	*60.4-128*		*04/24/2019*	*04/25/2019 01:36*	*EPA 8321B*	
Classical Chemistry Parameters					**Preparation Batch: A904217**			
% Solids	**90.9**	0.00	% by Weight	1	04/27/2019	04/29/2019 08:36	SM 2540B	

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Pace Analytical	Project: 19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number: 10471713
Minneapolis MN, 55414	Project Manager: Jennifer Anderson

FL-MW-D2 (27-29.5 ft)

A191708-02 (Solid)

Date Sampled
04/02/2019 00:00

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Base Neutral Pesticides by Gas Chromatography/Mass Spectrometry					**Preparation Batch: A904219**			**H**
Acetochlor	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Alachlor	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Atrazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Chlorpyrifos	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Cyanazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Desethylatrazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Deisopropylatrazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Dimethenamid	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
EPTC	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Ethalfluralin	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Fonofos	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Metolachlor	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Metribuzin	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Pendimethalin	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Phorate	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Prometon	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Propachlor	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Propazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Simazine	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Terbufos	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Triallate	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Trifluralin	ND	0.050	mg/kg dry	1	04/29/2019	04/30/2019 15:17	EPA 8270D	
Surrogate: Atrazine-d5		*90.1 %*	*52.6-121*		*04/29/2019*	*04/30/2019 15:17*	*EPA 8270D*	
Surrogate: Parathion-d10		*70.4 %*	*13.8-148*		*04/29/2019*	*04/30/2019 15:17*	*EPA 8270D*	
Surrogate: Triphenyl phosphate		*74.1 %*	*29.9-166*		*04/29/2019*	*04/30/2019 15:17*	*EPA 8270D*	
Acid Herbicides by High Performance Liquid Chromatography					**Preparation Batch: A904206**			**H**
2,4-D	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 02:42	EPA 8321B	
2,4-DB	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 02:42	EPA 8321B	
2,4,5-T	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 02:42	EPA 8321B	
2,4,5-TP	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 02:42	EPA 8321B	
Bentazon	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 02:42	EPA 8321B	
Dicamba	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 02:42	EPA 8321B	
MCPA	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 02:42	EPA 8321B	E1
Picloram	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 02:42	EPA 8321B	
Triclopyr	ND	0.10	mg/kg dry	1	04/24/2019	04/25/2019 02:42	EPA 8321B	
Surrogate: DCAA		*87.4 %*	*60.4-128*		*04/24/2019*	*04/25/2019 02:42*	*EPA 8321B*	
Classical Chemistry Parameters					**Preparation Batch: A904217**			
% Solids	**94.7**	0.00	% by Weight	1	04/27/2019	04/29/2019 08:36	SM 2540B	

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Pace Analytical	Project:	19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number:	10471713
Minneapolis MN, 55414	Project Manager:	Jennifer Anderson

Base Neutral Pesticides by Gas Chromatography/Mass Spectrometry - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904219 - EPA 3570										
Blank (A904219-BLK1)				Prepared: 04/29/2019 Analyzed: 04/30/2019 06:06						
Acetochlor	ND	0.050	mg/kg wet							
Alachlor	ND	0.050	mg/kg wet							
Atrazine	ND	0.050	mg/kg wet							
Chlorpyrifos	ND	0.050	mg/kg wet							
Cyanazine	ND	0.050	mg/kg wet							
Desethylatrazine	ND	0.050	mg/kg wet							
Deisopropylatrazine	ND	0.050	mg/kg wet							
Dimethenamid	ND	0.050	mg/kg wet							
EPTC	ND	0.050	mg/kg wet							
Ethalfluralin	ND	0.050	mg/kg wet							
Fonofos	ND	0.050	mg/kg wet							
Metolachlor	ND	0.050	mg/kg wet							
Metribuzin	ND	0.050	mg/kg wet							
Pendimethalin	ND	0.050	mg/kg wet							
Phorate	ND	0.050	mg/kg wet							
Prometon	ND	0.050	mg/kg wet							
Propachlor	ND	0.050	mg/kg wet							
Propazine	ND	0.050	mg/kg wet							
Simazine	ND	0.050	mg/kg wet							
Terbufos	ND	0.050	mg/kg wet							
Triallate	ND	0.050	mg/kg wet							
Trifluralin	ND	0.050	mg/kg wet							
Surrogate: Atrazine-d5	*0.212*		*mg/kg wet*	*0.2000*		*106*	*52.6-121*			
Surrogate: Parathion-d10	*0.141*		*mg/kg wet*	*0.2000*		*70.6*	*13.8-148*			
Surrogate: Triphenyl phosphate	*0.199*		*mg/kg wet*	*0.2000*		*99.4*	*29.9-166*			
LCS (A904219-BS1)				Prepared: 04/29/2019 Analyzed: 04/30/2019 06:34						
Acetochlor	0.403	0.050	mg/kg wet	0.4000		101	76.4-119			
Alachlor	0.383	0.050	mg/kg wet	0.4000		95.8	76.2-119			
Atrazine	0.377	0.050	mg/kg wet	0.4000		94.1	78.6-115			
Chlorpyrifos	0.388	0.050	mg/kg wet	0.4000		96.9	74.8-121			
Cyanazine	0.379	0.050	mg/kg wet	0.4000		94.9	55.2-143			
Desethylatrazine	0.384	0.050	mg/kg wet	0.4000		96.0	77-118			
Deisopropylatrazine	0.341	0.050	mg/kg wet	0.4000		85.3	69.5-121			
Dimethenamid	0.396	0.050	mg/kg wet	0.4000		98.9	78.8-119			
EPTC	0.349	0.050	mg/kg wet	0.4000		87.3	76.8-113			
Ethalfluralin	0.392	0.050	mg/kg wet	0.4000		98.1	61.6-130			
Fonofos	0.351	0.050	mg/kg wet	0.4000		87.7	72.5-117			
Metolachlor	0.389	0.050	mg/kg wet	0.4000		97.2	76.9-121			
Metribuzin	0.379	0.050	mg/kg wet	0.4000		94.8	75.1-118			
Pendimethalin	0.397	0.050	mg/kg wet	0.4000		99.4	60.2-136			
Phorate	0.363	0.050	mg/kg wet	0.4000		90.9	77.8-115			
Prometon	0.370	0.050	mg/kg wet	0.4000		92.5	69.1-120			
Propachlor	0.371	0.050	mg/kg wet	0.4000		92.6	78.2-116			
Propazine	0.388	0.050	mg/kg wet	0.4000		97.1	75.6-119			
Simazine	0.376	0.050	mg/kg wet	0.4000		93.9	77.7-115			

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Pace Analytical	Project: 19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number: 10471713
Minneapolis MN, 55414	Project Manager: Jennifer Anderson

Base Neutral Pesticides by Gas Chromatography/Mass Spectrometry - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904219 - EPA 3570										
LCS (A904219-BS1)				Prepared: 04/29/2019 Analyzed: 04/30/2019 06:34						
Terbufos	0.361	0.050	mg/kg wet	0.4000		90.2	74.5-113			
Triallate	0.346	0.050	mg/kg wet	0.4000		86.4	72.5-117			
Trifluralin	0.404	0.050	mg/kg wet	0.4000		101	67.2-128			
Surrogate: Atrazine-d5	*0.212*		*mg/kg wet*	*0.2000*		*106*	*52.6-121*			
Surrogate: Parathion-d10	*0.156*		*mg/kg wet*	*0.2000*		*77.9*	*13.8-148*			
Surrogate: Triphenyl phosphate	*0.179*		*mg/kg wet*	*0.2000*		*89.3*	*29.9-166*			
Matrix Spike (A904219-MS1)		**Source: A191715-03**		Prepared: 04/29/2019 Analyzed: 04/30/2019 07:03						
Acetochlor	0.503	0.050	mg/kg dry	0.4421	0.0992	91.4	68.6-127			
Alachlor	0.424	0.050	mg/kg dry	0.4421	ND	96.0	69.7-125			
Atrazine	0.403	0.050	mg/kg dry	0.4421	ND	91.2	65.5-117			
Chlorpyrifos	0.424	0.050	mg/kg dry	0.4421	ND	95.9	75.8-124			
Cyanazine	0.325	0.050	mg/kg dry	0.4421	ND	73.5	25.1-148			
Desethylatrazine	0.297	0.050	mg/kg dry	0.4421	ND	67.2	24.2-130			
Deisopropylatrazine	0.219	0.050	mg/kg dry	0.4421	ND	49.5	12.4-126			
Dimethenamid	1.07	0.050	mg/kg dry	0.4421	0.608	105	69.3-125			
EPTC	0.408	0.050	mg/kg dry	0.4421	ND	92.2	74.1-118			
Ethalfluralin	0.435	0.050	mg/kg dry	0.4421	ND	98.5	62.9-137			
Fonofos	0.399	0.050	mg/kg dry	0.4421	ND	90.2	68.1-117			
Metolachlor	0.594	0.050	mg/kg dry	0.4421	0.178	94.2	62-137			
Metribuzin	0.379	0.050	mg/kg dry	0.4421	ND	85.8	55.6-127			
Pendimethalin	0.498	0.050	mg/kg dry	0.4421	ND	113	47.5-164			
Phorate	0.401	0.050	mg/kg dry	0.4421	ND	90.8	73.6-118			
Prometon	0.373	0.050	mg/kg dry	0.4421	ND	84.4	54.7-125			
Propachlor	0.387	0.050	mg/kg dry	0.4421	ND	87.6	67.2-119			
Propazine	0.429	0.050	mg/kg dry	0.4421	ND	97.1	70.1-120			
Simazine	0.341	0.050	mg/kg dry	0.4421	ND	77.1	55.2-120			
Terbufos	0.395	0.050	mg/kg dry	0.4421	ND	89.3	71.8-117			
Triallate	0.395	0.050	mg/kg dry	0.4421	ND	89.4	67.9-125			
Trifluralin	0.445	0.050	mg/kg dry	0.4421	ND	101	65.4-139			
Surrogate: Atrazine-d5	*0.204*		*mg/kg dry*	*0.2211*		*92.4*	*52.6-121*			
Surrogate: Parathion-d10	*0.164*		*mg/kg dry*	*0.2211*		*74.3*	*13.8-148*			
Surrogate: Triphenyl phosphate	*0.183*		*mg/kg dry*	*0.2211*		*82.8*	*29.9-166*			
Matrix Spike Dup (A904219-MSD1)		**Source: A191715-03**		Prepared: 04/29/2019 Analyzed: 04/30/2019 07:31						
Acetochlor	0.466	0.050	mg/kg dry	0.4421	0.0992	83.0	68.6-127	7.62	20	
Alachlor	0.407	0.050	mg/kg dry	0.4421	ND	92.1	69.7-125	4.11	20	
Atrazine	0.369	0.050	mg/kg dry	0.4421	ND	83.5	65.5-117	8.75	20	
Chlorpyrifos	0.429	0.050	mg/kg dry	0.4421	ND	97.0	75.8-124	1.20	20	
Cyanazine	0.315	0.050	mg/kg dry	0.4421	ND	71.2	25.1-148	3.14	20	
Desethylatrazine	0.290	0.050	mg/kg dry	0.4421	ND	65.6	24.2-130	2.55	20	
Deisopropylatrazine	0.235	0.050	mg/kg dry	0.4421	ND	53.1	12.4-126	7.03	20	
Dimethenamid	0.730	0.050	mg/kg dry	0.4421	0.608	27.6	69.3-125	37.9	20	M, X
EPTC	0.394	0.050	mg/kg dry	0.4421	ND	89.0	74.1-118	3.51	20	
Ethalfluralin	0.414	0.050	mg/kg dry	0.4421	ND	93.8	62.9-137	4.93	20	
Fonofos	0.394	0.050	mg/kg dry	0.4421	ND	89.1	68.1-117	1.14	20	

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Pace Analytical	Project:	19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number:	10471713
Minneapolis MN, 55414	Project Manager:	Jennifer Anderson

Base Neutral Pesticides by Gas Chromatography/Mass Spectrometry - Quality Control

Pace Analytical - Madison

Batch A904219 - EPA 3570

Matrix Spike Dup (A904219-MSD1) **Source: A191715-03** Prepared: 04/29/2019 Analyzed: 04/30/2019 07:31

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Metolachlor	0.508	0.050	mg/kg dry	0.4421	0.178	74.8	62-137	15.5	20	
Metribuzin	0.359	0.050	mg/kg dry	0.4421	ND	81.3	55.6-127	5.44	20	
Pendimethalin	0.461	0.050	mg/kg dry	0.4421	ND	104	47.5-164	7.52	20	
Phorate	0.387	0.050	mg/kg dry	0.4421	ND	87.5	73.6-118	3.73	20	
Prometon	0.365	0.050	mg/kg dry	0.4421	ND	82.5	54.7-125	2.24	20	
Propachlor	0.394	0.050	mg/kg dry	0.4421	ND	89.2	67.2-119	1.83	20	
Propazine	0.391	0.050	mg/kg dry	0.4421	ND	88.3	70.1-120	9.40	20	
Simazine	0.353	0.050	mg/kg dry	0.4421	ND	79.8	55.2-120	3.36	20	
Terbufos	0.404	0.050	mg/kg dry	0.4421	ND	91.4	71.8-117	2.32	20	
Triallate	0.393	0.050	mg/kg dry	0.4421	ND	88.9	67.9-125	0.606	20	
Trifluralin	0.442	0.050	mg/kg dry	0.4421	ND	99.9	65.4-139	0.807	20	
Surrogate: Atrazine-d5	*0.222*		*mg/kg dry*	*0.2211*		*100*	*52.6-121*			
Surrogate: Parathion-d10	*0.169*		*mg/kg dry*	*0.2211*		*76.6*	*13.8-148*			
Surrogate: Triphenyl phosphate	*0.192*		*mg/kg dry*	*0.2211*		*86.9*	*29.9-166*			

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Pace Analytical	Project: 19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number: 10471713
Minneapolis MN, 55414	Project Manager: Jennifer Anderson

Acid Herbicides by High Performance Liquid Chromatography - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904206 - EPA 3570										
Blank (A904206-BLK1)				Prepared: 04/24/2019 Analyzed: 04/24/2019 20:04						
2,4-D	ND	0.10	mg/kg wet							
2,4-D [2C]	ND	0.10	mg/kg wet							
2,4-DB	ND	0.10	mg/kg wet							
2,4-DB [2C]	ND	0.10	mg/kg wet							
2,4,5-T	ND	0.10	mg/kg wet							
2,4,5-T [2C]	ND	0.10	mg/kg wet							
2,4,5-TP	ND	0.10	mg/kg wet							
2,4,5-TP [2C]	ND	0.10	mg/kg wet							
Bentazon	ND	0.10	mg/kg wet							
Bentazon [2C]	ND	0.10	mg/kg wet							
Dicamba	ND	0.10	mg/kg wet							
Dicamba [2C]	ND	0.10	mg/kg wet							
MCPA	ND	0.10	mg/kg wet							
MCPA [2C]	ND	0.10	mg/kg wet							
Picloram	ND	0.10	mg/kg wet							
Picloram [2C]	ND	0.10	mg/kg wet							
Triclopyr	ND	0.10	mg/kg wet							
Triclopyr [2C]	ND	0.10	mg/kg wet							
Surrogate: DCAA	*16.9*		*mg/kg wet*	*20.00*		*84.7*	*60.4-128*			
Surrogate: DCAA [2C]	*18.8*		*mg/kg wet*	*20.00*		*93.9*	*44.7-125*			
LCS (A904206-BS1)				Prepared: 04/24/2019 Analyzed: 04/24/2019 21:10						
2,4-D	1.79	0.10	mg/kg wet	2.000		89.7	82.8-109			
2,4-D [2C]	1.87	0.10	mg/kg wet	2.000		93.6	69.6-116			
2,4-DB	1.75	0.10	mg/kg wet	2.000		87.6	77.8-102			
2,4-DB [2C]	1.83	0.10	mg/kg wet	2.000		91.4	68.4-114			
2,4,5-T	1.79	0.10	mg/kg wet	2.000		89.3	84.8-108			
2,4,5-T [2C]	1.89	0.10	mg/kg wet	2.000		94.6	71.5-119			
2,4,5-TP	1.77	0.10	mg/kg wet	2.000		88.6	82.1-104			
2,4,5-TP [2C]	1.85	0.10	mg/kg wet	2.000		92.4	60.2-130			
Bentazon	1.04	0.10	mg/kg wet	1.000		104	77.4-126			
Bentazon [2C]	0.952	0.10	mg/kg wet	1.000		95.2	62.7-130			
Dicamba	1.85	0.10	mg/kg wet	2.000		92.4	83.8-111			
Dicamba [2C]	1.93	0.10	mg/kg wet	2.000		96.7	70.7-118			
Picloram	0.910	0.10	mg/kg wet	1.000		91.0	71.9-121			
Picloram [2C]	1.17	0.10	mg/kg wet	1.000		117	67.3-115			
Triclopyr	1.77	0.10	mg/kg wet	2.000		88.4	83.8-106			
Triclopyr [2C]	1.82	0.10	mg/kg wet	2.000		91.2	66.7-116			
Surrogate: DCAA	*17.0*		*mg/kg wet*	*20.00*		*85.0*	*60.4-128*			
Surrogate: DCAA [2C]	*18.8*		*mg/kg wet*	*20.00*		*93.9*	*44.7-125*			
LCS (A904206-BS2)				Prepared: 04/24/2019 Analyzed: 04/24/2019 22:17						
MCPA	3.51	0.10	mg/kg wet	4.000		87.7	88.6-119			
MCPA [2C]	3.58	0.10	mg/kg wet	4.000		89.6	68.5-130			
Surrogate: DCAA	*17.3*		*mg/kg wet*	*20.00*		*86.4*	*60.4-128*			
Surrogate: DCAA [2C]	*17.8*		*mg/kg wet*	*20.00*		*89.1*	*44.7-125*			

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Pace Analytical	Project: 19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number: 10471713
Minneapolis MN, 55414	Project Manager: Jennifer Anderson

Acid Herbicides by High Performance Liquid Chromatography - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904206 - EPA 3570										
Matrix Spike (A904206-MS1)	**Source: A191618-02**		Prepared: 04/24/2019 Analyzed: 04/25/2019 06:01							
2,4-D	1.98	0.10	mg/kg dry	2.720	0.528	53.3	68.8-106			M
2,4-D [2C]	1.81	0.10	mg/kg dry	2.720	0.513	47.5	36-125			
2,4-DB	1.48	0.10	mg/kg dry	2.720	0.107	50.3	41.2-115			
2,4-DB [2C]	1.62	0.10	mg/kg dry	2.720	ND	59.7	18.1-131			
2,4,5-T	1.64	0.10	mg/kg dry	2.720	ND	60.5	39.9-125			
2,4,5-T [2C]	1.68	0.10	mg/kg dry	2.720	0.0928	58.3	29-128			
2,4,5-TP	1.80	0.10	mg/kg dry	2.720	0.143	61.0	12.3-141			
2,4,5-TP [2C]	1.73	0.10	mg/kg dry	2.720	0.0397	62.2	21.8-137			
Bentazon	1.35	0.10	mg/kg dry	1.360	ND	99.5	50.1-128			
Bentazon [2C]	0.642	0.10	mg/kg dry	1.360	ND	47.2	26.5-142			
Dicamba	2.16	0.10	mg/kg dry	2.720	0.141	74.2	41.2-117			
Dicamba [2C]	2.66	0.10	mg/kg dry	2.720	0.348	84.9	31.9-118			
Picloram	1.10	0.10	mg/kg dry	1.360	ND	80.6	11.5-120			
Picloram [2C]	0.762	0.10	mg/kg dry	1.360	ND	56.0	10.2-118			
Triclopyr	1.84	0.10	mg/kg dry	2.720	ND	67.5	63.7-109			
Triclopyr [2C]	1.94	0.10	mg/kg dry	2.720	0.0814	68.3	40.7-118			
Surrogate: DCAA	*18.7*		*mg/kg dry*	*27.20*		*68.9*	*60.4-128*			
Surrogate: DCAA [2C]	*20.1*		*mg/kg dry*	*27.20*		*73.8*	*44.7-125*			
Matrix Spike (A904206-MS2)	**Source: A191618-02**		Prepared: 04/24/2019 Analyzed: 04/25/2019 08:13							
MCPA	4.00	0.10	mg/kg dry	5.441	0.128	71.1	71.9-119			M
MCPA [2C]	3.43	0.10	mg/kg dry	5.441	0.201	59.4	52.5-127			
Surrogate: DCAA	*19.2*		*mg/kg dry*	*27.20*		*70.6*	*60.4-128*			
Surrogate: DCAA [2C]	*19.8*		*mg/kg dry*	*27.20*		*72.8*	*44.7-125*			
Matrix Spike Dup (A904206-MSD1)	**Source: A191618-02**		Prepared: 04/24/2019 Analyzed: 04/25/2019 07:07							
2,4-D	1.74	0.10	mg/kg dry	2.720	0.528	44.7	68.8-106	12.5	20	M
2,4-D [2C]	1.72	0.10	mg/kg dry	2.720	0.513	44.4	36-125	4.87	20	
2,4-DB	1.42	0.10	mg/kg dry	2.720	0.107	48.2	41.2-115	4.04	20	
2,4-DB [2C]	1.56	0.10	mg/kg dry	2.720	ND	57.3	18.1-131	4.08	20	
2,4,5-T	1.63	0.10	mg/kg dry	2.720	ND	60.1	39.9-125	0.633	20	
2,4,5-T [2C]	1.59	0.10	mg/kg dry	2.720	0.0928	55.1	29-128	5.26	20	
2,4,5-TP	1.71	0.10	mg/kg dry	2.720	0.143	57.7	12.3-141	5.10	20	
2,4,5-TP [2C]	1.64	0.10	mg/kg dry	2.720	0.0397	58.8	21.8-137	5.60	20	
Bentazon	1.14	0.10	mg/kg dry	1.360	ND	84.1	50.1-128	16.8	20	
Bentazon [2C]	0.634	0.10	mg/kg dry	1.360	ND	46.6	26.5-142	1.23	20	
Dicamba	2.17	0.10	mg/kg dry	2.720	0.141	74.5	41.2-117	0.412	20	
Dicamba [2C]	2.64	0.10	mg/kg dry	2.720	0.348	84.4	31.9-118	0.485	20	
Picloram	1.19	0.10	mg/kg dry	1.360	ND	87.3	11.5-120	7.89	20	
Picloram [2C]	1.21	0.10	mg/kg dry	1.360	ND	89.1	10.2-118	45.6	20	X
Triclopyr	1.84	0.10	mg/kg dry	2.720	ND	67.5	63.7-109	0.00	20	
Triclopyr [2C]	1.80	0.10	mg/kg dry	2.720	0.0814	63.1	40.7-118	7.48	20	
Surrogate: DCAA	*18.5*		*mg/kg dry*	*27.20*		*67.9*	*60.4-128*			
Surrogate: DCAA [2C]	*19.4*		*mg/kg dry*	*27.20*		*71.2*	*44.7-125*			

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Pace Analytical	Project:	19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number:	10471713
Minneapolis MN, 55414	Project Manager:	Jennifer Anderson

Acid Herbicides by High Performance Liquid Chromatography - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904206 - EPA 3570										
Matrix Spike Dup (A904206-MSD2)	**Source: A191618-02**		Prepared: 04/24/2019 Analyzed: 04/25/2019 09:20							
MCPA	3.96	0.10	mg/kg dry	5.441	0.128	70.5	71.9-119	0.873	20	M
MCPA [2C]	3.83	0.10	mg/kg dry	5.441	0.201	66.6	52.5-127	10.8	20	
Surrogate: DCAA	*19.9*		*mg/kg dry*	*27.20*		*73.2*	*60.4-128*			
Surrogate: DCAA [2C]	*21.2*		*mg/kg dry*	*27.20*		*77.8*	*44.7-125*			

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1700 Elm Street, Suite 200	Project Number:	10471713
Minneapolis MN, 55414	Project Manager:	Jennifer Anderson

Classical Chemistry Parameters - Quality Control

Pace Analytical - Madison

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A904217 - % Solids										
Duplicate (A904217-DUP1)		**Source: A191725-03**		Prepared: 04/27/2019 Analyzed: 04/29/2019 08:36						
% Solids	82.0	0.00	% by Weight		80.9			1.44	20	

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Pace Analytical	Project:	19-01567 Freeway LF Bedrock
1700 Elm Street, Suite 200	Project Number:	10471713
Minneapolis MN, 55414	Project Manager:	Jennifer Anderson

Notes and Definitions

X	Precision for the matrix spike duplicate, laboratory control sample duplicate or lab duplicate was outside of control limits.
M	The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory control limits.
LC	Results may be biased low because of low continuing calibration verification (CCV).
H	The sample was held beyond the accepted holding time.
E1	Estimated value because of quality control sample exceedances.
ND	Analyte NOT DETECTED at or above the reporting limit or limit of detection (if listed).
NR	Not Reported
dry	Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
RPD	Relative Percent Difference

A191708

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: MN

Cert. Needed: ☐ Yes ☐ No

Workorder: 10471713 **Workorder Name:** 19-01567 Freeway LF Bedrock **Owner Received Date:** 4/22/2019 **Results Requested By:** 5/13/2019

Pace Analytical
www.pacelabs.com

Report To	Subcontract To
Jennifer Anderson Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-6436	Pace Analytical Madison 2525 Advance Road Madison, WI 53718 Phone (608)221-8700

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved JGFU	MDA List 1	MDA List 2	LAB USE ONLY
1	FL-MW-E2 (33-35 ft)	PS	4/2/2019 00:00	10471713001	Solid	1	X	X	01
2	FL-MW-D2 (27-29.5 ft)	PS	4/2/2019 00:00	10471713002	Solid	1	X	X	02
3									
4									
5									

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] / Pace	4/23/19 1345	[signature]	04-24-19 1230
2				
3				

Comments

Okay to proceed out of hold
Please include Barr Equis 5 and MPCA EDD

Cooler Temperature on Receipt 3.8 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

S/N 160142274
Exp. 07-13-19

2045 Mills Road West
Sidney, BC, Canada V8L5X2
TEL: (250) 655-5800
TOLL-FREE: 1-888-373-0881

SGS AXYS Client No.: 4173

Client Address: Pace Analytical Minnesota
1700 Elm Street SE - Suite 200
Minneapolis, MN, US, 55414

The SGS AXYS contact for these data is Sean Campbell.

BATCH SUMMARY

Batch ID:	WG68018	**Date:**	31-May-2019
Analysis Type:	Perfluorinated Organic	**Matrix Type:**	Solid

BATCH MAKEUP

Contract: 4173
Samples:

L31038-1	FL - MW - E2 (33-35) 02-APR -2019
L31038-2	FL - MW - D2 (27-29.5) 02 - APR - 2019

Blank:
WG68018-101

Reference or Spike:
WG68018-102

Duplicate:

Comments:
1. Data are considered final.
2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data.
3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.
4. For the FL - MW - D2 (27-29.5) 02 - APR – 2019 sample (SGS AXYS ID: L31038-2), the percent recovery for the surrogate compound 13C8-PFOSA (144%) was above the upper method criteria limit (130%) and was flagged with a ‘V’ on the report form. As the isotope dilution method of quantification produces data that is recovery corrected, this variance from method criteria was deemed to not affect the quantification of the target analyte. Percent surrogate recoveries are used as general method performance indicator only.

SGS AXYS

4173

CHAIN OF CUSTODY

2045 Mills Road West TEL: (250) 655-5800 TOLL FREE 1-888-373-0881
Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

SGS AXYS CLIENT #: 4173

REPORT TO:		INVOICE TO:	
Company	Pace Analytical Services	Company	Pace Analytical Services
Address	1700 Elm St. SE Suite 200 Minneapolis MN 55414	Address	1700 Elm St. SE Suite 200 Minneapolis MN 55414
Contact	Daniel George	Contact	Daniel George
Phone	612-849-6055	Phone	612-849-6055
FAX		FAX	
E-mail	daniel.george@~~gmail.com~~ pacelabs.com	E-mail	daniel.george@pacelabs.com
Project Name/Number:	19-01567 MPCA Freeway LF 2019 Bedrock	Sampler's Name:	
		Signature:	

ANALYSIS REQUESTED: PFC (EPA 537)

Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	SGS AXYS Lab Sample ID (Lab use only)	PFC (EPA 537)				
FL-MW-E2 (33-35)	solid	4/12/19	unknown	250 mL HDPE jar	L31038-1					
FL-MW-D2 (27-29.5)	Solid	4/12/19	unknown	" "	-2					
			4/22/19 MVS							

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Daniel George	4/22/19	1340	Rosa Lizalde	25 Apr 19	09:30
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Courier	Waybill No.

Sample Receipt

	Cooler
Temp °C	
Custody Seal #	
Seal Intact Y / N	
Sample Tags Y / N	

Remarks

SGS AXYS METHOD MLA-041 Rev 09

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
FL - MW - E2 (33-35) 02-APR - 2019
Sample Collection:
02-Apr-2019

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4173	**Project No.**	19-01567
		Lab Sample I.D.:	L31038-1
Matrix:	SOLID	**Sample Size:**	5.00 g (dry)
Sample Receipt Date:	25-Apr-2019	**Initial Calibration Date:**	16-May-2019
Extraction Date:	15-May-2019	**Instrument ID:**	LC MS/MS
Analysis Date:	16-May-2019 **Time:** 22:09:12	**Column ID:**	C18
Extract Volume (uL):	4000	**Sample Data Filename:**	**FC9W_191 S: 24**
Injection Volume (uL):	2	**Blank Data Filename:**	FC9W_191 S: 23
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	FC9W_191 S: 18
Concentration Units:	ng/g (dry weight basis)	**% Moisture:**	9.90

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	RETENTION TIME
PFBA	U		0.100 (L)	
PFPeA	U		0.100 (L)	
PFHxA	U		0.100 (L)	
PFHpA	U		0.100 (L)	
PFOA	U		0.100 (L)	
PFNA	U		0.100 (L)	
PFDA	U		0.100 (L)	
PFUnA	U		0.100 (L)	
PFDoA	U		0.100 (L)	
PFBS	U		0.200 (L)	
PFHxS	U		0.200 (L)	
PFOS	U		0.200 (L)	
PFOSA	U		0.100 (L)	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _________Andrew Porat________

For Axys Internal Use Only [XSL Template: FC-Form1A.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9;
Report Filename: PFC_FC_LC_PFOA_L31038-1_Form1A_FC9W_191S24_SJ2563243.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

CLIENT SAMPLE NO.
FL - MW - E2 (33-35) 02-APR - 2019
Sample Collection:
02-Apr-2019

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	19-01567
Contract No.:	4173	**Lab Sample I.D.:**	L31038-1
Matrix:	SOLID	**Sample Size:**	5.00 g (dry)
Sample Receipt Date:	25-Apr-2019	**Initial Calibration Date:**	16-May-2019
Extraction Date:	15-May-2019	**Instrument ID:**	LC MS/MS
Analysis Date:	16-May-2019 **Time:** 22:09:12	**Column ID:**	C18
Extract Volume (uL):	4000	**Sample Data Filename:**	**FC9W_191 S: 24**
Injection Volume (uL):	2	**Blank Data Filename:**	FC9W_191 S: 23
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	FC9W_191 S: 18
Concentration Units:	ng absolute	**% Moisture:**	9.90

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This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	RETENTION TIME
13C4-PFBA		12.0	11.3	94.0	2:10
13C2-PFHxA		12.0	12.5	104	3:31
13C2-PFOA		36.0	33.2	92.2	4:34
13C5-PFNA		12.0	11.0	91.4	5:21
13C2-PFDA		12.0	11.0	92.1	6:19
13C2-PFDoA		12.0	7.86	65.5	6:51
13C4-PFOS		18.0	16.5	91.5	6:27
18O2-PFHxS		18.0	17.6	97.8	4:41
13C8-PFOSA		12.0	10.9	90.7	7:01

(1) Where applicable, custom lab flags have been used on this report.
(2) R(%) = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _________Andrew Porat_________

For Axys Internal Use Only [XSL Template: FC-Form2.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9;
Report Filename: PFC_FC_LC_PFOA_L31038-1_Form2_FC9W_191S24_SJ2563243.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

CLIENT SAMPLE NO.
FL - MW - D2 (27-29.5) 02 - APR - 2019
Sample Collection:
02-Apr-2019

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	19-01567
Contract No.:	4173	**Lab Sample I.D.:**	L31038-2
Matrix:	SOLID	**Sample Size:**	5.08 g (dry)
Sample Receipt Date:	25-Apr-2019	**Initial Calibration Date:**	16-May-2019
Extraction Date:	15-May-2019	**Instrument ID:**	LC MS/MS
Analysis Date:	16-May-2019 **Time:** 22:18:38	**Column ID:**	C18
Extract Volume (uL):	4000	**Sample Data Filename:**	**FC9W_191 S: 25**
Injection Volume (uL):	2	**Blank Data Filename:**	FC9W_191 S: 23
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	FC9W_191 S: 18
Concentration Units:	ng/g (dry weight basis)	**% Moisture:**	5.12

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	RETENTION TIME
PFBA	U		0.0985 (L)	
PFPeA	U		0.0985 (L)	
PFHxA	U		0.0985 (L)	
PFHpA	U		0.0985 (L)	
PFOA		0.165	0.0985 (L)	4:34
PFNA	U		0.0985 (L)	
PFDA	U		0.0985 (L)	
PFUnA	U		0.0985 (L)	
PFDoA	U		0.0985 (L)	
PFBS	U		0.197 (L)	
PFHxS	U		0.197 (L)	
PFOS	U		0.197 (L)	
PFOSA	U		0.0985 (L)	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _________Andrew Porat________

For Axys Internal Use Only [XSL Template: FC-Form1A.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9;
Report Filename: PFC_FC_LC_PFOA_L31038-2_Form1A_FC9W_191S25_SJ2563244.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
FL - MW - D2 (27-29.5) 02 - APR - 2019
Sample Collection:
02-Apr-2019

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	19-01567
Contract No.:	4173	**Lab Sample I.D.:**	L31038-2
Matrix:	SOLID	**Sample Size:**	5.08 g (dry)
Sample Receipt Date:	25-Apr-2019	**Initial Calibration Date:**	16-May-2019
Extraction Date:	15-May-2019	**Instrument ID:**	LC MS/MS
Analysis Date:	16-May-2019 **Time:** 22:18:38	**Column ID:**	C18
Extract Volume (uL):	4000	**Sample Data Filename:**	**FC9W_191 S: 25**
Injection Volume (uL):	2	**Blank Data Filename:**	FC9W_191 S: 23
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	FC9W_191 S: 18
Concentration Units:	ng absolute	**% Moisture:**	5.12

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	RETENTION TIME
13C4-PFBA		12.0	11.0	91.7	2:11
13C2-PFHxA		12.0	12.6	105	3:31
13C2-PFOA		36.0	35.1	97.5	4:34
13C5-PFNA		12.0	12.7	106	5:21
13C2-PFDA		12.0	12.8	107	6:19
13C2-PFDoA		12.0	9.39	78.3	6:51
13C4-PFOS		18.0	20.3	113	6:27
18O2-PFHxS		18.0	18.4	102	4:40
13C8-PFOSA	V	12.0	17.2	144	7:01

(1) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits.
(2) R(%) = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _________Andrew Porat_________

For Axys Internal Use Only [XSL Template: FC-Form2.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9;
Report Filename: PFC_FC_LC_PFOA_L31038-2_Form2_FC9W_191S25_SJ2563244.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4173	**Lab Sample I.D.:**	WG68018-101
Matrix:	AQUEOUS (SOLID METHOD)	**Sample Size:**	5.00 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	16-May-2019
Extraction Date:	15-May-2019	**Instrument ID:**	LC MS/MS
Analysis Date:	16-May-2019 **Time:** 21:59:46	**Column ID:**	C18
Extract Volume (uL):	4000	**Sample Data Filename:**	**FC9W_191 S: 23**
Injection Volume (uL):	2	**Blank Data Filename:**	FC9W_191 S: 23
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	FC9W_191 S: 18
Concentration Units:	ng/g		

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	RETENTION TIME
PFBA	U		0.100 (L)	
PFPeA	U		0.100 (L)	
PFHxA	U		0.100 (L)	
PFHpA	U		0.100 (L)	
PFOA	U		0.100 (L)	
PFNA	U		0.100 (L)	
PFDA	U		0.100 (L)	
PFUnA	U		0.100 (L)	
PFDoA	U		0.100 (L)	
PFBS	U		0.200 (L)	
PFHxS	U		0.200 (L)	
PFOS	U		0.200 (L)	
PFOSA	U		0.100 (L)	

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: __________Andrew Porat_________

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Report Filename: PFC_FC_LC_PFOA_WG68018-101_Form1A_FC9W_191S23_SJ2563241.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

		Project No.	N/A
Contract No.:	4173	**Lab Sample I.D.:**	WG68018-101
Matrix:	AQUEOUS (SOLID METHOD)	**Sample Size:**	5.00 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	16-May-2019
Extraction Date:	15-May-2019	**Instrument ID:**	LC MS/MS
Analysis Date:	16-May-2019 **Time:** 21:59:46	**Column ID:**	C18
Extract Volume (uL):	4000	**Sample Data Filename:**	**FC9W_191 S: 23**
Injection Volume (uL):	2	**Blank Data Filename:**	FC9W_191 S: 23
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	FC9W_191 S: 18
Concentration Units:	ng absolute		

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	RETENTION TIME
13C4-PFBA		12.0	11.4	94.9	2:11
13C2-PFHxA		12.0	12.7	106	3:31
13C2-PFOA		36.0	31.9	88.6	4:34
13C5-PFNA		12.0	11.8	98.7	5:21
13C2-PFDA		12.0	11.6	96.3	6:18
13C2-PFDoA		12.0	9.61	80.1	6:51
13C4-PFOS		18.0	18.8	104	6:27
18O2-PFHxS		18.0	19.0	105	4:41
13C8-PFOSA		12.0	11.7	97.2	7:01

(1) Where applicable, custom lab flags have been used on this report.
(2) R(%) = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: __________Andrew Porat_________

For Axys Internal Use Only [XSL Template: FC-Form2.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9;
Report Filename: PFC_FC_LC_PFOA_WG68018-101_Form2_FC9W_191S23_SJ2563241.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 8A

PERFLUORINATED ORGANICS ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4173	**Lab Sample I.D.:**	WG68018-102
Matrix:	SOLID	**Initial Calibration Date:**	16-May-2019
Extraction Date:	15-May-2019	**Instrument ID:**	LC MS/MS
Analysis Date:	16-May-2019 **Time:** 21:40:55	**Column ID:**	C18
Extract Volume (uL):	4000	**OPR Data Filename:**	**FC9W_191 S: 21**
Injection Volume (uL):	2	**Blank Data Filename:**	FC9W_191 S: 23
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	FC9W_191 S: 18

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 1 mL EXTRACT VOLUME.

COMPOUND	LAB FLAG [1]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RETENTION TIME
PFBA		20.0	19.8	99.1	2:11
PFPeA		20.0	19.0	94.9	3:03
PFHxA		20.0	19.6	98.2	3:31
PFHpA		20.0	18.5	92.4	4:00
PFOA		20.0	20.0	100	4:34
PFNA		20.0	20.3	102	5:21
PFDA		20.0	20.6	103	6:19
PFUnA		20.0	19.5	97.5	6:42
PFDoA		20.0	20.6	103	6:51
PFBS		40.0	42.5	106	3:30
PFHxS		40.0	37.9	94.8	4:41
PFOS		40.0	40.9	102	6:27
PFOSA		20.0	18.6	93.2	7:01

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: __________Andrew Porat_________

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: FC-Form8A.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9;
Report Filename: PFC_FC_LC_PFOA_WG68018-102_Form8A_SJ2563238.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 8B

PERFLUORINATED ORGANICS ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4173	**Lab Sample I.D.:**	WG68018-102
Matrix:	SOLID	**Initial Calibration Date:**	16-May-2019
Extraction Date:	15-May-2019	**Instrument ID:**	LC MS/MS
Analysis Date:	16-May-2019 **Time:** 21:40:55	**Column ID:**	C18
Extract Volume (uL):	4000	**OPR Data Filename:**	**FC9W_191 S: 21**
Injection Volume (uL):	2	**Blank Data Filename:**	FC9W_191 S: 23
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	FC9W_191 S: 18

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 1 mL EXTRACT VOLUME.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RETENTION TIME
13C4-PFBA		12.0	12.1	101	2:11
13C2-PFHxA		12.0	13.2	110	3:31
13C2-PFOA		36.0	34.6	96.2	4:34
13C5-PFNA		12.0	11.8	98.2	5:21
13C2-PFDA		12.0	11.8	98.7	6:19
13C2-PFDoA		12.0	10.1	84.1	6:51
13C4-PFOS		18.0	18.8	104	6:27
18O2-PFHxS		18.0	19.8	110	4:41
13C8-PFOSA		12.0	12.5	104	7:01

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _________Andrew Porat________

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: FC-Form8B.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9;
Report Filename: PFC_FC_LC_PFOA_WG68018-102_Form8B_SJ2563238.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 3A
PERFLUORINATED ORGANICS INITIAL CALIBRATION PERCENT RECOVERIES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	16-May-2019	**CS0 Data Filename:**	N/A
		CS1 Data Filename:	FC9W_191 S: 6
Instrument ID:	LC MS/MS	**CS2 Data Filename:**	FC9W_191 S: 7
LC Column ID:	C18	**CS3 Data Filename:**	FC9W_191 S: 8
		CS4 Data Filename:	FC9W_191 S: 9
		CS5 Data Filename:	FC9W_191 S: 10
		CS6 Data Filename:	FC9W_191 S: 11
		CS7 Data Filename:	FC9W_191 S: 12
		CS8 Data Filename:	FC9W_191 S: 13

		PERCENT RECOVERY (%)								
COMPOUND	**LAB FLAG [1]**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**CS7**	**CS8**
PFBA			99.5	103	93.0	97.5	102	101	101	103
PFPeA			98.6	105	95.0	91.5	99.1	98.1	105	107
PFHxA			99.1	102	101	98.5	103	99.4	99.9	96.9
PFHpA			99.0	105	93.9	90.4	96.7	98.2	106	112
PFOA			95.7	112	95.3	97.8	106	99.8	95.0	98.5
PFNA			98.4	104	101	94.4	103	99.5	98.3	101
PFDA			96.4	108	104	96.6	104	101	98.4	92.2
PFUnA			94.4	111	109	106	111	100	92.2	76.5
PFDoA			99.0	104	92.2	105	107	99.7	101	92.1
PFBS			96.8	106	105	104	108	104	92.7	82.5
PFHxS			98.1	106	96.1	95.4	102	99.1	100	103
PFOS			98.3	107	92.2	93.0	104	94.0	104	108
PFOSA			98.0	106	96.5	95.5	100	95.8	102	106

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: __________Jordan Berends_________

For Axys Internal Use Only [XSL Template: FC-Form3A.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9; Report Filename: GENERIC-SPECS_FC_LC_16-May-2019_FC9W__Form3A_GS81819.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 3B
PERFLUORINATED ORGANICS INITIAL CALIBRATION PERCENT RECOVERIES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	16-May-2019
Instrument ID:	LC MS/MS
LC Column ID:	C18

CS0 Data Filename:	N/A
CS1 Data Filename:	FC9W_191 S: 6
CS2 Data Filename:	FC9W_191 S: 7
CS3 Data Filename:	FC9W_191 S: 8
CS4 Data Filename:	FC9W_191 S: 9
CS5 Data Filename:	FC9W_191 S: 10
CS6 Data Filename:	FC9W_191 S: 11
CS7 Data Filename:	FC9W_191 S: 12
CS8 Data Filename:	FC9W_191 S: 13

		PERCENT RECOVERIES (%)								
LABELED COMPOUND	**LAB FLAG [1]**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**CS7**	**CS8**
13C4-PFBA			102	99.7	102	101	101	105	98.2	91.2
13C2-PFHxA			116	110	108	114	106	103	82.4	61.1
13C2-PFOA			98.1	98.5	96.7	97.2	97.7	103	103	107
13C5-PFNA			105	104	98.1	106	101	105	98.8	81.9
13C2-PFDA			104	108	94.5	107	98.5	102	99.7	86.4
13C2-PFDoA			106	124	99.0	107	107	98.6	89.5	69.5
13C4-PFOS			113	116	101	114	100	104	84.9	65.8
18O2-PFHxS			110	109	109	111	105	102	87.2	66.4
13C8-PFOSA			108	120	104	104	105	97.9	88.6	71.3

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: __________Jordan Berends_________

For Axys Internal Use Only [XSL Template: FC-Form3B.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9;
Report Filename: GENERIC-SPECS_FC_LC_16-May-2019_FC9W__Form3B_GS81819.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 3C
PERFLUORINATED ORGANICS INITIAL CALIBRATION RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	16-May-2019	**CS0 Data Filename:**	N/A
		CS1 Data Filename:	FC9W_191 S: 6
Instrument ID:	LC MS/MS	**CS2 Data Filename:**	FC9W_191 S: 7
LC Column ID:	C18	**CS3 Data Filename:**	FC9W_191 S: 8
		CS4 Data Filename:	FC9W_191 S: 9
		CS5 Data Filename:	FC9W_191 S: 10
		CS6 Data Filename:	FC9W_191 S: 11
		CS7 Data Filename:	FC9W_191 S: 12
		CS8 Data Filename:	FC9W_191 S: 13

		RETENTION TIMES									
COMPOUND	**LAB FLAG** [1]	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**CS7**	**CS8**	**MEAN RT**
PFBA			2:11	2:11	2:11	2:11	2:11	2:11	2:11	2:11	2:11
PFPeA			3:03	3:03	3:03	3:03	3:03	3:02	3:03	3:03	3:03
PFHxA			3:31	3:31	3:31	3:30	3:30	3:30	3:30	3:30	3:30
PFHpA			4:00	4:00	4:00	4:00	4:00	3:59	4:00	3:59	4:00
PFOA			4:35	4:34	4:35	4:34	4:34	4:34	4:34	4:34	4:34
PFNA			5:21	5:21	5:21	5:21	5:21	5:21	5:21	5:21	5:21
PFDA			6:19	6:19	6:18	6:18	6:19	6:19	6:19	6:19	6:19
PFUnA			6:42	6:42	6:42	6:42	6:42	6:42	6:42	6:42	6:42
PFDoA			6:52	6:51	6:51	6:51	6:51	6:51	6:51	6:51	6:51
PFBS			3:30	3:30	3:30	3:30	3:30	3:30	3:30	3:30	3:30
PFHxS			4:41	4:41	4:41	4:41	4:41	4:41	4:40	4:40	4:41
PFOS			6:27	6:27	6:27	6:27	6:27	6:28	6:28	6:27	6:27
PFOSA			7:01	7:01	7:01	7:01	7:01	7:01	7:01	7:01	7:01

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _________Jordan Berends________

For Axys Internal Use Only [XSL Template: FC-Form3C.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9;
Report Filename: GENERIC-SPECS_FC_LC_16-May-2019_FC9W__Form3C_GS81819.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 3D
PERFLUORINATED ORGANICS INITIAL CALIBRATION RETENTION TIMES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	16-May-2019	**CS0 Data Filename:**	N/A
Instrument ID:	LC MS/MS	**CS1 Data Filename:**	FC9W_191 S: 6
LC Column ID:	C18	**CS2 Data Filename:**	FC9W_191 S: 7
		CS3 Data Filename:	FC9W_191 S: 8
		CS4 Data Filename:	FC9W_191 S: 9
		CS5 Data Filename:	FC9W_191 S: 10
		CS6 Data Filename:	FC9W_191 S: 11
		CS7 Data Filename:	FC9W_191 S: 12
		CS8 Data Filename:	FC9W_191 S: 13

		RETENTION TIMES									
LABELED COMPOUND	**LAB FLAG[1]**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**CS7**	**CS8**	**MEAN RT**
13C4-PFBA			2:11	2:11	2:11	2:10	2:11	2:11	2:11	2:11	2:11
13C2-PFHxA			3:31	3:30	3:30	3:30	3:30	3:30	3:30	3:30	3:30
13C2-PFOA			4:35	4:34	4:34	4:34	4:34	4:34	4:34	4:34	4:34
13C5-PFNA			5:21	5:21	5:21	5:21	5:21	5:21	5:21	5:21	5:21
13C2-PFDA			6:19	6:18	6:18	6:18	6:19	6:19	6:19	6:19	6:19
13C2-PFDoA			6:51	6:51	6:51	6:51	6:51	6:51	6:51	6:51	6:51
13C4-PFOS			6:27	6:27	6:27	6:27	6:27	6:27	6:27	6:27	6:27
18O2-PFHxS			4:41	4:41	4:41	4:41	4:41	4:40	4:40	4:40	4:41
13C8-PFOSA			7:01	7:01	7:01	7:01	7:01	7:01	7:01	7:01	7:01

(1) Where applicable, custom lab flags have been used on this report.

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Signed: _________Jordan Berends________

For Axys Internal Use Only [XSL Template: FC-Form3D.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9; Report Filename: GENERIC-SPECS_FC_LC_16-May-2019_FC9W__Form3D_GS81819.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 4A
PERFLUORINATED ORGANICS CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	16-May-2019	**VER Data Filename:**	FC9W_191 S: 18
Instrument ID:	LC MS/MS	**Analysis Date:**	16-May-2019
LC Column ID:	C18	**Analysis Time:**	21:12:38

COMPOUND	LAB FLAG [1]	RETENTION TIME	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
PFBA		2:11	20.0	18.9	94.5
PFPeA		3:03	20.0	18.0	89.9
PFHxA		3:31	20.0	19.4	96.9
PFHpA		4:00	20.0	17.3	86.4
PFOA		4:34	20.0	19.6	98.1
PFNA		5:21	20.0	19.5	97.5
PFDA		6:19	20.0	19.2	95.9
PFUnA		6:42	20.0	20.9	104
PFDoA		6:51	20.0	20.0	99.9
PFBS		3:30	40.0	42.3	106
PFHxS		4:40	40.0	37.2	93.1
PFOS		6:27	40.0	36.4	91.0
PFOSA		7:01	20.0	19.4	96.8

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _________Andrew Porat________

For Axys Internal Use Only [XSL Template: FC-Form4A.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9; Report Filename: GENERIC-SPECS_FC_LC_FC9W_191S18__Form4A_SJ2563235.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 4B
PERFLUORINATED ORGANICS CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	16-May-2019	**VER Data Filename:**	FC9W_191 S: 18
Instrument ID:	LC MS/MS	**Analysis Date:**	16-May-2019
LC Column ID:	C18	**Analysis Time:**	21:12:38

LABELED COMPOUND	LAB FLAG [1]	RETENTION TIME	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
13C4-PFBA		2:11	12.0	12.2	102
13C2-PFHxA		3:31	12.0	13.7	114
13C2-PFOA		4:34	36.0	36.7	102
13C5-PFNA		5:21	12.0	12.3	103
13C2-PFDA		6:19	12.0	12.6	105
13C2-PFDoA		6:51	12.0	12.0	100
13C4-PFOS		6:27	18.0	19.8	110
18O2-PFHxS		4:40	18.0	19.4	108
13C8-PFOSA		7:01	12.0	11.7	97.4

(1) Where applicable, custom lab flags have been used on this report.

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Signed: __________Andrew Porat_________

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SGS AXYS METHOD MLA-041 Rev 09

Form 4A
PERFLUORINATED ORGANICS CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	16-May-2019	**VER Data Filename:**	FC9W_191 S: 26
Instrument ID:	LC MS/MS	**Analysis Date:**	16-May-2019
LC Column ID:	C18	**Analysis Time:**	22:28:03

COMPOUND	LAB FLAG [1]	RETENTION TIME	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
PFBA		2:11	20.0	19.0	95.1
PFPeA		3:03	20.0	18.0	90.2
PFHxA		3:31	20.0	19.4	97.1
PFHpA		4:00	20.0	17.3	86.3
PFOA		4:34	20.0	19.3	96.7
PFNA		5:21	20.0	18.8	94.2
PFDA		6:19	20.0	19.1	95.7
PFUnA		6:42	20.0	16.7	83.7
PFDoA		6:51	20.0	21.0	105
PFBS		3:30	40.0	41.8	104
PFHxS		4:40	40.0	37.2	93.1
PFOS		6:28	40.0	37.7	94.4
PFOSA		7:01	20.0	20.1	100

(1) Where applicable, custom lab flags have been used on this report.

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Signed: __________Andrew Porat_________

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Report Filename: GENERIC-SPECS_FC_LC_FC9W_191S26__Form4A_SJ2563245.html; Workgroup: WG68018; Design ID: 1184]

SGS AXYS METHOD MLA-041 Rev 09

Form 4B
PERFLUORINATED ORGANICS CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	16-May-2019	**VER Data Filename:**	FC9W_191 S: 26
Instrument ID:	LC MS/MS	**Analysis Date:**	16-May-2019
LC Column ID:	C18	**Analysis Time:**	22:28:03

LABELED COMPOUND	LAB FLAG [1]	RETENTION TIME	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
13C4-PFBA		2:11	12.0	12.6	105
13C2-PFHxA		3:31	12.0	14.1	118
13C2-PFOA		4:34	36.0	36.0	99.9
13C5-PFNA		5:21	12.0	12.9	107
13C2-PFDA		6:19	12.0	13.4	112
13C2-PFDoA		6:51	12.0	9.98	83.1
13C4-PFOS		6:28	18.0	20.1	111
18O2-PFHxS		4:40	18.0	20.4	113
13C8-PFOSA		7:01	12.0	11.9	99.0

(1) Where applicable, custom lab flags have been used on this report.

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Signed: __________Andrew Porat_________

For Axys Internal Use Only [XSL Template: FC-Form4B.xsl; Created: 31-May-2019 10:15:41; Application: XMLTransformer-1.17.9; Report Filename: GENERIC-SPECS_FC_LC_FC9W_191S26__Form4B_SJ2563245.html; Workgroup: WG68018; Design ID: 1184]

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
BFR	BTBPE	SGS AXYS MLA-033	MLA-033		Y										Y						Y										
	DBDPE	SGS AXYS MLA-033	MLA-033		Y										Y						Y										
	HBB	SGS AXYS MLA-033	MLA-033		Y										Y						Y										
	PBEB	SGS AXYS MLA-033	MLA-033		Y										Y						Y										
Bisphenols	Bisphenol A	SGS AXYS MLA-113	MLA-113		Y																Y										
	Bisphenol AF	SGS AXYS MLA-113	MLA-113		Y																Y										
	Bisphenol B	SGS AXYS MLA-113	MLA-113		Y																Y										
	Bisphenol E	SGS AXYS MLA-113	MLA-113		Y																Y										
	Bisphenol F	SGS AXYS MLA-113	MLA-113		Y																Y										
	Bisphenol S	SGS AXYS MLA-113	MLA-113		Y																Y										
BPA and MPE	4,4'-dihydroxy-2,2-diphenylpropane (Bisphenol A) (BPA)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-(3-carboxypropyl) phthalate (MCPP)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-2-ethylhexyl phthalate (MEHP)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-benzyl phthalate (MBzP)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-butyl phthalate (MBP) (n + iso)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-cyclohexyl phthalate (MCHP)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-ethyl phthalate (MEP)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-iso-nonyl phthalate (MiNP)	SGS AXYS MLA-059	MLA-059																	Y											
	Mono-methyl phthalate (MMP)	SGS AXYS MLA-059	MLA-059																	Y											
HBCDD	alpha-hexabromocyclododecane (a-HBCDD)	SGS AXYS MLA-070	MLA-070	Y																											
	beta-hexabromocyclododecane (b-HBCDD)	SGS AXYS MLA-070	MLA-070	Y																											
	gamma-hexabromocyclododecane (g-HBCDD)	SGS AXYS MLA-070	MLA-070	Y																											
OC Pesticides	"Organochlorine Pesticides" category (CA only)	EPA 608	MLA-007																			Y									
		EPA 625	MLA-007																			Y									
		EPA 8081	MLA-007			Y																									
	"Pesticides" category (CA only)	EPA 8270	MLA-007			Y																									
	2,4'-DDD	EPA 625	MLA-007																				Y								
		EPA 8270	MLA-007				Y					Y																			
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	2,4'-DDE	EPA 625	MLA-007																				Y								
		EPA 8270	MLA-007				Y					Y																			
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	2,4'-DDT	EPA 625	MLA-007																				Y								
		EPA 8270	MLA-007				Y					Y																			
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	4,4'-DDD	EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	4,4'-DDE	EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	4,4'-DDT	EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Aldrin	EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Alpha-HCH	EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Beta-HCH	EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Chlordane, technical	EPA 8270	MLA-007				Y			Y	Y		Y										Y			Y	Y		Y		
		SGS AXYS MLA-007	MLA-007				Y																Y								
	cis-Chlordane (alpha-Chlordane)	EPA 8270	MLA-007				Y			Y		Y	Y										Y			Y			Y		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	cis-Nonachlor	EPA 8270	MLA-007				Y					Y											Y								
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Delta-HCH	EPA 608	MLA-007																				Y			Y	Y		Y		
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Dieldrin	EPA 608	MLA-007																				Y			Y	Y		Y		
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Endosulphan I	EPA 608	MLA-007																				Y			Y	Y		Y		
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Endosulphan II	EPA 608	MLA-007																				Y			Y	Y		Y		
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum: CALA	Solids: CALA	Solids: California DPH	Solids: Florida DOH	Solids: Minnesota DOH	Solids: New Jersey DEP	Solids: New York DOH	Solids: Virginia DGS	Solids: Washington DE	Solids: Maine DOH	Solids: ANAB DoD **	Tissue: CALA	Tissue: Florida DOH	Tissue: Minnesota DOH	Tissue: New Jersey DEP	Tissue: Virginia DGS	Urine: CALA	Water: CALA	Water, Non-Potable: California DPH	Water, Non-Potable: Florida DOH	Water, Non-Potable: Minnesota DOH	Water, Non-Potable: New Jersey DEP	Water, Non-Potable: New York DOH	Water, Non-Potable: Virginia DGS	Water, Non-Potable: Washington DE *	Water, Non-Potable: Maine DOH	Water, Non-Potable: Pennsylvania DEP	Water, Non-Potable: ANAB DoD **
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Endosulphan sulphate	EPA 608	MLA-007																				Y			Y	Y		Y		
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Endrin	EPA 608	MLA-007																				Y			Y	Y		Y		
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Endrin aldehyde	EPA 608	MLA-007																				Y			Y	Y		Y		
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007		Y		Y														Y		Y								
	Endrin ketone	EPA 8081	MLA-007				Y			Y		Y																			
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Gamma-HCH (Lindane)	EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Heptachlor	EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Heptachlor epoxide	EPA 608	MLA-007																				Y			Y	Y		Y		
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Hexachlorobenzene	EPA 1625	MLA-007																				Y			Y					
		EPA 8270	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Methoxychlor	EPA 608	MLA-007																				Y			Y	Y				
		EPA 8081	MLA-007				Y			Y	Y	Y	Y																		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Mirex	EPA 8270	MLA-007				Y			Y		Y											Y			Y	Y		Y		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			

Accreditation Scope

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Oxychlordane	EPA 8270	MLA-007				Y					Y											Y								
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	Toxaphene	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	trans-Chlordane (gamma-Chlordane)	EPA 8270	MLA-007				Y			Y		Y	Y										Y			Y			Y		
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y						Y		Y								
	trans-Nonachlor	EPA 8270	MLA-007				Y					Y											Y								
		EPA 1699	MLA-028				Y																Y								
		SGS AXYS MLA-028	MLA-028	Y	Y		Y					Y			Y						Y		Y					Y			
		SGS AXYS MLA-007	MLA-007	Y	Y		Y								Y								Y								
PAH	1,2,6-Trimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																Y										
	1,2-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																Y										
	1,4,6,7-Tetramethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																Y										
	1,7-Dimethylfluorene	SGS AXYS MLA-021	MLA-021		Y																Y										
	1,7-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																Y										
	1,8-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																Y										
	1-Methylchrysene	SGS AXYS MLA-021	MLA-021		Y																Y										
	1-Methylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																Y										
	1-Methylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																Y										
	2,3,5-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																Y										
	2,3,6-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																Y										
	2,4-Dimethyldibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																Y										
	2,6-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021		Y																Y										
	2,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																Y										
	2-Methylanthracene	SGS AXYS MLA-021	MLA-021		Y																Y										
	2-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																Y										
	2-Methylfluorene	SGS AXYS MLA-021	MLA-021		Y																Y										
	2-Methylnaphthalene	EPA 8270	MLA-021				Y			Y													Y								
		SGS AXYS MLA-021	MLA-021		Y		Y														Y										
	2-Methylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																Y										
	3,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																Y										
	3-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																Y										
	3-Methylfluoranthene/ Benzo(a)fluorene	SGS AXYS MLA-021	MLA-021		Y																Y										
	3-Methylphenanthrene	SGS AXYS MLA-021	MLA-021		Y																Y										
	5,9-Dimethylchrysene	SGS AXYS MLA-021	MLA-021		Y																Y										
	5/6-Methylchrysenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	7-Methylbenzo(a)pyrene	SGS AXYS MLA-021	MLA-021		Y																Y										
	9/4-Methylphenanthrenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	Acenaphthene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Acenaphthylene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Anthracene	EPA 1625	MLA-021																				Y			Y	Y				

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Benz[a]anthracene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Benzo[a]pyrene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Benzo[b]fluoranthene	EPA 1625	MLA-021																				Y			Y	Y		Y		
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Benzo[e]pyrene	SGS AXYS MLA-021	MLA-021		Y										Y						Y										
	Benzo[ghi]perylene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Benzo[j/k]fluoranthenes	SGS AXYS MLA-021	MLA-021		Y										Y						Y										
	Benzo[k]fluoranthene	EPA 1625	MLA-021																				Y			Y	Y		Y		
		EPA 8270	MLA-021				Y			Y			Y																		
		SGS AXYS MLA-021	MLA-021				Y																Y								
	Biphenyl	SGS AXYS MLA-021	MLA-021		Y																Y										
	C1-Acenaphthenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C1-Benz(a)anthracenes/chrysenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C1-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C1-Biphenyls	SGS AXYS MLA-021	MLA-021		Y																Y										
	C1-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																Y										
	C1-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C1-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C1-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C1-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C2-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C2-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C2-Biphenyls	SGS AXYS MLA-021	MLA-021		Y																Y										
	C2-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																Y										
	C2-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C2-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C2-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C2-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C3-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C3-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																Y										
	C3-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C3-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C3-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C3-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C4-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C4-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																Y										
	C4-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C4-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	C4-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																Y										
	Chrysene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		

Accreditation Scope

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Dibenz[a,h]anthracene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																Y										
	Fluoranthene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Fluorene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Indeno[1,2,3-cd]pyrene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Naphthalene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Perylene	SGS AXYS MLA-021	MLA-021		Y										Y						Y										
	Phenanthrene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Pyrene	EPA 1625	MLA-021																				Y			Y	Y				
		EPA 8270	MLA-021				Y			Y	Y		Y																		
		SGS AXYS MLA-021	MLA-021		Y		Y								Y						Y		Y								
	Retene	SGS AXYS MLA-021	MLA-021		Y																Y										
PBDPE	BDE 10 2,6-dibromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 100 2,2',4,4',6-pentabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 105 2,3,3',4,4'-pentabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 11 3,3'-dibromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 116 2,3,4,5,6-pentabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 119 2,3',4,4',6-pentabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 12 3,4-dibromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 126 3,3',4,4',5-pentabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 13 3,4'-dibromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 140 2,2',3,4,4',6'-hexabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 15 4,4'-dibromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 153 2,2',4,4',5,5'-hexabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 154 2,2',4,4',5',6-hexabromodiphenylether	EPA 1614	MLA-033									Y																Y			

Accreditation Scope

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 155 2,2',4,4',6,6'-hexabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 166 2,3,4,4',5,6-hexabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 17 2,2',4-tribromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 181 2,2',3,4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 183 2,2',3,4,4',5',6-heptabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 190 2,3,3',4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 206 2,2',3,3',4,4',5,5',6-nonabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 207 2,2',3,3',4,4',5,6,6'-nonabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 208 2,2',3,3',4,5,5',6,6'-nonabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 209 Decabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 25 2,3',4-tribromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 28 2,4,4'-tribromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 30 2,4,6-tribromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 33 2',3,4-tribromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 35 3,3',4-tribromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 37 3,4,4'-tribromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 47 2,2',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 49 2,2',4,5'-tetrabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 66 2,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 7 2,4-dibromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 75 2,4,4',6-tetrabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 77 3,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 8 2,4'-dibromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 85 2,2',3,4,4'-pentabromodiphenylether	EPA 1614	MLA-033									Y																Y			
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
	BDE 99 2,2',4,4',5-pentabromodiphenylether	EPA 1614	MLA-033									Y																Y			

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-033	MLA-033	Y	Y										Y						Y										
PCB Aroclors	"PCBs" category (CA only)	EPA 625	MLA-007																			Y									
		EPA 8270	MLA-007			Y																									
	PCB Aroclor 1016	EPA 1668	MLA-010				Y						Y										Y						Y		
		EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y																				
		SGS AXYS MLA-010	MLA-010				Y																Y								
		SGS AXYS MLA-007	MLA-007		Y		Y								Y						Y		Y								
	PCB Aroclor 1016/1242	EPA 8270	MLA-007									Y																			
	PCB Aroclor 1221	EPA 1668	MLA-010				Y						Y										Y						Y		
		EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																			
		SGS AXYS MLA-010	MLA-010				Y																Y								
		SGS AXYS MLA-007	MLA-007		Y		Y								Y						Y		Y								
	PCB Aroclor 1232	EPA 1668	MLA-010				Y						Y										Y						Y		
		EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																			
		SGS AXYS MLA-010	MLA-010				Y																Y								
		SGS AXYS MLA-007	MLA-007		Y		Y								Y						Y		Y								
	PCB Aroclor 1242	EPA 1668	MLA-010				Y						Y										Y						Y		
		EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y																				
		SGS AXYS MLA-010	MLA-010				Y																Y								
		SGS AXYS MLA-007	MLA-007		Y		Y								Y						Y		Y								
	PCB Aroclor 1248	EPA 1668	MLA-010				Y						Y										Y						Y		
		EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																			
		SGS AXYS MLA-010	MLA-010				Y																Y								
		SGS AXYS MLA-007	MLA-007		Y		Y								Y						Y		Y								
	PCB Aroclor 1254	EPA 1668	MLA-010				Y						Y										Y						Y		
		EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																			
		SGS AXYS MLA-010	MLA-010				Y																Y								
		SGS AXYS MLA-007	MLA-007		Y		Y								Y						Y		Y								
	PCB Aroclor 1260	EPA 1668	MLA-010				Y						Y										Y						Y		
		EPA 625	MLA-007																				Y			Y	Y		Y		
		EPA 8270	MLA-007				Y			Y	Y	Y																			
		SGS AXYS MLA-010	MLA-010				Y																Y								
		SGS AXYS MLA-007	MLA-007		Y		Y								Y						Y		Y								
	PCB Aroclor 1268	SGS AXYS MLA-007	MLA-007		Y										Y						Y										
PCB congeners	PCB 1 2-Chlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 10 2,6-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 100 2,2',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 101 2,2',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
	PCB 101/90/89	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 102 2,2',4,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 103 2,2',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 104 2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 105 2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 105/127	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 106 2,3,3',4,5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 107 2,3,3',4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 107/109	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 108 2,3,3',4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 109 2,3,3',4,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 11 3,3'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 110 2,3,3',4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 111 2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 111/117	EPA 8270	MLA-007									Y																			
	PCB 112 2,3,3',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 113 2,3,3',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 114 2,3,4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 115 2,3,4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 116 2,3,4,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 117 2,3,4',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 118 2,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 118/106	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 119 2,3',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 12 3,4-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 12/13	EPA 8270	MLA-007									Y																			
	PCB 120 2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 121 2,3',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 122 2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 123 2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 124 2,3',4',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 125 2,3',4',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 126 3,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 127 3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 128 2,2',3,3',4,4'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 129 2,2',3,3',4,5-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 13 3,4'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 130 2,2',3,3',4,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 131 2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 131/142	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
	PCB 132 2,2',3,3',4,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 132/168	EPA 8270	MLA-007									Y																			
	PCB 133 2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 134 2,2',3,3',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 134/143	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 135 2,2',3,3',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 136 2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 137 2,2',3,4,4',5-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 138 2,2',3,4,4',5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 138/163/164	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 139 2,2',3,4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 14 3,5-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 140 2,2',3,4,4',6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 141 2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 142 2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 143 2,2',3,4,5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 144 2,2',3,4,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 144/135	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 145 2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 146 2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 147 2,2',3,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 148 2,2',3,4',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 149 2,2',3,4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 149/139	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 15 4,4'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 150 2,2',3,4',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 151 2,2',3,5,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 152 2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 153 2,2',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 154 2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 155 2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 156 2,3,3',4,4',5-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 157 2,3,3',4,4',5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 158 2,3,3',4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 158/160	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
	PCB 159 2,3,3',4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 16 2,2',3-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 16/32	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 160 2,3,3',4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 161 2,3,3',4,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 162 2,3,3',4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 163 2,3,3',4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 164 2,3,3',4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 165 2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 166 2,3,4,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 167 2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 168 2,3',4,4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 169 3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 17 2,2',4-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 170 2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 170/190	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 171 2,2',3,3',4,4',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum: CALA	Solids: CALA	Solids: California DPH	Solids: Florida DOH	Solids: Minnesota DOH	Solids: New Jersey DEP	Solids: New York DOH	Solids: Virginia DGS	Solids: Washington DE	Solids: Maine DOH	Solids: ANAB DoD **	Tissue: CALA	Tissue: Florida DOH	Tissue: Minnesota DOH	Tissue: New Jersey DEP	Tissue: Virginia DGS	Urine: CALA	Water: CALA	Water, Non-Potable: California DPH	Water, Non-Potable: Florida DOH	Water, Non-Potable: Minnesota DOH	Water, Non-Potable: New Jersey DEP	Water, Non-Potable: New York DOH	Water, Non-Potable: Virginia DGS	Water, Non-Potable: Washington DE *	Water, Non-Potable: Maine DOH	Water, Non-Potable: Pennsylvania DEP	Water, Non-Potable: ANAB DoD **
	PCB 172 2,2',3,3',4,5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 172/192	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 173 2,2',3,3',4,5,6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 174 2,2',3,3',4,5,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 174/181	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 175 2,2',3,3',4,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 176 2,2',3,3',4,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 177 2,2',3,3',4,5',6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 178 2,2',3,3',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 179 2,2',3,3',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 18 2,2',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 180 2,2',3,4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 181 2,2',3,4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 182 2,2',3,4,4',5,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 183 2,2',3,4,4',5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 184 2,2',3,4,4',6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 185 2,2',3,4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 186 2,2',3,4,5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 187 2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 187/182	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 188 2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 189 2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 19 2,2',6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 190 2,3,3',4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 191 2,3,3',4,4',5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 192 2,3,3',4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 193 2,3,3',4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 195 2,2',3,3',4,4',5,6-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 196 2,2',3,3',4,4',5,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 196/203	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 197 2,2',3,3',4,4',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 198 2,2',3,3',4,5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 199 2,2',3,3',4,5,5',6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 2 3-Chlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 20 2,3,3'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 200 2,2',3,3',4,5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 201 2,2',3,3',4,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 202 2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 203 2,2',3,4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 204 2,2',3,4,4',5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 205 2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 206 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 207 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 208 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 209 Decachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 21 2,3,4-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 22 2,3,4'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 23 2,3,5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 23/34	EPA 8270	MLA-007									Y																			
	PCB 24 2,3,6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 24/27	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 25 2,3',4-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 26 2,3',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 27 2,3',6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 28 2,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 29 2,4,5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 3 4-Chlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 30 2,4,6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 31 2,4',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 32 2,4',6-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 33 2,3',4'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 33/20/21	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 34 2,3',5'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 35 3,3',4-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 36 3,3',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 37 3,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 38 3,4,5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 39 3,4',5-Trichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 4 2,2'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 4/10	EPA 8270	MLA-007									Y																			
	PCB 40 2,2',3,3'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 41 2,2',3,4-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 41/71/64/68	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 42 2,2',3,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 42/59	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 43 2,2',3,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 44 2,2',3,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 45 2,2',3,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 46 2,2',3,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 47 2,2',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 47/48/75	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 48 2,2',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 49 2,2',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
	PCB 49/43	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 5 2,3-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 50 2,2',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 51 2,2',4,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 52 2,2',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 52/73	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 53 2,2',5,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 54 2,2',6,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 55 2,3,3',4-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 56 2,3,3',4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 56/60	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 57 2,3,3',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 58 2,3,3',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 59 2,3,3',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 6 2,3'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 60 2,3,4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 61 2,3,4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 62 2,3,4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 62/65	EPA 8270	MLA-007									Y																			
	PCB 63 2,3,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 64 2,3,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	

Accreditation Scope

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum: CALA	Solids: CALA	Solids: California DPH	Solids: Florida DOH	Solids: Minnesota DOH	Solids: New Jersey DEP	Solids: New York DOH	Solids: Virginia DGS	Solids: Washington DE	Solids: Maine DOH	Solids: ANAB DoD **	Tissue: CALA	Tissue: Florida DOH	Tissue: Minnesota DOH	Tissue: New Jersey DEP	Tissue: Virginia DGS	Urine: CALA	Water: CALA	Water, Non-Potable: California DPH	Water, Non-Potable: Florida DOH	Water, Non-Potable: Minnesota DOH	Water, Non-Potable: New Jersey DEP	Water, Non-Potable: New York DOH	Water, Non-Potable: Virginia DGS	Water, Non-Potable: Washington DE *	Water, Non-Potable: Maine DOH	Water, Non-Potable: Pennsylvania DEP	Water, Non-Potable: ANAB DoD **
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 65 2,3,5,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 66 2,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 66/80	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 67 2,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 68 2,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 69 2,3',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 7 2,4-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 7/9	EPA 8270	MLA-007									Y																			
	PCB 70 2,3',4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 70/76	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 71 2,3',4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 72 2,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 73 2,3',5',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 74 2,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB 74/61	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 75 2,4,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 76 2,3',4',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 77 3,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 78 3,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 79 3,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 8 2,4'-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
	PCB 8/5	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 80 3,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 81 3,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 82 2,2',3,3',4-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 83 2,2',3,3',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 83/108	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 84 2,2',3,3',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 85 2,2',3,4,4'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 85/120	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 86 2,2',3,4,5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 87 2,2',3,4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 87/115/116	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 88 2,2',3,4,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 88/121	EPA 8270	MLA-007									Y																			
	PCB 89 2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 9 2,5-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y											Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 90 2,2',3,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 91 2,2',3,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 92 2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 93 2,2',3,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 94 2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 95 2,2',3,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	

Accreditation Scope

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 95/93	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 96 2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 97 2,2',3,4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 97/86	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	PCB 98 2,2',3,4',6'-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
	PCB 98/102	EPA 8270	MLA-007									Y																			
	PCB 99 2,2',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y										Y		Y	Y	Y	Y		Y	
		EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y		Y								Y						Y		Y								
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
		SGS AXYS MLA-901	MLA-901	Y																											
	PCB congeners, total	EPA 1668	MLA-010							Y																Y					
	Total Dichlorobiphenyls	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y										
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	Total Heptachlorobiphenyls	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y										
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	Total Hexachlorobiphenyls	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y										
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	Total Monochlorobiphenyls	SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y										
	Total Nonachlorobiphenyls	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y										
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	Total Octachlorobiphenyls	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y										
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	Total Pentachlorobiphenyls	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y										
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	Total Polychlorinated biphenyls	SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	Total Tetrachlorobiphenyls	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y										
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
	Total Trichlorobiphenyls	EPA 8270	MLA-007									Y																			
		SGS AXYS MLA-010	MLA-010	Y	Y										Y						Y										
		SGS AXYS MLA-007	MLA-007		Y										Y						Y										
PCDDF	"Dioxins and Dibenzofurans" category (CA only)	EPA 1613	MLA-017																			Y									
		EPA 8290	MLA-017			Y																									
	1,2,3,4,6,7,8-HpCDD	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
	1,2,3,4,6,7,8-HpCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	1,2,3,4,7,8,9-HpCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	1,2,3,4,7,8-HxCDD	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	1,2,3,4,7,8-HxCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	1,2,3,6,7,8-HxCDD	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	1,2,3,6,7,8-HxCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	1,2,3,7,8,9-HxCDD	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	1,2,3,7,8,9-HxCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	1,2,3,7,8-PeCDD	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	1,2,3,7,8-PeCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	2,3,4,6,7,8-HxCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	2,3,4,7,8-PeCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	2,3,7,8-TCDD	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	2,3,7,8-TCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	OCDD	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	OCDF	EPA 1613	MLA-017									Y											Y		Y	Y	Y	Y	Y		
		EPA 8290	MLA-017				Y		Y	Y	Y		Y			Y		Y	Y				Y			Y	Y				
		SGS AXYS MLA-017	MLA-017	Y	Y		Y								Y	Y					Y		Y								
	Total HpCDD	EPA 1613	MLA-017																				Y						Y		
		EPA 8290	MLA-017				Y		Y		Y		Y			Y		Y	Y				Y				Y				

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
		SGS AXYS MLA-017	MLA-017				Y									Y							Y								
	Total HpCDF	EPA 1613	MLA-017																				Y						Y		
		EPA 8290	MLA-017				Y		Y		Y		Y			Y		Y	Y				Y				Y				
		SGS AXYS MLA-017	MLA-017				Y									Y							Y								
	Total HxCDD	EPA 1613	MLA-017																				Y						Y		
		EPA 8290	MLA-017				Y		Y		Y		Y			Y		Y	Y				Y				Y				
		SGS AXYS MLA-017	MLA-017				Y									Y							Y								
	Total HxCDF	EPA 1613	MLA-017																				Y						Y		
		EPA 8290	MLA-017				Y		Y		Y		Y			Y		Y	Y				Y				Y				
		SGS AXYS MLA-017	MLA-017				Y									Y							Y								
	Total PeCDD	EPA 1613	MLA-017																				Y						Y		
		EPA 8290	MLA-017				Y		Y		Y		Y			Y		Y	Y				Y				Y				
		SGS AXYS MLA-017	MLA-017				Y									Y							Y								
	Total PeCDF	EPA 1613	MLA-017																				Y						Y		
		EPA 8290	MLA-017				Y		Y		Y		Y			Y		Y	Y				Y				Y				
		SGS AXYS MLA-017	MLA-017				Y									Y							Y								
	Total TCDD	EPA 1613	MLA-017																				Y						Y		
		EPA 8290	MLA-017				Y		Y		Y		Y			Y		Y	Y				Y				Y				
		SGS AXYS MLA-017	MLA-017				Y									Y							Y								
	Total TCDF	EPA 1613	MLA-017																				Y						Y		
		EPA 8290	MLA-017				Y		Y		Y		Y			Y		Y	Y				Y				Y				
		SGS AXYS MLA-017	MLA-017				Y									Y							Y								
PFAS	4:2 Fluorotelomersulfonate (4:2 FTS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	6:2 Fluorotelomersulfonate (6:2 FTS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	8:2 Fluorotelomersulfonate (8:2 FTS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	N-Ethylperfluorooctanesulfonamide (N-EtFOSA)	SGS AXYS MLA-110	MLA-110		Y							Y									Y							Y			
	N-Ethylperfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	N-Ethylperfluorooctanesulfonamidoethanol (N-EtFOSE)	SGS AXYS MLA-110	MLA-110		Y							Y									Y							Y			
	N-Methylperfluorooctanesulfonamide (N-MeFOSA)	SGS AXYS MLA-110	MLA-110		Y							Y									Y							Y			
	N-Methylperfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	SGS AXYS MLA-110	MLA-110		Y							Y									Y							Y			
	Perfluorobutanesulfonate (PFBS)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorobutanoate (PFBA)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorodecanoate (PFDA)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-110	MLA-110		Y							Y									Y							Y			
	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorononanoate (PFNA)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorooctanesulfonamide (PFOSA), a.k.a. FOSA	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorooctanoate (PFOA)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y									Y		Y	Y				Y			Y
	Perfluorotridecanoate (PFTrDA)	SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y									Y		Y	Y				Y			Y
	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-060	MLA-060																		Y		Y	Y	Y						
		SGS AXYS MLA-041	MLA-041		Y		Y	Y	Y																						

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-043	MLA-043												Y	Y	Y	Y													
		SGS AXYS MLA-042	MLA-042	Y																											
		SGS AXYS MLA-110	MLA-110		Y		Y	Y				Y		Y							Y		Y	Y				Y			Y
PPCP	1,7-Dimethylxanthine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	10-hydroxy-amitriptyline	SGS AXYS MLA-075	MLA-075		Y																Y										
	2-hydroxy-ibuprofen	SGS AXYS MLA-075	MLA-075		Y																Y										
	4-Epianhydrochlortetracycline (EACTC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	4-Epianhydrotetracycline (EATC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	4-Epichlortetracycline (ECTC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	4-Epioxytetracycline (EOTC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	4-Epitetracycline (ETC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Acetaminophen	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Albuterol	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Alprazolam	SGS AXYS MLA-075	MLA-075		Y																Y										
	Amitriptyline	SGS AXYS MLA-075	MLA-075		Y																Y										
	Amlodipine	SGS AXYS MLA-075	MLA-075		Y																Y										
	Amphetamine	SGS AXYS MLA-075	MLA-075		Y																Y										
	Anhydrochlortetracycline (ACTC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Anhydrotetracycline (ATC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Atenolol	SGS AXYS MLA-075	MLA-075		Y																Y										
	Atorvastatin	SGS AXYS MLA-075	MLA-075		Y																Y										
	Azithromycin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Benzoylecgonine	SGS AXYS MLA-075	MLA-075		Y																Y										
	Benztropine	SGS AXYS MLA-075	MLA-075		Y																Y										
	Betamethasone	SGS AXYS MLA-075	MLA-075		Y																Y										
	Bisphenol A	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Caffeine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Carbadox	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Carbamazepine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Cefotaxime	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Chlortetracycline (CTC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Cimetidine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
	Ciprofloxacin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Clarithromycin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Clinafloxacin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Clonidine	SGS AXYS MLA-075	MLA-075		Y																Y										
	Cloxacillin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Cocaine	SGS AXYS MLA-075	MLA-075		Y																Y										
	Codeine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Cotinine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	DEET (N,N-diethyl-m-toluamide)	SGS AXYS MLA-075	MLA-075		Y																Y										
	Dehydronifedipine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Demeclocycline	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Desmethyldiltiazem	SGS AXYS MLA-075	MLA-075		Y																Y										
	Diazepam	SGS AXYS MLA-075	MLA-075		Y																Y										
	Digoxigenin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Digoxin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Diltiazem	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Diphenhydramine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Doxycycline	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Enalapril	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Enrofloxacin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Erythromycin	SGS AXYS MLA-075	MLA-075		Y																Y										
	Erythromycin anydrate	EPA 1694	MLA-075										Y																Y		
	Flumequine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Fluocinonide	SGS AXYS MLA-075	MLA-075		Y																Y										
	Fluoxetine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Fluticasone propionate	SGS AXYS MLA-075	MLA-075		Y																Y										
	Furosemide	SGS AXYS MLA-075	MLA-075		Y																Y										
	Gemfibrozil	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Glipizide	SGS AXYS MLA-075	MLA-075		Y																Y										
	Glyburide	SGS AXYS MLA-075	MLA-075		Y																Y										
	Hydrochlorothiazide	SGS AXYS MLA-075	MLA-075		Y																Y										
	Hydrocodone	SGS AXYS MLA-075	MLA-075		Y																Y										

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
	Hydrocortisone	SGS AXYS MLA-075	MLA-075		Y																Y										
	Ibuprofen	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Isochlortetracycline (ICTC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Lincomycin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Lomefloxacin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Meprobamate	SGS AXYS MLA-075	MLA-075		Y																Y										
	Metformin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Methylprednisolone	SGS AXYS MLA-075	MLA-075		Y																Y										
	Metoprolol	SGS AXYS MLA-075	MLA-075		Y																Y										
	Miconazole	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Minocycline	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Naproxen	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Norfloxacin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Norfluoxetine	SGS AXYS MLA-075	MLA-075		Y																Y										
	Norgestimate	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Norverapamil	SGS AXYS MLA-075	MLA-075		Y																Y										
	Ofloxacin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Ormetoprim	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Oxacillin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Oxolinic acid	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Oxycodone	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Oxytetracycline (OTC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Paroxetine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Penicillin G	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Penicillin V	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Prednisolone	SGS AXYS MLA-075	MLA-075		Y																Y										
	Prednisone	SGS AXYS MLA-075	MLA-075		Y																Y										
	Promethazine	SGS AXYS MLA-075	MLA-075		Y																Y										
	Propoxyphene	SGS AXYS MLA-075	MLA-075		Y																Y										
	Propranolol	SGS AXYS MLA-075	MLA-075		Y																Y										
	Ranitidine	EPA 1694	MLA-075										Y																Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Roxithromycin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sarafloxacin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sertraline	SGS AXYS MLA-075	MLA-075		Y																Y										
	Simvastatin	SGS AXYS MLA-075	MLA-075		Y																Y										
	Sulfachloropyridazine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sulfadiazine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sulfadimethoxine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sulfamerazine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sulfamethazine	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sulfamethizole	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sulfamethoxazole	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sulfanilamide	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Sulfathiazole	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Tetracycline (TC)	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Theophylline	SGS AXYS MLA-075	MLA-075		Y																Y										
	Thiabendazole	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Trenbolone	SGS AXYS MLA-075	MLA-075		Y																Y										
	Trenbolone acetate	SGS AXYS MLA-075	MLA-075		Y																Y										
	Triamterene	SGS AXYS MLA-075	MLA-075		Y																Y										
	Triclocarban	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Triclosan	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Trimethoprim	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Tylosin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Valsartan	SGS AXYS MLA-075	MLA-075		Y																Y										
	Verapamil	SGS AXYS MLA-075	MLA-075		Y																Y										
	Virginiamycin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
	Warfarin	EPA 1694	MLA-075										Y																Y		
		SGS AXYS MLA-075	MLA-075		Y																Y										
Targeted Metabolites	11, 14, 17-eicosatrienoic acid (eicosatrienoic acid)	SGS AXYS MLM-001	MLM-001												Y																
	11, 14-eicosadienoic acid	SGS AXYS MLM-001	MLM-001												Y																
	3-hydroxytyrosine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
	Acetylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Acetylornithine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Alanine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	alpha-Aminoadipic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Arginine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Asparagine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Aspartate	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Asymmetric dimethylarginine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Butenylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Butyrylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	C22:5 ISOMER 1 (tentatively all-cis-4, 8, 12, 15, 19-docosapentaenoic acid)	SGS AXYS MLM-001	MLM-001												Y																
	C22:5 ISOMER 2 (all-cis-7,10,13,16,19-docosapentaenoic acid (DPA)	SGS AXYS MLM-001	MLM-001												Y																
	C22:5 ISOMER 3 (tentatively all-cis-4, 7, 10, 13, 16-docosapentaenoic acid)	SGS AXYS MLM-001	MLM-001												Y																
	Carnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Carnosine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	chenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	cholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Citrulline	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Creatinine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Decadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	decanoic acid (capric acid)	SGS AXYS MLM-001	MLM-001												Y																
	Decanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Decenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	deoxycholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	docosahexaenoic acid (DHA)	SGS AXYS MLM-001	MLM-001												Y																
	docosatetraenoic acid (adrenic acid)	SGS AXYS MLM-001	MLM-001												Y																
	Dodecanedioylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Dodecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Dodecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Dopamine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	eicosapentaenoic acid (EPA)	SGS AXYS MLM-001	MLM-001												Y																
	Eicosatetraenoic acid (arachidonic acid)	SGS AXYS MLM-001	MLM-001												Y																
	eicosatrienoic acid (dihomo-γ-linolenic acid)	SGS AXYS MLM-001	MLM-001												Y																
	Glutaconylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Glutamate	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Glutamine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Glutarylcarnitine (Hydroxyhexanoylcarnitine)	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Glycine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	glycochenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	glycocholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	glycodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hexadecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	hexadecanoic acid (palmitic acid)	SGS AXYS MLM-001	MLM-001												Y																
	Hexadecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	hexadecenoic acid (palmitoleic acid)	SGS AXYS MLM-001	MLM-001												Y																
	Hexadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hexanoylcarnitine (Fumarylcarnitine)	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hexenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hexose (sum isomers)	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Histamine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Histidine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxyhexadecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxyhexadecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxyhexadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxylbutyrylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxyoctadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxyproline	SGS AXYS MLM-001	MLM-001	Y											Y					Y											

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-101 Rev. 42

				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
	Hydroxypropionylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxysphingomyeline C14:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxysphingomyeline C16:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxysphingomyeline C22:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxysphingomyeline C22:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxysphingomyeline C24:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxytetradecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxytetradecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Hydroxyvalerylcarnitine (Methylmalonylcarnitine)	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Isoleucine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Kynurenine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Leucine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lithocholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Lysine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C14:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C16:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C16:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C17:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C18:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C18:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C18:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C20:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C20:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C24:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C26:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C28:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	lysoPhosphatidylcholine acyl C28:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Methionine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Methioninesulfoxide	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Methylglutarylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Nitrotyrosine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Nonaylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	octadecadienoic acid (linoleic acid)	SGS AXYS MLM-001	MLM-001												Y																
	Octadecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	octadecanoic acid (stearic acid)	SGS AXYS MLM-001	MLM-001												Y																
	Octadecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	octadecatrienoic acid (γ-linolenic acid)	SGS AXYS MLM-001	MLM-001												Y																
	Octadecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Octanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Ornithine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phenylalanine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phenylethylamine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C30:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C30:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C30:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C32:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C32:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C34:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C34:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C34:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C34:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C36:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C36:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C36:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C36:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C36:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C36:5	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C38:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											

Accreditation Scope

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				Serum	Solids										Tissue					Urine	Water	Water, Non-Potable									
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB DoD **
	Phosphatidylcholine acyl-alkyl C38:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C38:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C38:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C38:5	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C38:6	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C40:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C40:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C40:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C40:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C40:5	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C40:6	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C42:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C42:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C42:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C42:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C42:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C42:5	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C44:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C44:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C44:5	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine acyl-alkyl C44:6	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C24:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C26:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C28:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C30:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C30:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C32:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C32:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C32:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C32:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C34:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C34:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C34:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C34:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C36:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C36:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C36:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C36:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C36:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C36:5	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C36:6	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C38:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C38:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C38:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C38:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C38:5	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C38:6	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C40:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C40:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C40:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C40:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C40:5	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C40:6	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C42:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C42:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C42:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C42:4	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Phosphatidylcholine diacyl C42:5	SGS AXYS MLM-001	MLM-001	Y											Y					Y											

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum: CALA	Solids: CALA	Solids: California DPH	Solids: Florida DOH	Solids: Minnesota DOH	Solids: New Jersey DEP	Solids: New York DOH	Solids: Virginia DGS	Solids: Washington DE	Solids: Maine DOH	Solids: ANAB DoD **	Tissue: CALA	Tissue: Florida DOH	Tissue: Minnesota DOH	Tissue: New Jersey DEP	Tissue: Virginia DGS	Urine: CALA	Water: CALA	Water, Non-Potable: California DPH	Water, Non-Potable: Florida DOH	Water, Non-Potable: Minnesota DOH	Water, Non-Potable: New Jersey DEP	Water, Non-Potable: New York DOH	Water, Non-Potable: Virginia DGS	Water, Non-Potable: Washington DE *	Water, Non-Potable: Maine DOH	Water, Non-Potable: Pennsylvania DEP	Water, Non-Potable: ANAB DoD **
	Phosphatidylcholine diacyl C42:6	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Pimelylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Proline	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Propenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Propionylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Putrescine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sarcosine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Serine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Serotonin	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Spermidine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Spermine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C16:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C16:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C18:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C18:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C20:2	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C22:3	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C24:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C24:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C26:0	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Sphingomyeline C26:1	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Symmetric dimethylarginine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Taurine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	taurochenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	taurocholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	taurodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	taurolithocholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	tauroursodexoycholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Tetradecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	tetradecanoic acid (myristic acid)	SGS AXYS MLM-001	MLM-001												Y																
	Tetradecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Tetradecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Threonine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Tiglylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Total dimethylarginine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Tryptophan	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Tyrosine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	ursodexoycholic acid	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Valerylcarnitine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
	Valine	SGS AXYS MLM-001	MLM-001	Y											Y					Y											
TBBPA	Tetrabromobisphenol A	SGS AXYS MLA-079	MLA-079	Y																											
TOP	Perfluorobutanesulfonate (PFBS)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorobutanoate (PFBA)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorodecanoate (PFDA)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorononanoate (PFNA)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorooctanoate (PFOA)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-111	MLA-111		Y																Y										

Accreditation Scope

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum CALA	Solids CALA	Solids California DPH	Solids Florida DOH	Solids Minnesota DOH	Solids New Jersey DEP	Solids New York DOH	Solids Virginia DGS	Solids Washington DE	Solids Maine DOH	Solids ANAB DoD **	Tissue CALA	Tissue Florida DOH	Tissue Minnesota DOH	Tissue New Jersey DEP	Tissue Virginia DGS	Urine CALA	Water CALA	Water, Non-Potable California DPH	Water, Non-Potable Florida DOH	Water, Non-Potable Minnesota DOH	Water, Non-Potable New Jersey DEP	Water, Non-Potable New York DOH	Water, Non-Potable Virginia DGS	Water, Non-Potable Washington DE *	Water, Non-Potable Maine DOH	Water, Non-Potable Pennsylvania DEP	Water, Non-Potable ANAB DoD **
	Perfluorotridecanoate (PFTrDA)	SGS AXYS MLA-111	MLA-111		Y																Y										
	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-111	MLA-111		Y																Y										

Note * Analysis of pesticides and PCBs in non-potable water samples by SGS AXYS method MLA-007, with the exception of NPDES or State permitted discharges and Stormwater applications, may fall within the scope of Washington State Department of Ecology solids matrix accreditation, subject to approval of the Ecology Project Manager.

Note ** PFAS by LC-MS/MS compliant with US DoD QSM 5.1.1 table B-15

Legend

Y	Accreditation scope
BFR	Brominated flame retardants (non-PBDPE)
BPA and mPE	Bisphenol A and mono-Phthalate Esters
HBCDD	Hexabromocyclododecane
OC Pesticides	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PBDPE	Polybrominated diphenylethers
PCB	Polychlorinated Biphenyls
PCDDF	Polychlorinated dibenzodioxins/furans
PFAS	Per- and Polyfluoroalkyl Substances
PPCP	Pharmaceutical and Personal Care Products
TBBPA	Tetrabromobisphenol A
TOP	Total Oxidizable Precursors
California DPH	California Department of Public Health, Lab ID 2911
Florida DOH	Florida Department of Health, Lab ID E871007, (NELAC Standard)
Pennsylvania DEP	Pennsylvania Department of Environmental Protection
Minnesota DOH	Minnesota Department of Health, Lab ID 232-999-430, (NELAC Standard)
New Jersey DEP	New Jersey Department of Environmental Protection, Lab ID CANA005, (NELAC Standard)
New York DOH	New York Department of Health, Lab ID 11674, (NELAC Standard)
Washington DE	Washington Department of Ecology, Lab ID C404
Virginia DGS	Virginia Department of General Services, Division of Consolidated Laboratory Services, Lab ID 460224, (NELAC Standard)
Maine DOH	Maine Center for Disease Control and Prevention, Department of Health and Human Services, Lab ID CN00003
ANAB DoD	ANSI-ASQ National Accreditation Board, certificate ADE-1861, (US DoD QSM 5.1.1 Standard)
CALA	Canadian Association for Laboratory Accreditation Inc., Lab ID A2637, (ISO/IEC 17025:2005 Standard)

ANAB ACCREDITED ISO/IEC 17025 DOD ELAP
Certificate ADE-1861

CALA
Testing
Accreditation No. A 2637