

August 08, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-029
Pace Project No.: 60150122

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 02, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-029

Pace Project No.: 60150122

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-029

Pace Project No.: 60150122

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150122001	316-029	Water	08/01/13 07:13	08/02/13 01:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-029

Pace Project No.: 60150122

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150122001	316-029	SM 5210B	JML	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-029

Pace Project No.: 60150122

Sample: 316-029		Lab ID: 60150122001	Collected: 08/01/13 07:13	Received: 08/02/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	28300	mg/L	2.0	1	08/02/13 10:09	08/07/13 14:09		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150122

QC Batch: WET/42679

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150122001

METHOD BLANK: 1229820

Matrix: Water

Associated Lab Samples: 60150122001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/07/13 13:40	

LABORATORY CONTROL SAMPLE: 1229821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	173	87	85-115	

SAMPLE DUPLICATE: 1229822

Parameter	Units	60150047001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	710	744	5	17	

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QUALIFIERS

Project: BRIDGETON LF 316-029

Pace Project No.: 60150122

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-029

Pace Project No.: 60150122

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150122001	316-029	SM 5210B	WET/42679	SM 5210B	WET/42764

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Sample Condition Upon Receipt

WO#: 60150122

60150122

Client Name: Barr Eng.Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ roadsTracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐Thermometer Used: T-112 / T-194Type of Ice: Wet ☐ Blue ☒ None ☐ Samples received on ice, cooling process has begun.
(circle one)Cooler Temperature: 5.3Date and initials of person examining contents: KE 8/2/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1. <u>Insufficient amount of ice used in 8/2</u>
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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / NField Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 8/2

August 09, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-029
Pace Project No.: 60150123

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 02, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



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Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

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Nevada Certification #: KS000212008A

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Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150123001	316-029	Water	08/01/13 07:13	08/02/13 01:30
60150123002	TRIP BLANK	Water	08/01/13 07:13	08/02/13 01:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150123001	316-029	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	NDJ	1
		EPA 245.1	NDJ	1
		EPA 625	JMT	16
		EPA 624 Low	AAM	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	AJM	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60150123002	TRIP BLANK	EPA 624 Low	AAM	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

Sample: 316-029		Lab ID: 60150123001	Collected: 08/01/13 07:13	Received: 08/02/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6890	ug/L	150	2	08/07/13 10:20	08/08/13 16:11	7429-90-5	
Antimony	37.4	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:11	7440-36-0	
Arsenic	561	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:11	7440-38-2	
Beryllium	ND	ug/L	2.0	2	08/07/13 10:20	08/08/13 16:11	7440-41-7	D3
Cadmium	ND	ug/L	25.0	5	08/07/13 10:20	08/08/13 16:29	7440-43-9	D3
Chromium	223	ug/L	25.0	5	08/07/13 10:20	08/08/13 16:29	7440-47-3	
Cobalt	48.1	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:11	7440-48-4	
Copper	ND	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:11	7440-50-8	D3
Iron	697000	ug/L	100	2	08/07/13 10:20	08/08/13 16:11	7439-89-6	
Lead	148	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:11	7439-92-1	
Nickel	120	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:11	7440-02-0	
Selenium	ND	ug/L	75.0	5	08/07/13 10:20	08/08/13 16:29	7782-49-2	D3
Silver	ND	ug/L	14.0	2	08/07/13 10:20	08/08/13 16:11	7440-22-4	D3
Thallium	ND	ug/L	100	5	08/07/13 10:20	08/08/13 16:29	7440-28-0	D3
Zinc	10300	ug/L	1000	20	08/07/13 10:20	08/08/13 17:02	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2900	ug/L	150	2	08/05/13 16:30	08/06/13 18:44	7429-90-5	
Antimony, Dissolved	27.6	ug/L	20.0	2	08/05/13 16:30	08/06/13 18:44	7440-36-0	
Arsenic, Dissolved	429	ug/L	20.0	2	08/05/13 16:30	08/06/13 18:44	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	5	08/05/13 16:30	08/06/13 19:26	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	08/05/13 16:30	08/06/13 18:44	7440-43-9	D3
Chromium, Dissolved	206	ug/L	25.0	5	08/05/13 16:30	08/06/13 19:26	7440-47-3	
Cobalt, Dissolved	34.8	ug/L	10.0	2	08/05/13 16:30	08/06/13 18:44	7440-48-4	
Copper, Dissolved	ND	ug/L	20.0	2	08/05/13 16:30	08/07/13 11:13	7440-50-8	D3
Iron, Dissolved	417000	ug/L	100	2	08/05/13 16:30	08/06/13 18:44	7439-89-6	
Lead, Dissolved	58.4	ug/L	10.0	2	08/05/13 16:30	08/06/13 18:44	7439-92-1	
Nickel, Dissolved	108	ug/L	10.0	2	08/05/13 16:30	08/06/13 18:44	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	08/05/13 16:30	08/06/13 19:26	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	08/05/13 16:30	08/06/13 18:44	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	08/05/13 16:30	08/06/13 19:26	7440-28-0	D3
Zinc, Dissolved	8060	ug/L	1000	20	08/05/13 16:30	08/06/13 18:54	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	3.7	ug/L	0.20	1	08/02/13 09:30	08/02/13 12:56	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	08/07/13 08:30	08/07/13 11:24	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	08/02/13 00:00	08/04/13 22:44	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	08/02/13 00:00	08/04/13 22:44	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	08/02/13 00:00	08/04/13 22:44	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	08/02/13 00:00	08/04/13 22:44	67-72-1	
Naphthalene	ND	ug/L	1000	20	08/02/13 00:00	08/04/13 22:44	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	08/02/13 00:00	08/04/13 22:44	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

Sample: 316-029		Lab ID: 60150123001	Collected: 08/01/13 07:13	Received: 08/02/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/02/13 00:00	08/04/13 22:44	87-86-5	
Phenol	12500 ug/L		1000	20	08/02/13 00:00	08/04/13 22:44	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/02/13 00:00	08/04/13 22:44	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/02/13 00:00	08/04/13 22:44	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/02/13 00:00	08/04/13 22:44	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/02/13 00:00	08/04/13 22:44	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/02/13 00:00	08/04/13 22:44	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/02/13 00:00	08/04/13 22:44	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/02/13 00:00	08/04/13 22:44	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/02/13 00:00	08/04/13 22:44	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/05/13 14:50	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/05/13 14:50	75-27-4	
Bromoform	ND ug/L		200	200		08/05/13 14:50	75-25-2	
Bromomethane	ND ug/L		1000	200		08/05/13 14:50	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/05/13 14:50	56-23-5	
Chloroethane	ND ug/L		200	200		08/05/13 14:50	75-00-3	
Chloroform	ND ug/L		200	200		08/05/13 14:50	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/05/13 14:50	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/05/13 14:50	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/05/13 14:50	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/05/13 14:50	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/05/13 14:50	100-41-4	
Methylene chloride	ND ug/L		200	200		08/05/13 14:50	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/05/13 14:50	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/05/13 14:50	127-18-4	
Toluene	ND ug/L		200	200		08/05/13 14:50	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/05/13 14:50	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/05/13 14:50	79-00-5	
Trichloroethene	ND ug/L		200	200		08/05/13 14:50	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/05/13 14:50	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/05/13 14:50	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	88 %		80-120	200		08/05/13 14:50	1868-53-7	D3
4-Bromofluorobenzene (S)	97 %		80-120	200		08/05/13 14:50	460-00-4	
Toluene-d8 (S)	92 %		80-120	200		08/05/13 14:50	2037-26-5	
1,2-Dichloroethane-d4 (S)	90 %		80-120	200		08/05/13 14:50	17060-07-0	
Preservation pH	7.0		1.0	200		08/05/13 14:50		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	115 mg/L		5.0	1		08/05/13 07:46		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/07/13 07:29		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

Sample: 316-029		Lab ID: 60150123001	Collected: 08/01/13 07:13	Received: 08/02/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2080	mg/L	5.0	1		08/06/13 08:29		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	6.0	Std. Units	0.10	1		08/03/13 12:00		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	560	mg/L	20.0	200		08/06/13 15:37	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	69400	mg/L	5000	500		08/06/13 09:09		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

Sample: TRIP BLANK		Lab ID: 60150123002	Collected: 08/01/13 07:13	Received: 08/02/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/05/13 15:11	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/05/13 15:11	75-27-4	
Bromoform	ND ug/L		1.0	1		08/05/13 15:11	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/05/13 15:11	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/05/13 15:11	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/05/13 15:11	75-00-3	
Chloroform	ND ug/L		1.0	1		08/05/13 15:11	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/05/13 15:11	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/05/13 15:11	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/05/13 15:11	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/05/13 15:11	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/05/13 15:11	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/05/13 15:11	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/05/13 15:11	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/05/13 15:11	127-18-4	
Toluene	ND ug/L		1.0	1		08/05/13 15:11	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/05/13 15:11	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/05/13 15:11	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/05/13 15:11	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/05/13 15:11	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/05/13 15:11	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	87 %		80-120	1		08/05/13 15:11	1868-53-7	
4-Bromofluorobenzene (S)	100 %		80-120	1		08/05/13 15:11	460-00-4	
Toluene-d8 (S)	94 %		80-120	1		08/05/13 15:11	2037-26-5	
1,2-Dichloroethane-d4 (S)	87 %		80-120	1		08/05/13 15:11	17060-07-0	
Preservation pH	7.0		1.0	1		08/05/13 15:11		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch: MERP/7563

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60150123001

METHOD BLANK: 1229823

Matrix: Water

Associated Lab Samples: 60150123001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/02/13 12:43	

LABORATORY CONTROL SAMPLE: 1229824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.6	112	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1229825 1229826

Parameter	Units	60150002001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.7	4.6	93	92	70-130	1	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch: MERP/7576

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60150123001

METHOD BLANK: 1231932

Matrix: Water

Associated Lab Samples: 60150123001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/07/13 11:17	

LABORATORY CONTROL SAMPLE: 1231933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231934 1231935

Parameter	Units	60150362001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	3.8	4.0	77	80	70-130	4	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch: MPRP/23748

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60150123001

METHOD BLANK: 1232008

Matrix: Water

Associated Lab Samples: 60150123001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/08/13 14:51	
Antimony	ug/L	ND	10.0	08/08/13 14:51	
Arsenic	ug/L	ND	10.0	08/08/13 14:51	
Beryllium	ug/L	ND	1.0	08/08/13 14:51	
Cadmium	ug/L	ND	5.0	08/08/13 14:51	
Chromium	ug/L	ND	5.0	08/08/13 14:51	
Cobalt	ug/L	ND	5.0	08/08/13 14:51	
Copper	ug/L	ND	10.0	08/08/13 14:51	
Iron	ug/L	ND	50.0	08/08/13 14:51	
Lead	ug/L	ND	5.0	08/08/13 14:51	
Nickel	ug/L	ND	5.0	08/08/13 14:51	
Selenium	ug/L	ND	15.0	08/08/13 14:51	
Silver	ug/L	ND	7.0	08/08/13 14:51	
Thallium	ug/L	ND	20.0	08/08/13 14:51	
Zinc	ug/L	ND	50.0	08/08/13 14:51	

LABORATORY CONTROL SAMPLE: 1232009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10400	104	85-115	
Antimony	ug/L	1000	1040	104	85-115	
Arsenic	ug/L	1000	979	98	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	971	97	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	960	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	995	100	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	499	100	85-115	
Thallium	ug/L	1000	988	99	85-115	
Zinc	ug/L	1000	991	99	85-115	

MATRIX SPIKE SAMPLE: 1232010

Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	123	10000	10300	102	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

MATRIX SPIKE SAMPLE:		1232010					
Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	989	98	70-130	
Beryllium	ug/L	ND	1000	976	98	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	938	94	70-130	
Cobalt	ug/L	ND	1000	981	98	70-130	
Copper	ug/L	ND	1000	978	98	70-130	
Iron	ug/L	91.4	10000	9780	97	70-130	
Lead	ug/L	ND	1000	973	97	70-130	
Nickel	ug/L	ND	1000	991	99	70-130	
Selenium	ug/L	ND	1000	1000	100	70-130	
Silver	ug/L	ND	500	499	100	70-130	
Thallium	ug/L	ND	1000	974	97	70-130	
Zinc	ug/L	ND	1000	949	95	70-130	

MATRIX SPIKE SAMPLE:		1232011					
Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	10200	101	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	
Arsenic	ug/L	18.7	1000	1010	99	70-130	
Beryllium	ug/L	ND	1000	993	99	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	952	95	70-130	
Cobalt	ug/L	ND	1000	991	99	70-130	
Copper	ug/L	ND	1000	982	98	70-130	
Iron	ug/L	2080	10000	11700	97	70-130	
Lead	ug/L	ND	1000	977	97	70-130	
Nickel	ug/L	ND	1000	1000	100	70-130	
Selenium	ug/L	ND	1000	1020	102	70-130	
Silver	ug/L	ND	500	504	101	70-130	
Thallium	ug/L	ND	1000	976	98	70-130	
Zinc	ug/L	ND	1000	968	97	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch: MPRP/23720

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Dissolved

Associated Lab Samples: 60150123001

METHOD BLANK: 1231216

Matrix: Water

Associated Lab Samples: 60150123001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/06/13 18:00	
Antimony, Dissolved	ug/L	ND	10.0	08/06/13 18:00	
Arsenic, Dissolved	ug/L	ND	10.0	08/06/13 18:00	
Beryllium, Dissolved	ug/L	ND	1.0	08/06/13 18:00	
Cadmium, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Chromium, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Cobalt, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Copper, Dissolved	ug/L	ND	10.0	08/07/13 10:33	
Iron, Dissolved	ug/L	ND	50.0	08/06/13 18:00	
Lead, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Nickel, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Selenium, Dissolved	ug/L	ND	15.0	08/06/13 18:00	
Silver, Dissolved	ug/L	ND	7.0	08/06/13 18:00	
Thallium, Dissolved	ug/L	ND	20.0	08/06/13 18:00	
Zinc, Dissolved	ug/L	ND	50.0	08/06/13 18:00	

LABORATORY CONTROL SAMPLE: 1231217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10200	102	85-115	
Antimony, Dissolved	ug/L	1000	932	93	85-115	
Arsenic, Dissolved	ug/L	1000	890	89	85-115	
Beryllium, Dissolved	ug/L	1000	983	98	85-115	
Cadmium, Dissolved	ug/L	1000	936	94	85-115	
Chromium, Dissolved	ug/L	1000	988	99	85-115	
Cobalt, Dissolved	ug/L	1000	974	97	85-115	
Copper, Dissolved	ug/L	1000	960	96	85-115	
Iron, Dissolved	ug/L	10000	9700	97	85-115	
Lead, Dissolved	ug/L	1000	963	96	85-115	
Nickel, Dissolved	ug/L	1000	995	99	85-115	
Selenium, Dissolved	ug/L	1000	921	92	85-115	
Silver, Dissolved	ug/L	500	481	96	85-115	
Thallium, Dissolved	ug/L	1000	960	96	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231218

1231219

Parameter	Units	60150136001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	83.3	10000	10000	10200	10000	101	100	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231218 1231219											
Parameter	Units	60150136001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	946	933	95	93	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	915	904	91	90	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	978	963	98	96	70-130	1	7
Cadmium, Dissolved	ug/L	ND	1000	1000	944	932	94	93	70-130	1	10
Chromium, Dissolved	ug/L	1.8J	1000	1000	968	954	97	95	70-130	1	10
Cobalt, Dissolved	ug/L	50.9	1000	1000	991	976	94	92	70-130	2	6
Copper, Dissolved	ug/L	ND	1000	1000	1010	992	101	99	70-130	2	11
Iron, Dissolved	ug/L	ND	10000	10000	9540	9480	95	95	70-130	1	10
Lead, Dissolved	ug/L	ND	1000	1000	947	930	95	93	70-130	2	10
Nickel, Dissolved	ug/L	212	1000	1000	1170	1150	96	94	70-130	2	10
Selenium, Dissolved	ug/L	ND	1000	1000	910	898	91	90	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	493	486	99	97	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	950	935	95	93	70-130	2	6
Zinc, Dissolved	ug/L	547	1000	1000	1510	1490	96	94	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch: MSV/55359 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150123001, 60150123002

METHOD BLANK: 1231096 Matrix: Water

Associated Lab Samples: 60150123001, 60150123002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/05/13 11:49	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/05/13 11:49	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/05/13 11:49	
1,2-Dichloroethane	ug/L	ND	1.0	08/05/13 11:49	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/05/13 11:49	
Benzene	ug/L	ND	1.0	08/05/13 11:49	
Bromodichloromethane	ug/L	ND	1.0	08/05/13 11:49	
Bromoform	ug/L	ND	1.0	08/05/13 11:49	
Bromomethane	ug/L	ND	5.0	08/05/13 11:49	
Carbon tetrachloride	ug/L	ND	1.0	08/05/13 11:49	
Chloroethane	ug/L	ND	1.0	08/05/13 11:49	
Chloroform	ug/L	ND	1.0	08/05/13 11:49	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/05/13 11:49	
Ethylbenzene	ug/L	ND	1.0	08/05/13 11:49	
Methylene chloride	ug/L	ND	1.0	08/05/13 11:49	
Tetrachloroethene	ug/L	ND	1.0	08/05/13 11:49	
Toluene	ug/L	ND	1.0	08/05/13 11:49	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/05/13 11:49	
Trichloroethene	ug/L	ND	1.0	08/05/13 11:49	
Vinyl chloride	ug/L	ND	1.0	08/05/13 11:49	
Xylene (Total)	ug/L	ND	3.0	08/05/13 11:49	
1,2-Dichloroethane-d4 (S)	%	85	80-120	08/05/13 11:49	
4-Bromofluorobenzene (S)	%	101	80-120	08/05/13 11:49	
Toluene-d8 (S)	%	95	80-120	08/05/13 11:49	

LABORATORY CONTROL SAMPLE: 1231097

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	14.4	72	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	22.0	110	59-138	
1,1,2-Trichloroethane	ug/L	20	17.6	88	69-127	
1,2-Dichloroethane	ug/L	20	16.2	81	71-129	
1,4-Dichlorobenzene	ug/L	20	19.2	96	68-124	
Benzene	ug/L	20	18.8	94	73-129	
Bromodichloromethane	ug/L	20	15.3	76	63-129	
Bromoform	ug/L	20	18.7	93	52-123	
Bromomethane	ug/L	20	23.6	118	10-160	
Carbon tetrachloride	ug/L	20	15.1	76	70-140	
Chloroethane	ug/L	20	16.8	84	42-160	
Chloroform	ug/L	20	14.8	74	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.5	78	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

LABORATORY CONTROL SAMPLE: 1231097

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	17.0	85	66-133	
Methylene chloride	ug/L	20	16.9	85	56-135	
Tetrachloroethene	ug/L	20	18.7	93	64-143	
Toluene	ug/L	20	17.8	89	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.3	86	67-149	
Trichloroethene	ug/L	20	15.1	76	71-130	
Vinyl chloride	ug/L	20	19.8	99	41-160	
Xylene (Total)	ug/L	60	56.9	95	67-130	
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			92	80-120	

MATRIX SPIKE SAMPLE: 1231098

Parameter	Units	60149923001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	2970	74	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3760	94	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3450	86	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3130	78	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3520	88	18-147	
Benzene	ug/L	ND	4000	3760	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3080	77	35-155	
Bromoform	ug/L	ND	4000	3440	86	45-133	
Bromomethane	ug/L	ND	4000	4000	100	10-160	
Carbon tetrachloride	ug/L	ND	4000	3050	76	70-140	
Chloroethane	ug/L	ND	4000	3320	83	14-160	
Chloroform	ug/L	ND	4000	2960	74	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3190	80	19-160	
Ethylbenzene	ug/L	ND	4000	3430	86	37-154	
Methylene chloride	ug/L	ND	4000	3490	87	15-156	
Tetrachloroethene	ug/L	ND	4000	3620	90	64-148	
Toluene	ug/L	ND	4000	3590	90	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3540	89	54-156	
Trichloroethene	ug/L	ND	4000	3070	77	71-157	
Vinyl chloride	ug/L	ND	4000	4040	101	10-160	
Xylene (Total)	ug/L	ND	12000	11100	92	12-153	
1,2-Dichloroethane-d4 (S)	%				88	80-120	
4-Bromofluorobenzene (S)	%				97	80-120	
Toluene-d8 (S)	%				93	80-120	
Preservation pH			7.0		7.0		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029
Pace Project No.: 60150123

QC Batch:	OEXT/39618	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60150123001		

METHOD BLANK: 1229715 Matrix: Water
Associated Lab Samples: 60150123001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/04/13 21:00	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/04/13 21:00	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/04/13 21:00	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/04/13 21:00	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/04/13 21:00	
Hexachloroethane	ug/L	ND	5.0	08/04/13 21:00	
Naphthalene	ug/L	ND	5.0	08/04/13 21:00	
Nitrobenzene	ug/L	ND	5.0	08/04/13 21:00	
Pentachlorophenol	ug/L	ND	5.0	08/04/13 21:00	
Phenol	ug/L	ND	5.0	08/04/13 21:00	
2,4,6-Tribromophenol (S)	%	73	39-119	08/04/13 21:00	
2-Fluorobiphenyl (S)	%	75	36-120	08/04/13 21:00	
2-Fluorophenol (S)	%	45	18-120	08/04/13 21:00	
Nitrobenzene-d5 (S)	%	69	32-120	08/04/13 21:00	
Phenol-d6 (S)	%	31	12-120	08/04/13 21:00	
Terphenyl-d14 (S)	%	82	44-120	08/04/13 21:00	

LABORATORY CONTROL SAMPLE: 1229716

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	25.0	50	44-120	
2,4,6-Trichlorophenol	ug/L	50	28.7	57	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	33.9	68	31-147	
Hexachloro-1,3-butadiene	ug/L	50	23.9	48	41-116	
Hexachlorocyclopentadiene	ug/L	100	40.9	41	31-120	
Hexachloroethane	ug/L	50	23.0	46	40-113	
Naphthalene	ug/L	50	26.7	53	48-120	
Nitrobenzene	ug/L	50	26.2	52	47-120	
Pentachlorophenol	ug/L	50	31.5	63	43-127	
Phenol	ug/L	50	11.7	23	15-112	
2,4,6-Tribromophenol (S)	%			61	39-119	
2-Fluorobiphenyl (S)	%			56	36-120	
2-Fluorophenol (S)	%			32	18-120	
Nitrobenzene-d5 (S)	%			50	32-120	
Phenol-d6 (S)	%			22	12-120	
Terphenyl-d14 (S)	%			67	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

MATRIX SPIKE SAMPLE:		1229717					
Parameter	Units	60150002001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	34.2	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	37.3	75	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	10.7J	21	27-146	M1
Hexachloro-1,3-butadiene	ug/L	ND	50	32.4	65	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	40.2	40	11-120	
Hexachloroethane	ug/L	ND	50	31.6	63	40-113	
Naphthalene	ug/L	ND	50	34.2	68	32-120	
Nitrobenzene	ug/L	ND	50	34.0	68	35-128	
Pentachlorophenol	ug/L	ND	50	37.2	74	38-133	
Phenol	ug/L	ND	50	14.8	30	13-112	
2,4,6-Tribromophenol (S)	%				70	39-119	
2-Fluorobiphenyl (S)	%				68	36-120	
2-Fluorophenol (S)	%				40	18-120	
Nitrobenzene-d5 (S)	%				63	32-120	
Phenol-d6 (S)	%				28	12-120	
Terphenyl-d14 (S)	%				73	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch: WET/42707

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60150123001

METHOD BLANK: 1230904

Matrix: Water

Associated Lab Samples: 60150123001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/05/13 07:44	

LABORATORY CONTROL SAMPLE: 1230905

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.1	100	78-114	

MATRIX SPIKE SAMPLE: 1230906

Parameter	Units	60150085001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	43.5	45.7	102	78-114	

SAMPLE DUPLICATE: 1230907

Parameter	Units	60149971001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	9.7	9.7	0	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch: WET/42743

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150123001

METHOD BLANK: 1231879

Matrix: Water

Associated Lab Samples: 60150123001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/07/13 07:27	

LABORATORY CONTROL SAMPLE: 1231880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1231912

Parameter	Units	60150085001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	22.1	95	64-132	

SAMPLE DUPLICATE: 1231915

Parameter	Units	60149960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	70.0	51.9	30	34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch: WET/42729

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150123001

METHOD BLANK: 1231368

Matrix: Water

Associated Lab Samples: 60150123001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/06/13 08:29	

SAMPLE DUPLICATE: 1231369

Parameter	Units	60150123001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	2080	1960	6	25	

SAMPLE DUPLICATE: 1231370

Parameter	Units	60150132001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	30.0	34.0	12	25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch: WET/42699 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150123001

SAMPLE DUPLICATE: 1230630

Parameter	Units	60150133001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.7	7.6	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch:	WETA/25697	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	60150123001		

METHOD BLANK:	1231642	Matrix:	Water
Associated Lab Samples:	60150123001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/06/13 15:27	

LABORATORY CONTROL SAMPLE:	1231643					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.0	102	90-110	

MATRIX SPIKE SAMPLE:	1231644						
Parameter	Units	60149908001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1.7	2	3.5	91	90-110	

MATRIX SPIKE SAMPLE:	1231646						
Parameter	Units	60149884006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	17.6	10	25.4	78	90-110	M1

SAMPLE DUPLICATE:	1231645						
Parameter	Units	60149948004 Result	Dup Result	RPD	Max RPD	Qualifiers	
Nitrogen, Ammonia	mg/L	ND	ND		18		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

QC Batch:	WETA/25674	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150123001		

METHOD BLANK: 1230978 Matrix: Water

Associated Lab Samples: 60150123001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/06/13 08:46	

LABORATORY CONTROL SAMPLE: 1230979

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	46.7	93	90-110	

MATRIX SPIKE SAMPLE: 1230980

Parameter	Units	60149921001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	21.8	50	79.0	114	90-110	M1

MATRIX SPIKE SAMPLE: 1230982

Parameter	Units	60150085001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	12.0	50	61.2	98	90-110	

SAMPLE DUPLICATE: 1230981

Parameter	Units	60149968001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	72.5	76.6	6	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-029

Pace Project No.: 60150123

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150123001	316-029	EPA 200.7	MPRP/23748	EPA 200.7	ICP/18621
60150123001	316-029	EPA 200.7	MPRP/23720	EPA 200.7	ICP/18609
60150123001	316-029	EPA 245.1	MERP/7563	EPA 245.1	MERC/7520
60150123001	316-029	EPA 245.1	MERP/7576	EPA 245.1	MERC/7531
60150123001	316-029	EPA 625	OEXT/39618	EPA 625	MSSV/12573
60150123001	316-029	EPA 624 Low	MSV/55359		
60150123002	TRIP BLANK	EPA 624 Low	MSV/55359		
60150123001	316-029	EPA 1664A	WET/42707		
60150123001	316-029	EPA 1664A	WET/42743		
60150123001	316-029	SM 2540D	WET/42729		
60150123001	316-029	SM 4500-H+B	WET/42699		
60150123001	316-029	EPA 350.1	WETA/25697		
60150123001	316-029	EPA 410.4	WETA/25674		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150123



60150123

Client Name: Barr Eng

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

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☒ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 5.3

Date and initials of person examining contents: KE 8/2/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☒ Yes ☐ No ☐ N/A	1. <u>Insufficient amount of ice used in s/r</u>
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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☒ Yes ☐ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	14. <u>Initial pH ≈ 5.0. Added 2.5 mL of HNO₃ + 1/2 SO₄ preservative to each sample and respectively got a final pH ≈ 3.5 and 2.0</u>
Exceptions: <u>VOA</u> , coliform, TOC, <u>DO</u> , WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>KE</u> Lot # of added preservative <u>12510</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	
Pace Trip Blank lot # (if purchased): <u>071513-3</u>		15.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	16. <u>2 of 5 316-029</u>
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	17. List State: _____

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: [Signature]

Page : 1 Of 1

Invoice Information:

Regulatory Agency
State / Location
Missouri

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Hunter King					
SIGNATURE of SAMPLER: 	DATE Signed: 8/1/13				

August 08, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-030
Pace Project No.: 60150249

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 03, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-030

Pace Project No.: 60150249

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-030

Pace Project No.: 60150249

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150249001	316-030	Water	08/02/13 07:58	08/03/13 01:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-030

Pace Project No.: 60150249

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150249001	316-030	SM 5210B	JML	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-030

Pace Project No.: 60150249

Sample: 316-030		Lab ID: 60150249001	Collected: 08/02/13 07:58	Received: 08/03/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	29300	mg/L	2.0	1	08/03/13 12:06	08/08/13 10:34		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150249

QC Batch: WET/42702

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150249001

METHOD BLANK: 1230726

Matrix: Water

Associated Lab Samples: 60150249001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/08/13 10:21	

LABORATORY CONTROL SAMPLE: 1230727

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	169	85	85-115	

SAMPLE DUPLICATE: 1230728

Parameter	Units	60150176001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	5.6	5.3	5	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-030

Pace Project No.: 60150249

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-030

Pace Project No.: 60150249

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150249001	316-030	SM 5210B	WET/42702	SM 5210B	WET/42784

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO# : 60150249

60150249

Client Name: Barr Eng.Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☒ (Read)Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐Thermometer Used: T-112 / T-194Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)Cooler Temperature: 2.5Date and initials of person examining contents: 8/13 755

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>water</u>		15.
All containers needing preservation have been checked.	☐ Yes ☒ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>W</u> Lot # of added preservative <u>12510-1-3</u>
Trip Blank present:	☐ Yes ☐ No ☒ N/A	18.
Pace Trip Blank lot # (if purchased): <u>NA</u>		19.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	20.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	21. List State: _____

Client Notification/ Resolution:

Copy COC to Client? Y / NField Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]Date: 8/13/13

August 14, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-030
Pace Project No.: 60150250

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 03, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised 08/14/13 to correct the volatiles reporting list.

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

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150250001	316-030	Water	08/02/13 07:58	08/03/13 01:15
60150250002	TRIP BLANK	Water	08/02/13 08:00	08/03/13 01:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150250001	316-030	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	NDJ	1
		EPA 245.1	NDJ	1
		EPA 625	JMT	16
		EPA 624 Low	AAM	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	AJM	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60150250002	TRIP BLANK	EPA 624 Low	AAM	26

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

Sample: 316-030		Lab ID: 60150250001	Collected: 08/02/13 07:58	Received: 08/03/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4030	ug/L	150	2	08/07/13 10:20	08/08/13 16:15	7429-90-5	
Antimony	34.0	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:15	7440-36-0	
Arsenic	577	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:15	7440-38-2	
Beryllium	ND	ug/L	2.0	2	08/07/13 10:20	08/08/13 16:15	7440-41-7	D3
Cadmium	ND	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:15	7440-43-9	D3
Chromium	220	ug/L	25.0	5	08/07/13 10:20	08/08/13 16:32	7440-47-3	
Cobalt	50.4	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:15	7440-48-4	
Copper	ND	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:15	7440-50-8	D3
Iron	520000	ug/L	100	2	08/07/13 10:20	08/08/13 16:15	7439-89-6	
Lead	66.1	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:15	7439-92-1	
Nickel	127	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:15	7440-02-0	
Selenium	ND	ug/L	75.0	5	08/07/13 10:20	08/08/13 16:32	7782-49-2	D3
Silver	ND	ug/L	14.0	2	08/07/13 10:20	08/08/13 16:15	7440-22-4	D3
Thallium	ND	ug/L	100	5	08/07/13 10:20	08/08/13 16:32	7440-28-0	D3
Zinc	10200	ug/L	1000	20	08/07/13 10:20	08/08/13 17:05	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3040	ug/L	150	2	08/05/13 16:30	08/06/13 18:48	7429-90-5	
Antimony, Dissolved	24.2	ug/L	20.0	2	08/05/13 16:30	08/06/13 18:48	7440-36-0	
Arsenic, Dissolved	466	ug/L	20.0	2	08/05/13 16:30	08/06/13 18:48	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	5	08/05/13 16:30	08/06/13 19:30	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	08/05/13 16:30	08/06/13 18:48	7440-43-9	D3
Chromium, Dissolved	224	ug/L	25.0	5	08/05/13 16:30	08/06/13 19:30	7440-47-3	
Cobalt, Dissolved	41.3	ug/L	10.0	2	08/05/13 16:30	08/06/13 18:48	7440-48-4	
Copper, Dissolved	ND	ug/L	20.0	2	08/05/13 16:30	08/07/13 11:16	7440-50-8	D3
Iron, Dissolved	450000	ug/L	100	2	08/05/13 16:30	08/06/13 18:48	7439-89-6	
Lead, Dissolved	49.7	ug/L	10.0	2	08/05/13 16:30	08/06/13 18:48	7439-92-1	
Nickel, Dissolved	120	ug/L	10.0	2	08/05/13 16:30	08/06/13 18:48	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	08/05/13 16:30	08/06/13 19:30	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	08/05/13 16:30	08/06/13 18:48	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	08/05/13 16:30	08/06/13 19:30	7440-28-0	D3
Zinc, Dissolved	8920	ug/L	1000	20	08/05/13 16:30	08/07/13 11:30	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	2.8	ug/L	0.20	1	08/05/13 11:00	08/06/13 10:39	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	08/07/13 08:30	08/07/13 11:26	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	08/09/13 00:00	08/12/13 09:56	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 09:56	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 09:56	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 09:56	67-72-1	
Naphthalene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 09:56	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 09:56	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

Sample: 316-030		Lab ID: 60150250001	Collected: 08/02/13 07:58	Received: 08/03/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/12/13 09:56	87-86-5	
Phenol	13200 ug/L		1000	20	08/09/13 00:00	08/12/13 09:56	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/09/13 00:00	08/12/13 09:56	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/12/13 09:56	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/09/13 00:00	08/12/13 09:56	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/09/13 00:00	08/12/13 09:56	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/09/13 00:00	08/12/13 09:56	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/09/13 00:00	08/12/13 09:56	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/09/13 00:00	08/12/13 09:56	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/09/13 00:00	08/12/13 09:56	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/05/13 15:32	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/05/13 15:32	75-27-4	
Bromoform	ND ug/L		200	200		08/05/13 15:32	75-25-2	
Bromomethane	ND ug/L		1000	200		08/05/13 15:32	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/05/13 15:32	56-23-5	
Chloroethane	ND ug/L		200	200		08/05/13 15:32	75-00-3	
Chloroform	ND ug/L		200	200		08/05/13 15:32	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/05/13 15:32	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/05/13 15:32	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/05/13 15:32	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/05/13 15:32	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/05/13 15:32	100-41-4	
Methylene chloride	ND ug/L		200	200		08/05/13 15:32	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/05/13 15:32	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/05/13 15:32	127-18-4	
Toluene	ND ug/L		200	200		08/05/13 15:32	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/05/13 15:32	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/05/13 15:32	79-00-5	
Trichloroethene	ND ug/L		200	200		08/05/13 15:32	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/05/13 15:32	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/05/13 15:32	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	89 %		80-120	200		08/05/13 15:32	1868-53-7	D3
4-Bromofluorobenzene (S)	102 %		80-120	200		08/05/13 15:32	460-00-4	
Toluene-d8 (S)	94 %		80-120	200		08/05/13 15:32	2037-26-5	
1,2-Dichloroethane-d4 (S)	82 %		80-120	200		08/05/13 15:32	17060-07-0	
Preservation pH	7.0		1.0	200		08/05/13 15:32		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	688 mg/L		5.0	1		08/06/13 07:38		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/07/13 07:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

Sample: 316-030		Lab ID: 60150250001	Collected: 08/02/13 07:58	Received: 08/03/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1420	mg/L	5.0	1		08/06/13 15:47		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.8	Std. Units	0.10	1		08/03/13 12:00		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	685	mg/L	20.0	200		08/07/13 14:30	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	56400	mg/L	5000	500		08/06/13 09:11		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

Sample: TRIP BLANK		Lab ID: 60150250002	Collected: 08/02/13 08:00	Received: 08/03/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/05/13 15:54	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/05/13 15:54	75-27-4	
Bromoform	ND ug/L		1.0	1		08/05/13 15:54	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/05/13 15:54	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/05/13 15:54	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/05/13 15:54	75-00-3	
Chloroform	ND ug/L		1.0	1		08/05/13 15:54	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/05/13 15:54	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/05/13 15:54	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/05/13 15:54	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/05/13 15:54	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/05/13 15:54	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/05/13 15:54	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/05/13 15:54	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/05/13 15:54	127-18-4	
Toluene	ND ug/L		1.0	1		08/05/13 15:54	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/05/13 15:54	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/05/13 15:54	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/05/13 15:54	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/05/13 15:54	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/05/13 15:54	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	88 %		80-120	1		08/05/13 15:54	1868-53-7	
4-Bromofluorobenzene (S)	99 %		80-120	1		08/05/13 15:54	460-00-4	
Toluene-d8 (S)	94 %		80-120	1		08/05/13 15:54	2037-26-5	
1,2-Dichloroethane-d4 (S)	84 %		80-120	1		08/05/13 15:54	17060-07-0	
Preservation pH	7.0		1.0	1		08/05/13 15:54		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch: MERP/7569

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60150250001

METHOD BLANK: 1231064

Matrix: Water

Associated Lab Samples: 60150250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/06/13 10:25	

LABORATORY CONTROL SAMPLE: 1231065

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231066

1231067

Parameter	Units	60150186001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.6	5.4	111	108	70-130	2	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch: MERP/7576

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60150250001

METHOD BLANK: 1231932

Matrix: Water

Associated Lab Samples: 60150250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/07/13 11:17	

LABORATORY CONTROL SAMPLE: 1231933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231934 1231935

Parameter	Units	60150362001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	3.8	4.0	77	80	70-130	4	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch: MPRP/23748

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60150250001

METHOD BLANK: 1232008

Matrix: Water

Associated Lab Samples: 60150250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/08/13 14:51	
Antimony	ug/L	ND	10.0	08/08/13 14:51	
Arsenic	ug/L	ND	10.0	08/08/13 14:51	
Beryllium	ug/L	ND	1.0	08/08/13 14:51	
Cadmium	ug/L	ND	5.0	08/08/13 14:51	
Chromium	ug/L	ND	5.0	08/08/13 14:51	
Cobalt	ug/L	ND	5.0	08/08/13 14:51	
Copper	ug/L	ND	10.0	08/08/13 14:51	
Iron	ug/L	ND	50.0	08/08/13 14:51	
Lead	ug/L	ND	5.0	08/08/13 14:51	
Nickel	ug/L	ND	5.0	08/08/13 14:51	
Selenium	ug/L	ND	15.0	08/08/13 14:51	
Silver	ug/L	ND	7.0	08/08/13 14:51	
Thallium	ug/L	ND	20.0	08/08/13 14:51	
Zinc	ug/L	ND	50.0	08/08/13 14:51	

LABORATORY CONTROL SAMPLE: 1232009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10400	104	85-115	
Antimony	ug/L	1000	1040	104	85-115	
Arsenic	ug/L	1000	979	98	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	971	97	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	960	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	995	100	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	499	100	85-115	
Thallium	ug/L	1000	988	99	85-115	
Zinc	ug/L	1000	991	99	85-115	

MATRIX SPIKE SAMPLE: 1232010

Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	123	10000	10300	102	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

MATRIX SPIKE SAMPLE:		1232010					
Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	989	98	70-130	
Beryllium	ug/L	ND	1000	976	98	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	938	94	70-130	
Cobalt	ug/L	ND	1000	981	98	70-130	
Copper	ug/L	ND	1000	978	98	70-130	
Iron	ug/L	91.4	10000	9780	97	70-130	
Lead	ug/L	ND	1000	973	97	70-130	
Nickel	ug/L	ND	1000	991	99	70-130	
Selenium	ug/L	ND	1000	1000	100	70-130	
Silver	ug/L	ND	500	499	100	70-130	
Thallium	ug/L	ND	1000	974	97	70-130	
Zinc	ug/L	ND	1000	949	95	70-130	

MATRIX SPIKE SAMPLE:		1232011					
Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	10200	101	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	
Arsenic	ug/L	18.7	1000	1010	99	70-130	
Beryllium	ug/L	ND	1000	993	99	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	952	95	70-130	
Cobalt	ug/L	ND	1000	991	99	70-130	
Copper	ug/L	ND	1000	982	98	70-130	
Iron	ug/L	2080	10000	11700	97	70-130	
Lead	ug/L	ND	1000	977	97	70-130	
Nickel	ug/L	ND	1000	1000	100	70-130	
Selenium	ug/L	ND	1000	1020	102	70-130	
Silver	ug/L	ND	500	504	101	70-130	
Thallium	ug/L	ND	1000	976	98	70-130	
Zinc	ug/L	ND	1000	968	97	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030
Pace Project No.: 60150250

QC Batch: MPRP/23720 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60150250001

METHOD BLANK: 1231216 Matrix: Water
Associated Lab Samples: 60150250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/06/13 18:00	
Antimony, Dissolved	ug/L	ND	10.0	08/06/13 18:00	
Arsenic, Dissolved	ug/L	ND	10.0	08/06/13 18:00	
Beryllium, Dissolved	ug/L	ND	1.0	08/06/13 18:00	
Cadmium, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Chromium, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Cobalt, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Copper, Dissolved	ug/L	ND	10.0	08/07/13 10:33	
Iron, Dissolved	ug/L	ND	50.0	08/06/13 18:00	
Lead, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Nickel, Dissolved	ug/L	ND	5.0	08/06/13 18:00	
Selenium, Dissolved	ug/L	ND	15.0	08/06/13 18:00	
Silver, Dissolved	ug/L	ND	7.0	08/06/13 18:00	
Thallium, Dissolved	ug/L	ND	20.0	08/06/13 18:00	
Zinc, Dissolved	ug/L	ND	50.0	08/06/13 18:00	

LABORATORY CONTROL SAMPLE: 1231217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10200	102	85-115	
Antimony, Dissolved	ug/L	1000	932	93	85-115	
Arsenic, Dissolved	ug/L	1000	890	89	85-115	
Beryllium, Dissolved	ug/L	1000	983	98	85-115	
Cadmium, Dissolved	ug/L	1000	936	94	85-115	
Chromium, Dissolved	ug/L	1000	988	99	85-115	
Cobalt, Dissolved	ug/L	1000	974	97	85-115	
Copper, Dissolved	ug/L	1000	960	96	85-115	
Iron, Dissolved	ug/L	10000	9700	97	85-115	
Lead, Dissolved	ug/L	1000	963	96	85-115	
Nickel, Dissolved	ug/L	1000	995	99	85-115	
Selenium, Dissolved	ug/L	1000	921	92	85-115	
Silver, Dissolved	ug/L	500	481	96	85-115	
Thallium, Dissolved	ug/L	1000	960	96	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231218 1231219

Parameter	Units	60150136001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	83.3	10000	10000	10200	10000	101	100	70-130	1	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231218 1231219											
Parameter	Units	60150136001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	946	933	95	93	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	915	904	91	90	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	978	963	98	96	70-130	1	7
Cadmium, Dissolved	ug/L	ND	1000	1000	944	932	94	93	70-130	1	10
Chromium, Dissolved	ug/L	1.8J	1000	1000	968	954	97	95	70-130	1	10
Cobalt, Dissolved	ug/L	50.9	1000	1000	991	976	94	92	70-130	2	6
Copper, Dissolved	ug/L	ND	1000	1000	1010	992	101	99	70-130	2	11
Iron, Dissolved	ug/L	ND	10000	10000	9540	9480	95	95	70-130	1	10
Lead, Dissolved	ug/L	ND	1000	1000	947	930	95	93	70-130	2	10
Nickel, Dissolved	ug/L	212	1000	1000	1170	1150	96	94	70-130	2	10
Selenium, Dissolved	ug/L	ND	1000	1000	910	898	91	90	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	493	486	99	97	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	950	935	95	93	70-130	2	6
Zinc, Dissolved	ug/L	547	1000	1000	1510	1490	96	94	70-130	1	11

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch: MSV/55359 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150250001, 60150250002

METHOD BLANK: 1231096 Matrix: Water

Associated Lab Samples: 60150250001, 60150250002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/05/13 11:49	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/05/13 11:49	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/05/13 11:49	
1,2-Dichloroethane	ug/L	ND	1.0	08/05/13 11:49	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/05/13 11:49	
Benzene	ug/L	ND	1.0	08/05/13 11:49	
Bromodichloromethane	ug/L	ND	1.0	08/05/13 11:49	
Bromoform	ug/L	ND	1.0	08/05/13 11:49	
Bromomethane	ug/L	ND	5.0	08/05/13 11:49	
Carbon tetrachloride	ug/L	ND	1.0	08/05/13 11:49	
Chloroethane	ug/L	ND	1.0	08/05/13 11:49	
Chloroform	ug/L	ND	1.0	08/05/13 11:49	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/05/13 11:49	
Ethylbenzene	ug/L	ND	1.0	08/05/13 11:49	
Methylene chloride	ug/L	ND	1.0	08/05/13 11:49	
Tetrachloroethene	ug/L	ND	1.0	08/05/13 11:49	
Toluene	ug/L	ND	1.0	08/05/13 11:49	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/05/13 11:49	
Trichloroethene	ug/L	ND	1.0	08/05/13 11:49	
Vinyl chloride	ug/L	ND	1.0	08/05/13 11:49	
Xylene (Total)	ug/L	ND	3.0	08/05/13 11:49	
1,2-Dichloroethane-d4 (S)	%	85	80-120	08/05/13 11:49	
4-Bromofluorobenzene (S)	%	101	80-120	08/05/13 11:49	
Toluene-d8 (S)	%	95	80-120	08/05/13 11:49	

LABORATORY CONTROL SAMPLE: 1231097

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	14.4	72	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	22.0	110	59-138	
1,1,2-Trichloroethane	ug/L	20	17.6	88	69-127	
1,2-Dichloroethane	ug/L	20	16.2	81	71-129	
1,4-Dichlorobenzene	ug/L	20	19.2	96	68-124	
Benzene	ug/L	20	18.8	94	73-129	
Bromodichloromethane	ug/L	20	15.3	76	63-129	
Bromoform	ug/L	20	18.7	93	52-123	
Bromomethane	ug/L	20	23.6	118	10-160	
Carbon tetrachloride	ug/L	20	15.1	76	70-140	
Chloroethane	ug/L	20	16.8	84	42-160	
Chloroform	ug/L	20	14.8	74	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.5	78	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

LABORATORY CONTROL SAMPLE: 1231097

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	17.0	85	66-133	
Methylene chloride	ug/L	20	16.9	85	56-135	
Tetrachloroethene	ug/L	20	18.7	93	64-143	
Toluene	ug/L	20	17.8	89	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.3	86	67-149	
Trichloroethene	ug/L	20	15.1	76	71-130	
Vinyl chloride	ug/L	20	19.8	99	41-160	
Xylene (Total)	ug/L	60	56.9	95	67-130	
1,2-Dichloroethane-d4 (S)	%			94	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			92	80-120	

MATRIX SPIKE SAMPLE: 1231098

Parameter	Units	60149923001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	2970	74	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3760	94	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3450	86	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3130	78	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3520	88	18-147	
Benzene	ug/L	ND	4000	3760	94	37-151	
Bromodichloromethane	ug/L	ND	4000	3080	77	35-155	
Bromoform	ug/L	ND	4000	3440	86	45-133	
Bromomethane	ug/L	ND	4000	4000	100	10-160	
Carbon tetrachloride	ug/L	ND	4000	3050	76	70-140	
Chloroethane	ug/L	ND	4000	3320	83	14-160	
Chloroform	ug/L	ND	4000	2960	74	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3190	80	19-160	
Ethylbenzene	ug/L	ND	4000	3430	86	37-154	
Methylene chloride	ug/L	ND	4000	3490	87	15-156	
Tetrachloroethene	ug/L	ND	4000	3620	90	64-148	
Toluene	ug/L	ND	4000	3590	90	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3540	89	54-156	
Trichloroethene	ug/L	ND	4000	3070	77	71-157	
Vinyl chloride	ug/L	ND	4000	4040	101	10-160	
Xylene (Total)	ug/L	ND	12000	11100	92	12-153	
1,2-Dichloroethane-d4 (S)	%				88	80-120	
4-Bromofluorobenzene (S)	%				97	80-120	
Toluene-d8 (S)	%				93	80-120	
Preservation pH			7.0		7.0		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030
Pace Project No.: 60150250

QC Batch:	OEXT/39759	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60150250001		

METHOD BLANK: 1233568 Matrix: Water
Associated Lab Samples: 60150250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/12/13 09:14	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/12/13 09:14	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachloroethane	ug/L	ND	5.0	08/12/13 09:14	
Naphthalene	ug/L	ND	5.0	08/12/13 09:14	
Nitrobenzene	ug/L	ND	5.0	08/12/13 09:14	
Pentachlorophenol	ug/L	ND	5.0	08/12/13 09:14	
Phenol	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Tribromophenol (S)	%	76	39-119	08/12/13 09:14	
2-Fluorobiphenyl (S)	%	76	36-120	08/12/13 09:14	
2-Fluorophenol (S)	%	43	18-120	08/12/13 09:14	
Nitrobenzene-d5 (S)	%	75	32-120	08/12/13 09:14	
Phenol-d6 (S)	%	29	12-120	08/12/13 09:14	
Terphenyl-d14 (S)	%	75	44-120	08/12/13 09:14	

LABORATORY CONTROL SAMPLE: 1233569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	40.2	80	44-120	
2,4,6-Trichlorophenol	ug/L	50	43.3	87	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	51.9	104	31-147	
Hexachloro-1,3-butadiene	ug/L	50	38.7	77	41-116	
Hexachlorocyclopentadiene	ug/L	100	75.4	75	31-120	
Hexachloroethane	ug/L	50	39.8	80	40-113	
Naphthalene	ug/L	50	42.0	84	48-120	
Nitrobenzene	ug/L	50	42.5	85	47-120	
Pentachlorophenol	ug/L	50	46.4	93	43-127	
Phenol	ug/L	50	16.8	34	15-112	
2,4,6-Tribromophenol (S)	%			89	39-119	
2-Fluorobiphenyl (S)	%			85	36-120	
2-Fluorophenol (S)	%			49	18-120	
Nitrobenzene-d5 (S)	%			80	32-120	
Phenol-d6 (S)	%			33	12-120	
Terphenyl-d14 (S)	%			89	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

MATRIX SPIKE SAMPLE:		1233570					
Parameter	Units	60150323001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	33.3	67	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	38.1	76	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	6.7J	13	27-146	M1
Hexachloro-1,3-butadiene	ug/L	ND	50	32.5	65	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	23.3	23	11-120	
Hexachloroethane	ug/L	ND	50	30.5	61	40-113	
Naphthalene	ug/L	ND	50	34.3	69	32-120	
Nitrobenzene	ug/L	ND	50	35.2	70	35-128	
Pentachlorophenol	ug/L	ND	50	40.1	80	38-133	
Phenol	ug/L	ND	50	15.1	30	13-112	
2,4,6-Tribromophenol (S)	%				77	39-119	
2-Fluorobiphenyl (S)	%				72	36-120	
2-Fluorophenol (S)	%				41	18-120	
Nitrobenzene-d5 (S)	%				66	32-120	
Phenol-d6 (S)	%				29	12-120	
Terphenyl-d14 (S)	%				92	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch: WET/42723

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60150250001

METHOD BLANK: 1231303

Matrix: Water

Associated Lab Samples: 60150250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/06/13 07:31	

LABORATORY CONTROL SAMPLE: 1231304

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.8	100	78-114	

MATRIX SPIKE SAMPLE: 1231305

Parameter	Units	60150289001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.8	43.3	98	78-114	

SAMPLE DUPLICATE: 1231306

Parameter	Units	60149960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	594	518	14	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch: WET/42743

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150250001

METHOD BLANK: 1231879

Matrix: Water

Associated Lab Samples: 60150250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/07/13 07:27	

LABORATORY CONTROL SAMPLE: 1231880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1231912

Parameter	Units	60150085001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	22.1	95	64-132	

SAMPLE DUPLICATE: 1231915

Parameter	Units	60149960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	70.0	51.9	30	34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch: WET/42735

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150250001

METHOD BLANK: 1231637

Matrix: Water

Associated Lab Samples: 60150250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/06/13 15:46	

SAMPLE DUPLICATE: 1231638

Parameter	Units	60150016001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	75.0	69.0	8	25	

SAMPLE DUPLICATE: 1231639

Parameter	Units	60150153001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch: WET/42699 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150250001

SAMPLE DUPLICATE: 1230630

Parameter	Units	60150133001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.7	7.6	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch:	WETA/25712	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	60150250001		

METHOD BLANK: 1232218 Matrix: Water

Associated Lab Samples: 60150250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/07/13 14:22	

LABORATORY CONTROL SAMPLE: 1232219

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	105	90-110	

MATRIX SPIKE SAMPLE: 1232220

Parameter	Units	60149918006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.12	2	2.3	111	90-110	M1

MATRIX SPIKE SAMPLE: 1232222

Parameter	Units	60150017002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	2.0	99	90-110	

SAMPLE DUPLICATE: 1232221

Parameter	Units	60149943001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	0.10	0.11	2	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

QC Batch:	WETA/25683	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150250001		

METHOD BLANK:	1231118	Matrix:	Water
Associated Lab Samples:	60150250001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/06/13 09:10	

LABORATORY CONTROL SAMPLE: 1231119

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	51.8	104	90-110	

MATRIX SPIKE SAMPLE: 1231120

Parameter	Units	60150289001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	80.0	50	104	48	90-110	M1

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-030

Pace Project No.: 60150250

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150250001	316-030	EPA 200.7	MPRP/23748	EPA 200.7	ICP/18621
60150250001	316-030	EPA 200.7	MPRP/23720	EPA 200.7	ICP/18609
60150250001	316-030	EPA 245.1	MERP/7569	EPA 245.1	MERC/7527
60150250001	316-030	EPA 245.1	MERP/7576	EPA 245.1	MERC/7531
60150250001	316-030	EPA 625	OEXT/39759	EPA 625	MSSV/12606
60150250001	316-030	EPA 624 Low	MSV/55359		
60150250002	TRIP BLANK	EPA 624 Low	MSV/55359		
60150250001	316-030	EPA 1664A	WET/42723		
60150250001	316-030	EPA 1664A	WET/42743		
60150250001	316-030	SM 2540D	WET/42735		
60150250001	316-030	SM 4500-H+B	WET/42699		
60150250001	316-030	EPA 350.1	WETA/25712		
60150250001	316-030	EPA 410.4	WETA/25683		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150250



60150250

Client Name: Barr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☒ (Rush)

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Not Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.5

Date and initials of person examining contents: 8/13 75T

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6.
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7. <u>PH</u>
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>water</u>	13.
All containers needing preservation have been checked.	☐ Yes ☒ No ☐ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>✓</u>
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative <u>12510-1-3</u>
Pace Trip Blank lot # (if purchased): <u>NA</u>		
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	
		16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/13/13

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
(Company)	BARR ENGINEERING	Report To:	ED GALT/BRAITH/BARR	Attention:	TABITHA PROVINCE
(Address)		Copy To:	COPY FEDAK/FEEZOR	Company Name:	REPUBLIC SERVICES
(Email To:			DANA BAKER/MARGARET TREANOR -BARR	Address:	BRIDGETON, MO 63044
(Phone:	(816) 285-8410	Purchase Order No	PO 3727110	Pace Quote Reference:	130426_7588
Fax		Client Project ID:	BRIDGETON LF	Pace Project Manager:	Brown, Angie
Requested Due Date/TAT:	10 Day (Default)	Container Order Number:		Pace Profile #:	6787 LINE 2
				Regulatory Agency	
				State / Location	
				Missouri	

Page : 1 Of 1

[illegible]

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Hunter King					
SIGNATURE of SAMPLER: Hunter King					
		DATE Signed: 8/2/13			

August 12, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-031
Pace Project No.: 60150294

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 05, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-031

Pace Project No.: 60150294

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-031

Pace Project No.: 60150294

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150294001	316-031	Water	08/03/13 15:48	08/05/13 13:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-031

Pace Project No.: 60150294

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150294001	316-031	SM 5210B	JML	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-031

Pace Project No.: 60150294

Sample: 316-031		Lab ID: 60150294001	Collected: 08/03/13 15:48	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	31000	mg/L	2.0	1	08/05/13 15:28	08/10/13 10:58		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150294

QC Batch: WET/42721

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150294001

METHOD BLANK: 1231194

Matrix: Water

Associated Lab Samples: 60150294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/10/13 10:55	

LABORATORY CONTROL SAMPLE: 1231195

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	210	106	85-115	

SAMPLE DUPLICATE: 1231196

Parameter	Units	60150294001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	31000	29400	5	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-031

Pace Project No.: 60150294

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-031

Pace Project No.: 60150294

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150294001	316-031	SM 5210B	WET/42721	SM 5210B	WET/42817

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150294



60150294

Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 1.5

Date and initials of person examining contents: JES 01/5/13 1340

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>pH, BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>mp</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):	<u>covered</u>	18.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/7

August 12, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-031
Pace Project No.: 60150295

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 05, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

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9608 Loiret Boulevard, Lenexa, KS 66219

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Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150295001	316-031	Water	08/03/13 15:48	08/05/13 13:15
60150295002	TRIP BLANK	Water	08/03/13 08:00	08/05/13 13:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150295001	316-031	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	NDJ	1
		EPA 245.1	NDJ	1
		EPA 625	JMT	16
		EPA 624 Low	AAM	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	JML	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60150295002	TRIP BLANK	EPA 624 Low	AAM	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

Sample: 316-031		Lab ID: 60150295001	Collected: 08/03/13 15:48	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4850	ug/L	150	2	08/07/13 10:20	08/08/13 16:18	7429-90-5	
Antimony	32.1	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:18	7440-36-0	
Arsenic	500	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:18	7440-38-2	
Beryllium	ND	ug/L	2.0	2	08/07/13 10:20	08/08/13 16:18	7440-41-7	D3
Cadmium	ND	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:18	7440-43-9	D3
Chromium	198	ug/L	25.0	5	08/07/13 10:20	08/08/13 16:51	7440-47-3	
Cobalt	44.1	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:18	7440-48-4	
Copper	ND	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:18	7440-50-8	D3
Iron	418000	ug/L	100	2	08/07/13 10:20	08/08/13 16:18	7439-89-6	
Lead	66.7	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:18	7439-92-1	
Nickel	114	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:18	7440-02-0	
Selenium	ND	ug/L	75.0	5	08/07/13 10:20	08/08/13 16:51	7782-49-2	D3
Silver	ND	ug/L	14.0	2	08/07/13 10:20	08/08/13 16:18	7440-22-4	D3
Thallium	ND	ug/L	100	5	08/07/13 10:20	08/08/13 16:51	7440-28-0	D3
Zinc	9110	ug/L	1000	20	08/07/13 10:20	08/08/13 17:08	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2340	ug/L	150	2	08/08/13 16:20	08/09/13 09:44	7429-90-5	
Antimony, Dissolved	34.0	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:44	7440-36-0	D9
Arsenic, Dissolved	456	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:44	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	5	08/08/13 16:20	08/09/13 10:02	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:44	7440-43-9	D3
Chromium, Dissolved	194	ug/L	25.0	5	08/08/13 16:20	08/09/13 10:02	7440-47-3	
Cobalt, Dissolved	40.3	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:44	7440-48-4	
Copper, Dissolved	ND	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:44	7440-50-8	D3
Iron, Dissolved	349000	ug/L	100	2	08/08/13 16:20	08/09/13 09:44	7439-89-6	
Lead, Dissolved	63.5	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:44	7439-92-1	
Nickel, Dissolved	112	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:44	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	08/08/13 16:20	08/09/13 10:02	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	08/08/13 16:20	08/09/13 09:44	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	08/08/13 16:20	08/09/13 10:02	7440-28-0	D3
Zinc, Dissolved	6770	ug/L	1000	20	08/08/13 16:20	08/09/13 10:35	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	1.5	ug/L	0.20	1	08/07/13 08:30	08/07/13 11:53	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	08/07/13 08:30	08/07/13 11:35	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	08/09/13 00:00	08/12/13 10:16	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:16	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:16	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:16	67-72-1	
Naphthalene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:16	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:16	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

Sample: 316-031		Lab ID: 60150295001	Collected: 08/03/13 15:48	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:16	87-86-5	
Phenol	9930 ug/L		1000	20	08/09/13 00:00	08/12/13 10:16	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:16	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:16	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/09/13 00:00	08/12/13 10:16	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/09/13 00:00	08/12/13 10:16	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/09/13 00:00	08/12/13 10:16	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/09/13 00:00	08/12/13 10:16	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/09/13 00:00	08/12/13 10:16	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/09/13 00:00	08/12/13 10:16	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/08/13 12:30	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/08/13 12:30	75-27-4	
Bromoform	ND ug/L		200	200		08/08/13 12:30	75-25-2	
Bromomethane	ND ug/L		1000	200		08/08/13 12:30	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/08/13 12:30	56-23-5	M1
Chloroethane	ND ug/L		200	200		08/08/13 12:30	75-00-3	
Chloroform	ND ug/L		200	200		08/08/13 12:30	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/08/13 12:30	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/08/13 12:30	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 12:30	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 12:30	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/08/13 12:30	100-41-4	
Methylene chloride	ND ug/L		200	200		08/08/13 12:30	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/08/13 12:30	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/08/13 12:30	127-18-4	
Toluene	ND ug/L		200	200		08/08/13 12:30	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/08/13 12:30	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/08/13 12:30	79-00-5	
Trichloroethene	ND ug/L		200	200		08/08/13 12:30	79-01-6	M1
Vinyl chloride	ND ug/L		200	200		08/08/13 12:30	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/08/13 12:30	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	91 %		80-120	200		08/08/13 12:30	1868-53-7	D3
4-Bromofluorobenzene (S)	98 %		80-120	200		08/08/13 12:30	460-00-4	
Toluene-d8 (S)	94 %		80-120	200		08/08/13 12:30	2037-26-5	
1,2-Dichloroethane-d4 (S)	95 %		80-120	200		08/08/13 12:30	17060-07-0	
Preservation pH	7.0		1.0	200		08/08/13 12:30		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	499 mg/L		5.0	1		08/06/13 07:39		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	5.2 mg/L		5.0	1		08/07/13 07:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

Sample: 316-031		Lab ID: 60150295001	Collected: 08/03/13 15:48	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1760	mg/L	5.0	1		08/06/13 15:47		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	6.0	Std. Units	0.10	1		08/06/13 14:04		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	767	mg/L	20.0	200		08/07/13 14:34	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	46700	mg/L	5000	500		08/09/13 16:33		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

Sample: TRIP BLANK		Lab ID: 60150295002	Collected: 08/03/13 08:00	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/08/13 13:12	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/08/13 13:12	75-27-4	
Bromoform	ND ug/L		1.0	1		08/08/13 13:12	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/08/13 13:12	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/08/13 13:12	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/08/13 13:12	75-00-3	
Chloroform	ND ug/L		1.0	1		08/08/13 13:12	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/08/13 13:12	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/08/13 13:12	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 13:12	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 13:12	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/08/13 13:12	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/08/13 13:12	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/08/13 13:12	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/08/13 13:12	127-18-4	
Toluene	ND ug/L		1.0	1		08/08/13 13:12	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/08/13 13:12	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/08/13 13:12	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/08/13 13:12	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/08/13 13:12	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/08/13 13:12	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	90 %		80-120	1		08/08/13 13:12	1868-53-7	
4-Bromofluorobenzene (S)	99 %		80-120	1		08/08/13 13:12	460-00-4	
Toluene-d8 (S)	94 %		80-120	1		08/08/13 13:12	2037-26-5	
1,2-Dichloroethane-d4 (S)	93 %		80-120	1		08/08/13 13:12	17060-07-0	
Preservation pH	7.0		1.0	1		08/08/13 13:12		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch: MERP/7577

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60150295001

METHOD BLANK: 1231936

Matrix: Water

Associated Lab Samples: 60150295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/07/13 11:46	

LABORATORY CONTROL SAMPLE: 1231937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.4	88	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231938

1231939

Parameter	Units	60150362001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.0	3.0	81	60	70-130	29	20	M1, R1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch:	MERP/7576	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60150295001		

METHOD BLANK:	1231932	Matrix:	Water
Associated Lab Samples:	60150295001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/07/13 11:17	

LABORATORY CONTROL SAMPLE: 1231933						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231934												1231935	
Parameter	Units	60150362001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Mercury, Dissolved	ug/L	ND	5	5	3.8	4.0	77	80	70-130	4	20		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031
Pace Project No.: 60150295

QC Batch:	MPRP/23748	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60150295001		

METHOD BLANK: 1232008 Matrix: Water
Associated Lab Samples: 60150295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/08/13 14:51	
Antimony	ug/L	ND	10.0	08/08/13 14:51	
Arsenic	ug/L	ND	10.0	08/08/13 14:51	
Beryllium	ug/L	ND	1.0	08/08/13 14:51	
Cadmium	ug/L	ND	5.0	08/08/13 14:51	
Chromium	ug/L	ND	5.0	08/08/13 14:51	
Cobalt	ug/L	ND	5.0	08/08/13 14:51	
Copper	ug/L	ND	10.0	08/08/13 14:51	
Iron	ug/L	ND	50.0	08/08/13 14:51	
Lead	ug/L	ND	5.0	08/08/13 14:51	
Nickel	ug/L	ND	5.0	08/08/13 14:51	
Selenium	ug/L	ND	15.0	08/08/13 14:51	
Silver	ug/L	ND	7.0	08/08/13 14:51	
Thallium	ug/L	ND	20.0	08/08/13 14:51	
Zinc	ug/L	ND	50.0	08/08/13 14:51	

LABORATORY CONTROL SAMPLE: 1232009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10400	104	85-115	
Antimony	ug/L	1000	1040	104	85-115	
Arsenic	ug/L	1000	979	98	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	971	97	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	960	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	995	100	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	499	100	85-115	
Thallium	ug/L	1000	988	99	85-115	
Zinc	ug/L	1000	991	99	85-115	

MATRIX SPIKE SAMPLE: 1232010

Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	123	10000	10300	102	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

MATRIX SPIKE SAMPLE:		1232010					
Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	989	98	70-130	
Beryllium	ug/L	ND	1000	976	98	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	938	94	70-130	
Cobalt	ug/L	ND	1000	981	98	70-130	
Copper	ug/L	ND	1000	978	98	70-130	
Iron	ug/L	91.4	10000	9780	97	70-130	
Lead	ug/L	ND	1000	973	97	70-130	
Nickel	ug/L	ND	1000	991	99	70-130	
Selenium	ug/L	ND	1000	1000	100	70-130	
Silver	ug/L	ND	500	499	100	70-130	
Thallium	ug/L	ND	1000	974	97	70-130	
Zinc	ug/L	ND	1000	949	95	70-130	

MATRIX SPIKE SAMPLE:		1232011					
Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	10200	101	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	
Arsenic	ug/L	18.7	1000	1010	99	70-130	
Beryllium	ug/L	ND	1000	993	99	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	952	95	70-130	
Cobalt	ug/L	ND	1000	991	99	70-130	
Copper	ug/L	ND	1000	982	98	70-130	
Iron	ug/L	2080	10000	11700	97	70-130	
Lead	ug/L	ND	1000	977	97	70-130	
Nickel	ug/L	ND	1000	1000	100	70-130	
Selenium	ug/L	ND	1000	1020	102	70-130	
Silver	ug/L	ND	500	504	101	70-130	
Thallium	ug/L	ND	1000	976	98	70-130	
Zinc	ug/L	ND	1000	968	97	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031
Pace Project No.: 60150295

QC Batch: MPRP/23784 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60150295001

METHOD BLANK: 1233265 Matrix: Water
Associated Lab Samples: 60150295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/09/13 09:20	
Antimony, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Arsenic, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Beryllium, Dissolved	ug/L	ND	1.0	08/09/13 09:20	
Cadmium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Chromium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Cobalt, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Copper, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Iron, Dissolved	ug/L	ND	50.0	08/09/13 09:20	
Lead, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Nickel, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Selenium, Dissolved	ug/L	ND	15.0	08/09/13 09:20	
Silver, Dissolved	ug/L	ND	7.0	08/09/13 09:20	
Thallium, Dissolved	ug/L	ND	20.0	08/09/13 09:20	
Zinc, Dissolved	ug/L	ND	50.0	08/09/13 09:20	

LABORATORY CONTROL SAMPLE: 1233266

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10400	104	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	987	99	85-115	
Beryllium, Dissolved	ug/L	1000	1040	104	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	1020	102	85-115	
Cobalt, Dissolved	ug/L	1000	1020	102	85-115	
Copper, Dissolved	ug/L	1000	986	99	85-115	
Iron, Dissolved	ug/L	10000	10400	104	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	996	100	85-115	
Silver, Dissolved	ug/L	500	511	102	85-115	
Thallium, Dissolved	ug/L	1000	988	99	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267 1233268

Parameter	Units	60150334001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267 1233268											
Parameter	Units	60150334001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1050	1040	104	103	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	1020	1010	101	100	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1040	1030	104	103	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	998	987	100	99	70-130	1	10
Cobalt, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	11
Iron, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	10
Lead, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Nickel, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	514	510	103	102	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	988	978	99	98	70-130	1	6
Zinc, Dissolved	ug/L	ND	1000	1000	996	987	99	98	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch: MSV/55457 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150295001, 60150295002

METHOD BLANK: 1232937 Matrix: Water

Associated Lab Samples: 60150295001, 60150295002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,2-Dichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/08/13 11:47	
Benzene	ug/L	ND	1.0	08/08/13 11:47	
Bromodichloromethane	ug/L	ND	1.0	08/08/13 11:47	
Bromoform	ug/L	ND	1.0	08/08/13 11:47	
Bromomethane	ug/L	ND	5.0	08/08/13 11:47	
Carbon tetrachloride	ug/L	ND	1.0	08/08/13 11:47	
Chloroethane	ug/L	ND	1.0	08/08/13 11:47	
Chloroform	ug/L	ND	1.0	08/08/13 11:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Ethylbenzene	ug/L	ND	1.0	08/08/13 11:47	
Methylene chloride	ug/L	ND	1.0	08/08/13 11:47	
Tetrachloroethene	ug/L	ND	1.0	08/08/13 11:47	
Toluene	ug/L	ND	1.0	08/08/13 11:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Trichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Vinyl chloride	ug/L	ND	1.0	08/08/13 11:47	
Xylene (Total)	ug/L	ND	3.0	08/08/13 11:47	
1,2-Dichloroethane-d4 (S)	%	90	80-120	08/08/13 11:47	
4-Bromofluorobenzene (S)	%	99	80-120	08/08/13 11:47	
Toluene-d8 (S)	%	95	80-120	08/08/13 11:47	

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	14.8	74	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	106	59-138	
1,1,2-Trichloroethane	ug/L	20	17.3	87	69-127	
1,2-Dichloroethane	ug/L	20	16.2	81	71-129	
1,4-Dichlorobenzene	ug/L	20	20.0	100	68-124	
Benzene	ug/L	20	17.8	89	73-129	
Bromodichloromethane	ug/L	20	15.1	75	63-129	
Bromoform	ug/L	20	18.9	94	52-123	
Bromomethane	ug/L	20	21.6	108	10-160	
Carbon tetrachloride	ug/L	20	15.1	76	70-140	
Chloroethane	ug/L	20	16.4	82	42-160	
Chloroform	ug/L	20	14.5	72	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.3	76	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	17.2	86	66-133	
Methylene chloride	ug/L	20	16.6	83	56-135	
Tetrachloroethene	ug/L	20	18.2	91	64-143	
Toluene	ug/L	20	17.2	86	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.3	81	67-149	
Trichloroethene	ug/L	20	14.6	73	71-130	
Vinyl chloride	ug/L	20	17.7	89	41-160	
Xylene (Total)	ug/L	60	54.7	91	67-130	
1,2-Dichloroethane-d4 (S)	%			86	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			93	80-120	

MATRIX SPIKE SAMPLE: 1232939

Parameter	Units	60150295001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	2540	63	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3740	93	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	2900	72	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2700	68	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3480	85	18-147	
Benzene	ug/L	ND	4000	3090	77	37-151	
Bromodichloromethane	ug/L	ND	4000	2540	63	35-155	
Bromoform	ug/L	ND	4000	3070	74	45-133	
Bromomethane	ug/L	ND	4000	3550	89	10-160	
Carbon tetrachloride	ug/L	ND	4000	2550	64	70-140	M1
Chloroethane	ug/L	ND	4000	2680	67	14-160	
Chloroform	ug/L	ND	4000	2470	61	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2570	64	19-160	
Ethylbenzene	ug/L	ND	4000	2850	71	37-154	
Methylene chloride	ug/L	ND	4000	2800	70	15-156	
Tetrachloroethene	ug/L	ND	4000	3100	76	64-148	
Toluene	ug/L	ND	4000	2930	71	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	2750	69	54-156	
Trichloroethene	ug/L	ND	4000	2450	61	71-157	M1
Vinyl chloride	ug/L	ND	4000	2990	75	10-160	
Xylene (Total)	ug/L	ND	12000	9220	77	12-153	
1,2-Dichloroethane-d4 (S)	%				85	80-120	
4-Bromofluorobenzene (S)	%				110	80-120	
Toluene-d8 (S)	%				94	80-120	
Preservation pH			7.0	7.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch: OEXT/39759

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60150295001

METHOD BLANK: 1233568

Matrix: Water

Associated Lab Samples: 60150295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/12/13 09:14	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/12/13 09:14	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachloroethane	ug/L	ND	5.0	08/12/13 09:14	
Naphthalene	ug/L	ND	5.0	08/12/13 09:14	
Nitrobenzene	ug/L	ND	5.0	08/12/13 09:14	
Pentachlorophenol	ug/L	ND	5.0	08/12/13 09:14	
Phenol	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Tribromophenol (S)	%	76	39-119	08/12/13 09:14	
2-Fluorobiphenyl (S)	%	76	36-120	08/12/13 09:14	
2-Fluorophenol (S)	%	43	18-120	08/12/13 09:14	
Nitrobenzene-d5 (S)	%	75	32-120	08/12/13 09:14	
Phenol-d6 (S)	%	29	12-120	08/12/13 09:14	
Terphenyl-d14 (S)	%	75	44-120	08/12/13 09:14	

LABORATORY CONTROL SAMPLE: 1233569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	40.2	80	44-120	
2,4,6-Trichlorophenol	ug/L	50	43.3	87	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	51.9	104	31-147	
Hexachloro-1,3-butadiene	ug/L	50	38.7	77	41-116	
Hexachlorocyclopentadiene	ug/L	100	75.4	75	31-120	
Hexachloroethane	ug/L	50	39.8	80	40-113	
Naphthalene	ug/L	50	42.0	84	48-120	
Nitrobenzene	ug/L	50	42.5	85	47-120	
Pentachlorophenol	ug/L	50	46.4	93	43-127	
Phenol	ug/L	50	16.8	34	15-112	
2,4,6-Tribromophenol (S)	%			89	39-119	
2-Fluorobiphenyl (S)	%			85	36-120	
2-Fluorophenol (S)	%			49	18-120	
Nitrobenzene-d5 (S)	%			80	32-120	
Phenol-d6 (S)	%			33	12-120	
Terphenyl-d14 (S)	%			89	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch: WET/42723

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60150295001

METHOD BLANK: 1231303

Matrix: Water

Associated Lab Samples: 60150295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/06/13 07:31	

LABORATORY CONTROL SAMPLE: 1231304

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.8	100	78-114	

MATRIX SPIKE SAMPLE: 1231305

Parameter	Units	60150289001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.8	43.3	98	78-114	

SAMPLE DUPLICATE: 1231306

Parameter	Units	60149960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	594	518	14	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch: WET/42743

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150295001

METHOD BLANK: 1231879

Matrix: Water

Associated Lab Samples: 60150295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/07/13 07:27	

LABORATORY CONTROL SAMPLE: 1231880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1231912

Parameter	Units	60150085001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	22.1	95	64-132	

SAMPLE DUPLICATE: 1231915

Parameter	Units	60149960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	70.0	51.9	30	34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch: WET/42735

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150295001

METHOD BLANK: 1231637

Matrix: Water

Associated Lab Samples: 60150295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/06/13 15:46	

SAMPLE DUPLICATE: 1231638

Parameter	Units	60150016001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	75.0	69.0	8	25	

SAMPLE DUPLICATE: 1231639

Parameter	Units	60150153001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch: WET/42739

Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B

Analysis Description: 4500H+B pH

Associated Lab Samples: 60150295001

SAMPLE DUPLICATE: 1231691

Parameter	Units	60150295001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.0	6.0	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch:	WETA/25712	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	60150295001		

METHOD BLANK: 1232218 Matrix: Water

Associated Lab Samples: 60150295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/07/13 14:22	

LABORATORY CONTROL SAMPLE: 1232219

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	105	90-110	

MATRIX SPIKE SAMPLE: 1232220

Parameter	Units	60149918006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.12	2	2.3	111	90-110	M1

MATRIX SPIKE SAMPLE: 1232222

Parameter	Units	60150017002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	2.0	99	90-110	

SAMPLE DUPLICATE: 1232221

Parameter	Units	60149943001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	0.10	0.11	2	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

QC Batch:	WETA/25717	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150295001		

METHOD BLANK: 1232729 Matrix: Water
Associated Lab Samples: 60150295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/09/13 16:28	

LABORATORY CONTROL SAMPLE: 1232730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.7	107	90-110	

MATRIX SPIKE SAMPLE: 1232731

Parameter	Units	60150285001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	23.3	50	72.8	99	90-110	

MATRIX SPIKE SAMPLE: 1232733

Parameter	Units	60149898005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	37.9	50	74.7	74	90-110	M1

SAMPLE DUPLICATE: 1232732

Parameter	Units	60150299001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	44900	44000	2	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D9 Dissolved result is greater than the total. Data is within laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-031

Pace Project No.: 60150295

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150295001	316-031	EPA 200.7	MPRP/23748	EPA 200.7	ICP/18621
60150295001	316-031	EPA 200.7	MPRP/23784	EPA 200.7	ICP/18641
60150295001	316-031	EPA 245.1	MERP/7577	EPA 245.1	MERC/7532
60150295001	316-031	EPA 245.1	MERP/7576	EPA 245.1	MERC/7531
60150295001	316-031	EPA 625	OEXT/39759	EPA 625	MSSV/12606
60150295001	316-031	EPA 624 Low	MSV/55457		
60150295002	TRIP BLANK	EPA 624 Low	MSV/55457		
60150295001	316-031	EPA 1664A	WET/42723		
60150295001	316-031	EPA 1664A	WET/42743		
60150295001	316-031	SM 2540D	WET/42735		
60150295001	316-031	SM 4500-H+B	WET/42739		
60150295001	316-031	EPA 350.1	WETA/25712		
60150295001	316-031	EPA 410.4	WETA/25717		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150295



60150295

Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194 Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 1.5 (circle one)

Date and initials of person examining contents: JES 6/5/13 1340

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>pH BOD</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>water</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>mb</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative <u>12510-1-3</u>
Pace Trip Blank lot # (if purchased): <u>covered</u>		15.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 8/7

Missouri

Page 27 of 27

August 12, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-032
Pace Project No.: 60150298

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 05, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-032

Pace Project No.: 60150298

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-032

Pace Project No.: 60150298

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150298001	316-032	Water	08/04/13 12:21	08/05/13 13:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-032

Pace Project No.: 60150298

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150298001	316-032	SM 5210B	JML	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-032

Pace Project No.: 60150298

Sample: 316-032		Lab ID: 60150298001	Collected: 08/04/13 12:21	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	26300	mg/L	2.0	1	08/05/13 15:33	08/10/13 11:03		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150298

QC Batch: WET/42721

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150298001

METHOD BLANK: 1231194

Matrix: Water

Associated Lab Samples: 60150298001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/10/13 10:55	

LABORATORY CONTROL SAMPLE: 1231195

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	210	106	85-115	

SAMPLE DUPLICATE: 1231196

Parameter	Units	60150294001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	31000	29400	5	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-032

Pace Project No.: 60150298

DEFINITIONS

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ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-032

Pace Project No.: 60150298

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150298001	316-032	SM 5210B	WET/42721	SM 5210B	WET/42817

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150298

60150298

Client Name: Barr Eng.Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☒ XRushTracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐Thermometer Used: T-112 / T-194Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)Cooler Temperature: 1.9Date and initials of person examining contents: JJS 11/25

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>JJS</u> Lot # of added preservative <u>1250-1-3</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	18.
Pace Trip Blank lot # (if purchased): <u>1250-1-3</u>		19.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	20.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	21. List State:

Client Notification/ Resolution:Copy COC to Client? Y ☒ N ☐Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]Date: [Signature]

August 12, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-032
Pace Project No.: 60150299

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 05, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



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CERTIFICATIONS

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150299001	316-032	Water	08/04/13 12:21	08/05/13 13:15
60150299002	TRIP BLANK	Water	08/04/13 08:00	08/05/13 13:15

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150299001	316-032	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	NDJ	1
		EPA 245.1	NDJ	1
		EPA 625	JMT	16
		EPA 624 Low	AAM	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	JML	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60150299002	TRIP BLANK	EPA 624 Low	AAM	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

Sample: 316-032		Lab ID: 60150299001	Collected: 08/04/13 12:21	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	7460 ug/L		150	2	08/07/13 10:20	08/08/13 16:22	7429-90-5	
Antimony	29.4 ug/L		20.0	2	08/07/13 10:20	08/08/13 16:22	7440-36-0	
Arsenic	502 ug/L		20.0	2	08/07/13 10:20	08/08/13 16:22	7440-38-2	
Beryllium	ND ug/L		2.0	2	08/07/13 10:20	08/08/13 16:22	7440-41-7	D3
Cadmium	ND ug/L		10.0	2	08/07/13 10:20	08/08/13 16:22	7440-43-9	D3
Chromium	203 ug/L		25.0	5	08/07/13 10:20	08/08/13 16:55	7440-47-3	
Cobalt	49.9 ug/L		10.0	2	08/07/13 10:20	08/08/13 16:22	7440-48-4	
Copper	ND ug/L		20.0	2	08/07/13 10:20	08/08/13 16:22	7440-50-8	D3
Iron	572000 ug/L		100	2	08/07/13 10:20	08/08/13 16:22	7439-89-6	
Lead	103 ug/L		10.0	2	08/07/13 10:20	08/08/13 16:22	7439-92-1	
Nickel	115 ug/L		10.0	2	08/07/13 10:20	08/08/13 16:22	7440-02-0	
Selenium	ND ug/L		75.0	5	08/07/13 10:20	08/08/13 16:55	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/07/13 10:20	08/08/13 16:22	7440-22-4	D3
Thallium	ND ug/L		100	5	08/07/13 10:20	08/08/13 16:55	7440-28-0	D3
Zinc	9480 ug/L		1000	20	08/07/13 10:20	08/08/13 17:11	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2470 ug/L		150	2	08/08/13 16:20	08/09/13 09:48	7429-90-5	
Antimony, Dissolved	28.2 ug/L		20.0	2	08/08/13 16:20	08/09/13 09:48	7440-36-0	
Arsenic, Dissolved	430 ug/L		20.0	2	08/08/13 16:20	08/09/13 09:48	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/08/13 16:20	08/09/13 10:05	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	08/08/13 16:20	08/09/13 09:48	7440-43-9	D3
Chromium, Dissolved	178 ug/L		25.0	5	08/08/13 16:20	08/09/13 10:05	7440-47-3	
Cobalt, Dissolved	39.4 ug/L		10.0	2	08/08/13 16:20	08/09/13 09:48	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/08/13 16:20	08/09/13 09:48	7440-50-8	D3
Iron, Dissolved	373000 ug/L		100	2	08/08/13 16:20	08/09/13 09:48	7439-89-6	
Lead, Dissolved	59.9 ug/L		10.0	2	08/08/13 16:20	08/09/13 09:48	7439-92-1	
Nickel, Dissolved	101 ug/L		10.0	2	08/08/13 16:20	08/09/13 09:48	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/08/13 16:20	08/09/13 10:05	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/08/13 16:20	08/09/13 09:48	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/08/13 16:20	08/09/13 10:05	7440-28-0	D3
Zinc, Dissolved	7450 ug/L		1000	20	08/08/13 16:20	08/09/13 10:38	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.47 ug/L		0.20	1	08/07/13 08:30	08/07/13 11:55	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/07/13 08:30	08/07/13 11:37	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/09/13 00:00	08/12/13 10:37	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:37	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:37	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:37	67-72-1	
Naphthalene	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:37	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:37	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

Sample: 316-032		Lab ID: 60150299001	Collected: 08/04/13 12:21	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:37	87-86-5	
Phenol	6390 ug/L		1000	20	08/09/13 00:00	08/12/13 10:37	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:37	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:37	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/09/13 00:00	08/12/13 10:37	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/09/13 00:00	08/12/13 10:37	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/09/13 00:00	08/12/13 10:37	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/09/13 00:00	08/12/13 10:37	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/09/13 00:00	08/12/13 10:37	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/09/13 00:00	08/12/13 10:37	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/08/13 13:34	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/08/13 13:34	75-27-4	
Bromoform	ND ug/L		200	200		08/08/13 13:34	75-25-2	
Bromomethane	ND ug/L		1000	200		08/08/13 13:34	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/08/13 13:34	56-23-5	
Chloroethane	ND ug/L		200	200		08/08/13 13:34	75-00-3	
Chloroform	ND ug/L		200	200		08/08/13 13:34	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/08/13 13:34	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/08/13 13:34	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 13:34	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 13:34	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/08/13 13:34	100-41-4	
Methylene chloride	ND ug/L		200	200		08/08/13 13:34	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/08/13 13:34	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/08/13 13:34	127-18-4	
Toluene	ND ug/L		200	200		08/08/13 13:34	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/08/13 13:34	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/08/13 13:34	79-00-5	
Trichloroethene	ND ug/L		200	200		08/08/13 13:34	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/08/13 13:34	75-01-4	
Xylene (Total)	1400 ug/L		600	200		08/08/13 13:34	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	89 %		80-120	200		08/08/13 13:34	1868-53-7	D3
4-Bromofluorobenzene (S)	97 %		80-120	200		08/08/13 13:34	460-00-4	
Toluene-d8 (S)	94 %		80-120	200		08/08/13 13:34	2037-26-5	
1,2-Dichloroethane-d4 (S)	96 %		80-120	200		08/08/13 13:34	17060-07-0	
Preservation pH	7.0		1.0	200		08/08/13 13:34		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	411 mg/L		5.0	1		08/06/13 07:39		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/07/13 07:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

Sample: 316-032		Lab ID: 60150299001	Collected: 08/04/13 12:21	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1500	mg/L	5.0	1		08/06/13 15:47		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.7	Std. Units	0.10	1		08/06/13 14:04		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	597	mg/L	20.0	200		08/07/13 14:35	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	44900	mg/L	5000	500		08/09/13 16:33		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

Sample: TRIP BLANK		Lab ID: 60150299002	Collected: 08/04/13 08:00	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/08/13 13:55	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/08/13 13:55	75-27-4	
Bromoform	ND ug/L		1.0	1		08/08/13 13:55	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/08/13 13:55	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/08/13 13:55	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/08/13 13:55	75-00-3	
Chloroform	ND ug/L		1.0	1		08/08/13 13:55	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/08/13 13:55	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/08/13 13:55	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 13:55	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 13:55	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/08/13 13:55	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/08/13 13:55	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/08/13 13:55	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/08/13 13:55	127-18-4	
Toluene	ND ug/L		1.0	1		08/08/13 13:55	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/08/13 13:55	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/08/13 13:55	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/08/13 13:55	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/08/13 13:55	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/08/13 13:55	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	90 %		80-120	1		08/08/13 13:55	1868-53-7	
4-Bromofluorobenzene (S)	99 %		80-120	1		08/08/13 13:55	460-00-4	
Toluene-d8 (S)	93 %		80-120	1		08/08/13 13:55	2037-26-5	
1,2-Dichloroethane-d4 (S)	92 %		80-120	1		08/08/13 13:55	17060-07-0	
Preservation pH	7.0		1.0	1		08/08/13 13:55		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch:	MERP/7577	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury
Associated Lab Samples:	60150299001		

METHOD BLANK:	1231936	Matrix:	Water
Associated Lab Samples:	60150299001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/07/13 11:46	

LABORATORY CONTROL SAMPLE: 1231937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.4	88	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231938 1231939

Parameter	Units	60150362001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.0	3.0	81	60	70-130	29	20	M1, R1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch:	MERP/7576	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60150299001		

METHOD BLANK: 1231932 Matrix: Water

Associated Lab Samples: 60150299001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/07/13 11:17	

LABORATORY CONTROL SAMPLE: 1231933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231934 1231935

Parameter	Units	60150362001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	3.8	4.0	77	80	70-130	4	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch: MPRP/23748

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60150299001

METHOD BLANK: 1232008

Matrix: Water

Associated Lab Samples: 60150299001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/08/13 14:51	
Antimony	ug/L	ND	10.0	08/08/13 14:51	
Arsenic	ug/L	ND	10.0	08/08/13 14:51	
Beryllium	ug/L	ND	1.0	08/08/13 14:51	
Cadmium	ug/L	ND	5.0	08/08/13 14:51	
Chromium	ug/L	ND	5.0	08/08/13 14:51	
Cobalt	ug/L	ND	5.0	08/08/13 14:51	
Copper	ug/L	ND	10.0	08/08/13 14:51	
Iron	ug/L	ND	50.0	08/08/13 14:51	
Lead	ug/L	ND	5.0	08/08/13 14:51	
Nickel	ug/L	ND	5.0	08/08/13 14:51	
Selenium	ug/L	ND	15.0	08/08/13 14:51	
Silver	ug/L	ND	7.0	08/08/13 14:51	
Thallium	ug/L	ND	20.0	08/08/13 14:51	
Zinc	ug/L	ND	50.0	08/08/13 14:51	

LABORATORY CONTROL SAMPLE: 1232009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10400	104	85-115	
Antimony	ug/L	1000	1040	104	85-115	
Arsenic	ug/L	1000	979	98	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	971	97	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	960	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	995	100	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	499	100	85-115	
Thallium	ug/L	1000	988	99	85-115	
Zinc	ug/L	1000	991	99	85-115	

MATRIX SPIKE SAMPLE: 1232010

Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	123	10000	10300	102	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

MATRIX SPIKE SAMPLE:		1232010					
Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	989	98	70-130	
Beryllium	ug/L	ND	1000	976	98	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	938	94	70-130	
Cobalt	ug/L	ND	1000	981	98	70-130	
Copper	ug/L	ND	1000	978	98	70-130	
Iron	ug/L	91.4	10000	9780	97	70-130	
Lead	ug/L	ND	1000	973	97	70-130	
Nickel	ug/L	ND	1000	991	99	70-130	
Selenium	ug/L	ND	1000	1000	100	70-130	
Silver	ug/L	ND	500	499	100	70-130	
Thallium	ug/L	ND	1000	974	97	70-130	
Zinc	ug/L	ND	1000	949	95	70-130	

MATRIX SPIKE SAMPLE:		1232011					
Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	10200	101	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	
Arsenic	ug/L	18.7	1000	1010	99	70-130	
Beryllium	ug/L	ND	1000	993	99	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	952	95	70-130	
Cobalt	ug/L	ND	1000	991	99	70-130	
Copper	ug/L	ND	1000	982	98	70-130	
Iron	ug/L	2080	10000	11700	97	70-130	
Lead	ug/L	ND	1000	977	97	70-130	
Nickel	ug/L	ND	1000	1000	100	70-130	
Selenium	ug/L	ND	1000	1020	102	70-130	
Silver	ug/L	ND	500	504	101	70-130	
Thallium	ug/L	ND	1000	976	98	70-130	
Zinc	ug/L	ND	1000	968	97	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032
Pace Project No.: 60150299

QC Batch: MPRP/23784 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60150299001

METHOD BLANK: 1233265 Matrix: Water
Associated Lab Samples: 60150299001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/09/13 09:20	
Antimony, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Arsenic, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Beryllium, Dissolved	ug/L	ND	1.0	08/09/13 09:20	
Cadmium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Chromium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Cobalt, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Copper, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Iron, Dissolved	ug/L	ND	50.0	08/09/13 09:20	
Lead, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Nickel, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Selenium, Dissolved	ug/L	ND	15.0	08/09/13 09:20	
Silver, Dissolved	ug/L	ND	7.0	08/09/13 09:20	
Thallium, Dissolved	ug/L	ND	20.0	08/09/13 09:20	
Zinc, Dissolved	ug/L	ND	50.0	08/09/13 09:20	

LABORATORY CONTROL SAMPLE: 1233266

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10400	104	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	987	99	85-115	
Beryllium, Dissolved	ug/L	1000	1040	104	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	1020	102	85-115	
Cobalt, Dissolved	ug/L	1000	1020	102	85-115	
Copper, Dissolved	ug/L	1000	986	99	85-115	
Iron, Dissolved	ug/L	10000	10400	104	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	996	100	85-115	
Silver, Dissolved	ug/L	500	511	102	85-115	
Thallium, Dissolved	ug/L	1000	988	99	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267 1233268

Parameter	Units	60150334001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267 1233268											
Parameter	Units	60150334001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1050	1040	104	103	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	1020	1010	101	100	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1040	1030	104	103	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	998	987	100	99	70-130	1	10
Cobalt, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	11
Iron, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	10
Lead, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Nickel, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	514	510	103	102	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	988	978	99	98	70-130	1	6
Zinc, Dissolved	ug/L	ND	1000	1000	996	987	99	98	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch: MSV/55457 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150299001, 60150299002

METHOD BLANK: 1232937 Matrix: Water

Associated Lab Samples: 60150299001, 60150299002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,2-Dichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/08/13 11:47	
Benzene	ug/L	ND	1.0	08/08/13 11:47	
Bromodichloromethane	ug/L	ND	1.0	08/08/13 11:47	
Bromoform	ug/L	ND	1.0	08/08/13 11:47	
Bromomethane	ug/L	ND	5.0	08/08/13 11:47	
Carbon tetrachloride	ug/L	ND	1.0	08/08/13 11:47	
Chloroethane	ug/L	ND	1.0	08/08/13 11:47	
Chloroform	ug/L	ND	1.0	08/08/13 11:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Ethylbenzene	ug/L	ND	1.0	08/08/13 11:47	
Methylene chloride	ug/L	ND	1.0	08/08/13 11:47	
Tetrachloroethene	ug/L	ND	1.0	08/08/13 11:47	
Toluene	ug/L	ND	1.0	08/08/13 11:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Trichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Vinyl chloride	ug/L	ND	1.0	08/08/13 11:47	
Xylene (Total)	ug/L	ND	3.0	08/08/13 11:47	
1,2-Dichloroethane-d4 (S)	%	90	80-120	08/08/13 11:47	
4-Bromofluorobenzene (S)	%	99	80-120	08/08/13 11:47	
Toluene-d8 (S)	%	95	80-120	08/08/13 11:47	

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	14.8	74	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	106	59-138	
1,1,2-Trichloroethane	ug/L	20	17.3	87	69-127	
1,2-Dichloroethane	ug/L	20	16.2	81	71-129	
1,4-Dichlorobenzene	ug/L	20	20.0	100	68-124	
Benzene	ug/L	20	17.8	89	73-129	
Bromodichloromethane	ug/L	20	15.1	75	63-129	
Bromoform	ug/L	20	18.9	94	52-123	
Bromomethane	ug/L	20	21.6	108	10-160	
Carbon tetrachloride	ug/L	20	15.1	76	70-140	
Chloroethane	ug/L	20	16.4	82	42-160	
Chloroform	ug/L	20	14.5	72	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.3	76	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	17.2	86	66-133	
Methylene chloride	ug/L	20	16.6	83	56-135	
Tetrachloroethene	ug/L	20	18.2	91	64-143	
Toluene	ug/L	20	17.2	86	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.3	81	67-149	
Trichloroethene	ug/L	20	14.6	73	71-130	
Vinyl chloride	ug/L	20	17.7	89	41-160	
Xylene (Total)	ug/L	60	54.7	91	67-130	
1,2-Dichloroethane-d4 (S)	%			86	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			93	80-120	

MATRIX SPIKE SAMPLE: 1232939

Parameter	Units	60150295001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	2540	63	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3740	93	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	2900	72	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2700	68	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3480	85	18-147	
Benzene	ug/L	ND	4000	3090	77	37-151	
Bromodichloromethane	ug/L	ND	4000	2540	63	35-155	
Bromoform	ug/L	ND	4000	3070	74	45-133	
Bromomethane	ug/L	ND	4000	3550	89	10-160	
Carbon tetrachloride	ug/L	ND	4000	2550	64	70-140	M1
Chloroethane	ug/L	ND	4000	2680	67	14-160	
Chloroform	ug/L	ND	4000	2470	61	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2570	64	19-160	
Ethylbenzene	ug/L	ND	4000	2850	71	37-154	
Methylene chloride	ug/L	ND	4000	2800	70	15-156	
Tetrachloroethene	ug/L	ND	4000	3100	76	64-148	
Toluene	ug/L	ND	4000	2930	71	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	2750	69	54-156	
Trichloroethene	ug/L	ND	4000	2450	61	71-157	M1
Vinyl chloride	ug/L	ND	4000	2990	75	10-160	
Xylene (Total)	ug/L	ND	12000	9220	77	12-153	
1,2-Dichloroethane-d4 (S)	%				85	80-120	
4-Bromofluorobenzene (S)	%				110	80-120	
Toluene-d8 (S)	%				94	80-120	
Preservation pH			7.0	7.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032
Pace Project No.: 60150299

QC Batch:	OEXT/39759	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60150299001		

METHOD BLANK: 1233568 Matrix: Water
Associated Lab Samples: 60150299001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/12/13 09:14	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/12/13 09:14	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachloroethane	ug/L	ND	5.0	08/12/13 09:14	
Naphthalene	ug/L	ND	5.0	08/12/13 09:14	
Nitrobenzene	ug/L	ND	5.0	08/12/13 09:14	
Pentachlorophenol	ug/L	ND	5.0	08/12/13 09:14	
Phenol	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Tribromophenol (S)	%	76	39-119	08/12/13 09:14	
2-Fluorobiphenyl (S)	%	76	36-120	08/12/13 09:14	
2-Fluorophenol (S)	%	43	18-120	08/12/13 09:14	
Nitrobenzene-d5 (S)	%	75	32-120	08/12/13 09:14	
Phenol-d6 (S)	%	29	12-120	08/12/13 09:14	
Terphenyl-d14 (S)	%	75	44-120	08/12/13 09:14	

LABORATORY CONTROL SAMPLE: 1233569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	40.2	80	44-120	
2,4,6-Trichlorophenol	ug/L	50	43.3	87	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	51.9	104	31-147	
Hexachloro-1,3-butadiene	ug/L	50	38.7	77	41-116	
Hexachlorocyclopentadiene	ug/L	100	75.4	75	31-120	
Hexachloroethane	ug/L	50	39.8	80	40-113	
Naphthalene	ug/L	50	42.0	84	48-120	
Nitrobenzene	ug/L	50	42.5	85	47-120	
Pentachlorophenol	ug/L	50	46.4	93	43-127	
Phenol	ug/L	50	16.8	34	15-112	
2,4,6-Tribromophenol (S)	%			89	39-119	
2-Fluorobiphenyl (S)	%			85	36-120	
2-Fluorophenol (S)	%			49	18-120	
Nitrobenzene-d5 (S)	%			80	32-120	
Phenol-d6 (S)	%			33	12-120	
Terphenyl-d14 (S)	%			89	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch: WET/42723

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60150299001

METHOD BLANK: 1231303

Matrix: Water

Associated Lab Samples: 60150299001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/06/13 07:31	

LABORATORY CONTROL SAMPLE: 1231304

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.8	100	78-114	

MATRIX SPIKE SAMPLE: 1231305

Parameter	Units	60150289001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.8	43.3	98	78-114	

SAMPLE DUPLICATE: 1231306

Parameter	Units	60149960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	594	518	14	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch: WET/42743

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150299001

METHOD BLANK: 1231879

Matrix: Water

Associated Lab Samples: 60150299001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/07/13 07:27	

LABORATORY CONTROL SAMPLE: 1231880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1231912

Parameter	Units	60150085001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	22.1	95	64-132	

SAMPLE DUPLICATE: 1231915

Parameter	Units	60149960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	70.0	51.9	30	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch: WET/42735

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150299001

METHOD BLANK: 1231637

Matrix: Water

Associated Lab Samples: 60150299001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/06/13 15:46	

SAMPLE DUPLICATE: 1231638

Parameter	Units	60150016001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	75.0	69.0	8	25	

SAMPLE DUPLICATE: 1231639

Parameter	Units	60150153001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch: WET/42739 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150299001

SAMPLE DUPLICATE: 1231691

Parameter	Units	60150295001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.0	6.0	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch:	WETA/25712	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	60150299001		

METHOD BLANK: 1232218 Matrix: Water
Associated Lab Samples: 60150299001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/07/13 14:22	

LABORATORY CONTROL SAMPLE: 1232219

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	105	90-110	

MATRIX SPIKE SAMPLE: 1232220

Parameter	Units	60149918006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.12	2	2.3	111	90-110	M1

MATRIX SPIKE SAMPLE: 1232222

Parameter	Units	60150017002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	2.0	99	90-110	

SAMPLE DUPLICATE: 1232221

Parameter	Units	60149943001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	0.10	0.11	2	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

QC Batch:	WETA/25717	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150299001		

METHOD BLANK: 1232729 Matrix: Water

Associated Lab Samples: 60150299001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/09/13 16:28	

LABORATORY CONTROL SAMPLE: 1232730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.7	107	90-110	

MATRIX SPIKE SAMPLE: 1232731

Parameter	Units	60150285001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	23.3	50	72.8	99	90-110	

MATRIX SPIKE SAMPLE: 1232733

Parameter	Units	60149898005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	37.9	50	74.7	74	90-110	M1

SAMPLE DUPLICATE: 1232732

Parameter	Units	60150299001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	44900	44000	2	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-032

Pace Project No.: 60150299

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150299001	316-032	EPA 200.7	MPRP/23748	EPA 200.7	ICP/18621
60150299001	316-032	EPA 200.7	MPRP/23784	EPA 200.7	ICP/18641
60150299001	316-032	EPA 245.1	MERP/7577	EPA 245.1	MERC/7532
60150299001	316-032	EPA 245.1	MERP/7576	EPA 245.1	MERC/7531
60150299001	316-032	EPA 625	OEXT/39759	EPA 625	MSSV/12606
60150299001	316-032	EPA 624 Low	MSV/55457		
60150299002	TRIP BLANK	EPA 624 Low	MSV/55457		
60150299001	316-032	EPA 1664A	WET/42723		
60150299001	316-032	EPA 1664A	WET/42743		
60150299001	316-032	SM 2540D	WET/42735		
60150299001	316-032	SM 4500-H+B	WET/42739		
60150299001	316-032	EPA 350.1	WETA/25712		
60150299001	316-032	EPA 410.4	WETA/25717		

REPORT OF LABORATORY ANALYSIS

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WO#: 60150299



60150299



Sample Condition Upon Receipt

Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.9

Date and initials of person examining contents: JS 12/5

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>PH</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☒ N/A	16. <u>Samples not able to be preserved.</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☒ N/A	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>JS</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative <u>1250-1-3</u>
Pace Trip Blank lot # (if purchased): <u>60401</u>		17.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	18.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	19. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 12/13

August 12, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-33
Pace Project No.: 60150300

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 05, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-33

Pace Project No.: 60150300

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-33

Pace Project No.: 60150300

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150300001	316-33	Water	08/05/13 06:42	08/05/13 13:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-33

Pace Project No.: 60150300

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150300001	316-33	SM 5210B	JML	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-33

Pace Project No.: 60150300

Sample: 316-33		Lab ID: 60150300001	Collected: 08/05/13 06:42	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	27400	mg/L	2.0	1	08/05/13 15:33	08/10/13 11:05		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150300

QC Batch: WET/42721

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150300001

METHOD BLANK: 1231194

Matrix: Water

Associated Lab Samples: 60150300001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/10/13 10:55	

LABORATORY CONTROL SAMPLE: 1231195

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	210	106	85-115	

SAMPLE DUPLICATE: 1231196

Parameter	Units	60150294001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	31000	29400	5	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-33

Pace Project No.: 60150300

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-33

Pace Project No.: 60150300

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150300001	316-33	SM 5210B	WET/42721	SM 5210B	WET/42817

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150300



Client Name: Barr Eng

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ 2P1C

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1-3

Optional

Proj Due Date:

Proj Name:

Date and initials of person examining contents: AV 8/5/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BoB</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water). Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		18.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 4/7/13

August 12, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-33
Pace Project No.: 60150301

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 05, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150301001	316-33	Water	08/05/13 06:42	08/05/13 13:15
60150301002	TRIP BLANK	Water	08/05/13 08:00	08/05/13 13:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150301001	316-33	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	NDJ	1
		EPA 245.1	NDJ	1
		EPA 625	JMT	16
		EPA 624 Low	AAM	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	JML	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60150301002	TRIP BLANK	EPA 624 Low	AAM	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

Sample: 316-33		Lab ID: 60150301001	Collected: 08/05/13 06:42	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	15500	ug/L	150	2	08/07/13 10:20	08/08/13 16:25	7429-90-5	
Antimony	30.4	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:25	7440-36-0	
Arsenic	571	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:25	7440-38-2	
Beryllium	ND	ug/L	2.0	2	08/07/13 10:20	08/08/13 16:25	7440-41-7	D3
Cadmium	ND	ug/L	25.0	5	08/07/13 10:20	08/08/13 16:58	7440-43-9	D3
Chromium	246	ug/L	25.0	5	08/07/13 10:20	08/08/13 16:58	7440-47-3	
Cobalt	62.0	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:25	7440-48-4	
Copper	20.5	ug/L	20.0	2	08/07/13 10:20	08/08/13 16:25	7440-50-8	
Iron	850000	ug/L	100	2	08/07/13 10:20	08/08/13 16:25	7439-89-6	
Lead	186	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:25	7439-92-1	
Nickel	138	ug/L	10.0	2	08/07/13 10:20	08/08/13 16:25	7440-02-0	
Selenium	ND	ug/L	75.0	5	08/07/13 10:20	08/08/13 16:58	7782-49-2	D3
Silver	ND	ug/L	14.0	2	08/07/13 10:20	08/08/13 16:25	7440-22-4	D3
Thallium	ND	ug/L	100	5	08/07/13 10:20	08/08/13 16:58	7440-28-0	D3
Zinc	11900	ug/L	1000	20	08/07/13 10:20	08/08/13 17:14	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3010	ug/L	150	2	08/08/13 16:20	08/09/13 09:51	7429-90-5	
Antimony, Dissolved	35.1	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:51	7440-36-0	D9
Arsenic, Dissolved	477	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:51	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	5	08/08/13 16:20	08/09/13 10:25	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:51	7440-43-9	D3
Chromium, Dissolved	197	ug/L	25.0	5	08/08/13 16:20	08/09/13 10:25	7440-47-3	
Cobalt, Dissolved	43.3	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:51	7440-48-4	
Copper, Dissolved	ND	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:51	7440-50-8	D3
Iron, Dissolved	479000	ug/L	100	2	08/08/13 16:20	08/09/13 09:51	7439-89-6	
Lead, Dissolved	67.7	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:51	7439-92-1	
Nickel, Dissolved	108	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:51	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	08/08/13 16:20	08/09/13 10:25	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	08/08/13 16:20	08/09/13 09:51	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	08/08/13 16:20	08/09/13 10:25	7440-28-0	D3
Zinc, Dissolved	9430	ug/L	1000	20	08/08/13 16:20	08/09/13 10:41	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.20	1	08/07/13 08:30	08/07/13 11:57	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	08/07/13 08:30	08/07/13 11:44	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	08/09/13 00:00	08/12/13 10:58	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:58	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:58	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:58	67-72-1	
Naphthalene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:58	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	08/09/13 00:00	08/12/13 10:58	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

Sample: 316-33		Lab ID: 60150301001	Collected: 08/05/13 06:42	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:58	87-86-5	
Phenol	10700 ug/L		1000	20	08/09/13 00:00	08/12/13 10:58	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:58	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/12/13 10:58	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/09/13 00:00	08/12/13 10:58	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/09/13 00:00	08/12/13 10:58	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/09/13 00:00	08/12/13 10:58	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/09/13 00:00	08/12/13 10:58	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/09/13 00:00	08/12/13 10:58	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/09/13 00:00	08/12/13 10:58	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/08/13 14:16	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/08/13 14:16	75-27-4	
Bromoform	ND ug/L		200	200		08/08/13 14:16	75-25-2	
Bromomethane	ND ug/L		1000	200		08/08/13 14:16	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/08/13 14:16	56-23-5	
Chloroethane	ND ug/L		200	200		08/08/13 14:16	75-00-3	
Chloroform	ND ug/L		200	200		08/08/13 14:16	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/08/13 14:16	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/08/13 14:16	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 14:16	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 14:16	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/08/13 14:16	100-41-4	
Methylene chloride	ND ug/L		200	200		08/08/13 14:16	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/08/13 14:16	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/08/13 14:16	127-18-4	
Toluene	ND ug/L		200	200		08/08/13 14:16	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/08/13 14:16	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/08/13 14:16	79-00-5	
Trichloroethene	ND ug/L		200	200		08/08/13 14:16	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/08/13 14:16	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/08/13 14:16	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	89 %		80-120	200		08/08/13 14:16	1868-53-7	D3
4-Bromofluorobenzene (S)	97 %		80-120	200		08/08/13 14:16	460-00-4	
Toluene-d8 (S)	94 %		80-120	200		08/08/13 14:16	2037-26-5	
1,2-Dichloroethane-d4 (S)	93 %		80-120	200		08/08/13 14:16	17060-07-0	
Preservation pH	7.0		1.0	200		08/08/13 14:16		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	563 mg/L		5.0	1		08/06/13 07:39		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	25.9 mg/L		5.0	1		08/07/13 07:32		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

Sample: 316-33		Lab ID: 60150301001	Collected: 08/05/13 06:42	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1520	mg/L	5.0	1		08/06/13 15:48		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.7	Std. Units	0.10	1		08/06/13 14:04		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	686	mg/L	20.0	200		08/07/13 14:36	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	46000	mg/L	5000	500		08/09/13 16:33		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

Sample: TRIP BLANK		Lab ID: 60150301002	Collected: 08/05/13 08:00	Received: 08/05/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/08/13 14:37	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/08/13 14:37	75-27-4	
Bromoform	ND ug/L		1.0	1		08/08/13 14:37	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/08/13 14:37	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/08/13 14:37	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/08/13 14:37	75-00-3	
Chloroform	ND ug/L		1.0	1		08/08/13 14:37	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/08/13 14:37	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/08/13 14:37	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 14:37	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 14:37	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/08/13 14:37	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/08/13 14:37	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/08/13 14:37	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/08/13 14:37	127-18-4	
Toluene	ND ug/L		1.0	1		08/08/13 14:37	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/08/13 14:37	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/08/13 14:37	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/08/13 14:37	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/08/13 14:37	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/08/13 14:37	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	89 %		80-120	1		08/08/13 14:37	1868-53-7	
4-Bromofluorobenzene (S)	99 %		80-120	1		08/08/13 14:37	460-00-4	
Toluene-d8 (S)	94 %		80-120	1		08/08/13 14:37	2037-26-5	
1,2-Dichloroethane-d4 (S)	85 %		80-120	1		08/08/13 14:37	17060-07-0	
Preservation pH	7.0		1.0	1		08/08/13 14:37		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch:	MERP/7577	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury
Associated Lab Samples:	60150301001		

METHOD BLANK:	1231936	Matrix:	Water
Associated Lab Samples:	60150301001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/07/13 11:46	

LABORATORY CONTROL SAMPLE: 1231937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.4	88	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231938 1231939

Parameter	Units	60150362001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.0	3.0	81	60	70-130	29	20	M1, R1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch:	MERP/7576	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60150301001		

METHOD BLANK:	1231932	Matrix:	Water
Associated Lab Samples:	60150301001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/07/13 11:17	

LABORATORY CONTROL SAMPLE: 1231933						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1231934												1231935	
Parameter	Units	60150362001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Mercury, Dissolved	ug/L	ND	5	5	3.8	4.0	77	80	70-130	4	20		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch: MPRP/23748

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60150301001

METHOD BLANK: 1232008

Matrix: Water

Associated Lab Samples: 60150301001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/08/13 14:51	
Antimony	ug/L	ND	10.0	08/08/13 14:51	
Arsenic	ug/L	ND	10.0	08/08/13 14:51	
Beryllium	ug/L	ND	1.0	08/08/13 14:51	
Cadmium	ug/L	ND	5.0	08/08/13 14:51	
Chromium	ug/L	ND	5.0	08/08/13 14:51	
Cobalt	ug/L	ND	5.0	08/08/13 14:51	
Copper	ug/L	ND	10.0	08/08/13 14:51	
Iron	ug/L	ND	50.0	08/08/13 14:51	
Lead	ug/L	ND	5.0	08/08/13 14:51	
Nickel	ug/L	ND	5.0	08/08/13 14:51	
Selenium	ug/L	ND	15.0	08/08/13 14:51	
Silver	ug/L	ND	7.0	08/08/13 14:51	
Thallium	ug/L	ND	20.0	08/08/13 14:51	
Zinc	ug/L	ND	50.0	08/08/13 14:51	

LABORATORY CONTROL SAMPLE: 1232009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10400	104	85-115	
Antimony	ug/L	1000	1040	104	85-115	
Arsenic	ug/L	1000	979	98	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	971	97	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	960	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	995	100	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	499	100	85-115	
Thallium	ug/L	1000	988	99	85-115	
Zinc	ug/L	1000	991	99	85-115	

MATRIX SPIKE SAMPLE: 1232010

Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	123	10000	10300	102	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

MATRIX SPIKE SAMPLE:		1232010					
Parameter	Units	60150339003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	989	98	70-130	
Beryllium	ug/L	ND	1000	976	98	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	938	94	70-130	
Cobalt	ug/L	ND	1000	981	98	70-130	
Copper	ug/L	ND	1000	978	98	70-130	
Iron	ug/L	91.4	10000	9780	97	70-130	
Lead	ug/L	ND	1000	973	97	70-130	
Nickel	ug/L	ND	1000	991	99	70-130	
Selenium	ug/L	ND	1000	1000	100	70-130	
Silver	ug/L	ND	500	499	100	70-130	
Thallium	ug/L	ND	1000	974	97	70-130	
Zinc	ug/L	ND	1000	949	95	70-130	

MATRIX SPIKE SAMPLE:		1232011					
Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	10200	101	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	
Arsenic	ug/L	18.7	1000	1010	99	70-130	
Beryllium	ug/L	ND	1000	993	99	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	952	95	70-130	
Cobalt	ug/L	ND	1000	991	99	70-130	
Copper	ug/L	ND	1000	982	98	70-130	
Iron	ug/L	2080	10000	11700	97	70-130	
Lead	ug/L	ND	1000	977	97	70-130	
Nickel	ug/L	ND	1000	1000	100	70-130	
Selenium	ug/L	ND	1000	1020	102	70-130	
Silver	ug/L	ND	500	504	101	70-130	
Thallium	ug/L	ND	1000	976	98	70-130	
Zinc	ug/L	ND	1000	968	97	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33
Pace Project No.: 60150301

QC Batch:	MPRP/23784	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60150301001		
METHOD BLANK:	1233265	Matrix:	Water
Associated Lab Samples:	60150301001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/09/13 09:20	
Antimony, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Arsenic, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Beryllium, Dissolved	ug/L	ND	1.0	08/09/13 09:20	
Cadmium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Chromium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Cobalt, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Copper, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Iron, Dissolved	ug/L	ND	50.0	08/09/13 09:20	
Lead, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Nickel, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Selenium, Dissolved	ug/L	ND	15.0	08/09/13 09:20	
Silver, Dissolved	ug/L	ND	7.0	08/09/13 09:20	
Thallium, Dissolved	ug/L	ND	20.0	08/09/13 09:20	
Zinc, Dissolved	ug/L	ND	50.0	08/09/13 09:20	

LABORATORY CONTROL SAMPLE: 1233266

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10400	104	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	987	99	85-115	
Beryllium, Dissolved	ug/L	1000	1040	104	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	1020	102	85-115	
Cobalt, Dissolved	ug/L	1000	1020	102	85-115	
Copper, Dissolved	ug/L	1000	986	99	85-115	
Iron, Dissolved	ug/L	10000	10400	104	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	996	100	85-115	
Silver, Dissolved	ug/L	500	511	102	85-115	
Thallium, Dissolved	ug/L	1000	988	99	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267 1233268

Parameter	Units	60150334001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267 1233268											
Parameter	Units	60150334001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1050	1040	104	103	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	1020	1010	101	100	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1040	1030	104	103	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	998	987	100	99	70-130	1	10
Cobalt, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	11
Iron, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	10
Lead, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Nickel, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	514	510	103	102	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	988	978	99	98	70-130	1	6
Zinc, Dissolved	ug/L	ND	1000	1000	996	987	99	98	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch: MSV/55457 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150301001, 60150301002

METHOD BLANK: 1232937 Matrix: Water

Associated Lab Samples: 60150301001, 60150301002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,2-Dichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/08/13 11:47	
Benzene	ug/L	ND	1.0	08/08/13 11:47	
Bromodichloromethane	ug/L	ND	1.0	08/08/13 11:47	
Bromoform	ug/L	ND	1.0	08/08/13 11:47	
Bromomethane	ug/L	ND	5.0	08/08/13 11:47	
Carbon tetrachloride	ug/L	ND	1.0	08/08/13 11:47	
Chloroethane	ug/L	ND	1.0	08/08/13 11:47	
Chloroform	ug/L	ND	1.0	08/08/13 11:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Ethylbenzene	ug/L	ND	1.0	08/08/13 11:47	
Methylene chloride	ug/L	ND	1.0	08/08/13 11:47	
Tetrachloroethene	ug/L	ND	1.0	08/08/13 11:47	
Toluene	ug/L	ND	1.0	08/08/13 11:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Trichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Vinyl chloride	ug/L	ND	1.0	08/08/13 11:47	
Xylene (Total)	ug/L	ND	3.0	08/08/13 11:47	
1,2-Dichloroethane-d4 (S)	%	90	80-120	08/08/13 11:47	
4-Bromofluorobenzene (S)	%	99	80-120	08/08/13 11:47	
Toluene-d8 (S)	%	95	80-120	08/08/13 11:47	

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	14.8	74	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	106	59-138	
1,1,2-Trichloroethane	ug/L	20	17.3	87	69-127	
1,2-Dichloroethane	ug/L	20	16.2	81	71-129	
1,4-Dichlorobenzene	ug/L	20	20.0	100	68-124	
Benzene	ug/L	20	17.8	89	73-129	
Bromodichloromethane	ug/L	20	15.1	75	63-129	
Bromoform	ug/L	20	18.9	94	52-123	
Bromomethane	ug/L	20	21.6	108	10-160	
Carbon tetrachloride	ug/L	20	15.1	76	70-140	
Chloroethane	ug/L	20	16.4	82	42-160	
Chloroform	ug/L	20	14.5	72	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.3	76	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	17.2	86	66-133	
Methylene chloride	ug/L	20	16.6	83	56-135	
Tetrachloroethene	ug/L	20	18.2	91	64-143	
Toluene	ug/L	20	17.2	86	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.3	81	67-149	
Trichloroethene	ug/L	20	14.6	73	71-130	
Vinyl chloride	ug/L	20	17.7	89	41-160	
Xylene (Total)	ug/L	60	54.7	91	67-130	
1,2-Dichloroethane-d4 (S)	%			86	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			93	80-120	

MATRIX SPIKE SAMPLE: 1232939

Parameter	Units	60150295001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	2540	63	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3740	93	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	2900	72	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2700	68	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3480	85	18-147	
Benzene	ug/L	ND	4000	3090	77	37-151	
Bromodichloromethane	ug/L	ND	4000	2540	63	35-155	
Bromoform	ug/L	ND	4000	3070	74	45-133	
Bromomethane	ug/L	ND	4000	3550	89	10-160	
Carbon tetrachloride	ug/L	ND	4000	2550	64	70-140	M1
Chloroethane	ug/L	ND	4000	2680	67	14-160	
Chloroform	ug/L	ND	4000	2470	61	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2570	64	19-160	
Ethylbenzene	ug/L	ND	4000	2850	71	37-154	
Methylene chloride	ug/L	ND	4000	2800	70	15-156	
Tetrachloroethene	ug/L	ND	4000	3100	76	64-148	
Toluene	ug/L	ND	4000	2930	71	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	2750	69	54-156	
Trichloroethene	ug/L	ND	4000	2450	61	71-157	M1
Vinyl chloride	ug/L	ND	4000	2990	75	10-160	
Xylene (Total)	ug/L	ND	12000	9220	77	12-153	
1,2-Dichloroethane-d4 (S)	%				85	80-120	
4-Bromofluorobenzene (S)	%				110	80-120	
Toluene-d8 (S)	%				94	80-120	
Preservation pH			7.0	7.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33
Pace Project No.: 60150301

QC Batch:	OEXT/39759	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60150301001		

METHOD BLANK: 1233568 Matrix: Water
Associated Lab Samples: 60150301001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/12/13 09:14	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/12/13 09:14	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachloroethane	ug/L	ND	5.0	08/12/13 09:14	
Naphthalene	ug/L	ND	5.0	08/12/13 09:14	
Nitrobenzene	ug/L	ND	5.0	08/12/13 09:14	
Pentachlorophenol	ug/L	ND	5.0	08/12/13 09:14	
Phenol	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Tribromophenol (S)	%	76	39-119	08/12/13 09:14	
2-Fluorobiphenyl (S)	%	76	36-120	08/12/13 09:14	
2-Fluorophenol (S)	%	43	18-120	08/12/13 09:14	
Nitrobenzene-d5 (S)	%	75	32-120	08/12/13 09:14	
Phenol-d6 (S)	%	29	12-120	08/12/13 09:14	
Terphenyl-d14 (S)	%	75	44-120	08/12/13 09:14	

LABORATORY CONTROL SAMPLE: 1233569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	40.2	80	44-120	
2,4,6-Trichlorophenol	ug/L	50	43.3	87	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	51.9	104	31-147	
Hexachloro-1,3-butadiene	ug/L	50	38.7	77	41-116	
Hexachlorocyclopentadiene	ug/L	100	75.4	75	31-120	
Hexachloroethane	ug/L	50	39.8	80	40-113	
Naphthalene	ug/L	50	42.0	84	48-120	
Nitrobenzene	ug/L	50	42.5	85	47-120	
Pentachlorophenol	ug/L	50	46.4	93	43-127	
Phenol	ug/L	50	16.8	34	15-112	
2,4,6-Tribromophenol (S)	%			89	39-119	
2-Fluorobiphenyl (S)	%			85	36-120	
2-Fluorophenol (S)	%			49	18-120	
Nitrobenzene-d5 (S)	%			80	32-120	
Phenol-d6 (S)	%			33	12-120	
Terphenyl-d14 (S)	%			89	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch: WET/42723

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60150301001

METHOD BLANK: 1231303

Matrix: Water

Associated Lab Samples: 60150301001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/06/13 07:31	

LABORATORY CONTROL SAMPLE: 1231304

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.8	100	78-114	

MATRIX SPIKE SAMPLE: 1231305

Parameter	Units	60150289001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.8	43.3	98	78-114	

SAMPLE DUPLICATE: 1231306

Parameter	Units	60149960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	594	518	14	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch: WET/42743

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150301001

METHOD BLANK: 1231879

Matrix: Water

Associated Lab Samples: 60150301001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/07/13 07:27	

LABORATORY CONTROL SAMPLE: 1231880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	19.6	98	64-132	

MATRIX SPIKE SAMPLE: 1231912

Parameter	Units	60150085001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.7	22.1	95	64-132	

SAMPLE DUPLICATE: 1231915

Parameter	Units	60149960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	70.0	51.9	30	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch: WET/42735

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150301001

METHOD BLANK: 1231637

Matrix: Water

Associated Lab Samples: 60150301001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/06/13 15:46	

SAMPLE DUPLICATE: 1231638

Parameter	Units	60150016001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	75.0	69.0	8	25	

SAMPLE DUPLICATE: 1231639

Parameter	Units	60150153001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch: WET/42739 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150301001

SAMPLE DUPLICATE: 1231691

Parameter	Units	60150295001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.0	6.0	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch: WETA/25712

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60150301001

METHOD BLANK: 1232218

Matrix: Water

Associated Lab Samples: 60150301001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/07/13 14:22	

LABORATORY CONTROL SAMPLE: 1232219

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	105	90-110	

MATRIX SPIKE SAMPLE: 1232220

Parameter	Units	60149918006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.12	2	2.3	111	90-110	M1

MATRIX SPIKE SAMPLE: 1232222

Parameter	Units	60150017002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	2.0	99	90-110	

SAMPLE DUPLICATE: 1232221

Parameter	Units	60149943001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	0.10	0.11	2	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

QC Batch:	WETA/25717	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150301001		

METHOD BLANK: 1232729 Matrix: Water

Associated Lab Samples: 60150301001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/09/13 16:28	

LABORATORY CONTROL SAMPLE: 1232730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.7	107	90-110	

MATRIX SPIKE SAMPLE: 1232731

Parameter	Units	60150285001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	23.3	50	72.8	99	90-110	

MATRIX SPIKE SAMPLE: 1232733

Parameter	Units	60149898005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	37.9	50	74.7	74	90-110	M1

SAMPLE DUPLICATE: 1232732

Parameter	Units	60150299001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	44900	44000	2	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D9 Dissolved result is greater than the total. Data is within laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-33

Pace Project No.: 60150301

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150301001	316-33	EPA 200.7	MPRP/23748	EPA 200.7	ICP/18621
60150301001	316-33	EPA 200.7	MPRP/23784	EPA 200.7	ICP/18641
60150301001	316-33	EPA 245.1	MERP/7577	EPA 245.1	MERC/7532
60150301001	316-33	EPA 245.1	MERP/7576	EPA 245.1	MERC/7531
60150301001	316-33	EPA 625	OEXT/39759	EPA 625	MSSV/12606
60150301001	316-33	EPA 624 Low	MSV/55457		
60150301002	TRIP BLANK	EPA 624 Low	MSV/55457		
60150301001	316-33	EPA 1664A	WET/42723		
60150301001	316-33	EPA 1664A	WET/42743		
60150301001	316-33	SM 2540D	WET/42735		
60150301001	316-33	SM 4500-H+B	WET/42739		
60150301001	316-33	EPA 350.1	WETA/25712		
60150301001	316-33	EPA 410.4	WETA/25717		

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Sample Condition Upon Receipt

WO#: 60150301



60150301

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☒ None ☐ Other ☒ 2P1C

Thermometer Used: T-112 / T-194

Type of Ice: Yes Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.3

Date and initials of person examining contents: PV 8/5/13

Temperature should be above freezing to 6°C

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.

Samples arrived within holding time: ☒ Yes ☐ No ☐ N/A

5.

Short Hold Time analyses (<72hr): ☒ Yes ☐ No ☐ N/A

6. PH

Rush Turn Around Time requested: ☐ Yes ☒ No ☐ N/A

7.

Sufficient volume: ☒ Yes ☐ No ☐ N/A

8.

Correct containers used: ☒ Yes ☐ No ☐ N/A

Pace containers used: ☒ Yes ☐ No ☐ N/A

9.

Containers intact: ☒ Yes ☐ No ☐ N/A

10.

Unpreserved 5035A soils frozen w/in 48hrs? ☐ Yes ☐ No ☒ N/A

11.

Filtered volume received for dissolved tests? ☐ Yes ☐ No ☒ N/A

12.

Sample labels match COC: ☒ Yes ☐ No ☐ N/A

Includes date/time/ID/analyses Matrix: ✓

13.

All containers needing preservation have been checked. ☒ Yes ☐ No ☐ N/A

All containers needing preservation are found to be in compliance with EPA recommendation. ☒ Yes ☒ No ☐ N/A

Exceptions: VOA, coliform, TOC O&G WI-DRO (water), Phenolics ☒ Yes ☐ No

14. Added 2.5 ml of HNO3 to BPSW. pH 6.0/4.0. Added 2.0 ml H2O4 to BPSW. pH 6.0/3.0. PV 8/5/13

Trip Blank present: ☐ Yes ☐ No ☐ N/A

Initial when completed PV

Pace Trip Blank lot # (if purchased): ✓

Lot # of added preservative 12510/12518

Headspace in VOA vials (>6mm): ☐ Yes ☐ No ☐ N/A

15.

Project sampled in USDA Regulated Area: ☐ Yes ☐ No ☒ N/A

16.

17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/7/13

August 12, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-034
Pace Project No.: 60150406

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 07, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-034

Pace Project No.: 60150406

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-034

Pace Project No.: 60150406

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150406001	316-034	Water	08/06/13 06:45	08/07/13 02:05

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-034

Pace Project No.: 60150406

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150406001	316-034	SM 5210B	JML	1

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-034

Pace Project No.: 60150406

Sample: 316-034		Lab ID: 60150406001	Collected: 08/06/13 06:45	Received: 08/07/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	39000	mg/L	2.0	1	08/07/13 16:09	08/12/13 11:19		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150406

QC Batch: WET/42765

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150406001

METHOD BLANK: 1232451

Matrix: Water

Associated Lab Samples: 60150406001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/12/13 11:16	

LABORATORY CONTROL SAMPLE: 1232452

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	220	111	85-115	

SAMPLE DUPLICATE: 1232453

Parameter	Units	60150406001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	39000	41500	6	17	

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QUALIFIERS

Project: BRIDGETON LF 316-034

Pace Project No.: 60150406

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-034

Pace Project No.: 60150406

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150406001	316-034	SM 5210B	WET/42765	SM 5210B	WET/42828

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Sample Condition Upon Receipt

WO#: 60150406



Client Name: Burr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: MG Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.9

Date and initials of person examining contents: 12/12

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Boj</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses Matrix: <u>WR</u>		13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State: <u>MD</u>

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 12/12

August 15, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-034
Pace Project No.: 60150422

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 07, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



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CERTIFICATIONS

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150422001	316-034	Water	08/06/13 06:45	08/07/13 02:05
60150422002	TRIP BLANK	Water	08/06/13 06:45	08/07/13 02:05

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150422001	316-034	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	NDJ	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	AAM	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	JML	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60150422002	TRIP BLANK	EPA 624 Low	AAM	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

Sample: 316-034		Lab ID: 60150422001	Collected: 08/06/13 06:45	Received: 08/07/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	9010	ug/L	150	2	08/08/13 16:20	08/09/13 11:50	7429-90-5	
Antimony	36.8	ug/L	20.0	2	08/08/13 16:20	08/09/13 11:50	7440-36-0	
Arsenic	656	ug/L	20.0	2	08/08/13 16:20	08/09/13 11:50	7440-38-2	
Beryllium	ND	ug/L	5.0	5	08/08/13 16:20	08/09/13 11:54	7440-41-7	D3
Cadmium	13.6	ug/L	10.0	2	08/08/13 16:20	08/09/13 11:50	7440-43-9	
Chromium	247	ug/L	25.0	5	08/08/13 16:20	08/09/13 11:54	7440-47-3	
Cobalt	58.8	ug/L	10.0	2	08/08/13 16:20	08/09/13 11:50	7440-48-4	
Copper	ND	ug/L	20.0	2	08/08/13 16:20	08/09/13 11:50	7440-50-8	D3
Iron	849000	ug/L	100	2	08/08/13 16:20	08/09/13 11:50	7439-89-6	
Lead	202	ug/L	10.0	2	08/08/13 16:20	08/09/13 11:50	7439-92-1	
Nickel	140	ug/L	10.0	2	08/08/13 16:20	08/09/13 11:50	7440-02-0	
Selenium	ND	ug/L	75.0	5	08/08/13 16:20	08/09/13 11:54	7782-49-2	D3
Silver	ND	ug/L	14.0	2	08/08/13 16:20	08/09/13 11:50	7440-22-4	D3
Thallium	ND	ug/L	100	5	08/08/13 16:20	08/09/13 11:54	7440-28-0	D3
Zinc	12700	ug/L	1000	20	08/08/13 16:20	08/09/13 11:57	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3750	ug/L	150	2	08/08/13 16:20	08/09/13 09:55	7429-90-5	
Antimony, Dissolved	36.3	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:55	7440-36-0	
Arsenic, Dissolved	546	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:55	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	5	08/08/13 16:20	08/09/13 10:28	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:55	7440-43-9	D3
Chromium, Dissolved	220	ug/L	25.0	5	08/08/13 16:20	08/09/13 10:28	7440-47-3	
Cobalt, Dissolved	44.9	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:55	7440-48-4	
Copper, Dissolved	ND	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:55	7440-50-8	D3
Iron, Dissolved	603000	ug/L	100	2	08/08/13 16:20	08/09/13 09:55	7439-89-6	
Lead, Dissolved	83.2	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:55	7439-92-1	
Nickel, Dissolved	125	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:55	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	08/08/13 16:20	08/09/13 10:28	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	08/08/13 16:20	08/09/13 09:55	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	08/08/13 16:20	08/09/13 10:28	7440-28-0	D3
Zinc, Dissolved	11200	ug/L	1000	20	08/08/13 16:20	08/09/13 10:44	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.20	1	08/08/13 09:45	08/08/13 14:15	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	08/15/13 11:10	08/15/13 15:00	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	08/09/13 00:00	08/13/13 17:20	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	08/09/13 00:00	08/13/13 17:20	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	08/09/13 00:00	08/13/13 17:20	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	08/09/13 00:00	08/13/13 17:20	67-72-1	
Naphthalene	ND	ug/L	1000	20	08/09/13 00:00	08/13/13 17:20	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	08/09/13 00:00	08/13/13 17:20	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

Sample: 316-034		Lab ID: 60150422001	Collected: 08/06/13 06:45	Received: 08/07/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/13/13 17:20	87-86-5	
Phenol	16800 ug/L		1000	20	08/09/13 00:00	08/13/13 17:20	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/09/13 00:00	08/13/13 17:20	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/09/13 00:00	08/13/13 17:20	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/09/13 00:00	08/13/13 17:20	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/09/13 00:00	08/13/13 17:20	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/09/13 00:00	08/13/13 17:20	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/09/13 00:00	08/13/13 17:20	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/09/13 00:00	08/13/13 17:20	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/09/13 00:00	08/13/13 17:20	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/08/13 14:59	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/08/13 14:59	75-27-4	
Bromoform	ND ug/L		200	200		08/08/13 14:59	75-25-2	
Bromomethane	ND ug/L		1000	200		08/08/13 14:59	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/08/13 14:59	56-23-5	
Chloroethane	ND ug/L		200	200		08/08/13 14:59	75-00-3	
Chloroform	ND ug/L		200	200		08/08/13 14:59	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/08/13 14:59	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/08/13 14:59	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 14:59	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 14:59	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/08/13 14:59	100-41-4	
Methylene chloride	ND ug/L		200	200		08/08/13 14:59	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/08/13 14:59	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/08/13 14:59	127-18-4	
Toluene	ND ug/L		200	200		08/08/13 14:59	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/08/13 14:59	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/08/13 14:59	79-00-5	
Trichloroethene	ND ug/L		200	200		08/08/13 14:59	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/08/13 14:59	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/08/13 14:59	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	93 %		80-120	200		08/08/13 14:59	1868-53-7	D3
4-Bromofluorobenzene (S)	99 %		80-120	200		08/08/13 14:59	460-00-4	
Toluene-d8 (S)	97 %		80-120	200		08/08/13 14:59	2037-26-5	
1,2-Dichloroethane-d4 (S)	90 %		80-120	200		08/08/13 14:59	17060-07-0	
Preservation pH	7.0		1.0	200		08/08/13 14:59		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	76.3 mg/L		5.0	1		08/08/13 13:19		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/12/13 08:42		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

Sample: 316-034		Lab ID: 60150422001	Collected: 08/06/13 06:45	Received: 08/07/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1100	mg/L	5.0	1		08/13/13 10:48		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		08/08/13 13:45		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	654	mg/L	20.0	200		08/08/13 14:47	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	44100	mg/L	5000	500		08/13/13 15:54		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

Sample: TRIP BLANK		Lab ID: 60150422002	Collected: 08/06/13 06:45	Received: 08/07/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/08/13 15:20	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/08/13 15:20	75-27-4	
Bromoform	ND ug/L		1.0	1		08/08/13 15:20	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/08/13 15:20	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/08/13 15:20	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/08/13 15:20	75-00-3	
Chloroform	ND ug/L		1.0	1		08/08/13 15:20	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/08/13 15:20	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/08/13 15:20	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 15:20	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 15:20	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/08/13 15:20	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/08/13 15:20	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/08/13 15:20	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/08/13 15:20	127-18-4	
Toluene	ND ug/L		1.0	1		08/08/13 15:20	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/08/13 15:20	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/08/13 15:20	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/08/13 15:20	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/08/13 15:20	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/08/13 15:20	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	88 %		80-120	1		08/08/13 15:20	1868-53-7	
4-Bromofluorobenzene (S)	98 %		80-120	1		08/08/13 15:20	460-00-4	
Toluene-d8 (S)	95 %		80-120	1		08/08/13 15:20	2037-26-5	
1,2-Dichloroethane-d4 (S)	87 %		80-120	1		08/08/13 15:20	17060-07-0	
Preservation pH	7.0		1.0	1		08/08/13 15:20		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: MERP/7584

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60150422001

METHOD BLANK: 1232851

Matrix: Water

Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/08/13 14:11	

LABORATORY CONTROL SAMPLE: 1232852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1232853 1232854

Parameter	Units	60150463002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.4	4.4	88	87	70-130	1	20	

MATRIX SPIKE SAMPLE: 1232855

Parameter	Units	60150441002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.6	89	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: MERP/7594

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60150422001

METHOD BLANK: 1235701

Matrix: Water

Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/15/13 14:56	

LABORATORY CONTROL SAMPLE: 1235702

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.4	88	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1235703 1235704

Parameter	Units	60150422001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	2.0	2.0	40	40	70-130	1	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: MPRP/23789

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60150422001

METHOD BLANK: 1233290

Matrix: Water

Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/09/13 11:03	
Antimony	ug/L	ND	10.0	08/09/13 11:03	
Arsenic	ug/L	ND	10.0	08/09/13 11:03	
Beryllium	ug/L	ND	1.0	08/09/13 11:03	
Cadmium	ug/L	ND	5.0	08/09/13 11:03	
Chromium	ug/L	ND	5.0	08/09/13 11:03	
Cobalt	ug/L	ND	5.0	08/09/13 11:03	
Copper	ug/L	ND	10.0	08/09/13 11:03	
Iron	ug/L	ND	50.0	08/09/13 11:03	
Lead	ug/L	ND	5.0	08/09/13 11:03	
Nickel	ug/L	ND	5.0	08/09/13 11:03	
Selenium	ug/L	ND	15.0	08/09/13 11:03	
Silver	ug/L	ND	7.0	08/09/13 11:03	
Thallium	ug/L	ND	20.0	08/09/13 11:03	
Zinc	ug/L	ND	50.0	08/09/13 11:03	

LABORATORY CONTROL SAMPLE: 1233291

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10100	101	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	967	97	85-115	
Beryllium	ug/L	1000	988	99	85-115	
Cadmium	ug/L	1000	980	98	85-115	
Chromium	ug/L	1000	985	98	85-115	
Cobalt	ug/L	1000	994	99	85-115	
Copper	ug/L	1000	967	97	85-115	
Iron	ug/L	10000	9690	97	85-115	
Lead	ug/L	1000	978	98	85-115	
Nickel	ug/L	1000	998	100	85-115	
Selenium	ug/L	1000	982	98	85-115	
Silver	ug/L	500	495	99	85-115	
Thallium	ug/L	1000	958	96	85-115	
Zinc	ug/L	1000	975	98	85-115	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233292 1233293											
Parameter	Units	60150551002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Aluminum	ug/L	0.58 mg/L	10000	10000	10200	10300	96	97	70-130	1	8
Antimony	ug/L	ND	1000	1000	1040	1040	103	104	70-130	1	7
Arsenic	ug/L	ND	1000	1000	1090	1100	108	109	70-130	1	10
Beryllium	ug/L	ND	1000	1000	896	898	90	90	70-130	0	7
Cadmium	ug/L	ND	1000	1000	1070	1080	107	108	70-130	1	10
Chromium	ug/L	0.039 mg/L	1000	1000	920	927	88	89	70-130	1	10
Cobalt	ug/L	ND	1000	1000	875	878	87	88	70-130	0	6
Copper	ug/L	0.073 mg/L	1000	1000	1130	1140	106	106	70-130	0	11
Iron	ug/L	0.056 mg/L	10000	10000	8840	8870	88	88	70-130	0	10
Lead	ug/L	ND	1000	1000	824	824	82	82	70-130	0	10
Nickel	ug/L	0.047 mg/L	1000	1000	906	909	86	86	70-130	0	10
Selenium	ug/L	ND	1000	1000	1310	1320	131	132	70-130	0	10 M1
Silver	ug/L	ND	500	500	563	570	113	114	70-130	1	10
Thallium	ug/L	ND	1000	1000	735	743	73	74	70-130	1	6
Zinc	ug/L	ND	1000	1000	953	953	93	93	70-130	0	11

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: MPRP/23784

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Dissolved

Associated Lab Samples: 60150422001

METHOD BLANK: 1233265

Matrix: Water

Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/09/13 09:20	
Antimony, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Arsenic, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Beryllium, Dissolved	ug/L	ND	1.0	08/09/13 09:20	
Cadmium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Chromium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Cobalt, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Copper, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Iron, Dissolved	ug/L	ND	50.0	08/09/13 09:20	
Lead, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Nickel, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Selenium, Dissolved	ug/L	ND	15.0	08/09/13 09:20	
Silver, Dissolved	ug/L	ND	7.0	08/09/13 09:20	
Thallium, Dissolved	ug/L	ND	20.0	08/09/13 09:20	
Zinc, Dissolved	ug/L	ND	50.0	08/09/13 09:20	

LABORATORY CONTROL SAMPLE: 1233266

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10400	104	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	987	99	85-115	
Beryllium, Dissolved	ug/L	1000	1040	104	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	1020	102	85-115	
Cobalt, Dissolved	ug/L	1000	1020	102	85-115	
Copper, Dissolved	ug/L	1000	986	99	85-115	
Iron, Dissolved	ug/L	10000	10400	104	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	996	100	85-115	
Silver, Dissolved	ug/L	500	511	102	85-115	
Thallium, Dissolved	ug/L	1000	988	99	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267

1233268

Parameter	Units	60150334001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267 1233268											
Parameter	Units	60150334001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1050	1040	104	103	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	1020	1010	101	100	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1040	1030	104	103	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	998	987	100	99	70-130	1	10
Cobalt, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	11
Iron, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	10
Lead, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Nickel, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	514	510	103	102	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	988	978	99	98	70-130	1	6
Zinc, Dissolved	ug/L	ND	1000	1000	996	987	99	98	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: MSV/55457 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150422001, 60150422002

METHOD BLANK: 1232937 Matrix: Water

Associated Lab Samples: 60150422001, 60150422002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,2-Dichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/08/13 11:47	
Benzene	ug/L	ND	1.0	08/08/13 11:47	
Bromodichloromethane	ug/L	ND	1.0	08/08/13 11:47	
Bromoform	ug/L	ND	1.0	08/08/13 11:47	
Bromomethane	ug/L	ND	5.0	08/08/13 11:47	
Carbon tetrachloride	ug/L	ND	1.0	08/08/13 11:47	
Chloroethane	ug/L	ND	1.0	08/08/13 11:47	
Chloroform	ug/L	ND	1.0	08/08/13 11:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Ethylbenzene	ug/L	ND	1.0	08/08/13 11:47	
Methylene chloride	ug/L	ND	1.0	08/08/13 11:47	
Tetrachloroethene	ug/L	ND	1.0	08/08/13 11:47	
Toluene	ug/L	ND	1.0	08/08/13 11:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Trichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Vinyl chloride	ug/L	ND	1.0	08/08/13 11:47	
Xylene (Total)	ug/L	ND	3.0	08/08/13 11:47	
1,2-Dichloroethane-d4 (S)	%	90	80-120	08/08/13 11:47	
4-Bromofluorobenzene (S)	%	99	80-120	08/08/13 11:47	
Toluene-d8 (S)	%	95	80-120	08/08/13 11:47	

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	14.8	74	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	106	59-138	
1,1,2-Trichloroethane	ug/L	20	17.3	87	69-127	
1,2-Dichloroethane	ug/L	20	16.2	81	71-129	
1,4-Dichlorobenzene	ug/L	20	20.0	100	68-124	
Benzene	ug/L	20	17.8	89	73-129	
Bromodichloromethane	ug/L	20	15.1	75	63-129	
Bromoform	ug/L	20	18.9	94	52-123	
Bromomethane	ug/L	20	21.6	108	10-160	
Carbon tetrachloride	ug/L	20	15.1	76	70-140	
Chloroethane	ug/L	20	16.4	82	42-160	
Chloroform	ug/L	20	14.5	72	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.3	76	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	17.2	86	66-133	
Methylene chloride	ug/L	20	16.6	83	56-135	
Tetrachloroethene	ug/L	20	18.2	91	64-143	
Toluene	ug/L	20	17.2	86	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.3	81	67-149	
Trichloroethene	ug/L	20	14.6	73	71-130	
Vinyl chloride	ug/L	20	17.7	89	41-160	
Xylene (Total)	ug/L	60	54.7	91	67-130	
1,2-Dichloroethane-d4 (S)	%			86	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			93	80-120	

MATRIX SPIKE SAMPLE: 1232939

Parameter	Units	60150295001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	2540	63	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3740	93	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	2900	72	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2700	68	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3480	85	18-147	
Benzene	ug/L	ND	4000	3090	77	37-151	
Bromodichloromethane	ug/L	ND	4000	2540	63	35-155	
Bromoform	ug/L	ND	4000	3070	74	45-133	
Bromomethane	ug/L	ND	4000	3550	89	10-160	
Carbon tetrachloride	ug/L	ND	4000	2550	64	70-140	M1
Chloroethane	ug/L	ND	4000	2680	67	14-160	
Chloroform	ug/L	ND	4000	2470	61	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2570	64	19-160	
Ethylbenzene	ug/L	ND	4000	2850	71	37-154	
Methylene chloride	ug/L	ND	4000	2800	70	15-156	
Tetrachloroethene	ug/L	ND	4000	3100	76	64-148	
Toluene	ug/L	ND	4000	2930	71	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	2750	69	54-156	
Trichloroethene	ug/L	ND	4000	2450	61	71-157	M1
Vinyl chloride	ug/L	ND	4000	2990	75	10-160	
Xylene (Total)	ug/L	ND	12000	9220	77	12-153	
1,2-Dichloroethane-d4 (S)	%				85	80-120	
4-Bromofluorobenzene (S)	%				110	80-120	
Toluene-d8 (S)	%				94	80-120	
Preservation pH			7.0	7.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034
Pace Project No.: 60150422

QC Batch: OEXT/39759 Analysis Method: EPA 625
QC Batch Method: EPA 625 Analysis Description: 625 MSS
Associated Lab Samples: 60150422001

METHOD BLANK: 1233568 Matrix: Water
Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/12/13 09:14	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/12/13 09:14	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/12/13 09:14	
Hexachloroethane	ug/L	ND	5.0	08/12/13 09:14	
Naphthalene	ug/L	ND	5.0	08/12/13 09:14	
Nitrobenzene	ug/L	ND	5.0	08/12/13 09:14	
Pentachlorophenol	ug/L	ND	5.0	08/12/13 09:14	
Phenol	ug/L	ND	5.0	08/12/13 09:14	
2,4,6-Tribromophenol (S)	%	76	39-119	08/12/13 09:14	
2-Fluorobiphenyl (S)	%	76	36-120	08/12/13 09:14	
2-Fluorophenol (S)	%	43	18-120	08/12/13 09:14	
Nitrobenzene-d5 (S)	%	75	32-120	08/12/13 09:14	
Phenol-d6 (S)	%	29	12-120	08/12/13 09:14	
Terphenyl-d14 (S)	%	75	44-120	08/12/13 09:14	

LABORATORY CONTROL SAMPLE: 1233569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	40.2	80	44-120	
2,4,6-Trichlorophenol	ug/L	50	43.3	87	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	51.9	104	31-147	
Hexachloro-1,3-butadiene	ug/L	50	38.7	77	41-116	
Hexachlorocyclopentadiene	ug/L	100	75.4	75	31-120	
Hexachloroethane	ug/L	50	39.8	80	40-113	
Naphthalene	ug/L	50	42.0	84	48-120	
Nitrobenzene	ug/L	50	42.5	85	47-120	
Pentachlorophenol	ug/L	50	46.4	93	43-127	
Phenol	ug/L	50	16.8	34	15-112	
2,4,6-Tribromophenol (S)	%			89	39-119	
2-Fluorobiphenyl (S)	%			85	36-120	
2-Fluorophenol (S)	%			49	18-120	
Nitrobenzene-d5 (S)	%			80	32-120	
Phenol-d6 (S)	%			33	12-120	
Terphenyl-d14 (S)	%			89	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

MATRIX SPIKE SAMPLE:		1233570					
Parameter	Units	60150323001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	33.3	67	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	38.1	76	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	6.7J	13	27-146	M1
Hexachloro-1,3-butadiene	ug/L	ND	50	32.5	65	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	23.3	23	11-120	
Hexachloroethane	ug/L	ND	50	30.5	61	40-113	
Naphthalene	ug/L	ND	50	34.3	69	32-120	
Nitrobenzene	ug/L	ND	50	35.2	70	35-128	
Pentachlorophenol	ug/L	ND	50	40.1	80	38-133	
Phenol	ug/L	ND	50	15.1	30	13-112	
2,4,6-Tribromophenol (S)	%				77	39-119	
2-Fluorobiphenyl (S)	%				72	36-120	
2-Fluorophenol (S)	%				41	18-120	
Nitrobenzene-d5 (S)	%				66	32-120	
Phenol-d6 (S)	%				29	12-120	
Terphenyl-d14 (S)	%				92	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: WET/42769

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60150422001

METHOD BLANK: 1232615

Matrix: Water

Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/08/13 13:18	

LABORATORY CONTROL SAMPLE: 1232616

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	38.5	96	78-114	

MATRIX SPIKE SAMPLE: 1232619

Parameter	Units	60150456001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	9.3	40.4	39.7	75	78-114	M1

SAMPLE DUPLICATE: 1232620

Parameter	Units	60150457004 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: WET/42823

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150422001

METHOD BLANK: 1234848

Matrix: Water

Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/12/13 08:41	

LABORATORY CONTROL SAMPLE: 1234849

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.1	106	64-132	

MATRIX SPIKE SAMPLE: 1234855

Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	20.8	13.9	58	64-132	M1

SAMPLE DUPLICATE: 1234856

Parameter	Units	60150388001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	2.3J		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: WET/42847

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150422001

METHOD BLANK: 1235268

Matrix: Water

Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/13/13 10:48	

SAMPLE DUPLICATE: 1235269

Parameter	Units	60150422001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	1100	1040	6	25	

SAMPLE DUPLICATE: 1235270

Parameter	Units	60150850002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: WET/42771 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150422001

SAMPLE DUPLICATE: 1232634

Parameter	Units	60150420001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.4	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch: WETA/25730

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60150422001

METHOD BLANK: 1233021

Matrix: Water

Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/08/13 14:25	

LABORATORY CONTROL SAMPLE: 1233022

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.0	102	90-110	

MATRIX SPIKE SAMPLE: 1233023

Parameter	Units	60150132002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	1.9	95	90-110	

MATRIX SPIKE SAMPLE: 1233026

Parameter	Units	60150044003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.40	2	2.0	81	90-110	M1

SAMPLE DUPLICATE: 1233024

Parameter	Units	60150134005 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

QC Batch:	WETA/25768	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150422001		

METHOD BLANK: 1234986 Matrix: Water

Associated Lab Samples: 60150422001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/13/13 15:34	

LABORATORY CONTROL SAMPLE: 1234987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	47.7	95	90-110	

MATRIX SPIKE SAMPLE: 1234988

Parameter	Units	60149911002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	36.1	50	67.2	62	90-110	M1

MATRIX SPIKE SAMPLE: 1234990

Parameter	Units	60150157001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	39.3	79	90-110	M1

SAMPLE DUPLICATE: 1234989

Parameter	Units	60149925002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	72.4	69.8	4	25	

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QUALIFIERS

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-034

Pace Project No.: 60150422

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150422001	316-034	EPA 200.7	MPRP/23789	EPA 200.7	ICP/18644
60150422001	316-034	EPA 200.7	MPRP/23784	EPA 200.7	ICP/18641
60150422001	316-034	EPA 245.1	MERP/7584	EPA 245.1	MERC/7539
60150422001	316-034	EPA 245.1	MERP/7594	EPA 245.1	MERC/7553
60150422001	316-034	EPA 625	OEXT/39759	EPA 625	MSSV/12606
60150422001	316-034	EPA 624 Low	MSV/55457		
60150422002	TRIP BLANK	EPA 624 Low	MSV/55457		
60150422001	316-034	EPA 1664A	WET/42769		
60150422001	316-034	EPA 1664A	WET/42823		
60150422001	316-034	SM 2540D	WET/42847		
60150422001	316-034	SM 4500-H+B	WET/42771		
60150422001	316-034	EPA 350.1	WETA/25730		
60150422001	316-034	EPA 410.4	WETA/25768		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150422



Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.9

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 11/13

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>1"</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	☒ Yes ☒ No ☐ N/A	<u>HNO3 & H2O2 volume initial pH ~6.0</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	<u>added 2.0ml H2SO4 & 2.0 ml HNO3.</u>
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	14. <u>Final pHs ~3.0</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Initial when completed <u>11/13</u> Lot # of added preservative <u>125.0</u>
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	16. <u>5 of 5 sample vials have 1/2 footnotes</u>
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: Apply HS footnote → email client; proceed

Project Manager Review: 11/13

Date: 11/13

August 15, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-035
Pace Project No.: 60150553

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 08, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150553001	316-035	Water	08/07/13 12:42	08/08/13 00:05
60150553002	TRIP BLANK	Water	08/07/13 12:42	08/08/13 00:05

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150553001	316-035	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	NDJ	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	AAM	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	JML	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60150553002	TRIP BLANK	EPA 624 Low	AAM	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

Sample: 316-035		Lab ID: 60150553001	Collected: 08/07/13 12:42	Received: 08/08/13 00:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	13900	ug/L	150	2	08/09/13 15:15	08/14/13 15:43	7429-90-5	
Antimony	38.0	ug/L	20.0	2	08/09/13 15:15	08/14/13 15:43	7440-36-0	
Arsenic	704	ug/L	20.0	2	08/09/13 15:15	08/14/13 15:43	7440-38-2	
Beryllium	ND	ug/L	5.0	5	08/09/13 15:15	08/14/13 15:47	7440-41-7	D3
Cadmium	19.7	ug/L	10.0	2	08/09/13 15:15	08/14/13 15:43	7440-43-9	
Chromium	285	ug/L	25.0	5	08/09/13 15:15	08/14/13 15:47	7440-47-3	
Cobalt	63.9	ug/L	10.0	2	08/09/13 15:15	08/14/13 15:43	7440-48-4	
Copper	84.3	ug/L	20.0	2	08/09/13 15:15	08/14/13 15:43	7440-50-8	
Iron	874000	ug/L	100	2	08/09/13 15:15	08/14/13 15:43	7439-89-6	
Lead	253	ug/L	10.0	2	08/09/13 15:15	08/14/13 15:43	7439-92-1	
Nickel	158	ug/L	10.0	2	08/09/13 15:15	08/14/13 15:43	7440-02-0	
Selenium	ND	ug/L	75.0	5	08/09/13 15:15	08/14/13 15:47	7782-49-2	D3
Silver	ND	ug/L	14.0	2	08/09/13 15:15	08/14/13 15:43	7440-22-4	D3
Thallium	ND	ug/L	100	5	08/09/13 15:15	08/14/13 15:47	7440-28-0	D3
Zinc	14400	ug/L	1000	20	08/09/13 15:15	08/14/13 15:50	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3500	ug/L	150	2	08/08/13 16:20	08/09/13 09:58	7429-90-5	
Antimony, Dissolved	40.7	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:58	7440-36-0	D9
Arsenic, Dissolved	529	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:58	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	5	08/08/13 16:20	08/09/13 10:31	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:58	7440-43-9	D3
Chromium, Dissolved	215	ug/L	25.0	5	08/08/13 16:20	08/09/13 10:31	7440-47-3	
Cobalt, Dissolved	46.3	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:58	7440-48-4	
Copper, Dissolved	20.6	ug/L	20.0	2	08/08/13 16:20	08/09/13 09:58	7440-50-8	
Iron, Dissolved	545000	ug/L	100	2	08/08/13 16:20	08/09/13 09:58	7439-89-6	
Lead, Dissolved	87.4	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:58	7439-92-1	
Nickel, Dissolved	130	ug/L	10.0	2	08/08/13 16:20	08/09/13 09:58	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	08/08/13 16:20	08/09/13 10:31	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	08/08/13 16:20	08/09/13 09:58	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	08/08/13 16:20	08/09/13 10:31	7440-28-0	D3
Zinc, Dissolved	11100	ug/L	1000	20	08/08/13 16:20	08/09/13 10:47	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.92	ug/L	0.20	1	08/08/13 09:45	08/08/13 14:57	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	08/15/13 11:10	08/15/13 15:02	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	08/12/13 00:00	08/13/13 18:43	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	08/12/13 00:00	08/13/13 18:43	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	08/12/13 00:00	08/13/13 18:43	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	08/12/13 00:00	08/13/13 18:43	67-72-1	
Naphthalene	ND	ug/L	1000	20	08/12/13 00:00	08/13/13 18:43	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	08/12/13 00:00	08/13/13 18:43	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

Sample: 316-035		Lab ID: 60150553001	Collected: 08/07/13 12:42	Received: 08/08/13 00:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/12/13 00:00	08/13/13 18:43	87-86-5	
Phenol	17200 ug/L		1000	20	08/12/13 00:00	08/13/13 18:43	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/12/13 00:00	08/13/13 18:43	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/12/13 00:00	08/13/13 18:43	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/12/13 00:00	08/13/13 18:43	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/12/13 00:00	08/13/13 18:43	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/12/13 00:00	08/13/13 18:43	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/12/13 00:00	08/13/13 18:43	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/12/13 00:00	08/13/13 18:43	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/12/13 00:00	08/13/13 18:43	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/08/13 16:03	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/08/13 16:03	75-27-4	
Bromoform	ND ug/L		200	200		08/08/13 16:03	75-25-2	
Bromomethane	ND ug/L		1000	200		08/08/13 16:03	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/08/13 16:03	56-23-5	
Chloroethane	ND ug/L		200	200		08/08/13 16:03	75-00-3	
Chloroform	ND ug/L		200	200		08/08/13 16:03	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/08/13 16:03	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/08/13 16:03	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 16:03	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/08/13 16:03	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/08/13 16:03	100-41-4	
Methylene chloride	ND ug/L		200	200		08/08/13 16:03	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/08/13 16:03	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/08/13 16:03	127-18-4	
Toluene	ND ug/L		200	200		08/08/13 16:03	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/08/13 16:03	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/08/13 16:03	79-00-5	
Trichloroethene	ND ug/L		200	200		08/08/13 16:03	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/08/13 16:03	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/08/13 16:03	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	91 %		80-120	200		08/08/13 16:03	1868-53-7	D3
4-Bromofluorobenzene (S)	104 %		80-120	200		08/08/13 16:03	460-00-4	
Toluene-d8 (S)	93 %		80-120	200		08/08/13 16:03	2037-26-5	
1,2-Dichloroethane-d4 (S)	94 %		80-120	200		08/08/13 16:03	17060-07-0	
Preservation pH	7.0		1.0	200		08/08/13 16:03		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	753 mg/L		5.0	1		08/09/13 07:10		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/12/13 08:44		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

Sample: 316-035		Lab ID: 60150553001	Collected: 08/07/13 12:42	Received: 08/08/13 00:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2200	mg/L	5.0	1		08/13/13 10:57		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.4	Std. Units	0.10	1		08/09/13 15:00		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	726	mg/L	20.0	200		08/09/13 16:22	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	41700	mg/L	5000	500		08/13/13 16:10		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

Sample: TRIP BLANK		Lab ID: 60150553002	Collected: 08/07/13 12:42	Received: 08/08/13 00:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/08/13 16:24	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/08/13 16:24	75-27-4	
Bromoform	ND ug/L		1.0	1		08/08/13 16:24	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/08/13 16:24	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/08/13 16:24	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/08/13 16:24	75-00-3	
Chloroform	ND ug/L		1.0	1		08/08/13 16:24	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/08/13 16:24	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/08/13 16:24	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 16:24	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/08/13 16:24	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/08/13 16:24	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/08/13 16:24	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/08/13 16:24	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/08/13 16:24	127-18-4	
Toluene	ND ug/L		1.0	1		08/08/13 16:24	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/08/13 16:24	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/08/13 16:24	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/08/13 16:24	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/08/13 16:24	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/08/13 16:24	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	90 %		80-120	1		08/08/13 16:24	1868-53-7	
4-Bromofluorobenzene (S)	98 %		80-120	1		08/08/13 16:24	460-00-4	
Toluene-d8 (S)	95 %		80-120	1		08/08/13 16:24	2037-26-5	
1,2-Dichloroethane-d4 (S)	92 %		80-120	1		08/08/13 16:24	17060-07-0	
Preservation pH	7.0		1.0	1		08/08/13 16:24		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

QC Batch: MERP/7584

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60150553001

METHOD BLANK: 1232851

Matrix: Water

Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/08/13 14:11	

LABORATORY CONTROL SAMPLE: 1232852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1232853 1232854

Parameter	Units	60150463002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.4	4.4	88	87	70-130	1	20	

MATRIX SPIKE SAMPLE: 1232855

Parameter	Units	60150441002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L		ND	5	4.6	89	70-130

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

QC Batch: MERP/7594

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60150553001

METHOD BLANK: 1235701

Matrix: Water

Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/15/13 14:56	

LABORATORY CONTROL SAMPLE: 1235702

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.4	88	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1235703 1235704

Parameter	Units	60150422001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	2.0	2.0	40	40	70-130	1	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035
Pace Project No.: 60150553

QC Batch: MPRP/23801 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60150553001

METHOD BLANK: 1233906 Matrix: Water
Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/14/13 14:21	
Antimony	ug/L	ND	10.0	08/14/13 14:21	
Arsenic	ug/L	ND	10.0	08/14/13 14:21	
Beryllium	ug/L	ND	1.0	08/14/13 14:21	
Cadmium	ug/L	ND	5.0	08/14/13 14:21	
Chromium	ug/L	ND	5.0	08/14/13 14:21	
Cobalt	ug/L	ND	5.0	08/14/13 14:21	
Copper	ug/L	ND	10.0	08/14/13 14:21	
Iron	ug/L	ND	50.0	08/14/13 14:21	
Lead	ug/L	ND	5.0	08/14/13 14:21	
Nickel	ug/L	ND	5.0	08/14/13 14:21	
Selenium	ug/L	ND	15.0	08/14/13 14:21	
Silver	ug/L	ND	7.0	08/14/13 14:21	
Thallium	ug/L	ND	20.0	08/14/13 14:21	
Zinc	ug/L	ND	50.0	08/14/13 14:21	

LABORATORY CONTROL SAMPLE: 1233907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9850	98	85-115	
Antimony	ug/L	1000	973	97	85-115	
Arsenic	ug/L	1000	939	94	85-115	
Beryllium	ug/L	1000	995	99	85-115	
Cadmium	ug/L	1000	966	97	85-115	
Chromium	ug/L	1000	979	98	85-115	
Cobalt	ug/L	1000	992	99	85-115	
Copper	ug/L	1000	933	93	85-115	
Iron	ug/L	10000	9950	99	85-115	
Lead	ug/L	1000	992	99	85-115	
Nickel	ug/L	1000	1010	101	85-115	
Selenium	ug/L	1000	969	97	85-115	
Silver	ug/L	500	475	95	85-115	
Thallium	ug/L	1000	1000	100	85-115	
Zinc	ug/L	1000	999	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233908 1233909

Parameter	Units	60150665001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	192	10000	10000	10100	10000	99	98	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233908 1233909											
Parameter	Units	60150665001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1000	992	100	99	70-130	1	7
Arsenic	ug/L	ND	1000	1000	984	973	98	97	70-130	1	10
Beryllium	ug/L	ND	1000	1000	1010	999	101	100	70-130	1	7
Cadmium	ug/L	ND	1000	1000	983	976	98	98	70-130	1	10
Chromium	ug/L	7.2	1000	1000	986	979	98	97	70-130	1	10
Cobalt	ug/L	ND	1000	1000	978	969	98	97	70-130	1	6
Copper	ug/L	42.5	1000	1000	1020	1010	98	97	70-130	1	11
Iron	ug/L	322	10000	10000	10200	10100	99	98	70-130	1	10
Lead	ug/L	ND	1000	1000	970	965	97	96	70-130	1	10
Nickel	ug/L	11.2	1000	1000	1000	995	99	98	70-130	1	10
Selenium	ug/L	ND	1000	1000	1000	995	100	99	70-130	1	10
Silver	ug/L	ND	500	500	484	480	97	96	70-130	1	10
Thallium	ug/L	ND	1000	1000	937	935	94	93	70-130	0	6
Zinc	ug/L	910	1000	1000	1870	1870	96	96	70-130	0	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035
Pace Project No.: 60150553

QC Batch: MPRP/23784 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60150553001

METHOD BLANK: 1233265 Matrix: Water
Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/09/13 09:20	
Antimony, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Arsenic, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Beryllium, Dissolved	ug/L	ND	1.0	08/09/13 09:20	
Cadmium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Chromium, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Cobalt, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Copper, Dissolved	ug/L	ND	10.0	08/09/13 09:20	
Iron, Dissolved	ug/L	ND	50.0	08/09/13 09:20	
Lead, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Nickel, Dissolved	ug/L	ND	5.0	08/09/13 09:20	
Selenium, Dissolved	ug/L	ND	15.0	08/09/13 09:20	
Silver, Dissolved	ug/L	ND	7.0	08/09/13 09:20	
Thallium, Dissolved	ug/L	ND	20.0	08/09/13 09:20	
Zinc, Dissolved	ug/L	ND	50.0	08/09/13 09:20	

LABORATORY CONTROL SAMPLE: 1233266

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10400	104	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	987	99	85-115	
Beryllium, Dissolved	ug/L	1000	1040	104	85-115	
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Chromium, Dissolved	ug/L	1000	1020	102	85-115	
Cobalt, Dissolved	ug/L	1000	1020	102	85-115	
Copper, Dissolved	ug/L	1000	986	99	85-115	
Iron, Dissolved	ug/L	10000	10400	104	85-115	
Lead, Dissolved	ug/L	1000	1010	101	85-115	
Nickel, Dissolved	ug/L	1000	1030	103	85-115	
Selenium, Dissolved	ug/L	1000	996	100	85-115	
Silver, Dissolved	ug/L	500	511	102	85-115	
Thallium, Dissolved	ug/L	1000	988	99	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267 1233268

Parameter	Units	60150334001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1233267 1233268											
Parameter	Units	60150334001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1050	1040	104	103	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	1020	1010	101	100	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1040	1030	104	103	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	998	987	100	99	70-130	1	10
Cobalt, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	11
Iron, Dissolved	ug/L	ND	10000	10000	10300	10200	103	102	70-130	1	10
Lead, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Nickel, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	514	510	103	102	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	988	978	99	98	70-130	1	6
Zinc, Dissolved	ug/L	ND	1000	1000	996	987	99	98	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

QC Batch: MSV/55457 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150553001, 60150553002

METHOD BLANK: 1232937 Matrix: Water

Associated Lab Samples: 60150553001, 60150553002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,2-Dichloroethane	ug/L	ND	1.0	08/08/13 11:47	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/08/13 11:47	
Benzene	ug/L	ND	1.0	08/08/13 11:47	
Bromodichloromethane	ug/L	ND	1.0	08/08/13 11:47	
Bromoform	ug/L	ND	1.0	08/08/13 11:47	
Bromomethane	ug/L	ND	5.0	08/08/13 11:47	
Carbon tetrachloride	ug/L	ND	1.0	08/08/13 11:47	
Chloroethane	ug/L	ND	1.0	08/08/13 11:47	
Chloroform	ug/L	ND	1.0	08/08/13 11:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Ethylbenzene	ug/L	ND	1.0	08/08/13 11:47	
Methylene chloride	ug/L	ND	1.0	08/08/13 11:47	
Tetrachloroethene	ug/L	ND	1.0	08/08/13 11:47	
Toluene	ug/L	ND	1.0	08/08/13 11:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Trichloroethene	ug/L	ND	1.0	08/08/13 11:47	
Vinyl chloride	ug/L	ND	1.0	08/08/13 11:47	
Xylene (Total)	ug/L	ND	3.0	08/08/13 11:47	
1,2-Dichloroethane-d4 (S)	%	90	80-120	08/08/13 11:47	
4-Bromofluorobenzene (S)	%	99	80-120	08/08/13 11:47	
Toluene-d8 (S)	%	95	80-120	08/08/13 11:47	

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	14.8	74	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	106	59-138	
1,1,2-Trichloroethane	ug/L	20	17.3	87	69-127	
1,2-Dichloroethane	ug/L	20	16.2	81	71-129	
1,4-Dichlorobenzene	ug/L	20	20.0	100	68-124	
Benzene	ug/L	20	17.8	89	73-129	
Bromodichloromethane	ug/L	20	15.1	75	63-129	
Bromoform	ug/L	20	18.9	94	52-123	
Bromomethane	ug/L	20	21.6	108	10-160	
Carbon tetrachloride	ug/L	20	15.1	76	70-140	
Chloroethane	ug/L	20	16.4	82	42-160	
Chloroform	ug/L	20	14.5	72	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.3	76	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

LABORATORY CONTROL SAMPLE: 1232938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	17.2	86	66-133	
Methylene chloride	ug/L	20	16.6	83	56-135	
Tetrachloroethene	ug/L	20	18.2	91	64-143	
Toluene	ug/L	20	17.2	86	70-130	
trans-1,2-Dichloroethene	ug/L	20	16.3	81	67-149	
Trichloroethene	ug/L	20	14.6	73	71-130	
Vinyl chloride	ug/L	20	17.7	89	41-160	
Xylene (Total)	ug/L	60	54.7	91	67-130	
1,2-Dichloroethane-d4 (S)	%			86	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			93	80-120	

MATRIX SPIKE SAMPLE: 1232939

Parameter	Units	60150295001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	2540	63	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3740	93	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	2900	72	52-150	
1,2-Dichloroethane	ug/L	ND	4000	2700	68	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3480	85	18-147	
Benzene	ug/L	ND	4000	3090	77	37-151	
Bromodichloromethane	ug/L	ND	4000	2540	63	35-155	
Bromoform	ug/L	ND	4000	3070	74	45-133	
Bromomethane	ug/L	ND	4000	3550	89	10-160	
Carbon tetrachloride	ug/L	ND	4000	2550	64	70-140	M1
Chloroethane	ug/L	ND	4000	2680	67	14-160	
Chloroform	ug/L	ND	4000	2470	61	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	2570	64	19-160	
Ethylbenzene	ug/L	ND	4000	2850	71	37-154	
Methylene chloride	ug/L	ND	4000	2800	70	15-156	
Tetrachloroethene	ug/L	ND	4000	3100	76	64-148	
Toluene	ug/L	ND	4000	2930	71	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	2750	69	54-156	
Trichloroethene	ug/L	ND	4000	2450	61	71-157	M1
Vinyl chloride	ug/L	ND	4000	2990	75	10-160	
Xylene (Total)	ug/L	ND	12000	9220	77	12-153	
1,2-Dichloroethane-d4 (S)	%				85	80-120	
4-Bromofluorobenzene (S)	%				110	80-120	
Toluene-d8 (S)	%				94	80-120	
Preservation pH			7.0	7.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035
Pace Project No.: 60150553

QC Batch:	OEXT/39790	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60150553001		

METHOD BLANK: 1234813 Matrix: Water
Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/13/13 08:42	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/13/13 08:42	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/13/13 08:42	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/13/13 08:42	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/13/13 08:42	
Hexachloroethane	ug/L	ND	5.0	08/13/13 08:42	
Naphthalene	ug/L	ND	5.0	08/13/13 08:42	
Nitrobenzene	ug/L	ND	5.0	08/13/13 08:42	
Pentachlorophenol	ug/L	ND	5.0	08/13/13 08:42	
Phenol	ug/L	ND	5.0	08/13/13 08:42	
2,4,6-Tribromophenol (S)	%	81	39-119	08/13/13 08:42	
2-Fluorobiphenyl (S)	%	85	36-120	08/13/13 08:42	
2-Fluorophenol (S)	%	46	18-120	08/13/13 08:42	
Nitrobenzene-d5 (S)	%	80	32-120	08/13/13 08:42	
Phenol-d6 (S)	%	31	12-120	08/13/13 08:42	
Terphenyl-d14 (S)	%	98	44-120	08/13/13 08:42	

LABORATORY CONTROL SAMPLE: 1234814

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	33.4	67	44-120	
2,4,6-Trichlorophenol	ug/L	50	36.3	73	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	38.9	78	31-147	
Hexachloro-1,3-butadiene	ug/L	50	31.7	63	41-116	
Hexachlorocyclopentadiene	ug/L	100	54.0	54	31-120	
Hexachloroethane	ug/L	50	32.1	64	40-113	
Naphthalene	ug/L	50	35.3	71	48-120	
Nitrobenzene	ug/L	50	35.9	72	47-120	
Pentachlorophenol	ug/L	50	28.6	57	43-127	
Phenol	ug/L	50	15.9	32	15-112	
2,4,6-Tribromophenol (S)	%			70	39-119	
2-Fluorobiphenyl (S)	%			73	36-120	
2-Fluorophenol (S)	%			46	18-120	
Nitrobenzene-d5 (S)	%			66	32-120	
Phenol-d6 (S)	%			31	12-120	
Terphenyl-d14 (S)	%			76	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

MATRIX SPIKE SAMPLE:		1234815					
Parameter	Units	60150399001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	41.9	84	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	45.3	91	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	11.9J	24	27-146	M1
Hexachloro-1,3-butadiene	ug/L	ND	50	40.5	81	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	33.4	33	11-120	
Hexachloroethane	ug/L	ND	50	38.8	78	40-113	
Naphthalene	ug/L	ND	50	43.1	86	32-120	
Nitrobenzene	ug/L	ND	50	47.8	96	35-128	
Pentachlorophenol	ug/L	ND	50	43.8	88	38-133	
Phenol	ug/L	ND	50	19.3	39	13-112	
2,4,6-Tribromophenol (S)	%				86	39-119	
2-Fluorobiphenyl (S)	%				88	36-120	
2-Fluorophenol (S)	%				45	18-120	
Nitrobenzene-d5 (S)	%				82	32-120	
Phenol-d6 (S)	%				31	12-120	
Terphenyl-d14 (S)	%				102	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

QC Batch:	WET/42797	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60150553001		

METHOD BLANK: 1233558 Matrix: Water

Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/09/13 07:08	

LABORATORY CONTROL SAMPLE: 1233559

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.3	103	78-114	

MATRIX SPIKE SAMPLE: 1233560

Parameter	Units	60150536002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	41.7	101	78-114	

SAMPLE DUPLICATE: 1233561

Parameter	Units	60150551001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	2.6J		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

QC Batch: WET/42823

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150553001

METHOD BLANK: 1234848

Matrix: Water

Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/12/13 08:41	

LABORATORY CONTROL SAMPLE: 1234849

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.1	106	64-132	

MATRIX SPIKE SAMPLE: 1234855

Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	20.8	13.9	58	64-132	M1

SAMPLE DUPLICATE: 1234856

Parameter	Units	60150388001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	2.3J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

QC Batch: WET/42848

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150553001

METHOD BLANK: 1235271

Matrix: Water

Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/13/13 10:53	

SAMPLE DUPLICATE: 1235272

Parameter	Units	60150490004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	41.0	37.0	10	25	

SAMPLE DUPLICATE: 1235273

Parameter	Units	60150553001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	2200	2620	17	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

QC Batch: WET/42809 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150553001

SAMPLE DUPLICATE: 1234046

Parameter	Units	60150688001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	10.1	10.0	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

QC Batch:	WETA/25749	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	60150553001		

METHOD BLANK: 1233801 Matrix: Water

Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/09/13 16:20	

LABORATORY CONTROL SAMPLE: 1233802

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.0	101	90-110	

MATRIX SPIKE SAMPLE: 1233803

Parameter	Units	60150563001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	4.5	2	5.8	66	90-110	M1

MATRIX SPIKE SAMPLE: 1233805

Parameter	Units	60150316002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	2.1	105	90-110	

SAMPLE DUPLICATE: 1233804

Parameter	Units	60150160001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	0.83	0.82	1	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

QC Batch:	WETA/25769	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150553001		

METHOD BLANK: 1235028 Matrix: Water

Associated Lab Samples: 60150553001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/13/13 16:09	

LABORATORY CONTROL SAMPLE: 1235029

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	48.6	97	90-110	

MATRIX SPIKE SAMPLE: 1235030

Parameter	Units	60150160001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	ND	50	33.1	66	90-110	M1

MATRIX SPIKE SAMPLE: 1235032

Parameter	Units	60150366002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	189	250	451	105	90-110	

SAMPLE DUPLICATE: 1235031

Parameter	Units	60150160002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	ND	8.8J		25	

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QUALIFIERS

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D9 Dissolved result is greater than the total. Data is within laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-035

Pace Project No.: 60150553

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150553001	316-035	EPA 200.7	MPRP/23801	EPA 200.7	ICP/18658
60150553001	316-035	EPA 200.7	MPRP/23784	EPA 200.7	ICP/18641
60150553001	316-035	EPA 245.1	MERP/7584	EPA 245.1	MERC/7539
60150553001	316-035	EPA 245.1	MERP/7594	EPA 245.1	MERC/7553
60150553001	316-035	EPA 625	OEXT/39790	EPA 625	MSSV/12621
60150553001	316-035	EPA 624 Low	MSV/55457		
60150553002	TRIP BLANK	EPA 624 Low	MSV/55457		
60150553001	316-035	EPA 1664A	WET/42797		
60150553001	316-035	EPA 1664A	WET/42823		
60150553001	316-035	SM 2540D	WET/42848		
60150553001	316-035	SM 4500-H+B	WET/42809		
60150553001	316-035	EPA 350.1	WETA/25749		
60150553001	316-035	EPA 410.4	WETA/25769		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150553



60150553

Client Name: Barr Engin.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ x-roads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet ☒ Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2-1

Optional

Proj Due Date:

Proj Name:

Date and initials of person examining contents: 8/8/13 [Signature]

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>ph</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>US</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	14. <u>Both BP3W: BP3S initial ph 4.5, added 2.5ml to final ph 4.5 - no change</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	
Exceptions: VOA, coliform, TOC, Q&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>[Signature]</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative <u>12510-1-3 - H no 3</u> <u>12518-1-2 - H no 4</u>
Pace Trip Blank lot # (if purchased): <u>covered</u>		15.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/13

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company: BARR ENGINEERING	
Address:	
Email To:	
Phone: (816) 285-8410	Fax:
Requested Due Date/TAT: 10 Day (Default)	

Section B

Required Project Information:

Report To:	ED GALBRAITH/BARR
Copy To:	SCOTT FEDAK/FEEZOR
	DANA BAKER/MARGARET TREANOR -BARR
Purchase Order No.	PO 3727110
Client Project ID:	BRIDGETON LF
Container Order Number:	

Section C

Invoice Information:

Attention:	TABITHA PROVINCE
Company Name:	REPUBLIC SERVICES
Address:	BRIDGETON, MO 63044
Pace Quote Reference:	130426_7588
Pace Project Manager:	Brown, Angie
Pace Profile #:	6787 LINE 2

Page : 1 Of 1

	Regulatory Agency
	State / Location
	Missouri

ITEM#	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample IDs must be unique	MATRIX Drinking Water Water Waste Water Product Soli/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Y/N	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)
						START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other		Analyses Test	COD EPA 410	pH SM 4500H+B	LF DIS. METALS 200.7/245	TOTAL METALS 200.7/245	AMMONIA EPA 350	O/G EPA 1664	B25 SVOCs	VOCs EPA 624	TSS SM2540D			
						DATE	TIME	DATE	TIME																								
1	316-035 3A61H, 3A61U SDH			G		8/7/13	1242		1802u		1584	1	1					X	X	X	X	X	X	X	X	X	X	X	1802545	METALS LIST total & LF Dis.			
2	TRIP BLANK									2	2																			Al,Sb,As,Be,Cd,Cr,			
3																														Cu,Cu,Fe,Pb,Ni,Se,Ag,Tl,Zn			
4																														and Mercury			
5																																	
6																																	
7																																	
8																																	
9																																	
10																																	
11																																	
12																																	
ADDITIONAL COMMENTS						RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS																			
SITE CONTACT: BILL ABERNATHY 314-502-1299						Hunter King		8/7/13	1320	Emily Beiers		8/7/13	1320																				
SITE ADDRESS: BRIDGETON LF						Emily Beiers		8/7/13	1655	E Brackett		8/7/13	1655																				
13570 ST CHARLES ROCK RD										E Brackett 1 Pce		8/8	0005	2-1	y	y	y																
BRIDGETON MO 63044																																	
SAMPLER NAME AND SIGNATURE														TEMP in C				Received on Ice (Y/N)				Custody Sealed Cooler (Y/N)				Samples Intact (Y/N)							
PRINT Name of SAMPLER:																																	
SIGNATURE of SAMPLER:																																	
Hunter King																																	
Signature of Hunter King														DATE Signed: 8/7/13																			

August 15, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-035
Pace Project No.: 60150554

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 08, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-035

Pace Project No.: 60150554

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-035

Pace Project No.: 60150554

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150554001	316-035	Water	08/07/13 12:42	08/08/13 00:05

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-035

Pace Project No.: 60150554

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150554001	316-035	SM 5210B	JML	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-035

Pace Project No.: 60150554

Sample: 316-035		Lab ID: 60150554001	Collected: 08/07/13 12:42	Received: 08/08/13 00:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	34400	mg/L	2.0	1	08/09/13 10:02	08/14/13 12:57		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-035

Pace Project No.: 60150554

QC Batch: WET/42799

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150554001

METHOD BLANK: 1233606

Matrix: Water

Associated Lab Samples: 60150554001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/14/13 12:34	

LABORATORY CONTROL SAMPLE: 1233607

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	200	101	85-115	

SAMPLE DUPLICATE: 1233608

Parameter	Units	60150561001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	ND	ND		17	

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QUALIFIERS

Project: BRIDGETON LF 316-035

Pace Project No.: 60150554

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-035

Pace Project No.: 60150554

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150554001	316-035	SM 5210B	WET/42799	SM 5210B	WET/42875

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150554



60150554

Client Name: Barr Engin.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ x-roads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ zpc

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2-6

Date and initials of person examining contents: 8/8/13 SD

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Boo</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses Matrix: <u>WT</u>		13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/8/13

August 15, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-036
Pace Project No.: 60150676

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 09, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-036

Pace Project No.: 60150676

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-036

Pace Project No.: 60150676

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150676001	316-036	Water	08/08/13 13:04	08/09/13 01:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-036

Pace Project No.: 60150676

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150676001	316-036	SM 5210B	JML	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-036

Pace Project No.: 60150676

Sample: 316-036		Lab ID: 60150676001	Collected: 08/08/13 13:04	Received: 08/09/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	18800	mg/L	2.0	1	08/10/13 12:47	08/15/13 15:24		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150676

QC Batch: WET/42818

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150676001

METHOD BLANK: 1234462

Matrix: Water

Associated Lab Samples: 60150676001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/15/13 15:17	

LABORATORY CONTROL SAMPLE: 1234463

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	173	87	85-115	

SAMPLE DUPLICATE: 1234464

Parameter	Units	60150685001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	364	340	7	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-036

Pace Project No.: 60150676

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-036

Pace Project No.: 60150676

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150676001	316-036	SM 5210B	WET/42818	SM 5210B	WET/42907

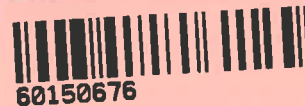
REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150676



Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 0.1

Date and initials of person examining contents: KE 8/9/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		18.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 8/9

August 16, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-036
Pace Project No.: 60150677

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 09, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150677001	316-036	Water	08/08/13 13:01	08/09/13 01:30
60150677002	TRIP BLANK	Water	08/08/13 13:01	08/09/13 01:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150677001	316-036	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	AAM	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC	1
60150677002	TRIP BLANK	EPA 624 Low	AAM	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

Sample: 316-036		Lab ID: 60150677001	Collected: 08/08/13 13:01	Received: 08/09/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5220 ug/L		150	2	08/15/13 10:30	08/15/13 15:27	7429-90-5	
Antimony	ND ug/L		50.0	5	08/15/13 10:30	08/15/13 15:48	7440-36-0	D3
Arsenic	620 ug/L		50.0	5	08/15/13 10:30	08/15/13 15:48	7440-38-2	
Beryllium	ND ug/L		2.0	2	08/15/13 10:30	08/15/13 15:27	7440-41-7	D3
Cadmium	ND ug/L		25.0	5	08/15/13 10:30	08/15/13 15:48	7440-43-9	D3
Chromium	204 ug/L		25.0	5	08/15/13 10:30	08/15/13 15:48	7440-47-3	
Cobalt	49.2 ug/L		25.0	5	08/15/13 10:30	08/15/13 15:48	7440-48-4	
Copper	23.6 ug/L		20.0	2	08/15/13 10:30	08/15/13 15:27	7440-50-8	
Iron	488000 ug/L		100	2	08/15/13 10:30	08/15/13 15:27	7439-89-6	
Lead	82.0 ug/L		25.0	5	08/15/13 10:30	08/15/13 15:48	7439-92-1	
Nickel	146 ug/L		10.0	2	08/15/13 10:30	08/15/13 15:27	7440-02-0	
Selenium	ND ug/L		75.0	5	08/15/13 10:30	08/15/13 15:48	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/15/13 10:30	08/15/13 15:27	7440-22-4	D3
Thallium	ND ug/L		100	5	08/15/13 10:30	08/15/13 15:48	7440-28-0	D3
Zinc	11900 ug/L		1000	20	08/15/13 10:30	08/15/13 16:25	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2850 ug/L		150	2	08/14/13 16:45	08/16/13 11:15	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	5	08/14/13 16:45	08/16/13 11:59	7440-36-0	D3
Arsenic, Dissolved	502 ug/L		50.0	5	08/14/13 16:45	08/16/13 11:59	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/14/13 16:45	08/16/13 11:59	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		25.0	5	08/14/13 16:45	08/16/13 11:59	7440-43-9	D3
Chromium, Dissolved	198 ug/L		25.0	5	08/14/13 16:45	08/16/13 11:59	7440-47-3	
Cobalt, Dissolved	47.6 ug/L		25.0	5	08/14/13 16:45	08/16/13 11:59	7440-48-4	
Copper, Dissolved	20.7 ug/L		20.0	2	08/14/13 16:45	08/16/13 11:15	7440-50-8	
Iron, Dissolved	478000 ug/L		100	2	08/14/13 16:45	08/16/13 11:15	7439-89-6	M1
Lead, Dissolved	57.3 ug/L		25.0	5	08/14/13 16:45	08/16/13 11:59	7439-92-1	
Nickel, Dissolved	138 ug/L		25.0	5	08/14/13 16:45	08/16/13 11:59	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/14/13 16:45	08/16/13 11:59	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/14/13 16:45	08/16/13 11:15	7440-22-4	D3,M1, R1
Thallium, Dissolved	ND ug/L		100	5	08/14/13 16:45	08/16/13 11:59	7440-28-0	D3
Zinc, Dissolved	9360 ug/L		1000	20	08/14/13 16:45	08/16/13 12:43	7440-66-6	M1
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	8.8 ug/L		0.20	1	08/13/13 17:45	08/14/13 10:56	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/15/13 11:10	08/15/13 15:22	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/14/13 00:00	08/15/13 10:42	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 10:42	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 10:42	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/14/13 00:00	08/15/13 10:42	67-72-1	
Naphthalene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 10:42	91-20-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-036
Pace Project No.: 60150677

Sample: 316-036		Lab ID: 60150677001	Collected: 08/08/13 13:01	Received: 08/09/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Nitrobenzene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 10:42	98-95-3	
Pentachlorophenol	ND ug/L		1000	20	08/14/13 00:00	08/15/13 10:42	87-86-5	
Phenol	15100 ug/L		1000	20	08/14/13 00:00	08/15/13 10:42	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 10:42	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/14/13 00:00	08/15/13 10:42	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/14/13 00:00	08/15/13 10:42	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/14/13 00:00	08/15/13 10:42	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/14/13 00:00	08/15/13 10:42	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/14/13 00:00	08/15/13 10:42	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/14/13 00:00	08/15/13 10:42	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/14/13 00:00	08/15/13 10:42	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/09/13 18:18	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/09/13 18:18	75-27-4	
Bromoform	ND ug/L		200	200		08/09/13 18:18	75-25-2	
Bromomethane	ND ug/L		1000	200		08/09/13 18:18	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/09/13 18:18	56-23-5	
Chloroethane	ND ug/L		200	200		08/09/13 18:18	75-00-3	
Chloroform	ND ug/L		200	200		08/09/13 18:18	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/09/13 18:18	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/09/13 18:18	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/09/13 18:18	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/09/13 18:18	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/09/13 18:18	100-41-4	
Methylene chloride	ND ug/L		200	200		08/09/13 18:18	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/09/13 18:18	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/09/13 18:18	127-18-4	
Toluene	ND ug/L		200	200		08/09/13 18:18	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/09/13 18:18	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/09/13 18:18	79-00-5	
Trichloroethene	ND ug/L		200	200		08/09/13 18:18	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/09/13 18:18	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/09/13 18:18	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	109 %		80-120	200		08/09/13 18:18	1868-53-7	D3
4-Bromofluorobenzene (S)	95 %		80-120	200		08/09/13 18:18	460-00-4	
Toluene-d8 (S)	101 %		80-120	200		08/09/13 18:18	2037-26-5	
1,2-Dichloroethane-d4 (S)	108 %		80-120	200		08/09/13 18:18	17060-07-0	
Preservation pH	7.0		1.0	200		08/09/13 18:18		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	299 mg/L		5.0	1		08/09/13 14:00		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

Sample: 316-036		Lab ID: 60150677001	Collected: 08/08/13 13:01	Received: 08/09/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH	Analytical Method: EPA 1664A							
Total Petroleum Hydrocarbons	7.1	mg/L	5.0	1		08/13/13 12:31		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1820	mg/L	5.0	1		08/14/13 08:29		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.8	Std. Units	0.10	1		08/12/13 12:54		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	699	mg/L	20.0	200		08/09/13 17:21	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	55800	mg/L	5000	500		08/15/13 07:56		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

Sample: TRIP BLANK		Lab ID: 60150677002	Collected: 08/08/13 13:01	Received: 08/09/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/09/13 18:40	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/09/13 18:40	75-27-4	
Bromoform	ND ug/L		1.0	1		08/09/13 18:40	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/09/13 18:40	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/09/13 18:40	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/09/13 18:40	75-00-3	
Chloroform	ND ug/L		1.0	1		08/09/13 18:40	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/09/13 18:40	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/09/13 18:40	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/09/13 18:40	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/09/13 18:40	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/09/13 18:40	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/09/13 18:40	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/09/13 18:40	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/09/13 18:40	127-18-4	
Toluene	ND ug/L		1.0	1		08/09/13 18:40	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/09/13 18:40	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/09/13 18:40	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/09/13 18:40	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/09/13 18:40	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/09/13 18:40	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	112 %		80-120	1		08/09/13 18:40	1868-53-7	
4-Bromofluorobenzene (S)	101 %		80-120	1		08/09/13 18:40	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		08/09/13 18:40	2037-26-5	
1,2-Dichloroethane-d4 (S)	94 %		80-120	1		08/09/13 18:40	17060-07-0	
Preservation pH	7.0		1.0	1		08/09/13 18:40		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch:	MERP/7595	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury
Associated Lab Samples:	60150677001		

METHOD BLANK:	1235705	Matrix:	Water
Associated Lab Samples:	60150677001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/14/13 10:47	

LABORATORY CONTROL SAMPLE: 1235706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1235707 1235708

Parameter	Units	60150897001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.8	4.8	96	97	70-130	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch:	MERP/7603	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60150677001		

METHOD BLANK:	1236523	Matrix:	Water
Associated Lab Samples:	60150677001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/15/13 15:09	

LABORATORY CONTROL SAMPLE: 1236524						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.4	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236525													1236526		
Parameter	Units	60150841001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual			
Mercury, Dissolved	ug/L	ND	5	5	2.4	2.0	46	38	70-130	18	20	M1			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch: MPRP/23858

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60150677001

METHOD BLANK: 1236595

Matrix: Water

Associated Lab Samples: 60150677001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/15/13 15:02	
Antimony	ug/L	ND	10.0	08/15/13 15:02	
Arsenic	ug/L	ND	10.0	08/15/13 15:02	
Beryllium	ug/L	ND	1.0	08/15/13 15:02	
Cadmium	ug/L	ND	5.0	08/15/13 15:02	
Chromium	ug/L	ND	5.0	08/15/13 15:02	
Cobalt	ug/L	ND	5.0	08/15/13 15:02	
Copper	ug/L	ND	10.0	08/15/13 15:02	
Iron	ug/L	ND	50.0	08/15/13 15:02	
Lead	ug/L	ND	5.0	08/15/13 15:02	
Nickel	ug/L	ND	5.0	08/15/13 15:02	
Selenium	ug/L	ND	15.0	08/15/13 15:02	
Silver	ug/L	ND	7.0	08/15/13 15:02	
Thallium	ug/L	ND	20.0	08/15/13 15:02	
Zinc	ug/L	ND	50.0	08/15/13 15:02	

LABORATORY CONTROL SAMPLE: 1236596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10200	102	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	956	96	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	949	95	85-115	
Cobalt	ug/L	1000	995	100	85-115	
Copper	ug/L	1000	963	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1000	100	85-115	
Selenium	ug/L	1000	996	100	85-115	
Silver	ug/L	500	481	96	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	949	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597

1236598

Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10000	9770	100	97	70-130	3	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597 1236598											
Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic	ug/L	ND	1000	1000	990	975	99	97	70-130	2	10
Beryllium	ug/L	ND	1000	1000	988	966	99	97	70-130	2	7
Cadmium	ug/L	ND	1000	1000	998	979	100	98	70-130	2	10
Chromium	ug/L	ND	1000	1000	953	938	95	94	70-130	2	10
Cobalt	ug/L	ND	1000	1000	992	978	99	98	70-130	1	6
Copper	ug/L	ND	1000	1000	987	972	99	97	70-130	2	11
Iron	ug/L	879	10000	10000	10600	10300	97	95	70-130	2	10
Lead	ug/L	ND	1000	1000	995	981	99	98	70-130	1	10
Nickel	ug/L	ND	1000	1000	1000	986	100	99	70-130	1	10
Selenium	ug/L	ND	1000	1000	898	894	90	89	70-130	0	10
Silver	ug/L	ND	500	500	490	480	98	96	70-130	2	10
Thallium	ug/L	ND	1000	1000	1010	995	101	100	70-130	2	6
Zinc	ug/L	ND	1000	1000	946	932	94	93	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch:	MPRP/23850	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60150677001		

METHOD BLANK: 1236263 Matrix: Water

Associated Lab Samples: 60150677001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/16/13 11:09	
Antimony, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Arsenic, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Beryllium, Dissolved	ug/L	ND	1.0	08/16/13 11:09	
Cadmium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Chromium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Cobalt, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Copper, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Iron, Dissolved	ug/L	116	50.0	08/16/13 11:09	
Lead, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Nickel, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Selenium, Dissolved	ug/L	ND	15.0	08/16/13 11:09	
Silver, Dissolved	ug/L	ND	7.0	08/16/13 11:09	
Thallium, Dissolved	ug/L	ND	20.0	08/16/13 11:09	
Zinc, Dissolved	ug/L	ND	50.0	08/16/13 11:09	

LABORATORY CONTROL SAMPLE: 1236264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10600	106	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	970	97	85-115	
Beryllium, Dissolved	ug/L	1000	1030	103	85-115	
Cadmium, Dissolved	ug/L	1000	990	99	85-115	
Chromium, Dissolved	ug/L	1000	1010	101	85-115	
Cobalt, Dissolved	ug/L	1000	1030	103	85-115	
Copper, Dissolved	ug/L	1000	1030	103	85-115	
Iron, Dissolved	ug/L	10000	10600	106	85-115	
Lead, Dissolved	ug/L	1000	1040	104	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	980	98	85-115	
Silver, Dissolved	ug/L	500	504	101	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	963	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265 1236266

Parameter	Units	60150677001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2850	10000	10000	13500	13700	107	109	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265 1236266											
Parameter	Units	60150677001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						RPD
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	1000	952	979	93	96	70-130	3
Arsenic, Dissolved	ug/L	502	1000	1000	1000	1560	1630	105	113	70-130	5
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	940	963	94	96	70-130	2
Cadmium, Dissolved	ug/L	ND	1000	1000	1000	1030	1050	102	104	70-130	2
Chromium, Dissolved	ug/L	198	1000	1000	1000	1120	1150	92	95	70-130	3
Cobalt, Dissolved	ug/L	47.6	1000	1000	1000	986	1010	94	96	70-130	2
Copper, Dissolved	ug/L	20.7	1000	1000	1000	1120	1130	109	111	70-130	2
Iron, Dissolved	ug/L	478000	10000	10000	10000	492000	507000	138	294	70-130	3
Lead, Dissolved	ug/L	57.3	1000	1000	1000	942	970	89	91	70-130	3
Nickel, Dissolved	ug/L	138	1000	1000	1000	1060	1080	92	94	70-130	2
Selenium, Dissolved	ug/L	ND	1000	1000	1000	1040	1080	104	108	70-130	3
Silver, Dissolved	ug/L	ND	500	500	500	47.7	39.2	9	8	70-130	20
Thallium, Dissolved	ug/L	ND	1000	1000	1000	754	758	75	76	70-130	0
Zinc, Dissolved	ug/L	9360	1000	1000	1000	10300	10800	96	145	70-130	5

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch: MSV/55502 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150677001, 60150677002

METHOD BLANK: 1234096 Matrix: Water

Associated Lab Samples: 60150677001, 60150677002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/09/13 16:53	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/09/13 16:53	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/09/13 16:53	
1,2-Dichloroethane	ug/L	ND	1.0	08/09/13 16:53	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/09/13 16:53	
Benzene	ug/L	ND	1.0	08/09/13 16:53	
Bromodichloromethane	ug/L	ND	1.0	08/09/13 16:53	
Bromoform	ug/L	ND	1.0	08/09/13 16:53	
Bromomethane	ug/L	ND	5.0	08/09/13 16:53	
Carbon tetrachloride	ug/L	ND	1.0	08/09/13 16:53	
Chloroethane	ug/L	ND	1.0	08/09/13 16:53	
Chloroform	ug/L	ND	1.0	08/09/13 16:53	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/09/13 16:53	
Ethylbenzene	ug/L	ND	1.0	08/09/13 16:53	
Methylene chloride	ug/L	ND	1.0	08/09/13 16:53	
Tetrachloroethene	ug/L	ND	1.0	08/09/13 16:53	
Toluene	ug/L	ND	1.0	08/09/13 16:53	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/09/13 16:53	
Trichloroethene	ug/L	ND	1.0	08/09/13 16:53	
Vinyl chloride	ug/L	ND	1.0	08/09/13 16:53	
Xylene (Total)	ug/L	ND	3.0	08/09/13 16:53	
1,2-Dichloroethane-d4 (S)	%	104	80-120	08/09/13 16:53	
4-Bromofluorobenzene (S)	%	102	80-120	08/09/13 16:53	
Toluene-d8 (S)	%	103	80-120	08/09/13 16:53	

LABORATORY CONTROL SAMPLE: 1234097

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.4	87	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	20.6	103	59-138	
1,1,2-Trichloroethane	ug/L	20	17.3	87	69-127	
1,2-Dichloroethane	ug/L	20	17.3	86	71-129	
1,4-Dichlorobenzene	ug/L	20	20.8	104	68-124	
Benzene	ug/L	20	16.9	85	73-129	
Bromodichloromethane	ug/L	20	17.0	85	63-129	
Bromoform	ug/L	20	19.4	97	52-123	
Bromomethane	ug/L	20	16.8	84	10-160	
Carbon tetrachloride	ug/L	20	17.4	87	70-140	
Chloroethane	ug/L	20	16.1	81	42-160	
Chloroform	ug/L	20	15.5	78	60-120	
cis-1,2-Dichloroethene	ug/L	20	17.7	89	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

LABORATORY CONTROL SAMPLE: 1234097

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	16.1	80	66-133	
Methylene chloride	ug/L	20	18.1	90	56-135	
Tetrachloroethene	ug/L	20	15.5	78	64-143	
Toluene	ug/L	20	16.0	80	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.5	88	67-149	
Trichloroethene	ug/L	20	18.8	94	71-130	
Vinyl chloride	ug/L	20	14.1	71	41-160	
Xylene (Total)	ug/L	60	51.9	86	67-130	
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			105	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1234098

Parameter	Units	60150604001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	20	19.2	96	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	19.1	95	46-157	
1,1,2-Trichloroethane	ug/L	ND	20	15.3	76	52-150	
1,2-Dichloroethane	ug/L	ND	20	16.4	82	49-155	
1,4-Dichlorobenzene	ug/L	ND	20	17.9	88	18-147	
Benzene	ug/L	ND	20	16.5	82	37-151	
Bromodichloromethane	ug/L	ND	20	16.1	80	35-155	
Bromoform	ug/L	ND	20	17.7	84	45-133	
Bromomethane	ug/L	ND	20	14.7	71	10-160	
Carbon tetrachloride	ug/L	ND	20	20.1	101	70-140	
Chloroethane	ug/L	ND	20	17.1	85	14-160	
Chloroform	ug/L	ND	20	16.9	82	51-138	
cis-1,2-Dichloroethene	ug/L	ND	20	18.4	92	19-160	
Ethylbenzene	ug/L	ND	20	15.0	75	37-154	
Methylene chloride	ug/L	ND	20	18.9	95	15-156	
Tetrachloroethene	ug/L	ND	20	15.4	77	64-148	
Toluene	ug/L	ND	20	16.0	80	47-150	
trans-1,2-Dichloroethene	ug/L	ND	20	18.7	93	54-156	
Trichloroethene	ug/L	ND	20	17.3	86	71-157	
Vinyl chloride	ug/L	ND	20	15.0	75	10-160	
Xylene (Total)	ug/L	ND	60	50.4	84	12-153	
1,2-Dichloroethane-d4 (S)	%				105	80-120	
4-Bromofluorobenzene (S)	%				100	80-120	
Toluene-d8 (S)	%				97	80-120	
Preservation pH			7.0	7.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036
Pace Project No.: 60150677

QC Batch:	OEXT/39841	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60150677001		

METHOD BLANK: 1235808 Matrix: Water
Associated Lab Samples: 60150677001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/15/13 08:58	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/15/13 08:58	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/15/13 08:58	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/15/13 08:58	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/15/13 08:58	
Hexachloroethane	ug/L	ND	5.0	08/15/13 08:58	
Naphthalene	ug/L	ND	5.0	08/15/13 08:58	
Nitrobenzene	ug/L	ND	5.0	08/15/13 08:58	
Pentachlorophenol	ug/L	ND	5.0	08/15/13 08:58	
Phenol	ug/L	ND	5.0	08/15/13 08:58	
2,4,6-Tribromophenol (S)	%	70	39-119	08/15/13 08:58	
2-Fluorobiphenyl (S)	%	68	36-120	08/15/13 08:58	
2-Fluorophenol (S)	%	49	18-120	08/15/13 08:58	
Nitrobenzene-d5 (S)	%	67	32-120	08/15/13 08:58	
Phenol-d6 (S)	%	37	12-120	08/15/13 08:58	
Terphenyl-d14 (S)	%	78	44-120	08/15/13 08:58	

LABORATORY CONTROL SAMPLE: 1235809

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	32.6	65	44-120	
2,4,6-Trichlorophenol	ug/L	50	33.7	67	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	37.2	74	31-147	
Hexachloro-1,3-butadiene	ug/L	50	33.0	66	41-116	
Hexachlorocyclopentadiene	ug/L	100	59.0	59	31-120	
Hexachloroethane	ug/L	50	31.9	64	40-113	
Naphthalene	ug/L	50	34.2	68	48-120	
Nitrobenzene	ug/L	50	35.4	71	47-120	
Pentachlorophenol	ug/L	50	36.2	72	43-127	
Phenol	ug/L	50	17.6	35	15-112	
2,4,6-Tribromophenol (S)	%			71	39-119	
2-Fluorobiphenyl (S)	%			66	36-120	
2-Fluorophenol (S)	%			47	18-120	
Nitrobenzene-d5 (S)	%			65	32-120	
Phenol-d6 (S)	%			35	12-120	
Terphenyl-d14 (S)	%			72	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

MATRIX SPIKE SAMPLE:		1235810					
Parameter	Units	60150566002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	33.9	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	36.0	72	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	31.7	63	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	33.2	66	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	57.6	58	11-120	
Hexachloroethane	ug/L	ND	50	32.1	64	40-113	
Naphthalene	ug/L	ND	50	34.1	68	32-120	
Nitrobenzene	ug/L	ND	50	35.1	70	35-128	
Pentachlorophenol	ug/L	ND	50	39.6	79	38-133	
Phenol	ug/L	ND	50	19.1	38	13-112	
2,4,6-Tribromophenol (S)	%				79	39-119	
2-Fluorobiphenyl (S)	%				68	36-120	
2-Fluorophenol (S)	%				44	18-120	
Nitrobenzene-d5 (S)	%				64	32-120	
Phenol-d6 (S)	%				33	12-120	
Terphenyl-d14 (S)	%				76	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch: WET/42807

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60150677001

METHOD BLANK: 1233947

Matrix: Water

Associated Lab Samples: 60150677001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/09/13 14:00	

LABORATORY CONTROL SAMPLE: 1233948

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	40.0	100	78-114	

MATRIX SPIKE SAMPLE: 1233951

Parameter	Units	60150695001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	45.3	104	78-114	

SAMPLE DUPLICATE: 1233952

Parameter	Units	60150302001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	2J		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch: WET/42850

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150677001

METHOD BLANK: 1235322

Matrix: Water

Associated Lab Samples: 60150677001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/13/13 12:29	

LABORATORY CONTROL SAMPLE: 1235323

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.6	108	64-132	

MATRIX SPIKE SAMPLE: 1235329

Parameter	Units	60150388004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.5	22.7	103	64-132	

SAMPLE DUPLICATE: 1235330

Parameter	Units	60150388005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	1.5J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch: WET/42863

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150677001

METHOD BLANK: 1235879

Matrix: Water

Associated Lab Samples: 60150677001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/14/13 08:24	

SAMPLE DUPLICATE: 1235880

Parameter	Units	60150901001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	24.0	24.0	0	25	

SAMPLE DUPLICATE: 1235881

Parameter	Units	60150674003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	65.0	60.0	8	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch: WET/42831 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150677001

SAMPLE DUPLICATE: 1234985

Parameter	Units	60150677001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.8	5.8	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch:	WETA/25750	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	60150677001		

METHOD BLANK: 1233806 Matrix: Water
Associated Lab Samples: 60150677001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/09/13 16:53	

LABORATORY CONTROL SAMPLE: 1233807

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	104	90-110	

MATRIX SPIKE SAMPLE: 1233808

Parameter	Units	60150463002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.27	2	2.3	102	90-110	

MATRIX SPIKE SAMPLE: 1233810

Parameter	Units	60150534003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	8.7	10	18.3	95	90-110	

SAMPLE DUPLICATE: 1233809

Parameter	Units	60150415002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	47.1	46.2	2	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

QC Batch:	WETA/25793	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150677001		

METHOD BLANK: 1235988 Matrix: Water

Associated Lab Samples: 60150677001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/15/13 07:24	

LABORATORY CONTROL SAMPLE: 1235989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	54.2	108	90-110	

MATRIX SPIKE SAMPLE: 1236006

Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	14.0	50	89.3	151	90-110	M1

MATRIX SPIKE SAMPLE: 1236009

Parameter	Units	60150388001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	65.4	50	125	120	90-110	M1

SAMPLE DUPLICATE: 1235991

Parameter	Units	60150386002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	16.7	15.7	6	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-036

Pace Project No.: 60150677

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150677001	316-036	EPA 200.7	MPRP/23858	EPA 200.7	ICP/18681
60150677001	316-036	EPA 200.7	MPRP/23850	EPA 200.7	ICP/18678
60150677001	316-036	EPA 245.1	MERP/7595	EPA 245.1	MERC/7551
60150677001	316-036	EPA 245.1	MERP/7603	EPA 245.1	MERC/7559
60150677001	316-036	EPA 625	OEXT/39841	EPA 625	MSSV/12639
60150677001	316-036	EPA 624 Low	MSV/55502		
60150677002	TRIP BLANK	EPA 624 Low	MSV/55502		
60150677001	316-036	EPA 1664A	WET/42807		
60150677001	316-036	EPA 1664A	WET/42850		
60150677001	316-036	SM 2540D	WET/42863		
60150677001	316-036	SM 4500-H+B	WET/42831		
60150677001	316-036	EPA 350.1	WETA/25750		
60150677001	316-036	EPA 410.4	WETA/25793		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150677



60150677

Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 0.1

Date and initials of person examining contents: KE 8/9/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. pH
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☒ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> coliform, TOC <u>U&C</u> WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		18.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 8/9

August 19, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-037
Pace Project No.: 60150779

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150779001	316-037	Water	08/09/13 13:09	08/10/13 01:20
60150779002	TRIP BLANK	Water	08/09/13 13:09	08/10/13 01:20

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150779001	316-037	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC	1
60150779002	TRIP BLANK	EPA 624 Low	JKL	26

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

Sample: 316-037		Lab ID: 60150779001	Collected: 08/09/13 13:09	Received: 08/10/13 01:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	9460 ug/L		150	2	08/15/13 10:30	08/15/13 15:31	7429-90-5	
Antimony	50.4 ug/L		20.0	2	08/15/13 10:30	08/15/13 15:31	7440-36-0	
Arsenic	674 ug/L		20.0	2	08/15/13 10:30	08/15/13 15:31	7440-38-2	
Beryllium	ND ug/L		2.0	2	08/15/13 10:30	08/15/13 15:31	7440-41-7	D3
Cadmium	ND ug/L		10.0	2	08/15/13 10:30	08/15/13 15:31	7440-43-9	D3
Chromium	229 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:08	7440-47-3	
Cobalt	60.9 ug/L		10.0	2	08/15/13 10:30	08/15/13 15:31	7440-48-4	
Copper	37.3 ug/L		20.0	2	08/15/13 10:30	08/15/13 15:31	7440-50-8	
Iron	685000 ug/L		100	2	08/15/13 10:30	08/15/13 15:31	7439-89-6	
Lead	162 ug/L		10.0	2	08/15/13 10:30	08/15/13 15:31	7439-92-1	
Nickel	216 ug/L		10.0	2	08/15/13 10:30	08/15/13 15:31	7440-02-0	
Selenium	ND ug/L		75.0	5	08/15/13 10:30	08/15/13 16:08	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/15/13 10:30	08/15/13 15:31	7440-22-4	D3
Thallium	ND ug/L		100	5	08/15/13 10:30	08/15/13 16:08	7440-28-0	D3
Zinc	11700 ug/L		1000	20	08/15/13 10:30	08/15/13 16:28	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2880 ug/L		150	2	08/14/13 16:45	08/16/13 11:26	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	5	08/14/13 16:45	08/16/13 12:09	7440-36-0	D3
Arsenic, Dissolved	511 ug/L		50.0	5	08/14/13 16:45	08/16/13 12:09	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/14/13 16:45	08/16/13 12:09	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	5	08/14/13 16:45	08/16/13 12:09	7440-43-9	D3
Chromium, Dissolved	205 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:09	7440-47-3	
Cobalt, Dissolved	51.5 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:09	7440-48-4	
Copper, Dissolved	21.0 ug/L		20.0	2	08/14/13 16:45	08/16/13 11:26	7440-50-8	
Iron, Dissolved	503000 ug/L		100	2	08/14/13 16:45	08/16/13 11:26	7439-89-6	
Lead, Dissolved	72.4 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:09	7439-92-1	
Nickel, Dissolved	201 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:09	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/14/13 16:45	08/16/13 12:09	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/14/13 16:45	08/16/13 11:26	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/14/13 16:45	08/16/13 12:09	7440-28-0	D3
Zinc, Dissolved	9740 ug/L		1000	20	08/14/13 16:45	08/16/13 12:53	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	1.8 ug/L		0.20	1	08/13/13 17:45	08/14/13 11:09	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/15/13 11:10	08/15/13 15:24	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/14/13 00:00	08/15/13 11:03	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:03	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:03	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:03	67-72-1	
Naphthalene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:03	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:03	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

Sample: 316-037		Lab ID: 60150779001	Collected: 08/09/13 13:09	Received: 08/10/13 01:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:03	87-86-5	
Phenol	13400 ug/L		1000	20	08/14/13 00:00	08/15/13 11:03	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:03	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:03	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/14/13 00:00	08/15/13 11:03	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/14/13 00:00	08/15/13 11:03	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/14/13 00:00	08/15/13 11:03	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/14/13 00:00	08/15/13 11:03	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/14/13 00:00	08/15/13 11:03	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/14/13 00:00	08/15/13 11:03	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/15/13 20:57	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/15/13 20:57	75-27-4	
Bromoform	ND ug/L		200	200		08/15/13 20:57	75-25-2	
Bromomethane	ND ug/L		1000	200		08/15/13 20:57	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/15/13 20:57	56-23-5	
Chloroethane	ND ug/L		200	200		08/15/13 20:57	75-00-3	
Chloroform	ND ug/L		200	200		08/15/13 20:57	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/15/13 20:57	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/15/13 20:57	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 20:57	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 20:57	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/15/13 20:57	100-41-4	
Methylene chloride	ND ug/L		200	200		08/15/13 20:57	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/15/13 20:57	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/15/13 20:57	127-18-4	
Toluene	ND ug/L		200	200		08/15/13 20:57	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/15/13 20:57	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/15/13 20:57	79-00-5	
Trichloroethene	ND ug/L		200	200		08/15/13 20:57	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/15/13 20:57	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/15/13 20:57	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	102 %		80-120	200		08/15/13 20:57	1868-53-7	D3
4-Bromofluorobenzene (S)	101 %		80-120	200		08/15/13 20:57	460-00-4	
Toluene-d8 (S)	100 %		80-120	200		08/15/13 20:57	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	200		08/15/13 20:57	17060-07-0	
Preservation pH	7.0		1.0	200		08/15/13 20:57		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	461 mg/L		5.0	1		08/11/13 09:15		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/13/13 12:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

Sample: 316-037		Lab ID: 60150779001	Collected: 08/09/13 13:09	Received: 08/10/13 01:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2620	mg/L	5.0	1		08/14/13 13:45		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.9	Std. Units	0.10	1		08/12/13 12:54		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	668	mg/L	20.0	200		08/13/13 15:24	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	52200	mg/L	5000	500		08/15/13 07:57		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

Sample: TRIP BLANK		Lab ID: 60150779002	Collected: 08/09/13 13:09	Received: 08/10/13 01:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/15/13 18:49	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/15/13 18:49	75-27-4	
Bromoform	ND ug/L		1.0	1		08/15/13 18:49	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/15/13 18:49	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/15/13 18:49	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/15/13 18:49	75-00-3	
Chloroform	ND ug/L		1.0	1		08/15/13 18:49	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/15/13 18:49	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/15/13 18:49	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 18:49	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 18:49	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/15/13 18:49	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/15/13 18:49	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/15/13 18:49	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/15/13 18:49	127-18-4	
Toluene	ND ug/L		1.0	1		08/15/13 18:49	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/15/13 18:49	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/15/13 18:49	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/15/13 18:49	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/15/13 18:49	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/15/13 18:49	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	102 %		80-120	1		08/15/13 18:49	1868-53-7	
4-Bromofluorobenzene (S)	99 %		80-120	1		08/15/13 18:49	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		08/15/13 18:49	2037-26-5	
1,2-Dichloroethane-d4 (S)	105 %		80-120	1		08/15/13 18:49	17060-07-0	
Preservation pH	7.0		1.0	1		08/15/13 18:49		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

QC Batch: MERP/7595

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60150779001

METHOD BLANK: 1235705

Matrix: Water

Associated Lab Samples: 60150779001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/14/13 10:47	

LABORATORY CONTROL SAMPLE: 1235706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1235707 1235708

Parameter	Units	60150897001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.8	4.8	96	97	70-130	1	20	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

QC Batch:	MERP/7603	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60150779001		

METHOD BLANK:	1236523	Matrix:	Water
Associated Lab Samples:	60150779001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/15/13 15:09	

LABORATORY CONTROL SAMPLE: 1236524						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.4	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236525													1236526		
Parameter	Units	60150841001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual			
Mercury, Dissolved	ug/L	ND	5	5	2.4	2.0	46	38	70-130	18	20	M1			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037
Pace Project No.: 60150779

QC Batch: MPRP/23858 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60150779001

METHOD BLANK: 1236595 Matrix: Water
Associated Lab Samples: 60150779001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/15/13 15:02	
Antimony	ug/L	ND	10.0	08/15/13 15:02	
Arsenic	ug/L	ND	10.0	08/15/13 15:02	
Beryllium	ug/L	ND	1.0	08/15/13 15:02	
Cadmium	ug/L	ND	5.0	08/15/13 15:02	
Chromium	ug/L	ND	5.0	08/15/13 15:02	
Cobalt	ug/L	ND	5.0	08/15/13 15:02	
Copper	ug/L	ND	10.0	08/15/13 15:02	
Iron	ug/L	ND	50.0	08/15/13 15:02	
Lead	ug/L	ND	5.0	08/15/13 15:02	
Nickel	ug/L	ND	5.0	08/15/13 15:02	
Selenium	ug/L	ND	15.0	08/15/13 15:02	
Silver	ug/L	ND	7.0	08/15/13 15:02	
Thallium	ug/L	ND	20.0	08/15/13 15:02	
Zinc	ug/L	ND	50.0	08/15/13 15:02	

LABORATORY CONTROL SAMPLE: 1236596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10200	102	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	956	96	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	949	95	85-115	
Cobalt	ug/L	1000	995	100	85-115	
Copper	ug/L	1000	963	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1000	100	85-115	
Selenium	ug/L	1000	996	100	85-115	
Silver	ug/L	500	481	96	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	949	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597 1236598

Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10000	9770	100	97	70-130	3	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597 1236598											
Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic	ug/L	ND	1000	1000	990	975	99	97	70-130	2	10
Beryllium	ug/L	ND	1000	1000	988	966	99	97	70-130	2	7
Cadmium	ug/L	ND	1000	1000	998	979	100	98	70-130	2	10
Chromium	ug/L	ND	1000	1000	953	938	95	94	70-130	2	10
Cobalt	ug/L	ND	1000	1000	992	978	99	98	70-130	1	6
Copper	ug/L	ND	1000	1000	987	972	99	97	70-130	2	11
Iron	ug/L	879	10000	10000	10600	10300	97	95	70-130	2	10
Lead	ug/L	ND	1000	1000	995	981	99	98	70-130	1	10
Nickel	ug/L	ND	1000	1000	1000	986	100	99	70-130	1	10
Selenium	ug/L	ND	1000	1000	898	894	90	89	70-130	0	10
Silver	ug/L	ND	500	500	490	480	98	96	70-130	2	10
Thallium	ug/L	ND	1000	1000	1010	995	101	100	70-130	2	6
Zinc	ug/L	ND	1000	1000	946	932	94	93	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037
Pace Project No.: 60150779

QC Batch: MPRP/23850 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60150779001

METHOD BLANK: 1236263 Matrix: Water
Associated Lab Samples: 60150779001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/16/13 11:09	
Antimony, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Arsenic, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Beryllium, Dissolved	ug/L	ND	1.0	08/16/13 11:09	
Cadmium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Chromium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Cobalt, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Copper, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Iron, Dissolved	ug/L	116	50.0	08/16/13 11:09	
Lead, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Nickel, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Selenium, Dissolved	ug/L	ND	15.0	08/16/13 11:09	
Silver, Dissolved	ug/L	ND	7.0	08/16/13 11:09	
Thallium, Dissolved	ug/L	ND	20.0	08/16/13 11:09	
Zinc, Dissolved	ug/L	ND	50.0	08/16/13 11:09	

LABORATORY CONTROL SAMPLE: 1236264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10600	106	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	970	97	85-115	
Beryllium, Dissolved	ug/L	1000	1030	103	85-115	
Cadmium, Dissolved	ug/L	1000	990	99	85-115	
Chromium, Dissolved	ug/L	1000	1010	101	85-115	
Cobalt, Dissolved	ug/L	1000	1030	103	85-115	
Copper, Dissolved	ug/L	1000	1030	103	85-115	
Iron, Dissolved	ug/L	10000	10600	106	85-115	
Lead, Dissolved	ug/L	1000	1040	104	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	980	98	85-115	
Silver, Dissolved	ug/L	500	504	101	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	963	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265 1236266

Parameter	Units	60150677001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2850	10000	10000	13500	13700	107	109	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265 1236266											
Parameter	Units	60150677001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	952	979	93	96	70-130	3	7
Arsenic, Dissolved	ug/L	502	1000	1000	1560	1630	105	113	70-130	5	10
Beryllium, Dissolved	ug/L	ND	1000	1000	940	963	94	96	70-130	2	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1030	1050	102	104	70-130	2	10
Chromium, Dissolved	ug/L	198	1000	1000	1120	1150	92	95	70-130	3	10
Cobalt, Dissolved	ug/L	47.6	1000	1000	986	1010	94	96	70-130	2	6
Copper, Dissolved	ug/L	20.7	1000	1000	1120	1130	109	111	70-130	2	11
Iron, Dissolved	ug/L	478000	10000	10000	492000	507000	138	294	70-130	3	10 M1
Lead, Dissolved	ug/L	57.3	1000	1000	942	970	89	91	70-130	3	10
Nickel, Dissolved	ug/L	138	1000	1000	1060	1080	92	94	70-130	2	10
Selenium, Dissolved	ug/L	ND	1000	1000	1040	1080	104	108	70-130	3	10
Silver, Dissolved	ug/L	ND	500	500	47.7	39.2	9	8	70-130	20	10 M1, R1
Thallium, Dissolved	ug/L	ND	1000	1000	754	758	75	76	70-130	0	6
Zinc, Dissolved	ug/L	9360	1000	1000	10300	10800	96	145	70-130	5	11 M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

QC Batch: MSV/55578 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150779001, 60150779002

METHOD BLANK: 1236561 Matrix: Water

Associated Lab Samples: 60150779001, 60150779002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,2-Dichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/15/13 17:02	
Benzene	ug/L	ND	1.0	08/15/13 17:02	
Bromodichloromethane	ug/L	ND	1.0	08/15/13 17:02	
Bromoform	ug/L	ND	1.0	08/15/13 17:02	
Bromomethane	ug/L	ND	5.0	08/15/13 17:02	
Carbon tetrachloride	ug/L	ND	1.0	08/15/13 17:02	
Chloroethane	ug/L	ND	1.0	08/15/13 17:02	
Chloroform	ug/L	ND	1.0	08/15/13 17:02	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Ethylbenzene	ug/L	ND	1.0	08/15/13 17:02	
Methylene chloride	ug/L	ND	1.0	08/15/13 17:02	
Tetrachloroethene	ug/L	ND	1.0	08/15/13 17:02	
Toluene	ug/L	ND	1.0	08/15/13 17:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Trichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Vinyl chloride	ug/L	ND	1.0	08/15/13 17:02	
Xylene (Total)	ug/L	ND	3.0	08/15/13 17:02	
1,2-Dichloroethane-d4 (S)	%	102	80-120	08/15/13 17:02	
4-Bromofluorobenzene (S)	%	100	80-120	08/15/13 17:02	
Toluene-d8 (S)	%	100	80-120	08/15/13 17:02	

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.2	101	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	90	59-138	
1,1,2-Trichloroethane	ug/L	20	18.2	91	69-127	
1,2-Dichloroethane	ug/L	20	19.3	97	71-129	
1,4-Dichlorobenzene	ug/L	20	18.5	93	68-124	
Benzene	ug/L	20	19.0	95	73-129	
Bromodichloromethane	ug/L	20	18.9	95	63-129	
Bromoform	ug/L	20	17.0	85	52-123	
Bromomethane	ug/L	20	21.0	105	10-160	
Carbon tetrachloride	ug/L	20	19.0	95	70-140	
Chloroethane	ug/L	20	17.6	88	42-160	
Chloroform	ug/L	20	18.9	94	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.6	98	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.2	96	66-133	
Methylene chloride	ug/L	20	19.9	100	56-135	
Tetrachloroethene	ug/L	20	19.2	96	64-143	
Toluene	ug/L	20	19.0	95	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.8	94	67-149	
Trichloroethene	ug/L	20	19.7	98	71-130	
Vinyl chloride	ug/L	20	19.8	99	41-160	
Xylene (Total)	ug/L	60	57.6	96	67-130	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1236563

Parameter	Units	60150779001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4120	103	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3690	92	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3640	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3880	97	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3630	89	18-147	
Benzene	ug/L	ND	4000	3720	93	37-151	
Bromodichloromethane	ug/L	ND	4000	3770	94	35-155	
Bromoform	ug/L	ND	4000	3390	82	45-133	
Bromomethane	ug/L	ND	4000	3150	79	10-160	
Carbon tetrachloride	ug/L	ND	4000	4110	103	70-140	
Chloroethane	ug/L	ND	4000	3610	90	14-160	
Chloroform	ug/L	ND	4000	3820	93	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	4020	100	19-160	
Ethylbenzene	ug/L	ND	4000	3890	97	37-154	
Methylene chloride	ug/L	ND	4000	3940	97	15-156	
Tetrachloroethene	ug/L	ND	4000	4070	102	64-148	
Toluene	ug/L	ND	4000	3850	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3840	96	54-156	
Trichloroethene	ug/L	ND	4000	3790	95	71-157	
Vinyl chloride	ug/L	ND	4000	3970	99	10-160	
Xylene (Total)	ug/L	ND	12000	11700	98	12-153	
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				98	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			7.0	7.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037
Pace Project No.: 60150779

QC Batch: OEXT/39841 Analysis Method: EPA 625
QC Batch Method: EPA 625 Analysis Description: 625 MSS
Associated Lab Samples: 60150779001

METHOD BLANK: 1235808 Matrix: Water
Associated Lab Samples: 60150779001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/15/13 08:58	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/15/13 08:58	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/15/13 08:58	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/15/13 08:58	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/15/13 08:58	
Hexachloroethane	ug/L	ND	5.0	08/15/13 08:58	
Naphthalene	ug/L	ND	5.0	08/15/13 08:58	
Nitrobenzene	ug/L	ND	5.0	08/15/13 08:58	
Pentachlorophenol	ug/L	ND	5.0	08/15/13 08:58	
Phenol	ug/L	ND	5.0	08/15/13 08:58	
2,4,6-Tribromophenol (S)	%	70	39-119	08/15/13 08:58	
2-Fluorobiphenyl (S)	%	68	36-120	08/15/13 08:58	
2-Fluorophenol (S)	%	49	18-120	08/15/13 08:58	
Nitrobenzene-d5 (S)	%	67	32-120	08/15/13 08:58	
Phenol-d6 (S)	%	37	12-120	08/15/13 08:58	
Terphenyl-d14 (S)	%	78	44-120	08/15/13 08:58	

LABORATORY CONTROL SAMPLE: 1235809

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	32.6	65	44-120	
2,4,6-Trichlorophenol	ug/L	50	33.7	67	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	37.2	74	31-147	
Hexachloro-1,3-butadiene	ug/L	50	33.0	66	41-116	
Hexachlorocyclopentadiene	ug/L	100	59.0	59	31-120	
Hexachloroethane	ug/L	50	31.9	64	40-113	
Naphthalene	ug/L	50	34.2	68	48-120	
Nitrobenzene	ug/L	50	35.4	71	47-120	
Pentachlorophenol	ug/L	50	36.2	72	43-127	
Phenol	ug/L	50	17.6	35	15-112	
2,4,6-Tribromophenol (S)	%			71	39-119	
2-Fluorobiphenyl (S)	%			66	36-120	
2-Fluorophenol (S)	%			47	18-120	
Nitrobenzene-d5 (S)	%			65	32-120	
Phenol-d6 (S)	%			35	12-120	
Terphenyl-d14 (S)	%			72	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

MATRIX SPIKE SAMPLE:		1235810					
Parameter	Units	60150566002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	33.9	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	36.0	72	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	31.7	63	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	33.2	66	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	57.6	58	11-120	
Hexachloroethane	ug/L	ND	50	32.1	64	40-113	
Naphthalene	ug/L	ND	50	34.1	68	32-120	
Nitrobenzene	ug/L	ND	50	35.1	70	35-128	
Pentachlorophenol	ug/L	ND	50	39.6	79	38-133	
Phenol	ug/L	ND	50	19.1	38	13-112	
2,4,6-Tribromophenol (S)	%				79	39-119	
2-Fluorobiphenyl (S)	%				68	36-120	
2-Fluorophenol (S)	%				44	18-120	
Nitrobenzene-d5 (S)	%				64	32-120	
Phenol-d6 (S)	%				33	12-120	
Terphenyl-d14 (S)	%				76	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

QC Batch: WET/42819

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60150779001

METHOD BLANK: 1234774

Matrix: Water

Associated Lab Samples: 60150779001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/11/13 09:13	

LABORATORY CONTROL SAMPLE: 1234775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	39.9	100	78-114	

MATRIX SPIKE SAMPLE: 1234778

Parameter	Units	60150399001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	23.1	54	78-114	M1

SAMPLE DUPLICATE: 1234777

Parameter	Units	60150546002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	1.5J		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

QC Batch: WET/42850

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150779001

METHOD BLANK: 1235322

Matrix: Water

Associated Lab Samples: 60150779001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/13/13 12:29	

LABORATORY CONTROL SAMPLE: 1235323

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.6	108	64-132	

MATRIX SPIKE SAMPLE: 1235329

Parameter	Units	60150388004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.5	22.7	103	64-132	

SAMPLE DUPLICATE: 1235330

Parameter	Units	60150388005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	1.5J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

QC Batch: WET/42871

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150779001

METHOD BLANK: 1236213

Matrix: Water

Associated Lab Samples: 60150779001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/14/13 13:44	

SAMPLE DUPLICATE: 1236214

Parameter	Units	60150698001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	26.0	28.0	7	25	

SAMPLE DUPLICATE: 1236215

Parameter	Units	60150718001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	510	590	15	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

QC Batch: WET/42831 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150779001

SAMPLE DUPLICATE: 1234985

Parameter	Units	60150677001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.8	5.8	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

QC Batch: WETA/25781

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60150779001

METHOD BLANK: 1235508

Matrix: Water

Associated Lab Samples: 60150779001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/13/13 14:56	

LABORATORY CONTROL SAMPLE: 1235509

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1235510

Parameter	Units	60150415003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.12	2	2.0	93	90-110	

MATRIX SPIKE SAMPLE: 1235512

Parameter	Units	60150412001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	3.0	2	4.7	89	90-110	M1

SAMPLE DUPLICATE: 1235511

Parameter	Units	60150253005 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	1.5	1.5	1	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

QC Batch:	WETA/25793	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150779001		

METHOD BLANK: 1235988 Matrix: Water

Associated Lab Samples: 60150779001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/15/13 07:24	

LABORATORY CONTROL SAMPLE: 1235989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	54.2	108	90-110	

MATRIX SPIKE SAMPLE: 1236006

Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	14.0	50	89.3	151	90-110	M1

MATRIX SPIKE SAMPLE: 1236009

Parameter	Units	60150388001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	65.4	50	125	120	90-110	M1

SAMPLE DUPLICATE: 1235991

Parameter	Units	60150386002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	16.7	15.7	6	25	

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QUALIFIERS

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-037

Pace Project No.: 60150779

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150779001	316-037	EPA 200.7	MPRP/23858	EPA 200.7	ICP/18681
60150779001	316-037	EPA 200.7	MPRP/23850	EPA 200.7	ICP/18678
60150779001	316-037	EPA 245.1	MERP/7595	EPA 245.1	MERC/7551
60150779001	316-037	EPA 245.1	MERP/7603	EPA 245.1	MERC/7559
60150779001	316-037	EPA 625	OEXT/39841	EPA 625	MSSV/12639
60150779001	316-037	EPA 624 Low	MSV/55578		
60150779002	TRIP BLANK	EPA 624 Low	MSV/55578		
60150779001	316-037	EPA 1664A	WET/42819		
60150779001	316-037	EPA 1664A	WET/42850		
60150779001	316-037	SM 2540D	WET/42871		
60150779001	316-037	SM 4500-H+B	WET/42831		
60150779001	316-037	EPA 350.1	WETA/25781		
60150779001	316-037	EPA 410.4	WETA/25793		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150779



Client Name: Barr Eng

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

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.5

Temperature should be above freezing to 6°C

Date and initials of person examining contents: KE 8/10/13

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>pH</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☒ Yes ☐ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> coliform, TOC, <u>OGG</u> WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased):		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/21/13

August 15, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-037
Pace Project No.: 60150780

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

CERTIFICATIONS

Project: BRIDGETON LF 316-037

Pace Project No.: 60150780

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: BRIDGETON LF 316-037

Pace Project No.: 60150780

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150780001	316-037	Water	08/09/13 13:09	08/10/13 01:20

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-037

Pace Project No.: 60150780

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150780001	316-037	SM 5210B	JML	1

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: BRIDGETON LF 316-037

Pace Project No.: 60150780

Sample: 316-037		Lab ID: 60150780001	Collected: 08/09/13 13:09	Received: 08/10/13 01:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	17900	mg/L	2.0	1	08/10/13 13:10	08/15/13 15:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: BRIDGETON LF 316-037

Pace Project No.: 60150780

QC Batch: WET/42818

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150780001

METHOD BLANK: 1234462

Matrix: Water

Associated Lab Samples: 60150780001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/15/13 15:17	

LABORATORY CONTROL SAMPLE: 1234463

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	173	87	85-115	

SAMPLE DUPLICATE: 1234464

Parameter	Units	60150685001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	364	340	7	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-037

Pace Project No.: 60150780

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-037

Pace Project No.: 60150780

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150780001	316-037	SM 5210B	WET/42818	SM 5210B	WET/42907

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150780



60150780

Optional

Proj Due Date:

Proj Name:

Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.5

Date and initials of person examining contents: ICE 2/10/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 2/13

September 12, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-038
Pace Project No.: 60150839

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 12, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised 09/06/13 for re-preparation of Biochemical Oxygen Demand analysis.

Amended report revised 09/12/12 to correct quality control sample association.

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

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-038

Pace Project No.: 60150839

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-038

Pace Project No.: 60150839

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150839001	316-038	Water	08/10/13 14:25	08/12/13 13:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-038

Pace Project No.: 60150839

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150839001	316-038	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-038

Pace Project No.: 60150839

Sample: 316-038		Lab ID: 60150839001	Collected: 08/10/13 14:25	Received: 08/12/13 13:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	69500	mg/L	2.0	1	08/12/13 14:23	08/17/13 10:40		
BOD, 5 day	25600	mg/L	2.0	1	08/29/13 16:31	09/03/13 09:16		H1,H2

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-038

Pace Project No.: 60150839

QC Batch: WET/42832

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150839001

METHOD BLANK: 1235010

Matrix: Water

Associated Lab Samples: 60150839001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/17/13 10:36	

LABORATORY CONTROL SAMPLE: 1235011

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	177	89	85-115	

SAMPLE DUPLICATE: 1235012

Parameter	Units	60150839001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	69500	66400	5	17	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-038

Pace Project No.: 60150839

QC Batch: WET/43137

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150839001

METHOD BLANK: 1244720

Matrix: Water

Associated Lab Samples: 60150839001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	09/03/13 09:13	

LABORATORY CONTROL SAMPLE: 1244721

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	175	88	85-115	

SAMPLE DUPLICATE: 1244722

Parameter	Units	60150839001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	25600	28500	10	17	H1

SAMPLE DUPLICATE: 1244724

Parameter	Units	60152007001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	27500	26100	5	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-038

Pace Project No.: 60150839

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

H1 Analysis conducted outside the EPA method holding time.

H2 Extraction or preparation conducted outside EPA method holding time.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-038

Pace Project No.: 60150839

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150839001	316-038	SM 5210B	WET/42832	SM 5210B	WET/42835
60150839001	316-038	SM 5210B	WET/43137	SM 5210B	WET/43196

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, Inc..



Sample Condition Upon Receipt

WO#: 60150839



60150839

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Yes Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 5.1

Date and initials of person examining contents: 8/2/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Barr</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>wt</u>	13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/14/13

August 19, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-039
Pace Project No.: 60150840

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 12, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150840001	316-039	Water	08/11/13 11:59	08/12/13 13:25

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150840001	316-039	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Sample: 316-039		Lab ID: 60150840001	Collected: 08/11/13 11:59	Received: 08/12/13 13:25	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	31400	mg/L	2.0	1	08/12/13 15:56	08/17/13 10:46		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

QC Batch: WET/42832

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150840001

METHOD BLANK: 1235010

Matrix: Water

Associated Lab Samples: 60150840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/17/13 10:36	

LABORATORY CONTROL SAMPLE: 1235011

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	177	89	85-115	

SAMPLE DUPLICATE: 1235012

Parameter	Units	60150839001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	69500	66400	5	17	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150840001	316-039	SM 5210B	WET/42832	SM 5210B	WET/42835

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Sample Condition Upon Receipt

WO#: 60150840



60150840

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.9

Date and initials of person examining contents: [Signature]

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☐ No ☐ N/A	6. <u>Yes</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WI</u>	13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	
		16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/14/13

August 19, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-039
Pace Project No.: 60150840

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 12, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150840001	316-039	Water	08/11/13 11:59	08/12/13 13:25

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150840001	316-039	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Sample: 316-039		Lab ID: 60150840001	Collected: 08/11/13 11:59	Received: 08/12/13 13:25	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	31400	mg/L	2.0	1	08/12/13 15:56	08/17/13 10:46		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

QC Batch: WET/42832

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150840001

METHOD BLANK: 1235010

Matrix: Water

Associated Lab Samples: 60150840001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/17/13 10:36	

LABORATORY CONTROL SAMPLE: 1235011

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	177	89	85-115	

SAMPLE DUPLICATE: 1235012

Parameter	Units	60150839001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	69500	66400	5	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-039

Pace Project No.: 60150840

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150840001	316-039	SM 5210B	WET/42832	SM 5210B	WET/42835

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150840

60150840

Client Name: BarrCourier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ ExtracurdsTracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐Thermometer Used: T-112 / T-194Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)Cooler Temperature: 4.9Date and initials of person examining contents: [Signature]

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☐ No ☐ N/A	6. <u>bow</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>wt</u>	13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	
		16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]Date: [Signature]

August 19, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-039
Pace Project No.: 60150841

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 12, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

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Iowa Certification #: 118

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Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150841001	316-039	Water	08/11/13 11:59	08/12/13 13:25
60150841002	TRIP BLANK	Water	08/11/13 11:59	08/12/13 13:25

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150841001	316-039	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	JMC	1
60150841002	TRIP BLANK	EPA 624 Low	JKL	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

Sample: 316-039		Lab ID: 60150841001	Collected: 08/11/13 11:59	Received: 08/12/13 13:25	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	10200 ug/L		150	2	08/15/13 10:30	08/15/13 15:34	7429-90-5	
Antimony	ND ug/L		50.0	5	08/15/13 10:30	08/15/13 16:11	7440-36-0	D3
Arsenic	740 ug/L		50.0	5	08/15/13 10:30	08/15/13 16:11	7440-38-2	
Beryllium	ND ug/L		2.0	2	08/15/13 10:30	08/15/13 15:34	7440-41-7	D3
Cadmium	ND ug/L		25.0	5	08/15/13 10:30	08/15/13 16:11	7440-43-9	D3
Chromium	258 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:11	7440-47-3	
Cobalt	60.6 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:11	7440-48-4	
Copper	42.6 ug/L		20.0	2	08/15/13 10:30	08/15/13 15:34	7440-50-8	
Iron	789000 ug/L		100	2	08/15/13 10:30	08/15/13 15:34	7439-89-6	
Lead	218 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:11	7439-92-1	
Nickel	159 ug/L		10.0	2	08/15/13 10:30	08/15/13 15:34	7440-02-0	
Selenium	ND ug/L		75.0	5	08/15/13 10:30	08/15/13 16:11	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/15/13 10:30	08/15/13 15:34	7440-22-4	D3
Thallium	ND ug/L		100	5	08/15/13 10:30	08/15/13 16:11	7440-28-0	D3
Zinc	13700 ug/L		1000	20	08/15/13 10:30	08/15/13 16:31	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3450 ug/L		150	2	08/14/13 16:45	08/16/13 11:29	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	5	08/14/13 16:45	08/16/13 12:29	7440-36-0	D3
Arsenic, Dissolved	576 ug/L		50.0	5	08/14/13 16:45	08/16/13 12:29	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/14/13 16:45	08/16/13 12:29	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	5	08/14/13 16:45	08/16/13 12:29	7440-43-9	D3
Chromium, Dissolved	216 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:29	7440-47-3	
Cobalt, Dissolved	51.0 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:29	7440-48-4	
Copper, Dissolved	21.5 ug/L		20.0	2	08/14/13 16:45	08/16/13 11:29	7440-50-8	
Iron, Dissolved	511000 ug/L		100	2	08/14/13 16:45	08/16/13 11:29	7439-89-6	
Lead, Dissolved	65.4 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:29	7439-92-1	
Nickel, Dissolved	144 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:29	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/14/13 16:45	08/16/13 12:29	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/14/13 16:45	08/16/13 11:29	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/14/13 16:45	08/16/13 12:29	7440-28-0	D3
Zinc, Dissolved	11100 ug/L		1000	20	08/14/13 16:45	08/16/13 13:12	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	2.1 ug/L		0.20	1	08/13/13 17:45	08/14/13 11:12	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/15/13 11:10	08/15/13 15:31	7439-97-6	M1
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/14/13 00:00	08/15/13 11:24	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:24	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:24	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:24	67-72-1	
Naphthalene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:24	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:24	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

Sample: 316-039		Lab ID: 60150841001	Collected: 08/11/13 11:59	Received: 08/12/13 13:25	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:24	87-86-5	
Phenol	10000 ug/L		1000	20	08/14/13 00:00	08/15/13 11:24	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:24	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/14/13 00:00	08/15/13 11:24	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/14/13 00:00	08/15/13 11:24	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/14/13 00:00	08/15/13 11:24	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/14/13 00:00	08/15/13 11:24	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/14/13 00:00	08/15/13 11:24	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/14/13 00:00	08/15/13 11:24	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/14/13 00:00	08/15/13 11:24	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/15/13 21:40	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/15/13 21:40	75-27-4	
Bromoform	ND ug/L		200	200		08/15/13 21:40	75-25-2	
Bromomethane	ND ug/L		1000	200		08/15/13 21:40	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/15/13 21:40	56-23-5	
Chloroethane	ND ug/L		200	200		08/15/13 21:40	75-00-3	
Chloroform	ND ug/L		200	200		08/15/13 21:40	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/15/13 21:40	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/15/13 21:40	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 21:40	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 21:40	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/15/13 21:40	100-41-4	
Methylene chloride	ND ug/L		200	200		08/15/13 21:40	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/15/13 21:40	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/15/13 21:40	127-18-4	
Toluene	ND ug/L		200	200		08/15/13 21:40	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/15/13 21:40	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/15/13 21:40	79-00-5	
Trichloroethene	ND ug/L		200	200		08/15/13 21:40	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/15/13 21:40	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/15/13 21:40	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	104 %		80-120	200		08/15/13 21:40	1868-53-7	D3
4-Bromofluorobenzene (S)	99 %		80-120	200		08/15/13 21:40	460-00-4	
Toluene-d8 (S)	100 %		80-120	200		08/15/13 21:40	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	200		08/15/13 21:40	17060-07-0	
Preservation pH	7.0		1.0	200		08/15/13 21:40		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	703 mg/L		5.0	1		08/13/13 09:15		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/19/13 09:01		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

Sample: 316-039		Lab ID: 60150841001	Collected: 08/11/13 11:59	Received: 08/12/13 13:25	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2160	mg/L	5.0	1		08/14/13 13:45		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		08/13/13 14:20		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	684	mg/L	20.0	200		08/13/13 15:25	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	46700	mg/L	5000	500		08/15/13 08:01		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

Sample: TRIP BLANK		Lab ID: 60150841002	Collected: 08/11/13 11:59	Received: 08/12/13 13:25	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/15/13 19:10	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/15/13 19:10	75-27-4	
Bromoform	ND ug/L		1.0	1		08/15/13 19:10	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/15/13 19:10	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/15/13 19:10	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/15/13 19:10	75-00-3	
Chloroform	ND ug/L		1.0	1		08/15/13 19:10	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/15/13 19:10	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/15/13 19:10	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 19:10	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 19:10	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/15/13 19:10	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/15/13 19:10	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/15/13 19:10	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/15/13 19:10	127-18-4	
Toluene	ND ug/L		1.0	1		08/15/13 19:10	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/15/13 19:10	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/15/13 19:10	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/15/13 19:10	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/15/13 19:10	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/15/13 19:10	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	100 %		80-120	1		08/15/13 19:10	1868-53-7	
4-Bromofluorobenzene (S)	99 %		80-120	1		08/15/13 19:10	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		08/15/13 19:10	2037-26-5	
1,2-Dichloroethane-d4 (S)	95 %		80-120	1		08/15/13 19:10	17060-07-0	
Preservation pH	7.0		1.0	1		08/15/13 19:10		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

QC Batch: MERP/7595

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60150841001

METHOD BLANK: 1235705

Matrix: Water

Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/14/13 10:47	

LABORATORY CONTROL SAMPLE: 1235706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1235707

1235708

Parameter	Units	60150897001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.8	4.8	96	97	70-130	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

QC Batch: MERP/7603

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60150841001

METHOD BLANK: 1236523

Matrix: Water

Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/15/13 15:09	

LABORATORY CONTROL SAMPLE: 1236524

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.4	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236525 1236526

Parameter	Units	60150841001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	2.4	2.0	46	38	70-130	18	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039
Pace Project No.: 60150841

QC Batch: MPRP/23858 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60150841001

METHOD BLANK: 1236595 Matrix: Water
Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/15/13 15:02	
Antimony	ug/L	ND	10.0	08/15/13 15:02	
Arsenic	ug/L	ND	10.0	08/15/13 15:02	
Beryllium	ug/L	ND	1.0	08/15/13 15:02	
Cadmium	ug/L	ND	5.0	08/15/13 15:02	
Chromium	ug/L	ND	5.0	08/15/13 15:02	
Cobalt	ug/L	ND	5.0	08/15/13 15:02	
Copper	ug/L	ND	10.0	08/15/13 15:02	
Iron	ug/L	ND	50.0	08/15/13 15:02	
Lead	ug/L	ND	5.0	08/15/13 15:02	
Nickel	ug/L	ND	5.0	08/15/13 15:02	
Selenium	ug/L	ND	15.0	08/15/13 15:02	
Silver	ug/L	ND	7.0	08/15/13 15:02	
Thallium	ug/L	ND	20.0	08/15/13 15:02	
Zinc	ug/L	ND	50.0	08/15/13 15:02	

LABORATORY CONTROL SAMPLE: 1236596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10200	102	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	956	96	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	949	95	85-115	
Cobalt	ug/L	1000	995	100	85-115	
Copper	ug/L	1000	963	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1000	100	85-115	
Selenium	ug/L	1000	996	100	85-115	
Silver	ug/L	500	481	96	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	949	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597 1236598

Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10000	9770	100	97	70-130	3	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597 1236598											
Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic	ug/L	ND	1000	1000	990	975	99	97	70-130	2	10
Beryllium	ug/L	ND	1000	1000	988	966	99	97	70-130	2	7
Cadmium	ug/L	ND	1000	1000	998	979	100	98	70-130	2	10
Chromium	ug/L	ND	1000	1000	953	938	95	94	70-130	2	10
Cobalt	ug/L	ND	1000	1000	992	978	99	98	70-130	1	6
Copper	ug/L	ND	1000	1000	987	972	99	97	70-130	2	11
Iron	ug/L	879	10000	10000	10600	10300	97	95	70-130	2	10
Lead	ug/L	ND	1000	1000	995	981	99	98	70-130	1	10
Nickel	ug/L	ND	1000	1000	1000	986	100	99	70-130	1	10
Selenium	ug/L	ND	1000	1000	898	894	90	89	70-130	0	10
Silver	ug/L	ND	500	500	490	480	98	96	70-130	2	10
Thallium	ug/L	ND	1000	1000	1010	995	101	100	70-130	2	6
Zinc	ug/L	ND	1000	1000	946	932	94	93	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039
Pace Project No.: 60150841

QC Batch: MPRP/23850 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60150841001

METHOD BLANK: 1236263 Matrix: Water
Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/16/13 11:09	
Antimony, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Arsenic, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Beryllium, Dissolved	ug/L	ND	1.0	08/16/13 11:09	
Cadmium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Chromium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Cobalt, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Copper, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Iron, Dissolved	ug/L	116	50.0	08/16/13 11:09	
Lead, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Nickel, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Selenium, Dissolved	ug/L	ND	15.0	08/16/13 11:09	
Silver, Dissolved	ug/L	ND	7.0	08/16/13 11:09	
Thallium, Dissolved	ug/L	ND	20.0	08/16/13 11:09	
Zinc, Dissolved	ug/L	ND	50.0	08/16/13 11:09	

LABORATORY CONTROL SAMPLE: 1236264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10600	106	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	970	97	85-115	
Beryllium, Dissolved	ug/L	1000	1030	103	85-115	
Cadmium, Dissolved	ug/L	1000	990	99	85-115	
Chromium, Dissolved	ug/L	1000	1010	101	85-115	
Cobalt, Dissolved	ug/L	1000	1030	103	85-115	
Copper, Dissolved	ug/L	1000	1030	103	85-115	
Iron, Dissolved	ug/L	10000	10600	106	85-115	
Lead, Dissolved	ug/L	1000	1040	104	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	980	98	85-115	
Silver, Dissolved	ug/L	500	504	101	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	963	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265 1236266

Parameter	Units	60150677001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2850	10000	10000	13500	13700	107	109	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265 1236266											
Parameter	Units	60150677001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	952	979	93	96	70-130	3	7
Arsenic, Dissolved	ug/L	502	1000	1000	1560	1630	105	113	70-130	5	10
Beryllium, Dissolved	ug/L	ND	1000	1000	940	963	94	96	70-130	2	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1030	1050	102	104	70-130	2	10
Chromium, Dissolved	ug/L	198	1000	1000	1120	1150	92	95	70-130	3	10
Cobalt, Dissolved	ug/L	47.6	1000	1000	986	1010	94	96	70-130	2	6
Copper, Dissolved	ug/L	20.7	1000	1000	1120	1130	109	111	70-130	2	11
Iron, Dissolved	ug/L	478000	10000	10000	492000	507000	138	294	70-130	3	10 M1
Lead, Dissolved	ug/L	57.3	1000	1000	942	970	89	91	70-130	3	10
Nickel, Dissolved	ug/L	138	1000	1000	1060	1080	92	94	70-130	2	10
Selenium, Dissolved	ug/L	ND	1000	1000	1040	1080	104	108	70-130	3	10
Silver, Dissolved	ug/L	ND	500	500	47.7	39.2	9	8	70-130	20	10 M1, R1
Thallium, Dissolved	ug/L	ND	1000	1000	754	758	75	76	70-130	0	6
Zinc, Dissolved	ug/L	9360	1000	1000	10300	10800	96	145	70-130	5	11 M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

QC Batch: MSV/55578 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150841001, 60150841002

METHOD BLANK: 1236561 Matrix: Water

Associated Lab Samples: 60150841001, 60150841002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,2-Dichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/15/13 17:02	
Benzene	ug/L	ND	1.0	08/15/13 17:02	
Bromodichloromethane	ug/L	ND	1.0	08/15/13 17:02	
Bromoform	ug/L	ND	1.0	08/15/13 17:02	
Bromomethane	ug/L	ND	5.0	08/15/13 17:02	
Carbon tetrachloride	ug/L	ND	1.0	08/15/13 17:02	
Chloroethane	ug/L	ND	1.0	08/15/13 17:02	
Chloroform	ug/L	ND	1.0	08/15/13 17:02	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Ethylbenzene	ug/L	ND	1.0	08/15/13 17:02	
Methylene chloride	ug/L	ND	1.0	08/15/13 17:02	
Tetrachloroethene	ug/L	ND	1.0	08/15/13 17:02	
Toluene	ug/L	ND	1.0	08/15/13 17:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Trichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Vinyl chloride	ug/L	ND	1.0	08/15/13 17:02	
Xylene (Total)	ug/L	ND	3.0	08/15/13 17:02	
1,2-Dichloroethane-d4 (S)	%	102	80-120	08/15/13 17:02	
4-Bromofluorobenzene (S)	%	100	80-120	08/15/13 17:02	
Toluene-d8 (S)	%	100	80-120	08/15/13 17:02	

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.2	101	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	90	59-138	
1,1,2-Trichloroethane	ug/L	20	18.2	91	69-127	
1,2-Dichloroethane	ug/L	20	19.3	97	71-129	
1,4-Dichlorobenzene	ug/L	20	18.5	93	68-124	
Benzene	ug/L	20	19.0	95	73-129	
Bromodichloromethane	ug/L	20	18.9	95	63-129	
Bromoform	ug/L	20	17.0	85	52-123	
Bromomethane	ug/L	20	21.0	105	10-160	
Carbon tetrachloride	ug/L	20	19.0	95	70-140	
Chloroethane	ug/L	20	17.6	88	42-160	
Chloroform	ug/L	20	18.9	94	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.6	98	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.2	96	66-133	
Methylene chloride	ug/L	20	19.9	100	56-135	
Tetrachloroethene	ug/L	20	19.2	96	64-143	
Toluene	ug/L	20	19.0	95	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.8	94	67-149	
Trichloroethene	ug/L	20	19.7	98	71-130	
Vinyl chloride	ug/L	20	19.8	99	41-160	
Xylene (Total)	ug/L	60	57.6	96	67-130	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1236563

Parameter	Units	60150779001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4120	103	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3690	92	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3640	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3880	97	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3630	89	18-147	
Benzene	ug/L	ND	4000	3720	93	37-151	
Bromodichloromethane	ug/L	ND	4000	3770	94	35-155	
Bromoform	ug/L	ND	4000	3390	82	45-133	
Bromomethane	ug/L	ND	4000	3150	79	10-160	
Carbon tetrachloride	ug/L	ND	4000	4110	103	70-140	
Chloroethane	ug/L	ND	4000	3610	90	14-160	
Chloroform	ug/L	ND	4000	3820	93	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	4020	100	19-160	
Ethylbenzene	ug/L	ND	4000	3890	97	37-154	
Methylene chloride	ug/L	ND	4000	3940	97	15-156	
Tetrachloroethene	ug/L	ND	4000	4070	102	64-148	
Toluene	ug/L	ND	4000	3850	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3840	96	54-156	
Trichloroethene	ug/L	ND	4000	3790	95	71-157	
Vinyl chloride	ug/L	ND	4000	3970	99	10-160	
Xylene (Total)	ug/L	ND	12000	11700	98	12-153	
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				98	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			7.0	7.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039
Pace Project No.: 60150841

QC Batch:	OEXT/39841	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60150841001		

METHOD BLANK: 1235808 Matrix: Water
Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/15/13 08:58	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/15/13 08:58	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/15/13 08:58	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/15/13 08:58	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/15/13 08:58	
Hexachloroethane	ug/L	ND	5.0	08/15/13 08:58	
Naphthalene	ug/L	ND	5.0	08/15/13 08:58	
Nitrobenzene	ug/L	ND	5.0	08/15/13 08:58	
Pentachlorophenol	ug/L	ND	5.0	08/15/13 08:58	
Phenol	ug/L	ND	5.0	08/15/13 08:58	
2,4,6-Tribromophenol (S)	%	70	39-119	08/15/13 08:58	
2-Fluorobiphenyl (S)	%	68	36-120	08/15/13 08:58	
2-Fluorophenol (S)	%	49	18-120	08/15/13 08:58	
Nitrobenzene-d5 (S)	%	67	32-120	08/15/13 08:58	
Phenol-d6 (S)	%	37	12-120	08/15/13 08:58	
Terphenyl-d14 (S)	%	78	44-120	08/15/13 08:58	

LABORATORY CONTROL SAMPLE: 1235809

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	32.6	65	44-120	
2,4,6-Trichlorophenol	ug/L	50	33.7	67	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	37.2	74	31-147	
Hexachloro-1,3-butadiene	ug/L	50	33.0	66	41-116	
Hexachlorocyclopentadiene	ug/L	100	59.0	59	31-120	
Hexachloroethane	ug/L	50	31.9	64	40-113	
Naphthalene	ug/L	50	34.2	68	48-120	
Nitrobenzene	ug/L	50	35.4	71	47-120	
Pentachlorophenol	ug/L	50	36.2	72	43-127	
Phenol	ug/L	50	17.6	35	15-112	
2,4,6-Tribromophenol (S)	%			71	39-119	
2-Fluorobiphenyl (S)	%			66	36-120	
2-Fluorophenol (S)	%			47	18-120	
Nitrobenzene-d5 (S)	%			65	32-120	
Phenol-d6 (S)	%			35	12-120	
Terphenyl-d14 (S)	%			72	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

MATRIX SPIKE SAMPLE:		1235810					
Parameter	Units	60150566002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	33.9	68	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	36.0	72	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	31.7	63	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	33.2	66	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	57.6	58	11-120	
Hexachloroethane	ug/L	ND	50	32.1	64	40-113	
Naphthalene	ug/L	ND	50	34.1	68	32-120	
Nitrobenzene	ug/L	ND	50	35.1	70	35-128	
Pentachlorophenol	ug/L	ND	50	39.6	79	38-133	
Phenol	ug/L	ND	50	19.1	38	13-112	
2,4,6-Tribromophenol (S)	%				79	39-119	
2-Fluorobiphenyl (S)	%				68	36-120	
2-Fluorophenol (S)	%				44	18-120	
Nitrobenzene-d5 (S)	%				64	32-120	
Phenol-d6 (S)	%				33	12-120	
Terphenyl-d14 (S)	%				76	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

QC Batch:	WET/42840	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60150841001		

METHOD BLANK: 1235177 Matrix: Water

Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/13/13 09:12	

LABORATORY CONTROL SAMPLE: 1235178

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.8	104	78-114	

MATRIX SPIKE SAMPLE: 1235181

Parameter	Units	60150850002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	42.6	45.7	103	78-114	

SAMPLE DUPLICATE: 1235182

Parameter	Units	60150596002 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

QC Batch: WET/42945

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150841001

METHOD BLANK: 1238250

Matrix: Water

Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/19/13 08:59	

LABORATORY CONTROL SAMPLE: 1238251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.2	101	64-132	

MATRIX SPIKE SAMPLE: 1238507

Parameter	Units	60150308001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	96.1	21.5	114	84	64-132	

SAMPLE DUPLICATE: 1238506

Parameter	Units	60150776002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	7.8	8.9	13	34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

QC Batch: WET/42871

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150841001

METHOD BLANK: 1236213

Matrix: Water

Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/14/13 13:44	

SAMPLE DUPLICATE: 1236214

Parameter	Units	60150698001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	26.0	28.0	7	25	

SAMPLE DUPLICATE: 1236215

Parameter	Units	60150718001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	510	590	15	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

QC Batch: WET/42839 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150841001

SAMPLE DUPLICATE: 1235162

Parameter	Units	60150856001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	10.9	10.9	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

QC Batch: WETA/25781

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60150841001

METHOD BLANK: 1235508

Matrix: Water

Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/13/13 14:56	

LABORATORY CONTROL SAMPLE: 1235509

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1235510

Parameter	Units	60150415003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.12	2	2.0	93	90-110	

MATRIX SPIKE SAMPLE: 1235512

Parameter	Units	60150412001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	3.0	2	4.7	89	90-110	M1

SAMPLE DUPLICATE: 1235511

Parameter	Units	60150253005 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	1.5	1.5	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

QC Batch:	WETA/25793	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150841001		

METHOD BLANK: 1235988 Matrix: Water

Associated Lab Samples: 60150841001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/15/13 07:24	

LABORATORY CONTROL SAMPLE: 1235989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	54.2	108	90-110	

MATRIX SPIKE SAMPLE: 1236006

Parameter	Units	60150386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	14.0	50	89.3	151	90-110	M1

MATRIX SPIKE SAMPLE: 1236009

Parameter	Units	60150388001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	65.4	50	125	120	90-110	M1

SAMPLE DUPLICATE: 1235991

Parameter	Units	60150386002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	16.7	15.7	6	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-039

Pace Project No.: 60150841

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150841001	316-039	EPA 200.7	MPRP/23858	EPA 200.7	ICP/18681
60150841001	316-039	EPA 200.7	MPRP/23850	EPA 200.7	ICP/18678
60150841001	316-039	EPA 245.1	MERP/7595	EPA 245.1	MERC/7551
60150841001	316-039	EPA 245.1	MERP/7603	EPA 245.1	MERC/7559
60150841001	316-039	EPA 625	OEXT/39841	EPA 625	MSSV/12639
60150841001	316-039	EPA 624 Low	MSV/55578		
60150841002	TRIP BLANK	EPA 624 Low	MSV/55578		
60150841001	316-039	EPA 1664A	WET/42840		
60150841001	316-039	EPA 1664A	WET/42945		
60150841001	316-039	SM 2540D	WET/42871		
60150841001	316-039	SM 4500-H+B	WET/42839		
60150841001	316-039	EPA 350.1	WETA/25781		
60150841001	316-039	EPA 410.4	WETA/25793		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150841



60150841

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: _____

Date and initials of person examining contents: 8/14/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>PH</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>WT</u>		15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, <u>PH</u> , WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>12510 / 12518</u> Lot # of added preservative <u>8/12</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	18.
Pace Trip Blank lot # (if purchased): <u>Aug 05</u>		19.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	20.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	21. List State:

Client Notification/ Resolution: Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/14/13

September 06, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-040
Pace Project No.: 60150924

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 14, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised 09/06/13 for re-preparation of Biochemical Oxygen Demand analysis.

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

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-040

Pace Project No.: 60150924

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-040

Pace Project No.: 60150924

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150924001	316-040	Water	08/12/13 12:30	08/14/13 06:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-040

Pace Project No.: 60150924

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150924001	316-040	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-040

Pace Project No.: 60150924

Sample: 316-040		Lab ID: 60150924001	Collected: 08/12/13 12:30	Received: 08/14/13 06:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	62700	mg/L	2.0	1	08/14/13 10:28	08/19/13 10:41		
BOD, 5 day	27600	mg/L	2.0	1	08/28/13 10:57	09/02/13 11:38		H1,H2

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150924

QC Batch: WET/42862

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150924001

METHOD BLANK: 1235833

Matrix: Water

Associated Lab Samples: 60150924001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/19/13 10:10	

LABORATORY CONTROL SAMPLE: 1235834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	177	90	85-115	

SAMPLE DUPLICATE: 1235835

Parameter	Units	60150846010 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	2.1	2.7	23	17	D6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150924

QC Batch: WET/43097

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150924001

METHOD BLANK: 1243515

Matrix: Water

Associated Lab Samples: 60150924001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	09/02/13 11:34	

LABORATORY CONTROL SAMPLE: 1243516

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	171	86	85-115	

SAMPLE DUPLICATE: 1243517

Parameter	Units	60150924001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	27600	28800	4	17	H1

SAMPLE DUPLICATE: 1243518

Parameter	Units	60151840001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	304	306	1	17	

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QUALIFIERS

Project: BRIDGETON LF 316-040

Pace Project No.: 60150924

DEFINITIONS

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ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

H1 Analysis conducted outside the EPA method holding time.

H2 Extraction or preparation conducted outside EPA method holding time.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-040

Pace Project No.: 60150924

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150924001	316-040	SM 5210B	WET/42862	SM 5210B	WET/42950
60150924001	316-040	SM 5210B	WET/43097	SM 5210B	WET/43202

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150924



Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.1

Date and initials of person examining contents: KE 8/14/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	
		16.
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N

Field Data Required? Y ☒ N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/14/13

August 23, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-040
Pace Project No.: 60150925

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 14, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised 08/23/13.

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

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150925001	316-040	Water	08/12/13 12:30	08/14/13 06:05
60150925002	TRIP BLANK	Water	08/12/13 12:30	08/14/13 06:05

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150925001	316-040	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	JML	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60150925002	TRIP BLANK	EPA 624 Low	JKL	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

Sample: 316-040		Lab ID: 60150925001	Collected: 08/12/13 12:30	Received: 08/14/13 06:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5090 ug/L		150	2	08/15/13 10:30	08/15/13 15:41	7429-90-5	
Antimony	ND ug/L		50.0	5	08/15/13 10:30	08/15/13 16:18	7440-36-0	D3
Arsenic	614 ug/L		50.0	5	08/15/13 10:30	08/15/13 16:18	7440-38-2	
Beryllium	ND ug/L		2.0	2	08/15/13 10:30	08/15/13 15:41	7440-41-7	D3
Cadmium	ND ug/L		25.0	5	08/15/13 10:30	08/15/13 16:18	7440-43-9	D3
Chromium	218 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:18	7440-47-3	
Cobalt	46.1 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:18	7440-48-4	
Copper	ND ug/L		20.0	2	08/15/13 10:30	08/15/13 15:41	7440-50-8	D3
Iron	593000 ug/L		100	2	08/15/13 10:30	08/15/13 15:41	7439-89-6	
Lead	103 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:18	7439-92-1	
Nickel	126 ug/L		10.0	2	08/15/13 10:30	08/15/13 15:41	7440-02-0	
Selenium	ND ug/L		75.0	5	08/15/13 10:30	08/15/13 16:18	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/15/13 10:30	08/15/13 15:41	7440-22-4	D3
Thallium	ND ug/L		100	5	08/15/13 10:30	08/15/13 16:18	7440-28-0	D3
Zinc	12200 ug/L		1000	20	08/15/13 10:30	08/15/13 16:50	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3400 ug/L		150	2	08/14/13 16:45	08/16/13 11:56	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	5	08/14/13 16:45	08/16/13 12:39	7440-36-0	D3
Arsenic, Dissolved	517 ug/L		50.0	5	08/14/13 16:45	08/16/13 12:39	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/14/13 16:45	08/16/13 12:39	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	5	08/14/13 16:45	08/16/13 12:39	7440-43-9	D3
Chromium, Dissolved	211 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:39	7440-47-3	
Cobalt, Dissolved	45.4 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:39	7440-48-4	D3
Copper, Dissolved	ND ug/L		20.0	2	08/14/13 16:45	08/16/13 11:56	7440-50-8	D3
Iron, Dissolved	567000 ug/L		100	2	08/14/13 16:45	08/16/13 11:56	7439-89-6	
Lead, Dissolved	64.8 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:39	7439-92-1	
Nickel, Dissolved	125 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:39	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/14/13 16:45	08/16/13 12:39	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/14/13 16:45	08/16/13 11:56	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/14/13 16:45	08/16/13 12:39	7440-28-0	D3
Zinc, Dissolved	10700 ug/L		1000	20	08/14/13 16:45	08/16/13 13:21	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.99 ug/L		0.20	1	08/19/13 17:00	08/20/13 09:11	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/15/13 11:10	08/15/13 15:42	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		6250	5	08/17/13 00:00	08/19/13 14:22	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:22	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:22	77-47-4	
Hexachloroethane	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:22	67-72-1	
Naphthalene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:22	91-20-3	
Nitrobenzene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:22	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-040
Pace Project No.: 60150925

Sample: 316-040		Lab ID: 60150925001	Collected: 08/12/13 12:30	Received: 08/14/13 06:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:22	87-86-5	
Phenol	3470 ug/L		1250	5	08/17/13 00:00	08/19/13 14:22	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:22	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:22	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	5	08/17/13 00:00	08/19/13 14:22	4165-60-0	P3,S0
2-Fluorobiphenyl (S)	0 %		36-120	5	08/17/13 00:00	08/19/13 14:22	321-60-8	S0
Terphenyl-d14 (S)	0 %		44-120	5	08/17/13 00:00	08/19/13 14:22	1718-51-0	S0
Phenol-d6 (S)	0 %		12-120	5	08/17/13 00:00	08/19/13 14:22	13127-88-3	S0
2-Fluorophenol (S)	0 %		18-120	5	08/17/13 00:00	08/19/13 14:22	367-12-4	S0
2,4,6-Tribromophenol (S)	0 %		39-119	5	08/17/13 00:00	08/19/13 14:22	118-79-6	S0
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/15/13 22:22	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/15/13 22:22	75-27-4	
Bromoform	ND ug/L		200	200		08/15/13 22:22	75-25-2	
Bromomethane	ND ug/L		1000	200		08/15/13 22:22	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/15/13 22:22	56-23-5	
Chloroethane	ND ug/L		200	200		08/15/13 22:22	75-00-3	
Chloroform	ND ug/L		200	200		08/15/13 22:22	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/15/13 22:22	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/15/13 22:22	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 22:22	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 22:22	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/15/13 22:22	100-41-4	
Methylene chloride	ND ug/L		200	200		08/15/13 22:22	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/15/13 22:22	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/15/13 22:22	127-18-4	
Toluene	ND ug/L		200	200		08/15/13 22:22	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/15/13 22:22	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/15/13 22:22	79-00-5	
Trichloroethene	ND ug/L		200	200		08/15/13 22:22	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/15/13 22:22	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/15/13 22:22	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	102 %		80-120	200		08/15/13 22:22	1868-53-7	D3
4-Bromofluorobenzene (S)	101 %		80-120	200		08/15/13 22:22	460-00-4	
Toluene-d8 (S)	101 %		80-120	200		08/15/13 22:22	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	200		08/15/13 22:22	17060-07-0	
Preservation pH	7.0		1.0	200		08/15/13 22:22		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	456 mg/L		5.0	1		08/15/13 09:55		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/19/13 09:02		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

Sample: 316-040		Lab ID: 60150925001	Collected: 08/12/13 12:30	Received: 08/14/13 06:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1720	mg/L	5.0	1		08/15/13 10:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		08/15/13 17:45		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	663	mg/L	20.0	200		08/14/13 11:55	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	59500	mg/L	5000	500		08/19/13 10:39		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

Sample: TRIP BLANK		Lab ID: 60150925002	Collected: 08/12/13 12:30	Received: 08/14/13 06:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/15/13 19:53	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/15/13 19:53	75-27-4	
Bromoform	ND ug/L		1.0	1		08/15/13 19:53	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/15/13 19:53	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/15/13 19:53	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/15/13 19:53	75-00-3	
Chloroform	ND ug/L		1.0	1		08/15/13 19:53	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/15/13 19:53	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/15/13 19:53	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 19:53	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 19:53	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/15/13 19:53	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/15/13 19:53	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/15/13 19:53	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/15/13 19:53	127-18-4	
Toluene	ND ug/L		1.0	1		08/15/13 19:53	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/15/13 19:53	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/15/13 19:53	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/15/13 19:53	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/15/13 19:53	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/15/13 19:53	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	102 %		80-120	1		08/15/13 19:53	1868-53-7	
4-Bromofluorobenzene (S)	100 %		80-120	1		08/15/13 19:53	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		08/15/13 19:53	2037-26-5	
1,2-Dichloroethane-d4 (S)	97 %		80-120	1		08/15/13 19:53	17060-07-0	
Preservation pH	7.0		1.0	1		08/15/13 19:53		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

QC Batch: MERP/7614

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60150925001

METHOD BLANK: 1238476

Matrix: Water

Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/22/13 09:26	

LABORATORY CONTROL SAMPLE: 1238477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1238478 1238479

Parameter	Units	60151227001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.2	4.1	83	82	70-130	1	20	

MATRIX SPIKE SAMPLE: 1238480

Parameter	Units	60151150001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	3.6	71	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

QC Batch: MERP/7603

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60150925001

METHOD BLANK: 1236523

Matrix: Water

Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/15/13 15:09	

LABORATORY CONTROL SAMPLE: 1236524

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.4	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236525 1236526

Parameter	Units	60150841001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	2.4	2.0	46	38	70-130	18	20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040
Pace Project No.: 60150925

QC Batch: MPRP/23858 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60150925001

METHOD BLANK: 1236595 Matrix: Water
Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/15/13 15:02	
Antimony	ug/L	ND	10.0	08/15/13 15:02	
Arsenic	ug/L	ND	10.0	08/15/13 15:02	
Beryllium	ug/L	ND	1.0	08/15/13 15:02	
Cadmium	ug/L	ND	5.0	08/15/13 15:02	
Chromium	ug/L	ND	5.0	08/15/13 15:02	
Cobalt	ug/L	ND	5.0	08/15/13 15:02	
Copper	ug/L	ND	10.0	08/15/13 15:02	
Iron	ug/L	ND	50.0	08/15/13 15:02	
Lead	ug/L	ND	5.0	08/15/13 15:02	
Nickel	ug/L	ND	5.0	08/15/13 15:02	
Selenium	ug/L	ND	15.0	08/15/13 15:02	
Silver	ug/L	ND	7.0	08/15/13 15:02	
Thallium	ug/L	ND	20.0	08/15/13 15:02	
Zinc	ug/L	ND	50.0	08/15/13 15:02	

LABORATORY CONTROL SAMPLE: 1236596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10200	102	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	956	96	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	949	95	85-115	
Cobalt	ug/L	1000	995	100	85-115	
Copper	ug/L	1000	963	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1000	100	85-115	
Selenium	ug/L	1000	996	100	85-115	
Silver	ug/L	500	481	96	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	949	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597 1236598

Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10000	9770	100	97	70-130	3	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597 1236598											
Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic	ug/L	ND	1000	1000	990	975	99	97	70-130	2	10
Beryllium	ug/L	ND	1000	1000	988	966	99	97	70-130	2	7
Cadmium	ug/L	ND	1000	1000	998	979	100	98	70-130	2	10
Chromium	ug/L	ND	1000	1000	953	938	95	94	70-130	2	10
Cobalt	ug/L	ND	1000	1000	992	978	99	98	70-130	1	6
Copper	ug/L	ND	1000	1000	987	972	99	97	70-130	2	11
Iron	ug/L	879	10000	10000	10600	10300	97	95	70-130	2	10
Lead	ug/L	ND	1000	1000	995	981	99	98	70-130	1	10
Nickel	ug/L	ND	1000	1000	1000	986	100	99	70-130	1	10
Selenium	ug/L	ND	1000	1000	898	894	90	89	70-130	0	10
Silver	ug/L	ND	500	500	490	480	98	96	70-130	2	10
Thallium	ug/L	ND	1000	1000	1010	995	101	100	70-130	2	6
Zinc	ug/L	ND	1000	1000	946	932	94	93	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040
Pace Project No.: 60150925

QC Batch: MPRP/23850 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60150925001

METHOD BLANK: 1236263 Matrix: Water
Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/16/13 11:09	
Antimony, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Arsenic, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Beryllium, Dissolved	ug/L	ND	1.0	08/16/13 11:09	
Cadmium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Chromium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Cobalt, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Copper, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Iron, Dissolved	ug/L	116	50.0	08/16/13 11:09	
Lead, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Nickel, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Selenium, Dissolved	ug/L	ND	15.0	08/16/13 11:09	
Silver, Dissolved	ug/L	ND	7.0	08/16/13 11:09	
Thallium, Dissolved	ug/L	ND	20.0	08/16/13 11:09	
Zinc, Dissolved	ug/L	ND	50.0	08/16/13 11:09	

LABORATORY CONTROL SAMPLE: 1236264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10600	106	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	970	97	85-115	
Beryllium, Dissolved	ug/L	1000	1030	103	85-115	
Cadmium, Dissolved	ug/L	1000	990	99	85-115	
Chromium, Dissolved	ug/L	1000	1010	101	85-115	
Cobalt, Dissolved	ug/L	1000	1030	103	85-115	
Copper, Dissolved	ug/L	1000	1030	103	85-115	
Iron, Dissolved	ug/L	10000	10600	106	85-115	
Lead, Dissolved	ug/L	1000	1040	104	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	980	98	85-115	
Silver, Dissolved	ug/L	500	504	101	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	963	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265 1236266

Parameter	Units	60150677001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2850	10000	10000	13500	13700	107	109	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265 1236266											
Parameter	Units	60150677001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	952	979	93	96	70-130	3	7
Arsenic, Dissolved	ug/L	502	1000	1000	1560	1630	105	113	70-130	5	10
Beryllium, Dissolved	ug/L	ND	1000	1000	940	963	94	96	70-130	2	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1030	1050	102	104	70-130	2	10
Chromium, Dissolved	ug/L	198	1000	1000	1120	1150	92	95	70-130	3	10
Cobalt, Dissolved	ug/L	47.6	1000	1000	986	1010	94	96	70-130	2	6
Copper, Dissolved	ug/L	20.7	1000	1000	1120	1130	109	111	70-130	2	11
Iron, Dissolved	ug/L	478000	10000	10000	492000	507000	138	294	70-130	3	10 M1
Lead, Dissolved	ug/L	57.3	1000	1000	942	970	89	91	70-130	3	10
Nickel, Dissolved	ug/L	138	1000	1000	1060	1080	92	94	70-130	2	10
Selenium, Dissolved	ug/L	ND	1000	1000	1040	1080	104	108	70-130	3	10
Silver, Dissolved	ug/L	ND	500	500	47.7	39.2	9	8	70-130	20	10 M1, R1
Thallium, Dissolved	ug/L	ND	1000	1000	754	758	75	76	70-130	0	6
Zinc, Dissolved	ug/L	9360	1000	1000	10300	10800	96	145	70-130	5	11 M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

QC Batch: MSV/55578 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150925001, 60150925002

METHOD BLANK: 1236561 Matrix: Water

Associated Lab Samples: 60150925001, 60150925002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,2-Dichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/15/13 17:02	
Benzene	ug/L	ND	1.0	08/15/13 17:02	
Bromodichloromethane	ug/L	ND	1.0	08/15/13 17:02	
Bromoform	ug/L	ND	1.0	08/15/13 17:02	
Bromomethane	ug/L	ND	5.0	08/15/13 17:02	
Carbon tetrachloride	ug/L	ND	1.0	08/15/13 17:02	
Chloroethane	ug/L	ND	1.0	08/15/13 17:02	
Chloroform	ug/L	ND	1.0	08/15/13 17:02	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Ethylbenzene	ug/L	ND	1.0	08/15/13 17:02	
Methylene chloride	ug/L	ND	1.0	08/15/13 17:02	
Tetrachloroethene	ug/L	ND	1.0	08/15/13 17:02	
Toluene	ug/L	ND	1.0	08/15/13 17:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Trichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Vinyl chloride	ug/L	ND	1.0	08/15/13 17:02	
Xylene (Total)	ug/L	ND	3.0	08/15/13 17:02	
1,2-Dichloroethane-d4 (S)	%	102	80-120	08/15/13 17:02	
4-Bromofluorobenzene (S)	%	100	80-120	08/15/13 17:02	
Toluene-d8 (S)	%	100	80-120	08/15/13 17:02	

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.2	101	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	90	59-138	
1,1,2-Trichloroethane	ug/L	20	18.2	91	69-127	
1,2-Dichloroethane	ug/L	20	19.3	97	71-129	
1,4-Dichlorobenzene	ug/L	20	18.5	93	68-124	
Benzene	ug/L	20	19.0	95	73-129	
Bromodichloromethane	ug/L	20	18.9	95	63-129	
Bromoform	ug/L	20	17.0	85	52-123	
Bromomethane	ug/L	20	21.0	105	10-160	
Carbon tetrachloride	ug/L	20	19.0	95	70-140	
Chloroethane	ug/L	20	17.6	88	42-160	
Chloroform	ug/L	20	18.9	94	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.6	98	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.2	96	66-133	
Methylene chloride	ug/L	20	19.9	100	56-135	
Tetrachloroethene	ug/L	20	19.2	96	64-143	
Toluene	ug/L	20	19.0	95	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.8	94	67-149	
Trichloroethene	ug/L	20	19.7	98	71-130	
Vinyl chloride	ug/L	20	19.8	99	41-160	
Xylene (Total)	ug/L	60	57.6	96	67-130	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1236563

Parameter	Units	60150779001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4120	103	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3690	92	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3640	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3880	97	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3630	89	18-147	
Benzene	ug/L	ND	4000	3720	93	37-151	
Bromodichloromethane	ug/L	ND	4000	3770	94	35-155	
Bromoform	ug/L	ND	4000	3390	82	45-133	
Bromomethane	ug/L	ND	4000	3150	79	10-160	
Carbon tetrachloride	ug/L	ND	4000	4110	103	70-140	
Chloroethane	ug/L	ND	4000	3610	90	14-160	
Chloroform	ug/L	ND	4000	3820	93	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	4020	100	19-160	
Ethylbenzene	ug/L	ND	4000	3890	97	37-154	
Methylene chloride	ug/L	ND	4000	3940	97	15-156	
Tetrachloroethene	ug/L	ND	4000	4070	102	64-148	
Toluene	ug/L	ND	4000	3850	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3840	96	54-156	
Trichloroethene	ug/L	ND	4000	3790	95	71-157	
Vinyl chloride	ug/L	ND	4000	3970	99	10-160	
Xylene (Total)	ug/L	ND	12000	11700	98	12-153	
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				98	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			7.0	7.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040
Pace Project No.: 60150925

QC Batch:	OEXT/39909	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60150925001		

METHOD BLANK: 1237910 Matrix: Water
Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/19/13 08:51	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/19/13 08:51	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/19/13 08:51	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/19/13 08:51	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/19/13 08:51	
Hexachloroethane	ug/L	ND	5.0	08/19/13 08:51	
Naphthalene	ug/L	ND	5.0	08/19/13 08:51	
Nitrobenzene	ug/L	ND	5.0	08/19/13 08:51	
Pentachlorophenol	ug/L	ND	5.0	08/19/13 08:51	
Phenol	ug/L	ND	5.0	08/19/13 08:51	
2,4,6-Tribromophenol (S)	%	96	39-119	08/19/13 08:51	
2-Fluorobiphenyl (S)	%	91	36-120	08/19/13 08:51	
2-Fluorophenol (S)	%	49	18-120	08/19/13 08:51	
Nitrobenzene-d5 (S)	%	89	32-120	08/19/13 08:51	
Phenol-d6 (S)	%	32	12-120	08/19/13 08:51	
Terphenyl-d14 (S)	%	96	44-120	08/19/13 08:51	

LABORATORY CONTROL SAMPLE: 1237911

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	42.9	86	44-120	
2,4,6-Trichlorophenol	ug/L	50	44.4	89	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	48.4	97	31-147	
Hexachloro-1,3-butadiene	ug/L	50	42.7	85	41-116	
Hexachlorocyclopentadiene	ug/L	100	72.2	72	31-120	
Hexachloroethane	ug/L	50	41.8	84	40-113	
Naphthalene	ug/L	50	44.5	89	48-120	
Nitrobenzene	ug/L	50	45.6	91	47-120	
Pentachlorophenol	ug/L	50	46.3	93	43-127	
Phenol	ug/L	50	15.0	30	15-112	
2,4,6-Tribromophenol (S)	%			90	39-119	
2-Fluorobiphenyl (S)	%			84	36-120	
2-Fluorophenol (S)	%			43	18-120	
Nitrobenzene-d5 (S)	%			81	32-120	M4
Phenol-d6 (S)	%			29	12-120	
Terphenyl-d14 (S)	%			87	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

QC Batch:	WET/42880	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60150925001		

METHOD BLANK: 1236364 Matrix: Water

Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/15/13 09:54	

LABORATORY CONTROL SAMPLE: 1236365

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.2	105	78-114	

MATRIX SPIKE SAMPLE: 1236368

Parameter	Units	60150967002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	42.2	103	78-114	

SAMPLE DUPLICATE: 1236369

Parameter	Units	60150906001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	22.5	26.3	16	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

QC Batch: WET/42945

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150925001

METHOD BLANK: 1238250

Matrix: Water

Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/19/13 08:59	

LABORATORY CONTROL SAMPLE: 1238251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.2	101	64-132	

MATRIX SPIKE SAMPLE: 1238507

Parameter	Units	60150308001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	96.1	21.5	114	84	64-132	

SAMPLE DUPLICATE: 1238506

Parameter	Units	60150776002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	7.8	8.9	13	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

QC Batch: WET/42889

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150925001

METHOD BLANK: 1236535

Matrix: Water

Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/15/13 10:13	

SAMPLE DUPLICATE: 1236536

Parameter	Units	60150885003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1236545

Parameter	Units	60150904001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	5380	5660	5	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

QC Batch:	WET/42911	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60150925001		

SAMPLE DUPLICATE: 1237036

Parameter	Units	60150697002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

QC Batch: WETA/25790

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60150925001

METHOD BLANK: 1235929

Matrix: Water

Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/14/13 11:39	

LABORATORY CONTROL SAMPLE: 1235930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1235931

Parameter	Units	60150614004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	2.1	101	90-110	

MATRIX SPIKE SAMPLE: 1235933

Parameter	Units	60150559002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	12.8	10	21.4	87	90-110	M1

SAMPLE DUPLICATE: 1235932

Parameter	Units	60150607002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

QC Batch:	WETA/25831	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150925001		

METHOD BLANK: 1237595 Matrix: Water
Associated Lab Samples: 60150925001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/19/13 10:25	

LABORATORY CONTROL SAMPLE: 1237596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.1	106	90-110	

MATRIX SPIKE SAMPLE: 1237597

Parameter	Units	60150776003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	206	100	288	82	90-110	M1

MATRIX SPIKE SAMPLE: 1237599

Parameter	Units	60150482002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	43.9	50	89.5	91	90-110	

SAMPLE DUPLICATE: 1237598

Parameter	Units	60150566001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	15.2	14.5	5	25	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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QUALIFIERS

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

- | | |
|----|---|
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| M4 | A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution. |
| 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. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-040

Pace Project No.: 60150925

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150925001	316-040	EPA 200.7	MPRP/23858	EPA 200.7	ICP/18681
60150925001	316-040	EPA 200.7	MPRP/23850	EPA 200.7	ICP/18678
60150925001	316-040	EPA 245.1	MERP/7614	EPA 245.1	MERC/7570
60150925001	316-040	EPA 245.1	MERP/7603	EPA 245.1	MERC/7559
60150925001	316-040	EPA 625	OEXT/39909	EPA 625	MSSV/12654
60150925001	316-040	EPA 624 Low	MSV/55578		
60150925002	TRIP BLANK	EPA 624 Low	MSV/55578		
60150925001	316-040	EPA 1664A	WET/42880		
60150925001	316-040	EPA 1664A	WET/42945		
60150925001	316-040	SM 2540D	WET/42889		
60150925001	316-040	SM 4500-H+B	WET/42911		
60150925001	316-040	EPA 350.1	WETA/25790		
60150925001	316-040	EPA 410.4	WETA/25831		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150925



60150925

Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.1

Date and initials of person examining contents: KE 8/14/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☒ Yes ☐ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>DT</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	Initial pH ≈ 6 . Added 2.5 mL of HNO_3 + H_2SO_4 preservative to each sample to get a pH of $\approx 3 + 1.5$ respectively.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	
Exceptions: <u>VOA</u> coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>KE</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative <u>12510/12518</u>
Pace Trip Blank lot # (if purchased): <u>051313-3</u>		
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	2 of 5 <u>316-040</u>
		16.
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/14/13

August 20, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-041
Pace Project No.: 60150935

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 14, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-041

Pace Project No.: 60150935

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-041

Pace Project No.: 60150935

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150935001	316-041	Water	08/13/13 11:10	08/14/13 02:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-041

Pace Project No.: 60150935

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150935001	316-041	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-041

Pace Project No.: 60150935

Sample: 316-041		Lab ID: 60150935001	Collected: 08/13/13 11:10	Received: 08/14/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	35800	mg/L	2.0	1	08/15/13 10:04	08/20/13 08:26		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150935

QC Batch: WET/42881

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60150935001

METHOD BLANK: 1236421

Matrix: Water

Associated Lab Samples: 60150935001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/20/13 08:03	

LABORATORY CONTROL SAMPLE: 1236422

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	172	87	85-115	

SAMPLE DUPLICATE: 1236423

Parameter	Units	60150928001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	4.9	4.9	0	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-041

Pace Project No.: 60150935

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-041

Pace Project No.: 60150935

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150935001	316-041	SM 5210B	WET/42881	SM 5210B	WET/42963

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150935



Client Name: Barr Eng

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Aspic

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.5

Date and initials of person examining contents: 8/14/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		18.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 8/14/13

August 30, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-041
Pace Project No.: 60150936

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 14, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised 08/30/13 to include quality control data for Total Mercury.

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

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150936001	316-041	Water	08/13/13 11:10	08/14/13 02:05
60150936002	TRIP BLANK	Water	08/13/13 11:10	08/14/13 02:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150936001	316-041	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	JML	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60150936002	TRIP BLANK	EPA 624 Low	JKL	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

Sample: 316-041		Lab ID: 60150936001	Collected: 08/13/13 11:10	Received: 08/14/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	12400 ug/L		150	2	08/15/13 10:30	08/15/13 15:45	7429-90-5	
Antimony	ND ug/L		50.0	5	08/15/13 10:30	08/15/13 16:22	7440-36-0	D3
Arsenic	750 ug/L		50.0	5	08/15/13 10:30	08/15/13 16:22	7440-38-2	
Beryllium	ND ug/L		2.0	2	08/15/13 10:30	08/15/13 15:45	7440-41-7	D3
Cadmium	ND ug/L		25.0	5	08/15/13 10:30	08/15/13 16:22	7440-43-9	D3
Chromium	258 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:22	7440-47-3	
Cobalt	69.5 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:22	7440-48-4	
Copper	50.0 ug/L		20.0	2	08/15/13 10:30	08/15/13 15:45	7440-50-8	
Iron	929000 ug/L		100	2	08/15/13 10:30	08/15/13 15:45	7439-89-6	
Lead	222 ug/L		25.0	5	08/15/13 10:30	08/15/13 16:22	7439-92-1	
Nickel	153 ug/L		10.0	2	08/15/13 10:30	08/15/13 15:45	7440-02-0	
Selenium	ND ug/L		75.0	5	08/15/13 10:30	08/15/13 16:22	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/15/13 10:30	08/15/13 15:45	7440-22-4	D3
Thallium	ND ug/L		100	5	08/15/13 10:30	08/15/13 16:22	7440-28-0	D3
Zinc	14700 ug/L		1000	20	08/15/13 10:30	08/15/13 16:53	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3800 ug/L		150	2	08/14/13 16:45	08/16/13 11:52	7429-90-5	
Antimony, Dissolved	ND ug/L		50.0	5	08/14/13 16:45	08/16/13 12:36	7440-36-0	D3
Arsenic, Dissolved	578 ug/L		50.0	5	08/14/13 16:45	08/16/13 12:36	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/14/13 16:45	08/16/13 12:36	7440-41-7	
Cadmium, Dissolved	ND ug/L		25.0	5	08/14/13 16:45	08/16/13 12:36	7440-43-9	D3
Chromium, Dissolved	215 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:36	7440-47-3	
Cobalt, Dissolved	54.2 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:36	7440-48-4	
Copper, Dissolved	23.5 ug/L		20.0	2	08/14/13 16:45	08/16/13 11:52	7440-50-8	
Iron, Dissolved	653000 ug/L		100	2	08/14/13 16:45	08/16/13 11:52	7439-89-6	
Lead, Dissolved	74.6 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:36	7439-92-1	
Nickel, Dissolved	129 ug/L		25.0	5	08/14/13 16:45	08/16/13 12:36	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/14/13 16:45	08/16/13 12:36	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/14/13 16:45	08/16/13 11:52	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/14/13 16:45	08/16/13 12:36	7440-28-0	D3
Zinc, Dissolved	12400 ug/L		1000	20	08/14/13 16:45	08/16/13 13:18	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	1.5 ug/L		0.20	1	08/19/13 17:00	08/20/13 09:13	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/15/13 11:10	08/15/13 15:40	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		6250	5	08/17/13 00:00	08/19/13 14:43	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:43	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:43	77-47-4	
Hexachloroethane	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:43	67-72-1	
Naphthalene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:43	91-20-3	
Nitrobenzene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:43	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

Sample: 316-041		Lab ID: 60150936001	Collected: 08/13/13 11:10	Received: 08/14/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:43	87-86-5	
Phenol	13500 ug/L		1250	5	08/17/13 00:00	08/19/13 14:43	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:43	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1250	5	08/17/13 00:00	08/19/13 14:43	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	5	08/17/13 00:00	08/19/13 14:43	4165-60-0	P3,S0
2-Fluorobiphenyl (S)	0 %		36-120	5	08/17/13 00:00	08/19/13 14:43	321-60-8	S0
Terphenyl-d14 (S)	0 %		44-120	5	08/17/13 00:00	08/19/13 14:43	1718-51-0	S0
Phenol-d6 (S)	0 %		12-120	5	08/17/13 00:00	08/19/13 14:43	13127-88-3	S0
2-Fluorophenol (S)	0 %		18-120	5	08/17/13 00:00	08/19/13 14:43	367-12-4	S0
2,4,6-Tribromophenol (S)	0 %		39-119	5	08/17/13 00:00	08/19/13 14:43	118-79-6	S0
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/15/13 22:44	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/15/13 22:44	75-27-4	
Bromoform	ND ug/L		200	200		08/15/13 22:44	75-25-2	
Bromomethane	ND ug/L		1000	200		08/15/13 22:44	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/15/13 22:44	56-23-5	
Chloroethane	ND ug/L		200	200		08/15/13 22:44	75-00-3	
Chloroform	ND ug/L		200	200		08/15/13 22:44	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/15/13 22:44	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/15/13 22:44	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 22:44	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 22:44	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/15/13 22:44	100-41-4	
Methylene chloride	ND ug/L		200	200		08/15/13 22:44	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/15/13 22:44	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/15/13 22:44	127-18-4	
Toluene	ND ug/L		200	200		08/15/13 22:44	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/15/13 22:44	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/15/13 22:44	79-00-5	
Trichloroethene	ND ug/L		200	200		08/15/13 22:44	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/15/13 22:44	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/15/13 22:44	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	103 %		80-120	200		08/15/13 22:44	1868-53-7	D3
4-Bromofluorobenzene (S)	101 %		80-120	200		08/15/13 22:44	460-00-4	
Toluene-d8 (S)	100 %		80-120	200		08/15/13 22:44	2037-26-5	
1,2-Dichloroethane-d4 (S)	100 %		80-120	200		08/15/13 22:44	17060-07-0	
Preservation pH	7.0		1.0	200		08/15/13 22:44		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	477 mg/L		5.0	1		08/15/13 09:55		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/19/13 09:02		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

Sample: 316-041		Lab ID: 60150936001	Collected: 08/13/13 11:10	Received: 08/14/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2020	mg/L	5.0	1		08/15/13 10:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		08/15/13 17:45		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	652	mg/L	20.0	200		08/14/13 11:58	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	52500	mg/L	5000	500		08/19/13 10:39		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

Sample: TRIP BLANK		Lab ID: 60150936002	Collected: 08/13/13 11:10	Received: 08/14/13 02:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/15/13 20:14	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/15/13 20:14	75-27-4	
Bromoform	ND ug/L		1.0	1		08/15/13 20:14	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/15/13 20:14	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/15/13 20:14	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/15/13 20:14	75-00-3	
Chloroform	ND ug/L		1.0	1		08/15/13 20:14	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/15/13 20:14	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/15/13 20:14	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 20:14	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 20:14	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/15/13 20:14	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/15/13 20:14	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/15/13 20:14	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/15/13 20:14	127-18-4	
Toluene	ND ug/L		1.0	1		08/15/13 20:14	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/15/13 20:14	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/15/13 20:14	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/15/13 20:14	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/15/13 20:14	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/15/13 20:14	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	103 %		80-120	1		08/15/13 20:14	1868-53-7	
4-Bromofluorobenzene (S)	100 %		80-120	1		08/15/13 20:14	460-00-4	
Toluene-d8 (S)	101 %		80-120	1		08/15/13 20:14	2037-26-5	
1,2-Dichloroethane-d4 (S)	100 %		80-120	1		08/15/13 20:14	17060-07-0	
Preservation pH	7.0		1.0	1		08/15/13 20:14		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch: MERP/7614

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60150936001

METHOD BLANK: 1238476

Matrix: Water

Associated Lab Samples: 60150936001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/22/13 09:26	

LABORATORY CONTROL SAMPLE: 1238477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1238478 1238479

Parameter	Units	60151227001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.2	4.1	83	82	70-130	1	20	

MATRIX SPIKE SAMPLE: 1238480

Parameter	Units	60151150001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	3.6	71	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch:	MERP/7603	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60150936001		

METHOD BLANK: 1236523 Matrix: Water

Associated Lab Samples: 60150936001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/15/13 15:09	

LABORATORY CONTROL SAMPLE: 1236524

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.4	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236525 1236526

Parameter	Units	60150841001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	2.4	2.0	46	38	70-130	18	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch: MPRP/23858

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60150936001

METHOD BLANK: 1236595

Matrix: Water

Associated Lab Samples: 60150936001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/15/13 15:02	
Antimony	ug/L	ND	10.0	08/15/13 15:02	
Arsenic	ug/L	ND	10.0	08/15/13 15:02	
Beryllium	ug/L	ND	1.0	08/15/13 15:02	
Cadmium	ug/L	ND	5.0	08/15/13 15:02	
Chromium	ug/L	ND	5.0	08/15/13 15:02	
Cobalt	ug/L	ND	5.0	08/15/13 15:02	
Copper	ug/L	ND	10.0	08/15/13 15:02	
Iron	ug/L	ND	50.0	08/15/13 15:02	
Lead	ug/L	ND	5.0	08/15/13 15:02	
Nickel	ug/L	ND	5.0	08/15/13 15:02	
Selenium	ug/L	ND	15.0	08/15/13 15:02	
Silver	ug/L	ND	7.0	08/15/13 15:02	
Thallium	ug/L	ND	20.0	08/15/13 15:02	
Zinc	ug/L	ND	50.0	08/15/13 15:02	

LABORATORY CONTROL SAMPLE: 1236596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10200	102	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	956	96	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	949	95	85-115	
Cobalt	ug/L	1000	995	100	85-115	
Copper	ug/L	1000	963	96	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1000	100	85-115	
Nickel	ug/L	1000	1000	100	85-115	
Selenium	ug/L	1000	996	100	85-115	
Silver	ug/L	500	481	96	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	949	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597

1236598

Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10000	9770	100	97	70-130	3	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236597 1236598											
Parameter	Units	60151032001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic	ug/L	ND	1000	1000	990	975	99	97	70-130	2	10
Beryllium	ug/L	ND	1000	1000	988	966	99	97	70-130	2	7
Cadmium	ug/L	ND	1000	1000	998	979	100	98	70-130	2	10
Chromium	ug/L	ND	1000	1000	953	938	95	94	70-130	2	10
Cobalt	ug/L	ND	1000	1000	992	978	99	98	70-130	1	6
Copper	ug/L	ND	1000	1000	987	972	99	97	70-130	2	11
Iron	ug/L	879	10000	10000	10600	10300	97	95	70-130	2	10
Lead	ug/L	ND	1000	1000	995	981	99	98	70-130	1	10
Nickel	ug/L	ND	1000	1000	1000	986	100	99	70-130	1	10
Selenium	ug/L	ND	1000	1000	898	894	90	89	70-130	0	10
Silver	ug/L	ND	500	500	490	480	98	96	70-130	2	10
Thallium	ug/L	ND	1000	1000	1010	995	101	100	70-130	2	6
Zinc	ug/L	ND	1000	1000	946	932	94	93	70-130	1	11

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch: MPRP/23850

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Dissolved

Associated Lab Samples: 60150936001

METHOD BLANK: 1236263

Matrix: Water

Associated Lab Samples: 60150936001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/16/13 11:09	
Antimony, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Arsenic, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Beryllium, Dissolved	ug/L	ND	1.0	08/16/13 11:09	
Cadmium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Chromium, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Cobalt, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Copper, Dissolved	ug/L	ND	10.0	08/16/13 11:09	
Iron, Dissolved	ug/L	116	50.0	08/16/13 11:09	
Lead, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Nickel, Dissolved	ug/L	ND	5.0	08/16/13 11:09	
Selenium, Dissolved	ug/L	ND	15.0	08/16/13 11:09	
Silver, Dissolved	ug/L	ND	7.0	08/16/13 11:09	
Thallium, Dissolved	ug/L	ND	20.0	08/16/13 11:09	
Zinc, Dissolved	ug/L	ND	50.0	08/16/13 11:09	

LABORATORY CONTROL SAMPLE: 1236264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10600	106	85-115	
Antimony, Dissolved	ug/L	1000	1030	103	85-115	
Arsenic, Dissolved	ug/L	1000	970	97	85-115	
Beryllium, Dissolved	ug/L	1000	1030	103	85-115	
Cadmium, Dissolved	ug/L	1000	990	99	85-115	
Chromium, Dissolved	ug/L	1000	1010	101	85-115	
Cobalt, Dissolved	ug/L	1000	1030	103	85-115	
Copper, Dissolved	ug/L	1000	1030	103	85-115	
Iron, Dissolved	ug/L	10000	10600	106	85-115	
Lead, Dissolved	ug/L	1000	1040	104	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	980	98	85-115	
Silver, Dissolved	ug/L	500	504	101	85-115	
Thallium, Dissolved	ug/L	1000	1030	103	85-115	
Zinc, Dissolved	ug/L	1000	963	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265

1236266

Parameter	Units	60150677001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2850	10000	10000	13500	13700	107	109	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1236265 1236266											
Parameter	Units	60150677001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.						RPD	RPD
Antimony, Dissolved	ug/L	ND	1000	1000	952	979	93	96	70-130	3	7
Arsenic, Dissolved	ug/L	502	1000	1000	1560	1630	105	113	70-130	5	10
Beryllium, Dissolved	ug/L	ND	1000	1000	940	963	94	96	70-130	2	7
Cadmium, Dissolved	ug/L	ND	1000	1000	1030	1050	102	104	70-130	2	10
Chromium, Dissolved	ug/L	198	1000	1000	1120	1150	92	95	70-130	3	10
Cobalt, Dissolved	ug/L	47.6	1000	1000	986	1010	94	96	70-130	2	6
Copper, Dissolved	ug/L	20.7	1000	1000	1120	1130	109	111	70-130	2	11
Iron, Dissolved	ug/L	478000	10000	10000	492000	507000	138	294	70-130	3	10 M1
Lead, Dissolved	ug/L	57.3	1000	1000	942	970	89	91	70-130	3	10
Nickel, Dissolved	ug/L	138	1000	1000	1060	1080	92	94	70-130	2	10
Selenium, Dissolved	ug/L	ND	1000	1000	1040	1080	104	108	70-130	3	10
Silver, Dissolved	ug/L	ND	500	500	47.7	39.2	9	8	70-130	20	10 M1, R1
Thallium, Dissolved	ug/L	ND	1000	1000	754	758	75	76	70-130	0	6
Zinc, Dissolved	ug/L	9360	1000	1000	10300	10800	96	145	70-130	5	11 M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch: MSV/55578 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60150936001, 60150936002

METHOD BLANK: 1236561 Matrix: Water

Associated Lab Samples: 60150936001, 60150936002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,2-Dichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/15/13 17:02	
Benzene	ug/L	ND	1.0	08/15/13 17:02	
Bromodichloromethane	ug/L	ND	1.0	08/15/13 17:02	
Bromoform	ug/L	ND	1.0	08/15/13 17:02	
Bromomethane	ug/L	ND	5.0	08/15/13 17:02	
Carbon tetrachloride	ug/L	ND	1.0	08/15/13 17:02	
Chloroethane	ug/L	ND	1.0	08/15/13 17:02	
Chloroform	ug/L	ND	1.0	08/15/13 17:02	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Ethylbenzene	ug/L	ND	1.0	08/15/13 17:02	
Methylene chloride	ug/L	ND	1.0	08/15/13 17:02	
Tetrachloroethene	ug/L	ND	1.0	08/15/13 17:02	
Toluene	ug/L	ND	1.0	08/15/13 17:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Trichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Vinyl chloride	ug/L	ND	1.0	08/15/13 17:02	
Xylene (Total)	ug/L	ND	3.0	08/15/13 17:02	
1,2-Dichloroethane-d4 (S)	%	102	80-120	08/15/13 17:02	
4-Bromofluorobenzene (S)	%	100	80-120	08/15/13 17:02	
Toluene-d8 (S)	%	100	80-120	08/15/13 17:02	

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.2	101	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	90	59-138	
1,1,2-Trichloroethane	ug/L	20	18.2	91	69-127	
1,2-Dichloroethane	ug/L	20	19.3	97	71-129	
1,4-Dichlorobenzene	ug/L	20	18.5	93	68-124	
Benzene	ug/L	20	19.0	95	73-129	
Bromodichloromethane	ug/L	20	18.9	95	63-129	
Bromoform	ug/L	20	17.0	85	52-123	
Bromomethane	ug/L	20	21.0	105	10-160	
Carbon tetrachloride	ug/L	20	19.0	95	70-140	
Chloroethane	ug/L	20	17.6	88	42-160	
Chloroform	ug/L	20	18.9	94	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.6	98	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.2	96	66-133	
Methylene chloride	ug/L	20	19.9	100	56-135	
Tetrachloroethene	ug/L	20	19.2	96	64-143	
Toluene	ug/L	20	19.0	95	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.8	94	67-149	
Trichloroethene	ug/L	20	19.7	98	71-130	
Vinyl chloride	ug/L	20	19.8	99	41-160	
Xylene (Total)	ug/L	60	57.6	96	67-130	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1236563

Parameter	Units	60150779001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4120	103	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3690	92	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3640	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3880	97	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3630	89	18-147	
Benzene	ug/L	ND	4000	3720	93	37-151	
Bromodichloromethane	ug/L	ND	4000	3770	94	35-155	
Bromoform	ug/L	ND	4000	3390	82	45-133	
Bromomethane	ug/L	ND	4000	3150	79	10-160	
Carbon tetrachloride	ug/L	ND	4000	4110	103	70-140	
Chloroethane	ug/L	ND	4000	3610	90	14-160	
Chloroform	ug/L	ND	4000	3820	93	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	4020	100	19-160	
Ethylbenzene	ug/L	ND	4000	3890	97	37-154	
Methylene chloride	ug/L	ND	4000	3940	97	15-156	
Tetrachloroethene	ug/L	ND	4000	4070	102	64-148	
Toluene	ug/L	ND	4000	3850	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3840	96	54-156	
Trichloroethene	ug/L	ND	4000	3790	95	71-157	
Vinyl chloride	ug/L	ND	4000	3970	99	10-160	
Xylene (Total)	ug/L	ND	12000	11700	98	12-153	
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				98	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			7.0		7.0		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041
Pace Project No.: 60150936

QC Batch:	OEXT/39909	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60150936001		

METHOD BLANK: 1237910 Matrix: Water
Associated Lab Samples: 60150936001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/19/13 08:51	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/19/13 08:51	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/19/13 08:51	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/19/13 08:51	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/19/13 08:51	
Hexachloroethane	ug/L	ND	5.0	08/19/13 08:51	
Naphthalene	ug/L	ND	5.0	08/19/13 08:51	
Nitrobenzene	ug/L	ND	5.0	08/19/13 08:51	
Pentachlorophenol	ug/L	ND	5.0	08/19/13 08:51	
Phenol	ug/L	ND	5.0	08/19/13 08:51	
2,4,6-Tribromophenol (S)	%	96	39-119	08/19/13 08:51	
2-Fluorobiphenyl (S)	%	91	36-120	08/19/13 08:51	
2-Fluorophenol (S)	%	49	18-120	08/19/13 08:51	
Nitrobenzene-d5 (S)	%	89	32-120	08/19/13 08:51	
Phenol-d6 (S)	%	32	12-120	08/19/13 08:51	
Terphenyl-d14 (S)	%	96	44-120	08/19/13 08:51	

LABORATORY CONTROL SAMPLE: 1237911

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	42.9	86	44-120	
2,4,6-Trichlorophenol	ug/L	50	44.4	89	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	48.4	97	31-147	
Hexachloro-1,3-butadiene	ug/L	50	42.7	85	41-116	
Hexachlorocyclopentadiene	ug/L	100	72.2	72	31-120	
Hexachloroethane	ug/L	50	41.8	84	40-113	
Naphthalene	ug/L	50	44.5	89	48-120	
Nitrobenzene	ug/L	50	45.6	91	47-120	
Pentachlorophenol	ug/L	50	46.3	93	43-127	
Phenol	ug/L	50	15.0	30	15-112	
2,4,6-Tribromophenol (S)	%			90	39-119	
2-Fluorobiphenyl (S)	%			84	36-120	
2-Fluorophenol (S)	%			43	18-120	
Nitrobenzene-d5 (S)	%			81	32-120	M4
Phenol-d6 (S)	%			29	12-120	
Terphenyl-d14 (S)	%			87	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch: WET/42880

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60150936001

METHOD BLANK: 1236364

Matrix: Water

Associated Lab Samples: 60150936001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/15/13 09:54	

LABORATORY CONTROL SAMPLE: 1236365

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.2	105	78-114	

MATRIX SPIKE SAMPLE: 1236368

Parameter	Units	60150967002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	42.2	103	78-114	

SAMPLE DUPLICATE: 1236369

Parameter	Units	60150906001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	22.5	26.3	16	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch: WET/42945

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60150936001

METHOD BLANK: 1238250

Matrix: Water

Associated Lab Samples: 60150936001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/19/13 08:59	

LABORATORY CONTROL SAMPLE: 1238251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.2	101	64-132	

MATRIX SPIKE SAMPLE: 1238507

Parameter	Units	60150308001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	96.1	21.5	114	84	64-132	

SAMPLE DUPLICATE: 1238506

Parameter	Units	60150776002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	7.8	8.9	13	34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch: WET/42889

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60150936001

METHOD BLANK: 1236535

Matrix: Water

Associated Lab Samples: 60150936001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/15/13 10:13	

SAMPLE DUPLICATE: 1236536

Parameter	Units	60150885003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1236545

Parameter	Units	60150904001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	5380	5660	5	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch: WET/42911 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60150936001

SAMPLE DUPLICATE: 1237036

Parameter	Units	60150697002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch:	WETA/25790	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	60150936001		

METHOD BLANK:	1235929	Matrix:	Water
Associated Lab Samples:	60150936001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/14/13 11:39	

LABORATORY CONTROL SAMPLE: 1235930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1235931

Parameter	Units	60150614004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	2.1	101	90-110	

MATRIX SPIKE SAMPLE: 1235933

Parameter	Units	60150559002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	12.8	10	21.4	87	90-110	M1

SAMPLE DUPLICATE: 1235932

Parameter	Units	60150607002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

QC Batch:	WETA/25831	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60150936001		

METHOD BLANK: 1237595 Matrix: Water
Associated Lab Samples: 60150936001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/19/13 10:25	

LABORATORY CONTROL SAMPLE: 1237596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	53.1	106	90-110	

MATRIX SPIKE SAMPLE: 1237597

Parameter	Units	60150776003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	206	100	288	82	90-110	M1

MATRIX SPIKE SAMPLE: 1237599

Parameter	Units	60150482002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	43.9	50	89.5	91	90-110	

SAMPLE DUPLICATE: 1237598

Parameter	Units	60150566001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	15.2	14.5	5	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

- | | |
|----|---|
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| M4 | A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution. |
| 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. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-041

Pace Project No.: 60150936

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150936001	316-041	EPA 200.7	MPRP/23858	EPA 200.7	ICP/18681
60150936001	316-041	EPA 200.7	MPRP/23850	EPA 200.7	ICP/18678
60150936001	316-041	EPA 245.1	MERP/7614	EPA 245.1	MERC/7570
60150936001	316-041	EPA 245.1	MERP/7603	EPA 245.1	MERC/7559
60150936001	316-041	EPA 625	OEXT/39909	EPA 625	MSSV/12654
60150936001	316-041	EPA 624 Low	MSV/55578		
60150936002	TRIP BLANK	EPA 624 Low	MSV/55578		
60150936001	316-041	EPA 1664A	WET/42880		
60150936001	316-041	EPA 1664A	WET/42945		
60150936001	316-041	SM 2540D	WET/42889		
60150936001	316-041	SM 4500-H+B	WET/42911		
60150936001	316-041	EPA 350.1	WETA/25790		
60150936001	316-041	EPA 410.4	WETA/25831		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60150936



Client Name: Barr

Optional

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

Proj Due Date:

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Proj Name:

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ 2PIL

Thermometer Used: T-112 / T-194

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.5

Date and initials of person examining contents: 2/8/14

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. PH
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix:	<u>LT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>051313-3</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y / ☒ N

Field Data Required? Y / ☒ N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 2/11/14

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

[illegible]

August 21, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-042
Pace Project No.: 60151016

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 15, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-042

Pace Project No.: 60151016

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-042

Pace Project No.: 60151016

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151016001	316-042	Water	08/14/13 11:10	08/15/13 01:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-042

Pace Project No.: 60151016

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151016001	316-042	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-042

Pace Project No.: 60151016

Sample: 316-042		Lab ID: 60151016001	Collected: 08/14/13 11:10	Received: 08/15/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	35300	mg/L	2.0	1	08/16/13 09:43	08/21/13 10:41		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151016

QC Batch: WET/42912

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151016001

METHOD BLANK: 1237092

Matrix: Water

Associated Lab Samples: 60151016001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/21/13 10:24	

LABORATORY CONTROL SAMPLE: 1237093

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	169	85	85-115	

SAMPLE DUPLICATE: 1237094

Parameter	Units	60151036003 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	10.1	12.7	23	17	D6

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QUALIFIERS

Project: BRIDGETON LF 316-042

Pace Project No.: 60151016

DEFINITIONS

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ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-042

Pace Project No.: 60151016

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151016001	316-042	SM 5210B	WET/42912	SM 5210B	WET/42988

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Sample Condition Upon Receipt

WO#: 60151016



60151016

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ 22PIL

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.9

Date and initials of person examining contents: 2/8/15/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Bob</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked:	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		18.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AK

Date: 2/8/15/13

August 22, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-042
Pace Project No.: 60151017

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 15, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



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CERTIFICATIONS

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151017001	316-042	Water	08/14/13 11:10	08/15/13 01:30
60151017002	TRIP BLANK	Water	08/14/13 11:10	08/15/13 01:30

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151017001	316-042	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151017002	TRIP BLANK	EPA 624 Low	JKL	26

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

Sample: 316-042		Lab ID: 60151017001	Collected: 08/14/13 11:10	Received: 08/15/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	9740 ug/L		150	2	08/19/13 17:00	08/21/13 11:45	7429-90-5	
Antimony	50.9 ug/L		20.0	2	08/19/13 17:00	08/21/13 11:45	7440-36-0	
Arsenic	678 ug/L		20.0	2	08/19/13 17:00	08/21/13 11:45	7440-38-2	
Beryllium	ND ug/L		2.0	2	08/19/13 17:00	08/21/13 11:45	7440-41-7	D3
Cadmium	ND ug/L		25.0	5	08/19/13 17:00	08/21/13 11:49	7440-43-9	D3
Chromium	254 ug/L		10.0	2	08/19/13 17:00	08/21/13 11:45	7440-47-3	
Cobalt	62.7 ug/L		10.0	2	08/19/13 17:00	08/21/13 11:45	7440-48-4	
Copper	35.7 ug/L		20.0	2	08/19/13 17:00	08/21/13 11:45	7440-50-8	
Iron	94000 ug/L		100	2	08/19/13 17:00	08/21/13 11:45	7439-89-6	
Lead	209 ug/L		10.0	2	08/19/13 17:00	08/21/13 11:45	7439-92-1	
Nickel	144 ug/L		10.0	2	08/19/13 17:00	08/21/13 11:45	7440-02-0	
Selenium	ND ug/L		75.0	5	08/19/13 17:00	08/21/13 11:49	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/19/13 17:00	08/21/13 11:45	7440-22-4	D3
Thallium	ND ug/L		100	5	08/19/13 17:00	08/21/13 11:49	7440-28-0	D3
Zinc	14600 ug/L		1000	20	08/19/13 17:00	08/21/13 11:52	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3680 ug/L		150	2	08/21/13 10:00	08/22/13 13:00	7429-90-5	
Antimony, Dissolved	54.8 ug/L		20.0	2	08/21/13 10:00	08/22/13 13:00	7440-36-0	D9
Arsenic, Dissolved	672 ug/L		20.0	2	08/21/13 10:00	08/22/13 13:00	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/21/13 10:00	08/22/13 13:10	7440-41-7	D3
Cadmium, Dissolved	14.2 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:00	7440-43-9	D9
Chromium, Dissolved	217 ug/L		25.0	5	08/21/13 10:00	08/22/13 13:10	7440-47-3	
Cobalt, Dissolved	50.7 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:00	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/21/13 10:00	08/22/13 13:00	7440-50-8	D3
Iron, Dissolved	649000 ug/L		100	2	08/21/13 10:00	08/22/13 13:00	7439-89-6	
Lead, Dissolved	107 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:00	7439-92-1	
Nickel, Dissolved	129 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:00	7440-02-0	
Selenium, Dissolved	124 ug/L		75.0	5	08/21/13 10:00	08/22/13 13:10	7782-49-2	
Silver, Dissolved	ND ug/L		14.0	2	08/21/13 10:00	08/22/13 13:00	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/21/13 10:00	08/22/13 13:10	7440-28-0	D3
Zinc, Dissolved	12700 ug/L		1000	20	08/21/13 10:00	08/22/13 13:40	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	1.0 ug/L		0.20	1	08/19/13 17:00	08/20/13 09:15	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/21/13 16:40	08/22/13 10:44	7439-97-6	M1
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		6250	5	08/17/13 00:00	08/19/13 15:04	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 15:04	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 15:04	77-47-4	
Hexachloroethane	ND ug/L		1250	5	08/17/13 00:00	08/19/13 15:04	67-72-1	
Naphthalene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 15:04	91-20-3	
Nitrobenzene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 15:04	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

Sample: 316-042		Lab ID: 60151017001	Collected: 08/14/13 11:10	Received: 08/15/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1250	5	08/17/13 00:00	08/19/13 15:04	87-86-5	
Phenol	12500 ug/L		1250	5	08/17/13 00:00	08/19/13 15:04	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1250	5	08/17/13 00:00	08/19/13 15:04	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1250	5	08/17/13 00:00	08/19/13 15:04	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	5	08/17/13 00:00	08/19/13 15:04	4165-60-0	P3,S0
2-Fluorobiphenyl (S)	0 %		36-120	5	08/17/13 00:00	08/19/13 15:04	321-60-8	S0
Terphenyl-d14 (S)	0 %		44-120	5	08/17/13 00:00	08/19/13 15:04	1718-51-0	S0
Phenol-d6 (S)	0 %		12-120	5	08/17/13 00:00	08/19/13 15:04	13127-88-3	S0
2-Fluorophenol (S)	0 %		18-120	5	08/17/13 00:00	08/19/13 15:04	367-12-4	S0
2,4,6-Tribromophenol (S)	0 %		39-119	5	08/17/13 00:00	08/19/13 15:04	118-79-6	S0
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/15/13 23:05	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/15/13 23:05	75-27-4	
Bromoform	ND ug/L		200	200		08/15/13 23:05	75-25-2	
Bromomethane	ND ug/L		1000	200		08/15/13 23:05	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/15/13 23:05	56-23-5	
Chloroethane	ND ug/L		200	200		08/15/13 23:05	75-00-3	
Chloroform	ND ug/L		200	200		08/15/13 23:05	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/15/13 23:05	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/15/13 23:05	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 23:05	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/15/13 23:05	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/15/13 23:05	100-41-4	
Methylene chloride	ND ug/L		200	200		08/15/13 23:05	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/15/13 23:05	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/15/13 23:05	127-18-4	
Toluene	ND ug/L		200	200		08/15/13 23:05	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/15/13 23:05	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/15/13 23:05	79-00-5	
Trichloroethene	ND ug/L		200	200		08/15/13 23:05	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/15/13 23:05	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/15/13 23:05	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	102 %		80-120	200		08/15/13 23:05	1868-53-7	D3
4-Bromofluorobenzene (S)	99 %		80-120	200		08/15/13 23:05	460-00-4	
Toluene-d8 (S)	100 %		80-120	200		08/15/13 23:05	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	200		08/15/13 23:05	17060-07-0	
Preservation pH	7.0		1.0	200		08/15/13 23:05		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	46.4 mg/L		5.0	1		08/19/13 14:51		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/22/13 11:38		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

Sample: 316-042		Lab ID: 60151017001	Collected: 08/14/13 11:10	Received: 08/15/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1260	mg/L	5.0	1		08/16/13 08:51		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.7	Std. Units	0.10	1		08/17/13 11:05		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	655	mg/L	20.0	200		08/16/13 13:41	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	55300	mg/L	5000	500		08/21/13 14:19		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

Sample: TRIP BLANK		Lab ID: 60151017002	Collected: 08/14/13 11:10	Received: 08/15/13 01:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/15/13 20:36	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/15/13 20:36	75-27-4	
Bromoform	ND ug/L		1.0	1		08/15/13 20:36	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/15/13 20:36	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/15/13 20:36	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/15/13 20:36	75-00-3	
Chloroform	ND ug/L		1.0	1		08/15/13 20:36	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/15/13 20:36	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/15/13 20:36	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 20:36	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/15/13 20:36	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/15/13 20:36	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/15/13 20:36	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/15/13 20:36	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/15/13 20:36	127-18-4	
Toluene	ND ug/L		1.0	1		08/15/13 20:36	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/15/13 20:36	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/15/13 20:36	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/15/13 20:36	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/15/13 20:36	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/15/13 20:36	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	104 %		80-120	1		08/15/13 20:36	1868-53-7	
4-Bromofluorobenzene (S)	98 %		80-120	1		08/15/13 20:36	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		08/15/13 20:36	2037-26-5	
1,2-Dichloroethane-d4 (S)	98 %		80-120	1		08/15/13 20:36	17060-07-0	
Preservation pH	7.0		1.0	1		08/15/13 20:36		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch: MERP/7614

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151017001

METHOD BLANK: 1238476

Matrix: Water

Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/22/13 09:26	

LABORATORY CONTROL SAMPLE: 1238477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1238478 1238479

Parameter	Units	60151227001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.2	4.1	83	82	70-130	1	20	

MATRIX SPIKE SAMPLE: 1238480

Parameter	Units	60151150001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	3.6	71	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch: MERP/7624

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60151017001

METHOD BLANK: 1239391

Matrix: Water

Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/22/13 10:35	

LABORATORY CONTROL SAMPLE: 1239392

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.3	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239393 1239394

Parameter	Units	60151017001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	0.20	0.23	4	5	70-130	15	20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042
Pace Project No.: 60151017

QC Batch: MPRP/23889 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60151017001

METHOD BLANK: 1238302 Matrix: Water
Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/20/13 17:57	
Antimony	ug/L	ND	10.0	08/20/13 17:57	
Arsenic	ug/L	ND	10.0	08/20/13 17:57	
Beryllium	ug/L	ND	1.0	08/20/13 17:57	
Cadmium	ug/L	ND	5.0	08/20/13 17:57	
Chromium	ug/L	ND	5.0	08/20/13 17:57	
Cobalt	ug/L	ND	5.0	08/20/13 17:57	
Copper	ug/L	ND	10.0	08/20/13 17:57	
Iron	ug/L	ND	50.0	08/20/13 17:57	
Lead	ug/L	ND	5.0	08/20/13 17:57	
Nickel	ug/L	ND	5.0	08/20/13 17:57	
Selenium	ug/L	ND	15.0	08/20/13 17:57	
Silver	ug/L	ND	7.0	08/20/13 17:57	
Thallium	ug/L	ND	20.0	08/20/13 17:57	
Zinc	ug/L	ND	50.0	08/20/13 17:57	

LABORATORY CONTROL SAMPLE: 1238303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9780	98	85-115	
Antimony	ug/L	1000	966	97	85-115	
Arsenic	ug/L	1000	916	92	85-115	
Beryllium	ug/L	1000	951	95	85-115	
Cadmium	ug/L	1000	944	94	85-115	
Chromium	ug/L	1000	935	94	85-115	
Cobalt	ug/L	1000	964	96	85-115	
Copper	ug/L	1000	930	93	85-115	
Iron	ug/L	10000	9580	96	85-115	
Lead	ug/L	1000	958	96	85-115	
Nickel	ug/L	1000	974	97	85-115	
Selenium	ug/L	1000	966	97	85-115	
Silver	ug/L	500	470	94	85-115	
Thallium	ug/L	1000	980	98	85-115	
Zinc	ug/L	1000	936	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1238304 1238305

Parameter	Units	60150921001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	2900	10000	10000	12800	12400	99	95	70-130	3	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1238304 1238305											
Parameter	Units	60150921001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	993	982	99	98	70-130	1	7
Arsenic	ug/L	ND	1000	1000	971	959	97	96	70-130	1	10
Beryllium	ug/L	ND	1000	1000	982	956	98	96	70-130	3	7
Cadmium	ug/L	ND	1000	1000	974	965	97	96	70-130	1	10
Chromium	ug/L	ND	1000	1000	943	936	94	94	70-130	1	10
Cobalt	ug/L	ND	1000	1000	967	957	96	95	70-130	1	6
Copper	ug/L	ND	1000	1000	963	956	96	95	70-130	1	11
Iron	ug/L	69.8	10000	10000	9870	9570	98	95	70-130	3	10
Lead	ug/L	ND	1000	1000	940	928	94	93	70-130	1	10
Nickel	ug/L	14.3	1000	1000	981	973	97	96	70-130	1	10
Selenium	ug/L	ND	1000	1000	991	989	99	99	70-130	0	10
Silver	ug/L	ND	500	500	486	482	97	96	70-130	1	10
Thallium	ug/L	ND	1000	1000	896	888	90	89	70-130	1	6
Zinc	ug/L	ND	1000	1000	972	970	97	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1238306							
Parameter	Units	60151167002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	98.9	10000	9920	98	70-130	
Antimony	ug/L	ND	1000	1020	102	70-130	
Arsenic	ug/L	12.3	1000	1020	101	70-130	
Beryllium	ug/L	ND	1000	940	94	70-130	
Cadmium	ug/L	ND	1000	993	99	70-130	
Chromium	ug/L	98.7	1000	1020	92	70-130	
Cobalt	ug/L	ND	1000	917	92	70-130	
Copper	ug/L	12.8	1000	995	98	70-130	
Iron	ug/L	118	10000	9380	93	70-130	
Lead	ug/L	ND	1000	884	88	70-130	
Nickel	ug/L	ND	1000	920	92	70-130	
Selenium	ug/L	ND	1000	1030	103	70-130	
Silver	ug/L	ND	500	507	101	70-130	
Thallium	ug/L	ND	1000	793	79	70-130	
Zinc	ug/L	53.3	1000	976	92	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042
Pace Project No.: 60151017

QC Batch: MPRP/23917 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151017001

METHOD BLANK: 1239259 Matrix: Water
Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/22/13 12:13	
Antimony, Dissolved	ug/L	ND	10.0	08/22/13 12:13	
Arsenic, Dissolved	ug/L	ND	10.0	08/22/13 12:13	
Beryllium, Dissolved	ug/L	ND	1.0	08/22/13 12:13	
Cadmium, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Chromium, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Cobalt, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Copper, Dissolved	ug/L	ND	10.0	08/22/13 12:13	
Iron, Dissolved	ug/L	ND	50.0	08/22/13 12:13	
Lead, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Nickel, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Selenium, Dissolved	ug/L	ND	15.0	08/22/13 12:13	
Silver, Dissolved	ug/L	ND	7.0	08/22/13 12:13	
Thallium, Dissolved	ug/L	ND	20.0	08/22/13 12:13	
Zinc, Dissolved	ug/L	ND	50.0	08/22/13 12:13	

LABORATORY CONTROL SAMPLE: 1239260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9580	96	85-115	
Antimony, Dissolved	ug/L	1000	999	100	85-115	
Arsenic, Dissolved	ug/L	1000	949	95	85-115	
Beryllium, Dissolved	ug/L	1000	970	97	85-115	
Cadmium, Dissolved	ug/L	1000	966	97	85-115	
Chromium, Dissolved	ug/L	1000	934	93	85-115	
Cobalt, Dissolved	ug/L	1000	978	98	85-115	
Copper, Dissolved	ug/L	1000	962	96	85-115	
Iron, Dissolved	ug/L	10000	9670	97	85-115	
Lead, Dissolved	ug/L	1000	978	98	85-115	
Nickel, Dissolved	ug/L	1000	990	99	85-115	
Selenium, Dissolved	ug/L	1000	982	98	85-115	
Silver, Dissolved	ug/L	500	467	93	85-115	
Thallium, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	936	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239261 1239262

Parameter	Units	60151047001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	35.9J	10000	10000	9700	9680	97	96	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239261 1239262											
Parameter	Units	60151047001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	981	975	98	97	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	985	985	98	98	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	989	983	99	98	70-130	1	10
Chromium, Dissolved	ug/L	1.1J	1000	1000	939	936	94	94	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	971	966	97	97	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1000	989	100	99	70-130	1	11
Iron, Dissolved	ug/L	16.1J	10000	10000	9600	9580	96	96	70-130	0	10
Lead, Dissolved	ug/L	2.8J	1000	1000	974	972	97	97	70-130	0	10
Nickel, Dissolved	ug/L	8.4	1000	1000	990	986	98	98	70-130	0	10
Selenium, Dissolved	ug/L	ND	1000	1000	997	986	100	99	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	478	474	96	95	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	989	985	99	98	70-130	0	6
Zinc, Dissolved	ug/L	ND	1000	1000	921	922	92	92	70-130	0	11

MATRIX SPIKE SAMPLE: 1239263							
Parameter	Units	60151047002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	26.4J	10000	9720	97	70-130	
Antimony, Dissolved	ug/L	ND	1000	1020	102	70-130	
Arsenic, Dissolved	ug/L	ND	1000	973	97	70-130	
Beryllium, Dissolved	ug/L	ND	1000	989	99	70-130	
Cadmium, Dissolved	ug/L	ND	1000	986	99	70-130	
Chromium, Dissolved	ug/L	1.6J	1000	952	95	70-130	
Cobalt, Dissolved	ug/L	ND	1000	969	97	70-130	
Copper, Dissolved	ug/L	ND	1000	991	99	70-130	
Iron, Dissolved	ug/L	28.2J	10000	9670	96	70-130	
Lead, Dissolved	ug/L	ND	1000	974	97	70-130	
Nickel, Dissolved	ug/L	ND	1000	983	98	70-130	
Selenium, Dissolved	ug/L	ND	1000	985	98	70-130	
Silver, Dissolved	ug/L	ND	500	479	96	70-130	
Thallium, Dissolved	ug/L	ND	1000	986	99	70-130	
Zinc, Dissolved	ug/L	ND	1000	929	93	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch: MSV/55578 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151017001, 60151017002

METHOD BLANK: 1236561 Matrix: Water

Associated Lab Samples: 60151017001, 60151017002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,2-Dichloroethane	ug/L	ND	1.0	08/15/13 17:02	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/15/13 17:02	
Benzene	ug/L	ND	1.0	08/15/13 17:02	
Bromodichloromethane	ug/L	ND	1.0	08/15/13 17:02	
Bromoform	ug/L	ND	1.0	08/15/13 17:02	
Bromomethane	ug/L	ND	5.0	08/15/13 17:02	
Carbon tetrachloride	ug/L	ND	1.0	08/15/13 17:02	
Chloroethane	ug/L	ND	1.0	08/15/13 17:02	
Chloroform	ug/L	ND	1.0	08/15/13 17:02	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Ethylbenzene	ug/L	ND	1.0	08/15/13 17:02	
Methylene chloride	ug/L	ND	1.0	08/15/13 17:02	
Tetrachloroethene	ug/L	ND	1.0	08/15/13 17:02	
Toluene	ug/L	ND	1.0	08/15/13 17:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Trichloroethene	ug/L	ND	1.0	08/15/13 17:02	
Vinyl chloride	ug/L	ND	1.0	08/15/13 17:02	
Xylene (Total)	ug/L	ND	3.0	08/15/13 17:02	
1,2-Dichloroethane-d4 (S)	%	102	80-120	08/15/13 17:02	
4-Bromofluorobenzene (S)	%	100	80-120	08/15/13 17:02	
Toluene-d8 (S)	%	100	80-120	08/15/13 17:02	

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.2	101	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	90	59-138	
1,1,2-Trichloroethane	ug/L	20	18.2	91	69-127	
1,2-Dichloroethane	ug/L	20	19.3	97	71-129	
1,4-Dichlorobenzene	ug/L	20	18.5	93	68-124	
Benzene	ug/L	20	19.0	95	73-129	
Bromodichloromethane	ug/L	20	18.9	95	63-129	
Bromoform	ug/L	20	17.0	85	52-123	
Bromomethane	ug/L	20	21.0	105	10-160	
Carbon tetrachloride	ug/L	20	19.0	95	70-140	
Chloroethane	ug/L	20	17.6	88	42-160	
Chloroform	ug/L	20	18.9	94	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.6	98	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

LABORATORY CONTROL SAMPLE: 1236562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.2	96	66-133	
Methylene chloride	ug/L	20	19.9	100	56-135	
Tetrachloroethene	ug/L	20	19.2	96	64-143	
Toluene	ug/L	20	19.0	95	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.8	94	67-149	
Trichloroethene	ug/L	20	19.7	98	71-130	
Vinyl chloride	ug/L	20	19.8	99	41-160	
Xylene (Total)	ug/L	60	57.6	96	67-130	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1236563

Parameter	Units	60150779001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4120	103	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3690	92	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3640	91	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3880	97	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3630	89	18-147	
Benzene	ug/L	ND	4000	3720	93	37-151	
Bromodichloromethane	ug/L	ND	4000	3770	94	35-155	
Bromoform	ug/L	ND	4000	3390	82	45-133	
Bromomethane	ug/L	ND	4000	3150	79	10-160	
Carbon tetrachloride	ug/L	ND	4000	4110	103	70-140	
Chloroethane	ug/L	ND	4000	3610	90	14-160	
Chloroform	ug/L	ND	4000	3820	93	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	4020	100	19-160	
Ethylbenzene	ug/L	ND	4000	3890	97	37-154	
Methylene chloride	ug/L	ND	4000	3940	97	15-156	
Tetrachloroethene	ug/L	ND	4000	4070	102	64-148	
Toluene	ug/L	ND	4000	3850	96	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3840	96	54-156	
Trichloroethene	ug/L	ND	4000	3790	95	71-157	
Vinyl chloride	ug/L	ND	4000	3970	99	10-160	
Xylene (Total)	ug/L	ND	12000	11700	98	12-153	
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				98	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			7.0	7.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch: OEXT/39909

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60151017001

METHOD BLANK: 1237910

Matrix: Water

Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/19/13 08:51	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/19/13 08:51	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/19/13 08:51	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/19/13 08:51	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/19/13 08:51	
Hexachloroethane	ug/L	ND	5.0	08/19/13 08:51	
Naphthalene	ug/L	ND	5.0	08/19/13 08:51	
Nitrobenzene	ug/L	ND	5.0	08/19/13 08:51	
Pentachlorophenol	ug/L	ND	5.0	08/19/13 08:51	
Phenol	ug/L	ND	5.0	08/19/13 08:51	
2,4,6-Tribromophenol (S)	%	96	39-119	08/19/13 08:51	
2-Fluorobiphenyl (S)	%	91	36-120	08/19/13 08:51	
2-Fluorophenol (S)	%	49	18-120	08/19/13 08:51	
Nitrobenzene-d5 (S)	%	89	32-120	08/19/13 08:51	
Phenol-d6 (S)	%	32	12-120	08/19/13 08:51	
Terphenyl-d14 (S)	%	96	44-120	08/19/13 08:51	

LABORATORY CONTROL SAMPLE: 1237911

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	42.9	86	44-120	
2,4,6-Trichlorophenol	ug/L	50	44.4	89	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	48.4	97	31-147	
Hexachloro-1,3-butadiene	ug/L	50	42.7	85	41-116	
Hexachlorocyclopentadiene	ug/L	100	72.2	72	31-120	
Hexachloroethane	ug/L	50	41.8	84	40-113	
Naphthalene	ug/L	50	44.5	89	48-120	
Nitrobenzene	ug/L	50	45.6	91	47-120	
Pentachlorophenol	ug/L	50	46.3	93	43-127	
Phenol	ug/L	50	15.0	30	15-112	
2,4,6-Tribromophenol (S)	%			90	39-119	
2-Fluorobiphenyl (S)	%			84	36-120	
2-Fluorophenol (S)	%			43	18-120	
Nitrobenzene-d5 (S)	%			81	32-120	M4
Phenol-d6 (S)	%			29	12-120	
Terphenyl-d14 (S)	%			87	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch:	WET/42947	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60151017001		

METHOD BLANK: 1238262 Matrix: Water

Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/19/13 14:49	

LABORATORY CONTROL SAMPLE: 1238263

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.2	105	78-114	

MATRIX SPIKE SAMPLE: 1238264

Parameter	Units	60151032002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	38.2	92	78-114	

SAMPLE DUPLICATE: 1238265

Parameter	Units	60151036001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch: WET/43002

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151017001

METHOD BLANK: 1240048

Matrix: Water

Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/22/13 11:37	

LABORATORY CONTROL SAMPLE: 1240049

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.7	104	64-132	

MATRIX SPIKE SAMPLE: 1240059

Parameter	Units	60151389002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	18.3	20	27.9	48	64-132	M1

SAMPLE DUPLICATE: 1240060

Parameter	Units	60151296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	3.4J		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch: WET/42913

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151017001

METHOD BLANK: 1237120

Matrix: Water

Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/16/13 08:50	

SAMPLE DUPLICATE: 1237121

Parameter	Units	60151057001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	14.0	15.0	7	25	

SAMPLE DUPLICATE: 1237122

Parameter	Units	60151103002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch: WET/42933 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60151017001

SAMPLE DUPLICATE: 1238067

Parameter	Units	60151023002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.4	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch: WETA/25823

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151017001

METHOD BLANK: 1237144

Matrix: Water

Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/16/13 13:38	

LABORATORY CONTROL SAMPLE: 1237145

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	103	90-110	

MATRIX SPIKE SAMPLE: 1237146

Parameter	Units	60151048001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	7.7	4	9.5	46	90-110	M1

MATRIX SPIKE SAMPLE: 1237148

Parameter	Units	60150960003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	1.8	90	90-110	

SAMPLE DUPLICATE: 1237147

Parameter	Units	60150960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

QC Batch:	WETA/25868	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151017001		

METHOD BLANK: 1238985 Matrix: Water

Associated Lab Samples: 60151017001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/21/13 13:53	

LABORATORY CONTROL SAMPLE: 1238986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	52.1	104	90-110	

MATRIX SPIKE SAMPLE: 1238987

Parameter	Units	60150731024 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	21.0	50	72.7	103	90-110	

MATRIX SPIKE SAMPLE: 1238989

Parameter	Units	60150731026 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	15.6	50	63.0	95	90-110	

SAMPLE DUPLICATE: 1238988

Parameter	Units	60150731025 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	ND	5.9J		25	

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QUALIFIERS

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

- | | |
|----|---|
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| D9 | Dissolved result is greater than the total. Data is within laboratory control limits. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| M4 | A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution. |
| P3 | Sample extract could not be concentrated to the routine final volume, resulting in elevated reporting limits. |
| S0 | Surrogate recovery outside laboratory control limits. |

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-042

Pace Project No.: 60151017

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151017001	316-042	EPA 200.7	MPRP/23889	EPA 200.7	ICP/18704
60151017001	316-042	EPA 200.7	MPRP/23917	EPA 200.7	ICP/18724
60151017001	316-042	EPA 245.1	MERP/7614	EPA 245.1	MERC/7570
60151017001	316-042	EPA 245.1	MERP/7624	EPA 245.1	MERC/7581
60151017001	316-042	EPA 625	OEXT/39909	EPA 625	MSSV/12654
60151017001	316-042	EPA 624 Low	MSV/55578		
60151017002	TRIP BLANK	EPA 624 Low	MSV/55578		
60151017001	316-042	EPA 1664A	WET/42947		
60151017001	316-042	EPA 1664A	WET/43002		
60151017001	316-042	SM 2540D	WET/42913		
60151017001	316-042	SM 4500-H+B	WET/42933		
60151017001	316-042	EPA 350.1	WETA/25823		
60151017001	316-042	EPA 410.4	WETA/25868		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151017



60151017

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☒ None ☐ Other depil

Thermometer Used: T-112 / T-194

Type of Ice: Wet ☒ Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 2.9

Date and initials of person examining contents: pv 8/15/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>pH</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: <u>VOA</u> coliform, TOC, <u>O&G</u> WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>071513-3</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution: Copy COC to Client? Y ☐ N ☒ Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AS

Date: 8/15/13

August 23, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-043
Pace Project No.: 60151162

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 16, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151162001	316-043	Water	08/15/13 12:40	08/16/13 01:05
60151162002	TRIP BLANK	Water	08/15/13 12:40	08/16/13 01:05

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151162001	316-043	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	26
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151162002	TRIP BLANK	EPA 624 Low	JKL	26

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

Sample: 316-043		Lab ID: 60151162001	Collected: 08/15/13 12:40	Received: 08/16/13 01:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	8380 ug/L		150	2	08/20/13 14:00	08/22/13 18:56	7429-90-5	
Antimony	40.8 ug/L		20.0	2	08/20/13 14:00	08/22/13 18:56	7440-36-0	
Arsenic	695 ug/L		20.0	2	08/20/13 14:00	08/22/13 18:56	7440-38-2	
Beryllium	ND ug/L		5.0	5	08/20/13 14:00	08/22/13 19:29	7440-41-7	D3
Cadmium	17.0 ug/L		10.0	2	08/20/13 14:00	08/22/13 18:56	7440-43-9	
Chromium	252 ug/L		25.0	5	08/20/13 14:00	08/22/13 19:29	7440-47-3	
Cobalt	51.4 ug/L		10.0	2	08/20/13 14:00	08/22/13 18:56	7440-48-4	
Copper	22.2 ug/L		20.0	2	08/20/13 14:00	08/22/13 18:56	7440-50-8	
Iron	814000 ug/L		100	2	08/20/13 14:00	08/22/13 18:56	7439-89-6	
Lead	214 ug/L		10.0	2	08/20/13 14:00	08/22/13 18:56	7439-92-1	
Nickel	136 ug/L		10.0	2	08/20/13 14:00	08/22/13 18:56	7440-02-0	
Selenium	95.6 ug/L		75.0	5	08/20/13 14:00	08/22/13 19:29	7782-49-2	
Silver	ND ug/L		14.0	2	08/20/13 14:00	08/22/13 18:56	7440-22-4	D3
Thallium	ND ug/L		100	5	08/20/13 14:00	08/22/13 19:29	7440-28-0	D3
Zinc	13000 ug/L		1000	20	08/20/13 14:00	08/22/13 19:43	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3410 ug/L		150	2	08/21/13 10:00	08/22/13 13:03	7429-90-5	
Antimony, Dissolved	49.0 ug/L		20.0	2	08/21/13 10:00	08/22/13 13:03	7440-36-0	D9
Arsenic, Dissolved	665 ug/L		20.0	2	08/21/13 10:00	08/22/13 13:03	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/21/13 10:00	08/22/13 13:33	7440-41-7	D3
Cadmium, Dissolved	13.1 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:03	7440-43-9	
Chromium, Dissolved	215 ug/L		25.0	5	08/21/13 10:00	08/22/13 13:33	7440-47-3	
Cobalt, Dissolved	44.0 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:03	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/21/13 10:00	08/22/13 13:03	7440-50-8	D3
Iron, Dissolved	591000 ug/L		100	2	08/21/13 10:00	08/22/13 13:03	7439-89-6	
Lead, Dissolved	105 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:03	7439-92-1	
Nickel, Dissolved	122 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:03	7440-02-0	
Selenium, Dissolved	118 ug/L		75.0	5	08/21/13 10:00	08/22/13 13:33	7782-49-2	D9
Silver, Dissolved	ND ug/L		14.0	2	08/21/13 10:00	08/22/13 13:03	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/21/13 10:00	08/22/13 13:33	7440-28-0	D3
Zinc, Dissolved	11200 ug/L		1000	20	08/21/13 10:00	08/22/13 13:44	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	4.1 ug/L		0.20	1	08/19/13 17:00	08/20/13 09:20	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/21/13 16:40	08/22/13 12:15	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/21/13 00:00	08/22/13 13:19	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 13:19	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 13:19	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/21/13 00:00	08/22/13 13:19	67-72-1	
Naphthalene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 13:19	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 13:19	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

Sample: 316-043		Lab ID: 60151162001	Collected: 08/15/13 12:40	Received: 08/16/13 01:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/21/13 00:00	08/22/13 13:19	87-86-5	
Phenol	15900 ug/L		1000	20	08/21/13 00:00	08/22/13 13:19	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 13:19	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/21/13 00:00	08/22/13 13:19	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/21/13 00:00	08/22/13 13:19	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/21/13 00:00	08/22/13 13:19	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/21/13 00:00	08/22/13 13:19	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/21/13 00:00	08/22/13 13:19	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/21/13 00:00	08/22/13 13:19	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/21/13 00:00	08/22/13 13:19	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/16/13 20:51	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/16/13 20:51	75-27-4	
Bromoform	ND ug/L		200	200		08/16/13 20:51	75-25-2	
Bromomethane	ND ug/L		1000	200		08/16/13 20:51	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/16/13 20:51	56-23-5	
Chloroethane	ND ug/L		200	200		08/16/13 20:51	75-00-3	
Chloroform	ND ug/L		200	200		08/16/13 20:51	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/16/13 20:51	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/16/13 20:51	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/16/13 20:51	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/16/13 20:51	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/16/13 20:51	100-41-4	
Methylene chloride	ND ug/L		200	200		08/16/13 20:51	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/16/13 20:51	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/16/13 20:51	127-18-4	
Toluene	ND ug/L		200	200		08/16/13 20:51	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/16/13 20:51	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/16/13 20:51	79-00-5	
Trichloroethene	ND ug/L		200	200		08/16/13 20:51	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/16/13 20:51	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/16/13 20:51	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	103 %		80-120	200		08/16/13 20:51	1868-53-7	D3,HS
4-Bromofluorobenzene (S)	97 %		80-120	200		08/16/13 20:51	460-00-4	
Toluene-d8 (S)	99 %		80-120	200		08/16/13 20:51	2037-26-5	
1,2-Dichloroethane-d4 (S)	100 %		80-120	200		08/16/13 20:51	17060-07-0	
Preservation pH	6.0		1.0	200		08/16/13 20:51		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	194 mg/L		5.0	1		08/19/13 14:52		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/22/13 11:38		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

Sample: 316-043		Lab ID: 60151162001	Collected: 08/15/13 12:40	Received: 08/16/13 01:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1460	mg/L	5.0	1		08/16/13 14:45		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		08/17/13 12:01		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	748	mg/L	20.0	200		08/20/13 14:28	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	70400	mg/L	5000	500		08/21/13 14:28		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

Sample: TRIP BLANK		Lab ID: 60151162002	Collected: 08/15/13 12:40	Received: 08/16/13 01:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/16/13 21:33	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/16/13 21:33	75-27-4	
Bromoform	ND ug/L		1.0	1		08/16/13 21:33	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/16/13 21:33	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/16/13 21:33	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/16/13 21:33	75-00-3	
Chloroform	ND ug/L		1.0	1		08/16/13 21:33	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/16/13 21:33	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/16/13 21:33	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/16/13 21:33	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/16/13 21:33	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/16/13 21:33	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/16/13 21:33	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/16/13 21:33	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/16/13 21:33	127-18-4	
Toluene	ND ug/L		1.0	1		08/16/13 21:33	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/16/13 21:33	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/16/13 21:33	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/16/13 21:33	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/16/13 21:33	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/16/13 21:33	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	104 %		80-120	1		08/16/13 21:33	1868-53-7	
4-Bromofluorobenzene (S)	99 %		80-120	1		08/16/13 21:33	460-00-4	
Toluene-d8 (S)	100 %		80-120	1		08/16/13 21:33	2037-26-5	
1,2-Dichloroethane-d4 (S)	97 %		80-120	1		08/16/13 21:33	17060-07-0	
Preservation pH	7.0		1.0	1		08/16/13 21:33		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

QC Batch: MERP/7614

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151162001

METHOD BLANK: 1238476

Matrix: Water

Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/22/13 09:26	

LABORATORY CONTROL SAMPLE: 1238477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1238478

1238479

Parameter	Units	60151227001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.2	4.1	83	82	70-130	1	20	

MATRIX SPIKE SAMPLE: 1238480

Parameter	Units	60151150001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	3.6	71	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

QC Batch: MERP/7624

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60151162001

METHOD BLANK: 1239391

Matrix: Water

Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/22/13 10:35	

LABORATORY CONTROL SAMPLE: 1239392

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.3	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239393 1239394

Parameter	Units	60151017001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	0.20	0.23	4	5	70-130	15	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043
Pace Project No.: 60151162

QC Batch: MPRP/23909 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60151162001

METHOD BLANK: 1238839 Matrix: Water
Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/22/13 17:34	
Antimony	ug/L	ND	10.0	08/22/13 17:34	
Arsenic	ug/L	ND	10.0	08/22/13 17:34	
Beryllium	ug/L	ND	1.0	08/22/13 17:34	
Cadmium	ug/L	ND	5.0	08/22/13 17:34	
Chromium	ug/L	ND	5.0	08/22/13 17:34	
Cobalt	ug/L	ND	5.0	08/22/13 17:34	
Copper	ug/L	ND	10.0	08/22/13 17:34	
Iron	ug/L	ND	50.0	08/22/13 17:34	
Lead	ug/L	ND	5.0	08/22/13 17:34	
Nickel	ug/L	ND	5.0	08/22/13 17:34	
Selenium	ug/L	ND	15.0	08/22/13 17:34	
Silver	ug/L	ND	7.0	08/22/13 17:34	
Thallium	ug/L	ND	20.0	08/22/13 17:34	
Zinc	ug/L	ND	50.0	08/22/13 17:34	

LABORATORY CONTROL SAMPLE: 1238840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9820	98	85-115	
Antimony	ug/L	1000	974	97	85-115	
Arsenic	ug/L	1000	935	93	85-115	
Beryllium	ug/L	1000	984	98	85-115	
Cadmium	ug/L	1000	958	96	85-115	
Chromium	ug/L	1000	940	94	85-115	
Cobalt	ug/L	1000	974	97	85-115	
Copper	ug/L	1000	952	95	85-115	
Iron	ug/L	10000	9590	96	85-115	
Lead	ug/L	1000	969	97	85-115	
Nickel	ug/L	1000	995	100	85-115	
Selenium	ug/L	1000	945	95	85-115	
Silver	ug/L	500	460	92	85-115	
Thallium	ug/L	1000	980	98	85-115	
Zinc	ug/L	1000	939	94	85-115	

MATRIX SPIKE SAMPLE: 1238841

Parameter	Units	60151012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	9530	95	70-130	
Antimony	ug/L	ND	1000	976	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

MATRIX SPIKE SAMPLE:		1238841					
Parameter	Units	60151012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	959	96	70-130	
Beryllium	ug/L	ND	1000	961	96	70-130	
Cadmium	ug/L	ND	1000	958	96	70-130	
Chromium	ug/L	ND	1000	926	93	70-130	
Cobalt	ug/L	ND	1000	937	94	70-130	
Copper	ug/L	ND	1000	965	96	70-130	
Iron	ug/L	ND	10000	9230	92	70-130	
Lead	ug/L	ND	1000	923	92	70-130	
Nickel	ug/L	7.4	1000	959	95	70-130	
Selenium	ug/L	ND	1000	951	95	70-130	
Silver	ug/L	ND	500	466	93	70-130	
Thallium	ug/L	ND	1000	884	88	70-130	
Zinc	ug/L	ND	1000	945	94	70-130	

MATRIX SPIKE SAMPLE:		1238842					
Parameter	Units	60151268002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	87.6	10000	9870	98	70-130	
Antimony	ug/L	ND	1000	1010	101	70-130	
Arsenic	ug/L	ND	1000	995	99	70-130	
Beryllium	ug/L	ND	1000	944	94	70-130	
Cadmium	ug/L	ND	1000	993	99	70-130	
Chromium	ug/L	ND	1000	922	92	70-130	
Cobalt	ug/L	ND	1000	928	93	70-130	
Copper	ug/L	ND	1000	970	97	70-130	
Iron	ug/L	ND	10000	9110	91	70-130	
Lead	ug/L	6.3	1000	920	91	70-130	
Nickel	ug/L	ND	1000	945	94	70-130	
Selenium	ug/L	ND	1000	992	99	70-130	
Silver	ug/L	ND	500	478	96	70-130	
Thallium	ug/L	ND	1000	866	87	70-130	
Zinc	ug/L	ND	1000	975	97	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043
Pace Project No.: 60151162

QC Batch: MPRP/23917 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151162001

METHOD BLANK: 1239259 Matrix: Water
Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/22/13 12:13	
Antimony, Dissolved	ug/L	ND	10.0	08/22/13 12:13	
Arsenic, Dissolved	ug/L	ND	10.0	08/22/13 12:13	
Beryllium, Dissolved	ug/L	ND	1.0	08/22/13 12:13	
Cadmium, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Chromium, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Cobalt, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Copper, Dissolved	ug/L	ND	10.0	08/22/13 12:13	
Iron, Dissolved	ug/L	ND	50.0	08/22/13 12:13	
Lead, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Nickel, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Selenium, Dissolved	ug/L	ND	15.0	08/22/13 12:13	
Silver, Dissolved	ug/L	ND	7.0	08/22/13 12:13	
Thallium, Dissolved	ug/L	ND	20.0	08/22/13 12:13	
Zinc, Dissolved	ug/L	ND	50.0	08/22/13 12:13	

LABORATORY CONTROL SAMPLE: 1239260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9580	96	85-115	
Antimony, Dissolved	ug/L	1000	999	100	85-115	
Arsenic, Dissolved	ug/L	1000	949	95	85-115	
Beryllium, Dissolved	ug/L	1000	970	97	85-115	
Cadmium, Dissolved	ug/L	1000	966	97	85-115	
Chromium, Dissolved	ug/L	1000	934	93	85-115	
Cobalt, Dissolved	ug/L	1000	978	98	85-115	
Copper, Dissolved	ug/L	1000	962	96	85-115	
Iron, Dissolved	ug/L	10000	9670	97	85-115	
Lead, Dissolved	ug/L	1000	978	98	85-115	
Nickel, Dissolved	ug/L	1000	990	99	85-115	
Selenium, Dissolved	ug/L	1000	982	98	85-115	
Silver, Dissolved	ug/L	500	467	93	85-115	
Thallium, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	936	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239261 1239262

Parameter	Units	60151047001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	35.9J	10000	10000	9700	9680	97	96	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239261 1239262											
Parameter	Units	60151047001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	981	975	98	97	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	985	985	98	98	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	989	983	99	98	70-130	1	10
Chromium, Dissolved	ug/L	1.1J	1000	1000	939	936	94	94	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	971	966	97	97	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1000	989	100	99	70-130	1	11
Iron, Dissolved	ug/L	16.1J	10000	10000	9600	9580	96	96	70-130	0	10
Lead, Dissolved	ug/L	2.8J	1000	1000	974	972	97	97	70-130	0	10
Nickel, Dissolved	ug/L	8.4	1000	1000	990	986	98	98	70-130	0	10
Selenium, Dissolved	ug/L	ND	1000	1000	997	986	100	99	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	478	474	96	95	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	989	985	99	98	70-130	0	6
Zinc, Dissolved	ug/L	ND	1000	1000	921	922	92	92	70-130	0	11

MATRIX SPIKE SAMPLE: 1239263							
Parameter	Units	60151047002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	26.4J	10000	9720	97	70-130	
Antimony, Dissolved	ug/L	ND	1000	1020	102	70-130	
Arsenic, Dissolved	ug/L	ND	1000	973	97	70-130	
Beryllium, Dissolved	ug/L	ND	1000	989	99	70-130	
Cadmium, Dissolved	ug/L	ND	1000	986	99	70-130	
Chromium, Dissolved	ug/L	1.6J	1000	952	95	70-130	
Cobalt, Dissolved	ug/L	ND	1000	969	97	70-130	
Copper, Dissolved	ug/L	ND	1000	991	99	70-130	
Iron, Dissolved	ug/L	28.2J	10000	9670	96	70-130	
Lead, Dissolved	ug/L	ND	1000	974	97	70-130	
Nickel, Dissolved	ug/L	ND	1000	983	98	70-130	
Selenium, Dissolved	ug/L	ND	1000	985	98	70-130	
Silver, Dissolved	ug/L	ND	500	479	96	70-130	
Thallium, Dissolved	ug/L	ND	1000	986	99	70-130	
Zinc, Dissolved	ug/L	ND	1000	929	93	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

QC Batch: MSV/55612 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151162001, 60151162002

METHOD BLANK: 1237402 Matrix: Water

Associated Lab Samples: 60151162001, 60151162002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/16/13 19:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/16/13 19:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/16/13 19:47	
1,2-Dichloroethane	ug/L	ND	1.0	08/16/13 19:47	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/16/13 19:47	
Benzene	ug/L	ND	1.0	08/16/13 19:47	
Bromodichloromethane	ug/L	ND	1.0	08/16/13 19:47	
Bromoform	ug/L	ND	1.0	08/16/13 19:47	
Bromomethane	ug/L	ND	5.0	08/16/13 19:47	
Carbon tetrachloride	ug/L	ND	1.0	08/16/13 19:47	
Chloroethane	ug/L	ND	1.0	08/16/13 19:47	
Chloroform	ug/L	ND	1.0	08/16/13 19:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/16/13 19:47	
Ethylbenzene	ug/L	ND	1.0	08/16/13 19:47	
Methylene chloride	ug/L	ND	1.0	08/16/13 19:47	
Tetrachloroethene	ug/L	ND	1.0	08/16/13 19:47	
Toluene	ug/L	ND	1.0	08/16/13 19:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/16/13 19:47	
Trichloroethene	ug/L	ND	1.0	08/16/13 19:47	
Vinyl chloride	ug/L	ND	1.0	08/16/13 19:47	
Xylene (Total)	ug/L	ND	3.0	08/16/13 19:47	
1,2-Dichloroethane-d4 (S)	%	94	80-120	08/16/13 19:47	
4-Bromofluorobenzene (S)	%	98	80-120	08/16/13 19:47	
Toluene-d8 (S)	%	101	80-120	08/16/13 19:47	

LABORATORY CONTROL SAMPLE: 1237403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.7	99	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	16.7	83	59-138	
1,1,2-Trichloroethane	ug/L	20	17.2	86	69-127	
1,2-Dichloroethane	ug/L	20	18.1	90	71-129	
1,4-Dichlorobenzene	ug/L	20	17.0	85	68-124	
Benzene	ug/L	20	18.2	91	73-129	
Bromodichloromethane	ug/L	20	18.0	90	63-129	
Bromoform	ug/L	20	16.1	81	52-123	
Bromomethane	ug/L	20	14.3	72	10-160	
Carbon tetrachloride	ug/L	20	19.7	99	70-140	
Chloroethane	ug/L	20	16.1	81	42-160	
Chloroform	ug/L	20	18.3	91	60-120	
cis-1,2-Dichloroethene	ug/L	20	19.1	96	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

LABORATORY CONTROL SAMPLE: 1237403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.3	91	66-133	
Methylene chloride	ug/L	20	19.1	95	56-135	
Tetrachloroethene	ug/L	20	19.3	96	64-143	
Toluene	ug/L	20	18.6	93	70-130	
trans-1,2-Dichloroethene	ug/L	20	17.8	89	67-149	
Trichloroethene	ug/L	20	18.3	92	71-130	
Vinyl chloride	ug/L	20	18.2	91	41-160	
Xylene (Total)	ug/L	60	55.5	93	67-130	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			96	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1237404

Parameter	Units	60151162001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4010	100	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3460	87	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3520	88	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3730	93	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3490	87	18-147	
Benzene	ug/L	ND	4000	3660	92	37-151	
Bromodichloromethane	ug/L	ND	4000	3700	92	35-155	
Bromoform	ug/L	ND	4000	3180	77	45-133	
Bromomethane	ug/L	ND	4000	3070	77	10-160	
Carbon tetrachloride	ug/L	ND	4000	3930	98	70-140	
Chloroethane	ug/L	ND	4000	3280	82	14-160	
Chloroform	ug/L	ND	4000	3740	92	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3880	97	19-160	
Ethylbenzene	ug/L	ND	4000	3760	94	37-154	
Methylene chloride	ug/L	ND	4000	3810	94	15-156	
Tetrachloroethene	ug/L	ND	4000	3840	96	64-148	
Toluene	ug/L	ND	4000	3650	91	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3670	92	54-156	
Trichloroethene	ug/L	ND	4000	3580	89	71-157	
Vinyl chloride	ug/L	ND	4000	3730	93	10-160	
Xylene (Total)	ug/L	ND	12000	11400	95	12-153	
1,2-Dichloroethane-d4 (S)	%				105	80-120	
4-Bromofluorobenzene (S)	%				98	80-120 HS	
Toluene-d8 (S)	%				101	80-120	
Preservation pH			6.0		7.0		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043
Pace Project No.: 60151162

QC Batch:	OEXT/39966	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60151162001		

METHOD BLANK: 1239147 Matrix: Water
Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/22/13 12:38	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/22/13 12:38	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/22/13 12:38	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/22/13 12:38	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/22/13 12:38	
Hexachloroethane	ug/L	ND	5.0	08/22/13 12:38	
Naphthalene	ug/L	ND	5.0	08/22/13 12:38	
Nitrobenzene	ug/L	ND	5.0	08/22/13 12:38	
Pentachlorophenol	ug/L	ND	5.0	08/22/13 12:38	
Phenol	ug/L	ND	5.0	08/22/13 12:38	
2,4,6-Tribromophenol (S)	%	73	39-119	08/22/13 12:38	
2-Fluorobiphenyl (S)	%	75	36-120	08/22/13 12:38	
2-Fluorophenol (S)	%	46	18-120	08/22/13 12:38	
Nitrobenzene-d5 (S)	%	72	32-120	08/22/13 12:38	
Phenol-d6 (S)	%	38	12-120	08/22/13 12:38	
Terphenyl-d14 (S)	%	82	44-120	08/22/13 12:38	

LABORATORY CONTROL SAMPLE: 1239148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	34.3	69	44-120	
2,4,6-Trichlorophenol	ug/L	50	37.1	74	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	40.3	81	31-147	
Hexachloro-1,3-butadiene	ug/L	50	33.7	67	41-116	
Hexachlorocyclopentadiene	ug/L	100	53.9	54	31-120	
Hexachloroethane	ug/L	50	33.4	67	40-113	
Naphthalene	ug/L	50	36.1	72	48-120	
Nitrobenzene	ug/L	50	37.4	75	47-120	
Pentachlorophenol	ug/L	50	38.5	77	43-127	
Phenol	ug/L	50	19.8	40	15-112	
2,4,6-Tribromophenol (S)	%			76	39-119	
2-Fluorobiphenyl (S)	%			74	36-120	
2-Fluorophenol (S)	%			43	18-120	
Nitrobenzene-d5 (S)	%			71	32-120	
Phenol-d6 (S)	%			36	12-120	
Terphenyl-d14 (S)	%			78	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

MATRIX SPIKE SAMPLE:		1239149					
Parameter	Units	60151167001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	34.5	69	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	43.6	87	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	42.4	85	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	34.2	68	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	65.7	66	11-120	
Hexachloroethane	ug/L	ND	50	32.2	64	40-113	
Naphthalene	ug/L	ND	50	36.7	73	32-120	
Nitrobenzene	ug/L	ND	50	41.3	83	35-128	
Pentachlorophenol	ug/L	ND	50	35.8	72	38-133	
Phenol	ug/L	ND	50	20.0	40	13-112	
2,4,6-Tribromophenol (S)	%				84	39-119	
2-Fluorobiphenyl (S)	%				73	36-120	
2-Fluorophenol (S)	%				38	18-120	
Nitrobenzene-d5 (S)	%				67	32-120	
Phenol-d6 (S)	%				38	12-120	
Terphenyl-d14 (S)	%				86	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

QC Batch: WET/42947

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60151162001

METHOD BLANK: 1238262

Matrix: Water

Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/19/13 14:49	

LABORATORY CONTROL SAMPLE: 1238263

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.2	105	78-114	

MATRIX SPIKE SAMPLE: 1238264

Parameter	Units	60151032002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	38.2	92	78-114	

SAMPLE DUPLICATE: 1238265

Parameter	Units	60151036001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

QC Batch: WET/43002

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151162001

METHOD BLANK: 1240048

Matrix: Water

Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/22/13 11:37	

LABORATORY CONTROL SAMPLE: 1240049

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.7	104	64-132	

MATRIX SPIKE SAMPLE: 1240059

Parameter	Units	60151389002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	18.3	20	27.9	48	64-132	M1

SAMPLE DUPLICATE: 1240060

Parameter	Units	60151296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	3.4J		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

QC Batch: WET/42925

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151162001

METHOD BLANK: 1237673

Matrix: Water

Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/16/13 14:43	

SAMPLE DUPLICATE: 1237674

Parameter	Units	60151041001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	273	301	10	25	

SAMPLE DUPLICATE: 1237743

Parameter	Units	60151162001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	1460	1400	4	25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

QC Batch: WET/42951 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60151162001

SAMPLE DUPLICATE: 1238378

Parameter	Units	60151111003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

QC Batch: WETA/25860

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151162001

METHOD BLANK: 1238623

Matrix: Water

Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/20/13 14:26	

LABORATORY CONTROL SAMPLE: 1238624

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1238625

Parameter	Units	60151132001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	1.8	92	90-110	

MATRIX SPIKE SAMPLE: 1238627

Parameter	Units	60151131001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.15	2	2.2	105	90-110	

SAMPLE DUPLICATE: 1238626

Parameter	Units	60151158002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

QC Batch:	WETA/25868	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151162001		

METHOD BLANK: 1238985 Matrix: Water
Associated Lab Samples: 60151162001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/21/13 13:53	

LABORATORY CONTROL SAMPLE: 1238986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	52.1	104	90-110	

MATRIX SPIKE SAMPLE: 1238987

Parameter	Units	60150731024 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	21.0	50	72.7	103	90-110	

MATRIX SPIKE SAMPLE: 1238989

Parameter	Units	60150731026 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	15.6	50	63.0	95	90-110	

SAMPLE DUPLICATE: 1238988

Parameter	Units	60150731025 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	ND	5.9J		25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D9 Dissolved result is greater than the total. Data is within laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-043

Pace Project No.: 60151162

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151162001	316-043	EPA 200.7	MPRP/23909	EPA 200.7	ICP/18714
60151162001	316-043	EPA 200.7	MPRP/23917	EPA 200.7	ICP/18724
60151162001	316-043	EPA 245.1	MERP/7614	EPA 245.1	MERC/7570
60151162001	316-043	EPA 245.1	MERP/7624	EPA 245.1	MERC/7581
60151162001	316-043	EPA 625	OEXT/39966	EPA 625	MSSV/12676
60151162001	316-043	EPA 624 Low	MSV/55612		
60151162002	TRIP BLANK	EPA 624 Low	MSV/55612		
60151162001	316-043	EPA 1664A	WET/42947		
60151162001	316-043	EPA 1664A	WET/43002		
60151162001	316-043	SM 2540D	WET/42925		
60151162001	316-043	SM 4500-H+B	WET/42951		
60151162001	316-043	EPA 350.1	WETA/25860		
60151162001	316-043	EPA 410.4	WETA/25868		

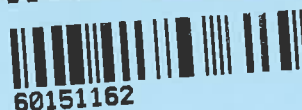
REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151162



Client Name: Barr Engr.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ x-Roads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.3

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 8/16/13 AB

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>ph</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>OT</u>		15.
All containers needing preservation have been checked:	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>071513-3</u>		20.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/16/13

August 22, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-043
Pace Project No.: 60151163

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 16, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-043

Pace Project No.: 60151163

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-043

Pace Project No.: 60151163

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151163001	316-043	Water	08/15/13 12:40	08/16/13 01:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-043

Pace Project No.: 60151163

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151163001	316-043	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-043

Pace Project No.: 60151163

Sample: 316-043		Lab ID: 60151163001	Collected: 08/15/13 12:40	Received: 08/16/13 01:05	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	30500	mg/L	2.0	1	08/16/13 15:54	08/21/13 14:08		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-043

Pace Project No.: 60151163

QC Batch: WET/42922

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151163001

METHOD BLANK: 1237520

Matrix: Water

Associated Lab Samples: 60151163001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/21/13 13:25	

LABORATORY CONTROL SAMPLE: 1237521

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	173	87	85-115	

SAMPLE DUPLICATE: 1237522

Parameter	Units	60151045001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	2830	3390	18	17	D6

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-043

Pace Project No.: 60151163

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-043

Pace Project No.: 60151163

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151163001	316-043	SM 5210B	WET/42922	SM 5210B	WET/42994

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO# : 60151163



60151163

Client Name: Barr Engin.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ 2pc

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.3

Date and initials of person examining contents: 8/16/13 [Signature]

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BoD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>OT</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		18.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/16/13

August 26, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-044
Pace Project No.: 60151248

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 17, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-044

Pace Project No.: 60151248

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-044

Pace Project No.: 60151248

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151248001	316-044	Water	08/16/13 09:45	08/17/13 00:55

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-044

Pace Project No.: 60151248

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151248001	316-044	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-044

Pace Project No.: 60151248

Sample: 316-044		Lab ID: 60151248001	Collected: 08/16/13 09:45	Received: 08/17/13 00:55	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	31900	mg/L	2.0	1	08/17/13 10:18	08/22/13 16:58		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151248

QC Batch: WET/42932

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151248001

METHOD BLANK: 1237977

Matrix: Water

Associated Lab Samples: 60151248001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/22/13 16:34	

LABORATORY CONTROL SAMPLE: 1237978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	180	91	85-115	

SAMPLE DUPLICATE: 1237979

Parameter	Units	60151135008 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	102	106	4	17	

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QUALIFIERS

Project: BRIDGETON LF 316-044

Pace Project No.: 60151248

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-044

Pace Project No.: 60151248

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151248001	316-044	SM 5210B	WET/42932	SM 5210B	WET/43057

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151248



60151248

Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.3

Date and initials of person examining contents: JWS 8/17/13 735

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>MP</u> Lot # of added preservative
Trip Blank present:	☐ Yes ☐ No ☒ N/A	18.
Pace Trip Blank lot # (if purchased): <u>NA</u>		19.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	20.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	21. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/19/13

August 26, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-044
Pace Project No.: 60151250

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 17, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151250001	316-044	Water	08/16/13 09:45	08/17/13 00:55
60151250002	TRIP BLANK	Water	08/16/13 08:00	08/17/13 00:55

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151250001	316-044	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151250002	TRIP BLANK	EPA 624 Low	JKL	25

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-044
Pace Project No.: 60151250

Sample: 316-044		Lab ID: 60151250001	Collected: 08/16/13 09:45	Received: 08/17/13 00:55	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4860 ug/L		150	2	08/20/13 14:00	08/22/13 18:59	7429-90-5	
Antimony	48.9 ug/L		20.0	2	08/20/13 14:00	08/22/13 18:59	7440-36-0	
Arsenic	793 ug/L		20.0	2	08/20/13 14:00	08/22/13 18:59	7440-38-2	
Beryllium	ND ug/L		5.0	5	08/20/13 14:00	08/22/13 19:32	7440-41-7	D3
Cadmium	14.3 ug/L		10.0	2	08/20/13 14:00	08/22/13 18:59	7440-43-9	
Chromium	239 ug/L		25.0	5	08/20/13 14:00	08/22/13 19:32	7440-47-3	
Cobalt	48.0 ug/L		10.0	2	08/20/13 14:00	08/22/13 18:59	7440-48-4	
Copper	ND ug/L		20.0	2	08/20/13 14:00	08/22/13 18:59	7440-50-8	D3
Iron	685000 ug/L		100	2	08/20/13 14:00	08/22/13 18:59	7439-89-6	
Lead	151 ug/L		10.0	2	08/20/13 14:00	08/22/13 18:59	7439-92-1	
Nickel	127 ug/L		10.0	2	08/20/13 14:00	08/22/13 18:59	7440-02-0	
Selenium	80.6 ug/L		75.0	5	08/20/13 14:00	08/22/13 19:32	7782-49-2	
Silver	ND ug/L		14.0	2	08/20/13 14:00	08/22/13 18:59	7440-22-4	D3
Thallium	ND ug/L		100	5	08/20/13 14:00	08/22/13 19:32	7440-28-0	D3
Zinc	11900 ug/L		1000	20	08/20/13 14:00	08/22/13 19:46	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3350 ug/L		150	2	08/21/13 10:00	08/22/13 13:07	7429-90-5	
Antimony, Dissolved	56.1 ug/L		20.0	2	08/21/13 10:00	08/22/13 13:07	7440-36-0	D9
Arsenic, Dissolved	819 ug/L		20.0	2	08/21/13 10:00	08/22/13 13:07	7440-38-2	D9
Beryllium, Dissolved	ND ug/L		5.0	5	08/21/13 10:00	08/22/13 13:37	7440-41-7	D3
Cadmium, Dissolved	12.8 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:07	7440-43-9	
Chromium, Dissolved	217 ug/L		25.0	5	08/21/13 10:00	08/22/13 13:37	7440-47-3	
Cobalt, Dissolved	45.8 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:07	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/21/13 10:00	08/22/13 13:07	7440-50-8	D3
Iron, Dissolved	584000 ug/L		100	2	08/21/13 10:00	08/22/13 13:07	7439-89-6	
Lead, Dissolved	109 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:07	7439-92-1	
Nickel, Dissolved	124 ug/L		10.0	2	08/21/13 10:00	08/22/13 13:07	7440-02-0	
Selenium, Dissolved	107 ug/L		75.0	5	08/21/13 10:00	08/22/13 13:37	7782-49-2	D9
Silver, Dissolved	ND ug/L		14.0	2	08/21/13 10:00	08/22/13 13:07	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/21/13 10:00	08/22/13 13:37	7440-28-0	D3
Zinc, Dissolved	11000 ug/L		1000	20	08/21/13 10:00	08/22/13 13:47	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.49 ug/L		0.20	1	08/21/13 12:15	08/22/13 09:42	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/21/13 16:40	08/22/13 12:17	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/21/13 00:00	08/22/13 14:01	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 14:01	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 14:01	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/21/13 00:00	08/22/13 14:01	67-72-1	
Naphthalene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 14:01	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 14:01	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

Sample: 316-044		Lab ID: 60151250001	Collected: 08/16/13 09:45	Received: 08/17/13 00:55	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/21/13 00:00	08/22/13 14:01	87-86-5	
Phenol	14500 ug/L		1000	20	08/21/13 00:00	08/22/13 14:01	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/21/13 00:00	08/22/13 14:01	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/21/13 00:00	08/22/13 14:01	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/21/13 00:00	08/22/13 14:01	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/21/13 00:00	08/22/13 14:01	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/21/13 00:00	08/22/13 14:01	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/21/13 00:00	08/22/13 14:01	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/21/13 00:00	08/22/13 14:01	367-12-4	S4
2,4,6-Tribromophenol (S)	80 %		39-119	20	08/21/13 00:00	08/22/13 14:01	118-79-6	
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/21/13 18:15	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/21/13 18:15	75-27-4	
Bromoform	ND ug/L		200	200		08/21/13 18:15	75-25-2	
Bromomethane	ND ug/L		1000	200		08/21/13 18:15	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/21/13 18:15	56-23-5	
Chloroethane	ND ug/L		200	200		08/21/13 18:15	75-00-3	
Chloroform	ND ug/L		200	200		08/21/13 18:15	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/21/13 18:15	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/21/13 18:15	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 18:15	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 18:15	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/21/13 18:15	100-41-4	
Methylene chloride	ND ug/L		200	200		08/21/13 18:15	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/21/13 18:15	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/21/13 18:15	127-18-4	
Toluene	ND ug/L		200	200		08/21/13 18:15	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/21/13 18:15	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/21/13 18:15	79-00-5	
Trichloroethene	ND ug/L		200	200		08/21/13 18:15	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/21/13 18:15	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/21/13 18:15	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	200		08/21/13 18:15	460-00-4	D3
Toluene-d8 (S)	99 %		80-120	200		08/21/13 18:15	2037-26-5	
1,2-Dichloroethane-d4 (S)	105 %		80-120	200		08/21/13 18:15	17060-07-0	
Preservation pH	6.0		1.0	200		08/21/13 18:15		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	558 mg/L		5.0	1		08/20/13 07:05		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/22/13 11:38		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

Sample: 316-044		Lab ID: 60151250001	Collected: 08/16/13 09:45	Received: 08/17/13 00:55	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3100	mg/L	5.0	1		08/20/13 08:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		08/17/13 12:01		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	722	mg/L	20.0	200		08/20/13 14:31	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	68700	mg/L	5000	500		08/23/13 12:51		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

Sample: TRIP BLANK		Lab ID: 60151250002	Collected: 08/16/13 08:00	Received: 08/17/13 00:55	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/21/13 18:58	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/21/13 18:58	75-27-4	
Bromoform	ND ug/L		1.0	1		08/21/13 18:58	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/21/13 18:58	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/21/13 18:58	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/21/13 18:58	75-00-3	
Chloroform	ND ug/L		1.0	1		08/21/13 18:58	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/21/13 18:58	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/21/13 18:58	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 18:58	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 18:58	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/21/13 18:58	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/21/13 18:58	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/21/13 18:58	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/21/13 18:58	127-18-4	
Toluene	ND ug/L		1.0	1		08/21/13 18:58	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/21/13 18:58	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/21/13 18:58	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/21/13 18:58	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/21/13 18:58	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/21/13 18:58	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	103 %		80-120	1		08/21/13 18:58	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		08/21/13 18:58	2037-26-5	
1,2-Dichloroethane-d4 (S)	98 %		80-120	1		08/21/13 18:58	17060-07-0	
Preservation pH	5.0		1.0	1		08/21/13 18:58		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

QC Batch: MERP/7625

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151250001

METHOD BLANK: 1239396

Matrix: Water

Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/22/13 09:37	

LABORATORY CONTROL SAMPLE: 1239397

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	89	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239398

1239399

Parameter	Units	60151360001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.5	4.3	90	87	70-130	4	20	

MATRIX SPIKE SAMPLE: 1239400

Parameter	Units	60151362001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.2	85	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

QC Batch: MERP/7624

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60151250001

METHOD BLANK: 1239391

Matrix: Water

Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/22/13 10:35	

LABORATORY CONTROL SAMPLE: 1239392

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.3	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239393 1239394

Parameter	Units	60151017001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	0.20	0.23	4	5	70-130	15	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044
Pace Project No.: 60151250

QC Batch: MPRP/23909 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60151250001

METHOD BLANK: 1238839 Matrix: Water
Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/22/13 17:34	
Antimony	ug/L	ND	10.0	08/22/13 17:34	
Arsenic	ug/L	ND	10.0	08/22/13 17:34	
Beryllium	ug/L	ND	1.0	08/22/13 17:34	
Cadmium	ug/L	ND	5.0	08/22/13 17:34	
Chromium	ug/L	ND	5.0	08/22/13 17:34	
Cobalt	ug/L	ND	5.0	08/22/13 17:34	
Copper	ug/L	ND	10.0	08/22/13 17:34	
Iron	ug/L	ND	50.0	08/22/13 17:34	
Lead	ug/L	ND	5.0	08/22/13 17:34	
Nickel	ug/L	ND	5.0	08/22/13 17:34	
Selenium	ug/L	ND	15.0	08/22/13 17:34	
Silver	ug/L	ND	7.0	08/22/13 17:34	
Thallium	ug/L	ND	20.0	08/22/13 17:34	
Zinc	ug/L	ND	50.0	08/22/13 17:34	

LABORATORY CONTROL SAMPLE: 1238840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9820	98	85-115	
Antimony	ug/L	1000	974	97	85-115	
Arsenic	ug/L	1000	935	93	85-115	
Beryllium	ug/L	1000	984	98	85-115	
Cadmium	ug/L	1000	958	96	85-115	
Chromium	ug/L	1000	940	94	85-115	
Cobalt	ug/L	1000	974	97	85-115	
Copper	ug/L	1000	952	95	85-115	
Iron	ug/L	10000	9590	96	85-115	
Lead	ug/L	1000	969	97	85-115	
Nickel	ug/L	1000	995	100	85-115	
Selenium	ug/L	1000	945	95	85-115	
Silver	ug/L	500	460	92	85-115	
Thallium	ug/L	1000	980	98	85-115	
Zinc	ug/L	1000	939	94	85-115	

MATRIX SPIKE SAMPLE: 1238841

Parameter	Units	60151012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	9530	95	70-130	
Antimony	ug/L	ND	1000	976	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

MATRIX SPIKE SAMPLE:		1238841					
Parameter	Units	60151012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	959	96	70-130	
Beryllium	ug/L	ND	1000	961	96	70-130	
Cadmium	ug/L	ND	1000	958	96	70-130	
Chromium	ug/L	ND	1000	926	93	70-130	
Cobalt	ug/L	ND	1000	937	94	70-130	
Copper	ug/L	ND	1000	965	96	70-130	
Iron	ug/L	ND	10000	9230	92	70-130	
Lead	ug/L	ND	1000	923	92	70-130	
Nickel	ug/L	7.4	1000	959	95	70-130	
Selenium	ug/L	ND	1000	951	95	70-130	
Silver	ug/L	ND	500	466	93	70-130	
Thallium	ug/L	ND	1000	884	88	70-130	
Zinc	ug/L	ND	1000	945	94	70-130	

MATRIX SPIKE SAMPLE:		1238842					
Parameter	Units	60151268002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	87.6	10000	9870	98	70-130	
Antimony	ug/L	ND	1000	1010	101	70-130	
Arsenic	ug/L	ND	1000	995	99	70-130	
Beryllium	ug/L	ND	1000	944	94	70-130	
Cadmium	ug/L	ND	1000	993	99	70-130	
Chromium	ug/L	ND	1000	922	92	70-130	
Cobalt	ug/L	ND	1000	928	93	70-130	
Copper	ug/L	ND	1000	970	97	70-130	
Iron	ug/L	ND	10000	9110	91	70-130	
Lead	ug/L	6.3	1000	920	91	70-130	
Nickel	ug/L	ND	1000	945	94	70-130	
Selenium	ug/L	ND	1000	992	99	70-130	
Silver	ug/L	ND	500	478	96	70-130	
Thallium	ug/L	ND	1000	866	87	70-130	
Zinc	ug/L	ND	1000	975	97	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044
Pace Project No.: 60151250

QC Batch: MPRP/23917 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151250001

METHOD BLANK: 1239259 Matrix: Water
Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/22/13 12:13	
Antimony, Dissolved	ug/L	ND	10.0	08/22/13 12:13	
Arsenic, Dissolved	ug/L	ND	10.0	08/22/13 12:13	
Beryllium, Dissolved	ug/L	ND	1.0	08/22/13 12:13	
Cadmium, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Chromium, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Cobalt, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Copper, Dissolved	ug/L	ND	10.0	08/22/13 12:13	
Iron, Dissolved	ug/L	ND	50.0	08/22/13 12:13	
Lead, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Nickel, Dissolved	ug/L	ND	5.0	08/22/13 12:13	
Selenium, Dissolved	ug/L	ND	15.0	08/22/13 12:13	
Silver, Dissolved	ug/L	ND	7.0	08/22/13 12:13	
Thallium, Dissolved	ug/L	ND	20.0	08/22/13 12:13	
Zinc, Dissolved	ug/L	ND	50.0	08/22/13 12:13	

LABORATORY CONTROL SAMPLE: 1239260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9580	96	85-115	
Antimony, Dissolved	ug/L	1000	999	100	85-115	
Arsenic, Dissolved	ug/L	1000	949	95	85-115	
Beryllium, Dissolved	ug/L	1000	970	97	85-115	
Cadmium, Dissolved	ug/L	1000	966	97	85-115	
Chromium, Dissolved	ug/L	1000	934	93	85-115	
Cobalt, Dissolved	ug/L	1000	978	98	85-115	
Copper, Dissolved	ug/L	1000	962	96	85-115	
Iron, Dissolved	ug/L	10000	9670	97	85-115	
Lead, Dissolved	ug/L	1000	978	98	85-115	
Nickel, Dissolved	ug/L	1000	990	99	85-115	
Selenium, Dissolved	ug/L	1000	982	98	85-115	
Silver, Dissolved	ug/L	500	467	93	85-115	
Thallium, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	936	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239261 1239262

Parameter	Units	60151047001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	35.9J	10000	10000	9700	9680	97	96	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239261 1239262											
Parameter	Units	60151047001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	981	975	98	97	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	985	985	98	98	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	989	983	99	98	70-130	1	10
Chromium, Dissolved	ug/L	1.1J	1000	1000	939	936	94	94	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	971	966	97	97	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	1000	989	100	99	70-130	1	11
Iron, Dissolved	ug/L	16.1J	10000	10000	9600	9580	96	96	70-130	0	10
Lead, Dissolved	ug/L	2.8J	1000	1000	974	972	97	97	70-130	0	10
Nickel, Dissolved	ug/L	8.4	1000	1000	990	986	98	98	70-130	0	10
Selenium, Dissolved	ug/L	ND	1000	1000	997	986	100	99	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	478	474	96	95	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	989	985	99	98	70-130	0	6
Zinc, Dissolved	ug/L	ND	1000	1000	921	922	92	92	70-130	0	11

MATRIX SPIKE SAMPLE: 1239263							
Parameter	Units	60151047002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	26.4J	10000	9720	97	70-130	
Antimony, Dissolved	ug/L	ND	1000	1020	102	70-130	
Arsenic, Dissolved	ug/L	ND	1000	973	97	70-130	
Beryllium, Dissolved	ug/L	ND	1000	989	99	70-130	
Cadmium, Dissolved	ug/L	ND	1000	986	99	70-130	
Chromium, Dissolved	ug/L	1.6J	1000	952	95	70-130	
Cobalt, Dissolved	ug/L	ND	1000	969	97	70-130	
Copper, Dissolved	ug/L	ND	1000	991	99	70-130	
Iron, Dissolved	ug/L	28.2J	10000	9670	96	70-130	
Lead, Dissolved	ug/L	ND	1000	974	97	70-130	
Nickel, Dissolved	ug/L	ND	1000	983	98	70-130	
Selenium, Dissolved	ug/L	ND	1000	985	98	70-130	
Silver, Dissolved	ug/L	ND	500	479	96	70-130	
Thallium, Dissolved	ug/L	ND	1000	986	99	70-130	
Zinc, Dissolved	ug/L	ND	1000	929	93	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

QC Batch: MSV/55691 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151250001, 60151250002

METHOD BLANK: 1239406 Matrix: Water

Associated Lab Samples: 60151250001, 60151250002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/21/13 17:11	
Benzene	ug/L	ND	1.0	08/21/13 17:11	
Bromodichloromethane	ug/L	ND	1.0	08/21/13 17:11	
Bromoform	ug/L	ND	1.0	08/21/13 17:11	
Bromomethane	ug/L	ND	5.0	08/21/13 17:11	
Carbon tetrachloride	ug/L	ND	1.0	08/21/13 17:11	
Chloroethane	ug/L	ND	1.0	08/21/13 17:11	
Chloroform	ug/L	ND	1.0	08/21/13 17:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Ethylbenzene	ug/L	ND	1.0	08/21/13 17:11	
Methylene chloride	ug/L	ND	1.0	08/21/13 17:11	
Tetrachloroethene	ug/L	ND	1.0	08/21/13 17:11	
Toluene	ug/L	ND	1.0	08/21/13 17:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Trichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Vinyl chloride	ug/L	ND	1.0	08/21/13 17:11	
Xylene (Total)	ug/L	ND	3.0	08/21/13 17:11	
1,2-Dichloroethane-d4 (S)	%	105	80-120	08/21/13 17:11	
4-Bromofluorobenzene (S)	%	103	80-120	08/21/13 17:11	
Toluene-d8 (S)	%	99	80-120	08/21/13 17:11	

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.7	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	106	59-138	
1,1,2-Trichloroethane	ug/L	20	16.4	82	69-127	
1,2-Dichloroethane	ug/L	20	19.0	95	71-129	
1,4-Dichlorobenzene	ug/L	20	17.8	89	68-124	
Benzene	ug/L	20	18.6	93	73-129	
Bromodichloromethane	ug/L	20	17.8	89	63-129	
Bromoform	ug/L	20	18.4	92	52-123	
Bromomethane	ug/L	20	15.1	75	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	17.8	89	42-160	
Chloroform	ug/L	20	17.9	89	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.5	93	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.0	90	66-133	
Methylene chloride	ug/L	20	19.4	97	56-135	
Tetrachloroethene	ug/L	20	17.2	86	64-143	
Toluene	ug/L	20	17.5	87	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.0	90	67-149	
Trichloroethene	ug/L	20	16.9	84	71-130	
Vinyl chloride	ug/L	20	17.6	88	41-160	
Xylene (Total)	ug/L	60	52.8	88	67-130	
1,2-Dichloroethane-d4 (S)	%			107	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1239408

Parameter	Units	60151250001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4090	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4470	112	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3470	87	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3980	99	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3990	98	18-147	
Benzene	ug/L	ND	4000	3870	97	37-151	
Bromodichloromethane	ug/L	ND	4000	3860	96	35-155	
Bromoform	ug/L	ND	4000	3780	95	45-133	
Bromomethane	ug/L	ND	4000	2650	66	10-160	
Carbon tetrachloride	ug/L	ND	4000	4240	106	70-140	
Chloroethane	ug/L	ND	4000	3660	91	14-160	
Chloroform	ug/L	ND	4000	3900	96	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3900	98	19-160	
Ethylbenzene	ug/L	ND	4000	4170	104	37-154	
Methylene chloride	ug/L	ND	4000	3960	99	15-156	
Tetrachloroethene	ug/L	ND	4000	4170	103	64-148	
Toluene	ug/L	ND	4000	3890	97	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3770	94	54-156	
Trichloroethene	ug/L	ND	4000	3680	92	71-157	
Vinyl chloride	ug/L	ND	4000	3580	90	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				102	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044
Pace Project No.: 60151250

QC Batch: OEXT/39966 Analysis Method: EPA 625
QC Batch Method: EPA 625 Analysis Description: 625 MSS
Associated Lab Samples: 60151250001

METHOD BLANK: 1239147 Matrix: Water
Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/22/13 12:38	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/22/13 12:38	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/22/13 12:38	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/22/13 12:38	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/22/13 12:38	
Hexachloroethane	ug/L	ND	5.0	08/22/13 12:38	
Naphthalene	ug/L	ND	5.0	08/22/13 12:38	
Nitrobenzene	ug/L	ND	5.0	08/22/13 12:38	
Pentachlorophenol	ug/L	ND	5.0	08/22/13 12:38	
Phenol	ug/L	ND	5.0	08/22/13 12:38	
2,4,6-Tribromophenol (S)	%	73	39-119	08/22/13 12:38	
2-Fluorobiphenyl (S)	%	75	36-120	08/22/13 12:38	
2-Fluorophenol (S)	%	46	18-120	08/22/13 12:38	
Nitrobenzene-d5 (S)	%	72	32-120	08/22/13 12:38	
Phenol-d6 (S)	%	38	12-120	08/22/13 12:38	
Terphenyl-d14 (S)	%	82	44-120	08/22/13 12:38	

LABORATORY CONTROL SAMPLE: 1239148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	34.3	69	44-120	
2,4,6-Trichlorophenol	ug/L	50	37.1	74	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	40.3	81	31-147	
Hexachloro-1,3-butadiene	ug/L	50	33.7	67	41-116	
Hexachlorocyclopentadiene	ug/L	100	53.9	54	31-120	
Hexachloroethane	ug/L	50	33.4	67	40-113	
Naphthalene	ug/L	50	36.1	72	48-120	
Nitrobenzene	ug/L	50	37.4	75	47-120	
Pentachlorophenol	ug/L	50	38.5	77	43-127	
Phenol	ug/L	50	19.8	40	15-112	
2,4,6-Tribromophenol (S)	%			76	39-119	
2-Fluorobiphenyl (S)	%			74	36-120	
2-Fluorophenol (S)	%			43	18-120	
Nitrobenzene-d5 (S)	%			71	32-120	
Phenol-d6 (S)	%			36	12-120	
Terphenyl-d14 (S)	%			78	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

MATRIX SPIKE SAMPLE:		1239149					
Parameter	Units	60151167001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	34.5	69	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	43.6	87	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	42.4	85	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	34.2	68	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	65.7	66	11-120	
Hexachloroethane	ug/L	ND	50	32.2	64	40-113	
Naphthalene	ug/L	ND	50	36.7	73	32-120	
Nitrobenzene	ug/L	ND	50	41.3	83	35-128	
Pentachlorophenol	ug/L	ND	50	35.8	72	38-133	
Phenol	ug/L	ND	50	20.0	40	13-112	
2,4,6-Tribromophenol (S)	%				84	39-119	
2-Fluorobiphenyl (S)	%				73	36-120	
2-Fluorophenol (S)	%				38	18-120	
Nitrobenzene-d5 (S)	%				67	32-120	
Phenol-d6 (S)	%				38	12-120	
Terphenyl-d14 (S)	%				86	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

QC Batch: WET/42958

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60151250001

METHOD BLANK: 1238545

Matrix: Water

Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/20/13 07:01	

LABORATORY CONTROL SAMPLE: 1238546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.8	104	78-114	

MATRIX SPIKE SAMPLE: 1238547

Parameter	Units	60151301001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	46.5	46.3	95	78-114	

SAMPLE DUPLICATE: 1238548

Parameter	Units	60150921001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

QC Batch: WET/43002

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151250001

METHOD BLANK: 1240048

Matrix: Water

Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/22/13 11:37	

LABORATORY CONTROL SAMPLE: 1240049

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.7	104	64-132	

MATRIX SPIKE SAMPLE: 1240059

Parameter	Units	60151389002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	18.3	20	27.9	48	64-132	M1

SAMPLE DUPLICATE: 1240060

Parameter	Units	60151296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	3.4J		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

QC Batch: WET/42959

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151250001

METHOD BLANK: 1238590

Matrix: Water

Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/20/13 08:22	

SAMPLE DUPLICATE: 1238591

Parameter	Units	60151300001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1238592

Parameter	Units	60151247001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	5.0		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

QC Batch: WET/42951 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60151250001

SAMPLE DUPLICATE: 1238378

Parameter	Units	60151111003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

QC Batch:	WETA/25860	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	60151250001		

METHOD BLANK: 1238623 Matrix: Water
Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/20/13 14:26	

LABORATORY CONTROL SAMPLE: 1238624

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1238625

Parameter	Units	60151132001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	1.8	92	90-110	

MATRIX SPIKE SAMPLE: 1238627

Parameter	Units	60151131001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.15	2	2.2	105	90-110	

SAMPLE DUPLICATE: 1238626

Parameter	Units	60151158002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

QC Batch:	WETA/25906	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151250001		

METHOD BLANK: 1240709 Matrix: Water

Associated Lab Samples: 60151250001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/23/13 12:48	

LABORATORY CONTROL SAMPLE: 1240710

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.9	102	90-110	

MATRIX SPIKE SAMPLE: 1240711

Parameter	Units	60151111003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	165	100	258	93	90-110	

SAMPLE DUPLICATE: 1240712

Parameter	Units	60151250001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	68700	62300	10	25	

SAMPLE DUPLICATE: 1240713

Parameter	Units	60151295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	57500	53100	8	25	

SAMPLE DUPLICATE: 1240714

Parameter	Units	60151296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	54700	54000	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D9 Dissolved result is greater than the total. Data is within laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-044

Pace Project No.: 60151250

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151250001	316-044	EPA 200.7	MPRP/23909	EPA 200.7	ICP/18714
60151250001	316-044	EPA 200.7	MPRP/23917	EPA 200.7	ICP/18724
60151250001	316-044	EPA 245.1	MERP/7625	EPA 245.1	MERC/7580
60151250001	316-044	EPA 245.1	MERP/7624	EPA 245.1	MERC/7581
60151250001	316-044	EPA 625	OEXT/39966	EPA 625	MSSV/12676
60151250001	316-044	EPA 624 Low	MSV/55691		
60151250002	TRIP BLANK	EPA 624 Low	MSV/55691		
60151250001	316-044	EPA 1664A	WET/42958		
60151250001	316-044	EPA 1664A	WET/43002		
60151250001	316-044	SM 2540D	WET/42959		
60151250001	316-044	SM 4500-H+B	WET/42951		
60151250001	316-044	EPA 350.1	WETA/25860		
60151250001	316-044	EPA 410.4	WETA/25906		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151250

60151250

Client Name: Barr Eng.Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☐ NRTracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐Thermometer Used: T-112 / T-194Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)Cooler Temperature: 3.3Date and initials of person examining contents: JMS 8/19/13 730

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☒ No ☐ N/A	6. <u>pl4</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16. <u>SPW/BPS not able to be preserved.</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>MA</u> Lot # of added preservative <u>12510-1-3</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	18.
Pace Trip Blank lot # (if purchased): <u>071513-3</u>		19.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	20.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	21. List State: _____

Client Notification/ Resolution: Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]Date: 8/19/13

September 13, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-045
Pace Project No.: 60151293

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised 09/06/13 for re-preparation of Biochemical Oxygen Demand analysis.

Amended report revised 09/13/13 to correct for quality control sample association for BOD analyses.

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

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-045

Pace Project No.: 60151293

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-045

Pace Project No.: 60151293

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151293001	316-045	Water	08/17/13 16:28	08/19/13 13:45

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-045

Pace Project No.: 60151293

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151293001	316-045	SM 5210B	DJR, JMC1	1

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-045

Pace Project No.: 60151293

Sample: 316-045		Lab ID: 60151293001	Collected: 08/17/13 16:28	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	61600	mg/L	2.0	1	08/19/13 15:24	08/24/13 09:29		D6
BOD, 5 day	31700	mg/L	2.0	1	08/29/13 16:33	09/03/13 09:20		H1,H2

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151293

QC Batch: WET/42955

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151293001

METHOD BLANK: 1238467

Matrix: Water

Associated Lab Samples: 60151293001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/24/13 09:20	

LABORATORY CONTROL SAMPLE: 1238468

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	175	88	85-115	

SAMPLE DUPLICATE: 1238469

Parameter	Units	60151293001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	61600	79400	25	17	D6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151293

QC Batch: WET/43137

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151293001

METHOD BLANK: 1244720

Matrix: Water

Associated Lab Samples: 60151293001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	09/03/13 09:13	

LABORATORY CONTROL SAMPLE: 1244721

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	175	88	85-115	

SAMPLE DUPLICATE: 1244722

Parameter	Units	60150839001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	25600	28500	10	17	H1

SAMPLE DUPLICATE: 1244724

Parameter	Units	60152007001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	27500	26100	5	17	

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QUALIFIERS

Project: BRIDGETON LF 316-045

Pace Project No.: 60151293

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

H1 Analysis conducted outside the EPA method holding time.

H2 Extraction or preparation conducted outside EPA method holding time.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-045

Pace Project No.: 60151293

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151293001	316-045	SM 5210B	WET/42955	SM 5210B	WET/43046
60151293001	316-045	SM 5210B	WET/43137	SM 5210B	WET/43196

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151293



60151293

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 5.3

Date and initials of person examining contents: 8/19

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Run</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>wt</u>	13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N

Field Data Required? Y ☒ N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/21/13

August 26, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-046
Pace Project No.: 60151294

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-046

Pace Project No.: 60151294

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-046

Pace Project No.: 60151294

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151294001	316-046	Water	08/18/13 11:05	08/19/13 13:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-046

Pace Project No.: 60151294

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151294001	316-046	SM 5210B	JMC1	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-046

Pace Project No.: 60151294

Sample: 316-046		Lab ID: 60151294001	Collected: 08/18/13 11:05	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	35200	mg/L	2.0	1	08/19/13 15:27	08/24/13 09:40		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151294

QC Batch: WET/42955

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151294001

METHOD BLANK: 1238467

Matrix: Water

Associated Lab Samples: 60151294001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/24/13 09:20	

LABORATORY CONTROL SAMPLE: 1238468

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	175	88	85-115	

SAMPLE DUPLICATE: 1238469

Parameter	Units	60151293001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	61600	79400	25	17	D6

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-046

Pace Project No.: 60151294

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-046

Pace Project No.: 60151294

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151294001	316-046	SM 5210B	WET/42955	SM 5210B	WET/43046

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151294



Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 5.1

Temperature should be above freezing to 6°C

Date and initials of person examining contents: Bar 8/19

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 & signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>801</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>wt</u>	13.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 8/21/13

August 27, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-045
Pace Project No.: 60151295

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151295001	316-045	Water	08/17/13 16:28	08/19/13 13:45
60151295002	TRIP BLANK	Water	08/17/13 16:28	08/19/13 13:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151295001	316-045	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151295002	TRIP BLANK	EPA 624 Low	JKL	25

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-045
Pace Project No.: 60151295

Sample: 316-045		Lab ID: 60151295001	Collected: 08/17/13 16:28	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5380	ug/L	150	2	08/20/13 14:00	08/22/13 19:02	7429-90-5	
Antimony	42.0	ug/L	20.0	2	08/20/13 14:00	08/22/13 19:02	7440-36-0	
Arsenic	708	ug/L	20.0	2	08/20/13 14:00	08/22/13 19:02	7440-38-2	
Beryllium	ND	ug/L	5.0	5	08/20/13 14:00	08/22/13 19:36	7440-41-7	D3
Cadmium	14.3	ug/L	10.0	2	08/20/13 14:00	08/22/13 19:02	7440-43-9	
Chromium	239	ug/L	25.0	5	08/20/13 14:00	08/22/13 19:36	7440-47-3	
Cobalt	47.7	ug/L	10.0	2	08/20/13 14:00	08/22/13 19:02	7440-48-4	
Copper	ND	ug/L	20.0	2	08/20/13 14:00	08/22/13 19:02	7440-50-8	D3
Iron	708000	ug/L	100	2	08/20/13 14:00	08/22/13 19:02	7439-89-6	
Lead	171	ug/L	10.0	2	08/20/13 14:00	08/22/13 19:02	7439-92-1	
Nickel	124	ug/L	10.0	2	08/20/13 14:00	08/22/13 19:02	7440-02-0	
Selenium	ND	ug/L	75.0	5	08/20/13 14:00	08/22/13 19:36	7782-49-2	D3
Silver	ND	ug/L	14.0	2	08/20/13 14:00	08/22/13 19:02	7440-22-4	D3
Thallium	ND	ug/L	100	5	08/20/13 14:00	08/22/13 19:36	7440-28-0	D3
Zinc	12600	ug/L	1000	20	08/20/13 14:00	08/22/13 19:49	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3460	ug/L	150	2	08/24/13 10:25	08/26/13 15:53	7429-90-5	
Antimony, Dissolved	48.6	ug/L	20.0	2	08/24/13 10:25	08/26/13 15:53	7440-36-0	D9
Arsenic, Dissolved	632	ug/L	20.0	2	08/24/13 10:25	08/26/13 15:53	7440-38-2	
Beryllium, Dissolved	ND	ug/L	20.0	20	08/24/13 10:25	08/26/13 16:07	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	08/24/13 10:25	08/26/13 15:53	7440-43-9	D3
Chromium, Dissolved	218	ug/L	25.0	5	08/24/13 10:25	08/26/13 16:00	7440-47-3	
Cobalt, Dissolved	44.4	ug/L	10.0	2	08/24/13 10:25	08/26/13 15:53	7440-48-4	
Copper, Dissolved	ND	ug/L	20.0	2	08/24/13 10:25	08/26/13 15:53	7440-50-8	D3
Iron, Dissolved	585000	ug/L	100	2	08/24/13 10:25	08/26/13 15:53	7439-89-6	
Lead, Dissolved	68.7	ug/L	10.0	2	08/24/13 10:25	08/26/13 15:53	7439-92-1	
Nickel, Dissolved	118	ug/L	10.0	2	08/24/13 10:25	08/26/13 15:53	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	08/24/13 10:25	08/26/13 16:00	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	08/24/13 10:25	08/26/13 15:53	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	08/24/13 10:25	08/26/13 16:00	7440-28-0	D3
Zinc, Dissolved	12100	ug/L	1000	20	08/24/13 10:25	08/26/13 16:07	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	7.1	ug/L	0.20	1	08/21/13 12:15	08/22/13 09:53	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	08/24/13 15:00	08/26/13 12:04	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	08/22/13 00:00	08/23/13 14:09	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	08/22/13 00:00	08/23/13 14:09	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	08/22/13 00:00	08/23/13 14:09	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	08/22/13 00:00	08/23/13 14:09	67-72-1	
Naphthalene	ND	ug/L	1000	20	08/22/13 00:00	08/23/13 14:09	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	08/22/13 00:00	08/23/13 14:09	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

Sample: 316-045		Lab ID: 60151295001	Collected: 08/17/13 16:28	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:09	87-86-5	
Phenol	15600 ug/L		1000	20	08/22/13 00:00	08/23/13 14:09	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:09	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:09	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/22/13 00:00	08/23/13 14:09	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/22/13 00:00	08/23/13 14:09	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/22/13 00:00	08/23/13 14:09	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/22/13 00:00	08/23/13 14:09	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/22/13 00:00	08/23/13 14:09	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/22/13 00:00	08/23/13 14:09	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/21/13 19:19	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/21/13 19:19	75-27-4	
Bromoform	ND ug/L		200	200		08/21/13 19:19	75-25-2	
Bromomethane	ND ug/L		1000	200		08/21/13 19:19	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/21/13 19:19	56-23-5	
Chloroethane	ND ug/L		200	200		08/21/13 19:19	75-00-3	
Chloroform	ND ug/L		200	200		08/21/13 19:19	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/21/13 19:19	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/21/13 19:19	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 19:19	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 19:19	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/21/13 19:19	100-41-4	
Methylene chloride	ND ug/L		200	200		08/21/13 19:19	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/21/13 19:19	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/21/13 19:19	127-18-4	
Toluene	ND ug/L		200	200		08/21/13 19:19	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/21/13 19:19	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/21/13 19:19	79-00-5	
Trichloroethene	ND ug/L		200	200		08/21/13 19:19	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/21/13 19:19	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/21/13 19:19	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	200		08/21/13 19:19	460-00-4	D3
Toluene-d8 (S)	99 %		80-120	200		08/21/13 19:19	2037-26-5	
1,2-Dichloroethane-d4 (S)	106 %		80-120	200		08/21/13 19:19	17060-07-0	
Preservation pH	6.0		1.0	200		08/21/13 19:19		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	575 mg/L		5.0	1		08/20/13 07:05		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/22/13 11:39		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

Sample: 316-045		Lab ID: 60151295001	Collected: 08/17/13 16:28	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2560	mg/L	5.0	1		08/20/13 08:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		08/20/13 13:51		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	770	mg/L	20.0	200		08/20/13 14:32	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	57500	mg/L	5000	500		08/23/13 12:57		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

Sample: TRIP BLANK		Lab ID: 60151295002	Collected: 08/17/13 16:28	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/21/13 19:41	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/21/13 19:41	75-27-4	
Bromoform	ND ug/L		1.0	1		08/21/13 19:41	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/21/13 19:41	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/21/13 19:41	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/21/13 19:41	75-00-3	
Chloroform	ND ug/L		1.0	1		08/21/13 19:41	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/21/13 19:41	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/21/13 19:41	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 19:41	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 19:41	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/21/13 19:41	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/21/13 19:41	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/21/13 19:41	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/21/13 19:41	127-18-4	
Toluene	ND ug/L		1.0	1		08/21/13 19:41	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/21/13 19:41	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/21/13 19:41	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/21/13 19:41	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/21/13 19:41	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/21/13 19:41	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		08/21/13 19:41	460-00-4	
Toluene-d8 (S)	97 %		80-120	1		08/21/13 19:41	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	1		08/21/13 19:41	17060-07-0	
Preservation pH	5.0		1.0	1		08/21/13 19:41		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch: MERP/7625

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151295001

METHOD BLANK: 1239396

Matrix: Water

Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/22/13 09:37	

LABORATORY CONTROL SAMPLE: 1239397

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	89	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239398

1239399

Parameter	Units	60151360001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.5	4.3	90	87	70-130	4	20	

MATRIX SPIKE SAMPLE: 1239400

Parameter	Units	60151362001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.2	85	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch: MERP/7638

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60151295001

METHOD BLANK: 1241876

Matrix: Water

Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/26/13 11:59	

LABORATORY CONTROL SAMPLE: 1241877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241878 1241879

Parameter	Units	60151485001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	0.86	0.90	17	18	70-130	5	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch: MPRP/23909

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60151295001

METHOD BLANK: 1238839

Matrix: Water

Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/22/13 17:34	
Antimony	ug/L	ND	10.0	08/22/13 17:34	
Arsenic	ug/L	ND	10.0	08/22/13 17:34	
Beryllium	ug/L	ND	1.0	08/22/13 17:34	
Cadmium	ug/L	ND	5.0	08/22/13 17:34	
Chromium	ug/L	ND	5.0	08/22/13 17:34	
Cobalt	ug/L	ND	5.0	08/22/13 17:34	
Copper	ug/L	ND	10.0	08/22/13 17:34	
Iron	ug/L	ND	50.0	08/22/13 17:34	
Lead	ug/L	ND	5.0	08/22/13 17:34	
Nickel	ug/L	ND	5.0	08/22/13 17:34	
Selenium	ug/L	ND	15.0	08/22/13 17:34	
Silver	ug/L	ND	7.0	08/22/13 17:34	
Thallium	ug/L	ND	20.0	08/22/13 17:34	
Zinc	ug/L	ND	50.0	08/22/13 17:34	

LABORATORY CONTROL SAMPLE: 1238840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9820	98	85-115	
Antimony	ug/L	1000	974	97	85-115	
Arsenic	ug/L	1000	935	93	85-115	
Beryllium	ug/L	1000	984	98	85-115	
Cadmium	ug/L	1000	958	96	85-115	
Chromium	ug/L	1000	940	94	85-115	
Cobalt	ug/L	1000	974	97	85-115	
Copper	ug/L	1000	952	95	85-115	
Iron	ug/L	10000	9590	96	85-115	
Lead	ug/L	1000	969	97	85-115	
Nickel	ug/L	1000	995	100	85-115	
Selenium	ug/L	1000	945	95	85-115	
Silver	ug/L	500	460	92	85-115	
Thallium	ug/L	1000	980	98	85-115	
Zinc	ug/L	1000	939	94	85-115	

MATRIX SPIKE SAMPLE: 1238841

Parameter	Units	60151012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	9530	95	70-130	
Antimony	ug/L	ND	1000	976	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

MATRIX SPIKE SAMPLE:		1238841					
Parameter	Units	60151012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	959	96	70-130	
Beryllium	ug/L	ND	1000	961	96	70-130	
Cadmium	ug/L	ND	1000	958	96	70-130	
Chromium	ug/L	ND	1000	926	93	70-130	
Cobalt	ug/L	ND	1000	937	94	70-130	
Copper	ug/L	ND	1000	965	96	70-130	
Iron	ug/L	ND	10000	9230	92	70-130	
Lead	ug/L	ND	1000	923	92	70-130	
Nickel	ug/L	7.4	1000	959	95	70-130	
Selenium	ug/L	ND	1000	951	95	70-130	
Silver	ug/L	ND	500	466	93	70-130	
Thallium	ug/L	ND	1000	884	88	70-130	
Zinc	ug/L	ND	1000	945	94	70-130	

MATRIX SPIKE SAMPLE:		1238842					
Parameter	Units	60151268002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	87.6	10000	9870	98	70-130	
Antimony	ug/L	ND	1000	1010	101	70-130	
Arsenic	ug/L	ND	1000	995	99	70-130	
Beryllium	ug/L	ND	1000	944	94	70-130	
Cadmium	ug/L	ND	1000	993	99	70-130	
Chromium	ug/L	ND	1000	922	92	70-130	
Cobalt	ug/L	ND	1000	928	93	70-130	
Copper	ug/L	ND	1000	970	97	70-130	
Iron	ug/L	ND	10000	9110	91	70-130	
Lead	ug/L	6.3	1000	920	91	70-130	
Nickel	ug/L	ND	1000	945	94	70-130	
Selenium	ug/L	ND	1000	992	99	70-130	
Silver	ug/L	ND	500	478	96	70-130	
Thallium	ug/L	ND	1000	866	87	70-130	
Zinc	ug/L	ND	1000	975	97	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045
Pace Project No.: 60151295

QC Batch:	MPRP/23964	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60151295001		

METHOD BLANK: 1241871 Matrix: Water
Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/26/13 15:47	
Antimony, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Arsenic, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Beryllium, Dissolved	ug/L	ND	1.0	08/26/13 15:47	
Cadmium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Chromium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Cobalt, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Copper, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Iron, Dissolved	ug/L	ND	50.0	08/26/13 15:47	
Lead, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Nickel, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Selenium, Dissolved	ug/L	ND	15.0	08/26/13 15:47	
Silver, Dissolved	ug/L	ND	7.0	08/26/13 15:47	
Thallium, Dissolved	ug/L	ND	20.0	08/26/13 15:47	
Zinc, Dissolved	ug/L	ND	50.0	08/26/13 15:47	

LABORATORY CONTROL SAMPLE: 1241872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9950	100	85-115	
Antimony, Dissolved	ug/L	1000	991	99	85-115	
Arsenic, Dissolved	ug/L	1000	952	95	85-115	
Beryllium, Dissolved	ug/L	1000	1000	100	85-115	
Cadmium, Dissolved	ug/L	1000	979	98	85-115	
Chromium, Dissolved	ug/L	1000	985	98	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	962	96	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	998	100	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	981	98	85-115	
Silver, Dissolved	ug/L	500	490	98	85-115	
Thallium, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874

Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L		10000	10000	9990	9960	100	100	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874											
Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L		1000	1000	1000	999	100	100	70-130	1	7
Arsenic, Dissolved	ug/L		1000	1000	973	963	97	96	70-130	1	10
Beryllium, Dissolved	ug/L		1000	1000	1000	996	100	100	70-130	0	7
Cadmium, Dissolved	ug/L		1000	1000	982	974	98	97	70-130	1	10
Chromium, Dissolved	ug/L		1000	1000	985	983	98	98	70-130	0	10
Cobalt, Dissolved	ug/L		1000	1000	984	974	98	97	70-130	1	6
Copper, Dissolved	ug/L		1000	1000	965	967	96	97	70-130	0	11
Iron, Dissolved	ug/L		10000	10000	9920	9870	99	99	70-130	0	10
Lead, Dissolved	ug/L		1000	1000	987	980	99	98	70-130	1	10
Nickel, Dissolved	ug/L		1000	1000	992	984	99	98	70-130	1	10
Selenium, Dissolved	ug/L		1000	1000	982	977	98	98	70-130	1	10
Silver, Dissolved	ug/L		500	500	494	490	99	98	70-130	1	10
Thallium, Dissolved	ug/L		1000	1000	990	981	99	98	70-130	1	6
Zinc, Dissolved	ug/L		1000	1000	991	976	98	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1241875							
Parameter	Units	60151591001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L		ND	10000	10100	101	70-130
Antimony, Dissolved	ug/L		ND	1000	1020	102	70-130
Arsenic, Dissolved	ug/L		ND	1000	1000	100	70-130
Beryllium, Dissolved	ug/L		ND	1000	1020	102	70-130
Cadmium, Dissolved	ug/L		ND	1000	1000	100	70-130
Chromium, Dissolved	ug/L		ND	1000	968	97	70-130
Cobalt, Dissolved	ug/L		ND	1000	986	99	70-130
Copper, Dissolved	ug/L		ND	1000	994	99	70-130
Iron, Dissolved	ug/L		ND	10000	10100	101	70-130
Lead, Dissolved	ug/L		ND	1000	954	95	70-130
Nickel, Dissolved	ug/L		16.3	1000	1010	100	70-130
Selenium, Dissolved	ug/L		ND	1000	1030	103	70-130
Silver, Dissolved	ug/L		ND	500	500	100	70-130
Thallium, Dissolved	ug/L		ND	1000	911	91	70-130
Zinc, Dissolved	ug/L		ND	1000	1000	99	70-130

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch: MSV/55691 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151295001, 60151295002

METHOD BLANK: 1239406 Matrix: Water

Associated Lab Samples: 60151295001, 60151295002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/21/13 17:11	
Benzene	ug/L	ND	1.0	08/21/13 17:11	
Bromodichloromethane	ug/L	ND	1.0	08/21/13 17:11	
Bromoform	ug/L	ND	1.0	08/21/13 17:11	
Bromomethane	ug/L	ND	5.0	08/21/13 17:11	
Carbon tetrachloride	ug/L	ND	1.0	08/21/13 17:11	
Chloroethane	ug/L	ND	1.0	08/21/13 17:11	
Chloroform	ug/L	ND	1.0	08/21/13 17:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Ethylbenzene	ug/L	ND	1.0	08/21/13 17:11	
Methylene chloride	ug/L	ND	1.0	08/21/13 17:11	
Tetrachloroethene	ug/L	ND	1.0	08/21/13 17:11	
Toluene	ug/L	ND	1.0	08/21/13 17:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Trichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Vinyl chloride	ug/L	ND	1.0	08/21/13 17:11	
Xylene (Total)	ug/L	ND	3.0	08/21/13 17:11	
1,2-Dichloroethane-d4 (S)	%	105	80-120	08/21/13 17:11	
4-Bromofluorobenzene (S)	%	103	80-120	08/21/13 17:11	
Toluene-d8 (S)	%	99	80-120	08/21/13 17:11	

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.7	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	106	59-138	
1,1,2-Trichloroethane	ug/L	20	16.4	82	69-127	
1,2-Dichloroethane	ug/L	20	19.0	95	71-129	
1,4-Dichlorobenzene	ug/L	20	17.8	89	68-124	
Benzene	ug/L	20	18.6	93	73-129	
Bromodichloromethane	ug/L	20	17.8	89	63-129	
Bromoform	ug/L	20	18.4	92	52-123	
Bromomethane	ug/L	20	15.1	75	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	17.8	89	42-160	
Chloroform	ug/L	20	17.9	89	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.5	93	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.0	90	66-133	
Methylene chloride	ug/L	20	19.4	97	56-135	
Tetrachloroethene	ug/L	20	17.2	86	64-143	
Toluene	ug/L	20	17.5	87	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.0	90	67-149	
Trichloroethene	ug/L	20	16.9	84	71-130	
Vinyl chloride	ug/L	20	17.6	88	41-160	
Xylene (Total)	ug/L	60	52.8	88	67-130	
1,2-Dichloroethane-d4 (S)	%			107	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1239408

Parameter	Units	60151250001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4090	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4470	112	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3470	87	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3980	99	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3990	98	18-147	
Benzene	ug/L	ND	4000	3870	97	37-151	
Bromodichloromethane	ug/L	ND	4000	3860	96	35-155	
Bromoform	ug/L	ND	4000	3780	95	45-133	
Bromomethane	ug/L	ND	4000	2650	66	10-160	
Carbon tetrachloride	ug/L	ND	4000	4240	106	70-140	
Chloroethane	ug/L	ND	4000	3660	91	14-160	
Chloroform	ug/L	ND	4000	3900	96	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3900	98	19-160	
Ethylbenzene	ug/L	ND	4000	4170	104	37-154	
Methylene chloride	ug/L	ND	4000	3960	99	15-156	
Tetrachloroethene	ug/L	ND	4000	4170	103	64-148	
Toluene	ug/L	ND	4000	3890	97	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3770	94	54-156	
Trichloroethene	ug/L	ND	4000	3680	92	71-157	
Vinyl chloride	ug/L	ND	4000	3580	90	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				102	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045
Pace Project No.: 60151295

QC Batch: OEXT/39993 Analysis Method: EPA 625
QC Batch Method: EPA 625 Analysis Description: 625 MSS
Associated Lab Samples: 60151295001

METHOD BLANK: 1239937 Matrix: Water
Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/23/13 13:27	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/23/13 13:27	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/23/13 13:27	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/23/13 13:27	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/23/13 13:27	
Hexachloroethane	ug/L	ND	5.0	08/23/13 13:27	
Naphthalene	ug/L	ND	5.0	08/23/13 13:27	
Nitrobenzene	ug/L	ND	5.0	08/23/13 13:27	
Pentachlorophenol	ug/L	ND	5.0	08/23/13 13:27	
Phenol	ug/L	ND	5.0	08/23/13 13:27	
2,4,6-Tribromophenol (S)	%	77	39-119	08/23/13 13:27	
2-Fluorobiphenyl (S)	%	84	36-120	08/23/13 13:27	
2-Fluorophenol (S)	%	38	18-120	08/23/13 13:27	
Nitrobenzene-d5 (S)	%	80	32-120	08/23/13 13:27	
Phenol-d6 (S)	%	27	12-120	08/23/13 13:27	
Terphenyl-d14 (S)	%	92	44-120	08/23/13 13:27	

LABORATORY CONTROL SAMPLE: 1239938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	38.3	77	44-120	
2,4,6-Trichlorophenol	ug/L	50	39.2	78	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	42.1	84	31-147	
Hexachloro-1,3-butadiene	ug/L	50	37.5	75	41-116	
Hexachlorocyclopentadiene	ug/L	100	58.2	58	31-120	
Hexachloroethane	ug/L	50	39.5	79	40-113	
Naphthalene	ug/L	50	39.7	79	48-120	
Nitrobenzene	ug/L	50	41.0	82	47-120	
Pentachlorophenol	ug/L	50	40.2	80	43-127	
Phenol	ug/L	50	16.0	32	15-112	
2,4,6-Tribromophenol (S)	%			82	39-119	
2-Fluorobiphenyl (S)	%			80	36-120	
2-Fluorophenol (S)	%			37	18-120	
Nitrobenzene-d5 (S)	%			78	32-120	
Phenol-d6 (S)	%			27	12-120	
Terphenyl-d14 (S)	%			86	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

MATRIX SPIKE SAMPLE:		1239939					
Parameter	Units	60151362001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	37.8	76	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	41.9	84	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	45.2	90	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	37.5	75	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	71.7	72	11-120	
Hexachloroethane	ug/L	ND	50	38.7	77	40-113	
Naphthalene	ug/L	ND	50	40.3	81	32-120	
Nitrobenzene	ug/L	ND	50	43.6	87	35-128	
Pentachlorophenol	ug/L	ND	50	48.8	98	38-133	
Phenol	ug/L	ND	50	15.8	32	13-112	
2,4,6-Tribromophenol (S)	%				83	39-119	
2-Fluorobiphenyl (S)	%				80	36-120	
2-Fluorophenol (S)	%				34	18-120	
Nitrobenzene-d5 (S)	%				77	32-120	
Phenol-d6 (S)	%				27	12-120	
Terphenyl-d14 (S)	%				89	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch:	WET/42958	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60151295001		

METHOD BLANK: 1238545 Matrix: Water

Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/20/13 07:01	

LABORATORY CONTROL SAMPLE: 1238546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.8	104	78-114	

MATRIX SPIKE SAMPLE: 1238547

Parameter	Units	60151301001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	46.5	46.3	95	78-114	

SAMPLE DUPLICATE: 1238548

Parameter	Units	60150921001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch: WET/43002

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151295001

METHOD BLANK: 1240048

Matrix: Water

Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/22/13 11:37	

LABORATORY CONTROL SAMPLE: 1240049

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.7	104	64-132	

MATRIX SPIKE SAMPLE: 1240059

Parameter	Units	60151389002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	18.3	20	27.9	48	64-132	M1

SAMPLE DUPLICATE: 1240060

Parameter	Units	60151296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	3.4J		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch: WET/42959

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151295001

METHOD BLANK: 1238590

Matrix: Water

Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/20/13 08:22	

SAMPLE DUPLICATE: 1238591

Parameter	Units	60151300001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1238592

Parameter	Units	60151247001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	5.0		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch: WET/42971 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60151295001

SAMPLE DUPLICATE: 1238946

Parameter	Units	60151295001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.5	5.5	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch: WETA/25860

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151295001

METHOD BLANK: 1238623

Matrix: Water

Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/20/13 14:26	

LABORATORY CONTROL SAMPLE: 1238624

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1238625

Parameter	Units	60151132001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	1.8	92	90-110	

MATRIX SPIKE SAMPLE: 1238627

Parameter	Units	60151131001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.15	2	2.2	105	90-110	

SAMPLE DUPLICATE: 1238626

Parameter	Units	60151158002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

QC Batch:	WETA/25906	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151295001		

METHOD BLANK: 1240709 Matrix: Water

Associated Lab Samples: 60151295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/23/13 12:48	

LABORATORY CONTROL SAMPLE: 1240710

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.9	102	90-110	

MATRIX SPIKE SAMPLE: 1240711

Parameter	Units	60151111003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	165	100	258	93	90-110	

SAMPLE DUPLICATE: 1240712

Parameter	Units	60151250001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	68700	62300	10	25	

SAMPLE DUPLICATE: 1240713

Parameter	Units	60151295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	57500	53100	8	25	

SAMPLE DUPLICATE: 1240714

Parameter	Units	60151296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	54700	54000	1	25	

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QUALIFIERS

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D9 Dissolved result is greater than the total. Data is within laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-045

Pace Project No.: 60151295

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151295001	316-045	EPA 200.7	MPRP/23909	EPA 200.7	ICP/18714
60151295001	316-045	EPA 200.7	MPRP/23964	EPA 200.7	ICP/18749
60151295001	316-045	EPA 245.1	MERP/7625	EPA 245.1	MERC/7580
60151295001	316-045	EPA 245.1	MERP/7638	EPA 245.1	MERC/7592
60151295001	316-045	EPA 625	OEXT/39993	EPA 625	MSSV/12686
60151295001	316-045	EPA 624 Low	MSV/55691		
60151295002	TRIP BLANK	EPA 624 Low	MSV/55691		
60151295001	316-045	EPA 1664A	WET/42958		
60151295001	316-045	EPA 1664A	WET/43002		
60151295001	316-045	SM 2540D	WET/42959		
60151295001	316-045	SM 4500-H+B	WET/42971		
60151295001	316-045	EPA 350.1	WETA/25860		
60151295001	316-045	EPA 410.4	WETA/25906		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151295



60151295

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 5.3

Date and initials of person examining contents: Bar 8/19

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ 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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>wt</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☒ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>Aug 12</u>		20.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/21/19

August 27, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-046
Pace Project No.: 60151296

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151296001	316-046	Water	08/18/13 11:05	08/19/13 13:45
60151296002	TRIP BLANK	Water	08/18/13 11:05	08/19/13 13:45

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151296001	316-046	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151296002	TRIP BLANK	EPA 624 Low	JKL	25

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

Sample: 316-046		Lab ID: 60151296001	Collected: 08/18/13 11:05	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5080 ug/L		150	2	08/20/13 14:00	08/22/13 19:06	7429-90-5	
Antimony	50.8 ug/L		20.0	2	08/20/13 14:00	08/22/13 19:06	7440-36-0	
Arsenic	749 ug/L		20.0	2	08/20/13 14:00	08/22/13 19:06	7440-38-2	
Beryllium	ND ug/L		5.0	5	08/20/13 14:00	08/22/13 19:39	7440-41-7	D3
Cadmium	12.7 ug/L		10.0	2	08/20/13 14:00	08/22/13 19:06	7440-43-9	
Chromium	242 ug/L		25.0	5	08/20/13 14:00	08/22/13 19:39	7440-47-3	
Cobalt	46.5 ug/L		10.0	2	08/20/13 14:00	08/22/13 19:06	7440-48-4	
Copper	ND ug/L		20.0	2	08/20/13 14:00	08/22/13 19:06	7440-50-8	D3
Iron	654000 ug/L		100	2	08/20/13 14:00	08/22/13 19:06	7439-89-6	
Lead	150 ug/L		10.0	2	08/20/13 14:00	08/22/13 19:06	7439-92-1	
Nickel	121 ug/L		10.0	2	08/20/13 14:00	08/22/13 19:06	7440-02-0	
Selenium	89.6 ug/L		75.0	5	08/20/13 14:00	08/22/13 19:39	7782-49-2	
Silver	ND ug/L		14.0	2	08/20/13 14:00	08/22/13 19:06	7440-22-4	D3
Thallium	ND ug/L		100	5	08/20/13 14:00	08/22/13 19:39	7440-28-0	D3
Zinc	14300 ug/L		1000	20	08/20/13 14:00	08/22/13 19:52	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3860 ug/L		150	2	08/24/13 10:25	08/26/13 15:57	7429-90-5	
Antimony, Dissolved	51.7 ug/L		20.0	2	08/24/13 10:25	08/26/13 15:57	7440-36-0	D9
Arsenic, Dissolved	688 ug/L		20.0	2	08/24/13 10:25	08/26/13 15:57	7440-38-2	
Beryllium, Dissolved	ND ug/L		20.0	20	08/24/13 10:25	08/26/13 16:10	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	08/24/13 10:25	08/26/13 15:57	7440-43-9	D3
Chromium, Dissolved	233 ug/L		25.0	5	08/24/13 10:25	08/26/13 16:04	7440-47-3	
Cobalt, Dissolved	46.9 ug/L		10.0	2	08/24/13 10:25	08/26/13 15:57	7440-48-4	D9
Copper, Dissolved	ND ug/L		20.0	2	08/24/13 10:25	08/26/13 15:57	7440-50-8	D3
Iron, Dissolved	644000 ug/L		100	2	08/24/13 10:25	08/26/13 15:57	7439-89-6	
Lead, Dissolved	80.0 ug/L		10.0	2	08/24/13 10:25	08/26/13 15:57	7439-92-1	
Nickel, Dissolved	120 ug/L		10.0	2	08/24/13 10:25	08/26/13 15:57	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/24/13 10:25	08/26/13 16:04	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/24/13 10:25	08/26/13 15:57	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/24/13 10:25	08/26/13 16:04	7440-28-0	D3
Zinc, Dissolved	13700 ug/L		1000	20	08/24/13 10:25	08/26/13 16:10	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.51 ug/L		0.20	1	08/21/13 12:15	08/22/13 09:55	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/24/13 15:00	08/26/13 12:06	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/22/13 00:00	08/23/13 14:29	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:29	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:29	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:29	67-72-1	
Naphthalene	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:29	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:29	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

Sample: 316-046		Lab ID: 60151296001	Collected: 08/18/13 11:05	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:29	87-86-5	
Phenol	15200 ug/L		1000	20	08/22/13 00:00	08/23/13 14:29	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:29	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/22/13 00:00	08/23/13 14:29	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/22/13 00:00	08/23/13 14:29	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/22/13 00:00	08/23/13 14:29	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/22/13 00:00	08/23/13 14:29	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/22/13 00:00	08/23/13 14:29	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/22/13 00:00	08/23/13 14:29	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/22/13 00:00	08/23/13 14:29	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/21/13 20:02	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/21/13 20:02	75-27-4	
Bromoform	ND ug/L		200	200		08/21/13 20:02	75-25-2	
Bromomethane	ND ug/L		1000	200		08/21/13 20:02	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/21/13 20:02	56-23-5	
Chloroethane	ND ug/L		200	200		08/21/13 20:02	75-00-3	
Chloroform	ND ug/L		200	200		08/21/13 20:02	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/21/13 20:02	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/21/13 20:02	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 20:02	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 20:02	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/21/13 20:02	100-41-4	
Methylene chloride	ND ug/L		200	200		08/21/13 20:02	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/21/13 20:02	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/21/13 20:02	127-18-4	
Toluene	ND ug/L		200	200		08/21/13 20:02	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/21/13 20:02	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/21/13 20:02	79-00-5	
Trichloroethene	ND ug/L		200	200		08/21/13 20:02	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/21/13 20:02	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/21/13 20:02	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	200		08/21/13 20:02	460-00-4	D3
Toluene-d8 (S)	99 %		80-120	200		08/21/13 20:02	2037-26-5	
1,2-Dichloroethane-d4 (S)	107 %		80-120	200		08/21/13 20:02	17060-07-0	
Preservation pH	6.0		1.0	200		08/21/13 20:02		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	647 mg/L		5.0	1		08/20/13 07:05		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	ND mg/L		5.0	1		08/22/13 11:39		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

Sample: 316-046		Lab ID: 60151296001	Collected: 08/18/13 11:05	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3000	mg/L	5.0	1		08/20/13 08:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.5	Std. Units	0.10	1		08/20/13 13:51		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	752	mg/L	20.0	200		08/20/13 14:33	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	54700	mg/L	5000	500		08/23/13 12:58		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

Sample: TRIP BLANK		Lab ID: 60151296002	Collected: 08/18/13 11:05	Received: 08/19/13 13:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/21/13 20:23	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/21/13 20:23	75-27-4	
Bromoform	ND ug/L		1.0	1		08/21/13 20:23	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/21/13 20:23	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/21/13 20:23	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/21/13 20:23	75-00-3	
Chloroform	ND ug/L		1.0	1		08/21/13 20:23	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/21/13 20:23	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/21/13 20:23	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 20:23	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 20:23	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/21/13 20:23	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/21/13 20:23	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/21/13 20:23	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/21/13 20:23	127-18-4	
Toluene	ND ug/L		1.0	1		08/21/13 20:23	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/21/13 20:23	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/21/13 20:23	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/21/13 20:23	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/21/13 20:23	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/21/13 20:23	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	1		08/21/13 20:23	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		08/21/13 20:23	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	1		08/21/13 20:23	17060-07-0	
Preservation pH	5.0		1.0	1		08/21/13 20:23		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch: MERP/7625

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151296001

METHOD BLANK: 1239396

Matrix: Water

Associated Lab Samples: 60151296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/22/13 09:37	

LABORATORY CONTROL SAMPLE: 1239397

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	89	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239398

1239399

Parameter	Units	60151360001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.5	4.3	90	87	70-130	4	20	

MATRIX SPIKE SAMPLE: 1239400

Parameter	Units	60151362001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	5	4.2	85	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch:	MERP/7638	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60151296001		

METHOD BLANK:	1241876	Matrix:	Water
Associated Lab Samples:	60151296001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/26/13 11:59	

LABORATORY CONTROL SAMPLE: 1241877						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241878													1241879		
Parameter	Units	60151485001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual			
Mercury, Dissolved	ug/L	ND	5	5	0.86	0.90	17	18	70-130	5	20	M1			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch: MPRP/23909

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60151296001

METHOD BLANK: 1238839

Matrix: Water

Associated Lab Samples: 60151296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/22/13 17:34	
Antimony	ug/L	ND	10.0	08/22/13 17:34	
Arsenic	ug/L	ND	10.0	08/22/13 17:34	
Beryllium	ug/L	ND	1.0	08/22/13 17:34	
Cadmium	ug/L	ND	5.0	08/22/13 17:34	
Chromium	ug/L	ND	5.0	08/22/13 17:34	
Cobalt	ug/L	ND	5.0	08/22/13 17:34	
Copper	ug/L	ND	10.0	08/22/13 17:34	
Iron	ug/L	ND	50.0	08/22/13 17:34	
Lead	ug/L	ND	5.0	08/22/13 17:34	
Nickel	ug/L	ND	5.0	08/22/13 17:34	
Selenium	ug/L	ND	15.0	08/22/13 17:34	
Silver	ug/L	ND	7.0	08/22/13 17:34	
Thallium	ug/L	ND	20.0	08/22/13 17:34	
Zinc	ug/L	ND	50.0	08/22/13 17:34	

LABORATORY CONTROL SAMPLE: 1238840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9820	98	85-115	
Antimony	ug/L	1000	974	97	85-115	
Arsenic	ug/L	1000	935	93	85-115	
Beryllium	ug/L	1000	984	98	85-115	
Cadmium	ug/L	1000	958	96	85-115	
Chromium	ug/L	1000	940	94	85-115	
Cobalt	ug/L	1000	974	97	85-115	
Copper	ug/L	1000	952	95	85-115	
Iron	ug/L	10000	9590	96	85-115	
Lead	ug/L	1000	969	97	85-115	
Nickel	ug/L	1000	995	100	85-115	
Selenium	ug/L	1000	945	95	85-115	
Silver	ug/L	500	460	92	85-115	
Thallium	ug/L	1000	980	98	85-115	
Zinc	ug/L	1000	939	94	85-115	

MATRIX SPIKE SAMPLE: 1238841

Parameter	Units	60151012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	9530	95	70-130	
Antimony	ug/L	ND	1000	976	98	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

MATRIX SPIKE SAMPLE:		1238841					
Parameter	Units	60151012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	959	96	70-130	
Beryllium	ug/L	ND	1000	961	96	70-130	
Cadmium	ug/L	ND	1000	958	96	70-130	
Chromium	ug/L	ND	1000	926	93	70-130	
Cobalt	ug/L	ND	1000	937	94	70-130	
Copper	ug/L	ND	1000	965	96	70-130	
Iron	ug/L	ND	10000	9230	92	70-130	
Lead	ug/L	ND	1000	923	92	70-130	
Nickel	ug/L	7.4	1000	959	95	70-130	
Selenium	ug/L	ND	1000	951	95	70-130	
Silver	ug/L	ND	500	466	93	70-130	
Thallium	ug/L	ND	1000	884	88	70-130	
Zinc	ug/L	ND	1000	945	94	70-130	

MATRIX SPIKE SAMPLE:		1238842					
Parameter	Units	60151268002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	87.6	10000	9870	98	70-130	
Antimony	ug/L	ND	1000	1010	101	70-130	
Arsenic	ug/L	ND	1000	995	99	70-130	
Beryllium	ug/L	ND	1000	944	94	70-130	
Cadmium	ug/L	ND	1000	993	99	70-130	
Chromium	ug/L	ND	1000	922	92	70-130	
Cobalt	ug/L	ND	1000	928	93	70-130	
Copper	ug/L	ND	1000	970	97	70-130	
Iron	ug/L	ND	10000	9110	91	70-130	
Lead	ug/L	6.3	1000	920	91	70-130	
Nickel	ug/L	ND	1000	945	94	70-130	
Selenium	ug/L	ND	1000	992	99	70-130	
Silver	ug/L	ND	500	478	96	70-130	
Thallium	ug/L	ND	1000	866	87	70-130	
Zinc	ug/L	ND	1000	975	97	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046
Pace Project No.: 60151296

QC Batch: MPRP/23964 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151296001

METHOD BLANK: 1241871 Matrix: Water
Associated Lab Samples: 60151296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/26/13 15:47	
Antimony, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Arsenic, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Beryllium, Dissolved	ug/L	ND	1.0	08/26/13 15:47	
Cadmium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Chromium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Cobalt, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Copper, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Iron, Dissolved	ug/L	ND	50.0	08/26/13 15:47	
Lead, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Nickel, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Selenium, Dissolved	ug/L	ND	15.0	08/26/13 15:47	
Silver, Dissolved	ug/L	ND	7.0	08/26/13 15:47	
Thallium, Dissolved	ug/L	ND	20.0	08/26/13 15:47	
Zinc, Dissolved	ug/L	ND	50.0	08/26/13 15:47	

LABORATORY CONTROL SAMPLE: 1241872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9950	100	85-115	
Antimony, Dissolved	ug/L	1000	991	99	85-115	
Arsenic, Dissolved	ug/L	1000	952	95	85-115	
Beryllium, Dissolved	ug/L	1000	1000	100	85-115	
Cadmium, Dissolved	ug/L	1000	979	98	85-115	
Chromium, Dissolved	ug/L	1000	985	98	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	962	96	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	998	100	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	981	98	85-115	
Silver, Dissolved	ug/L	500	490	98	85-115	
Thallium, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874

Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L		10000	10000	9990	9960	100	100	70-130	0	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874											
Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L		1000	1000	1000	999	100	100	70-130	1	7
Arsenic, Dissolved	ug/L		1000	1000	973	963	97	96	70-130	1	10
Beryllium, Dissolved	ug/L		1000	1000	1000	996	100	100	70-130	0	7
Cadmium, Dissolved	ug/L		1000	1000	982	974	98	97	70-130	1	10
Chromium, Dissolved	ug/L		1000	1000	985	983	98	98	70-130	0	10
Cobalt, Dissolved	ug/L		1000	1000	984	974	98	97	70-130	1	6
Copper, Dissolved	ug/L		1000	1000	965	967	96	97	70-130	0	11
Iron, Dissolved	ug/L		10000	10000	9920	9870	99	99	70-130	0	10
Lead, Dissolved	ug/L		1000	1000	987	980	99	98	70-130	1	10
Nickel, Dissolved	ug/L		1000	1000	992	984	99	98	70-130	1	10
Selenium, Dissolved	ug/L		1000	1000	982	977	98	98	70-130	1	10
Silver, Dissolved	ug/L		500	500	494	490	99	98	70-130	1	10
Thallium, Dissolved	ug/L		1000	1000	990	981	99	98	70-130	1	6
Zinc, Dissolved	ug/L		1000	1000	991	976	98	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1241875							
Parameter	Units	60151591001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L		ND	10000	10100	101	70-130
Antimony, Dissolved	ug/L		ND	1000	1020	102	70-130
Arsenic, Dissolved	ug/L		ND	1000	1000	100	70-130
Beryllium, Dissolved	ug/L		ND	1000	1020	102	70-130
Cadmium, Dissolved	ug/L		ND	1000	1000	100	70-130
Chromium, Dissolved	ug/L		ND	1000	968	97	70-130
Cobalt, Dissolved	ug/L		ND	1000	986	99	70-130
Copper, Dissolved	ug/L		ND	1000	994	99	70-130
Iron, Dissolved	ug/L		ND	10000	10100	101	70-130
Lead, Dissolved	ug/L		ND	1000	954	95	70-130
Nickel, Dissolved	ug/L		16.3	1000	1010	100	70-130
Selenium, Dissolved	ug/L		ND	1000	1030	103	70-130
Silver, Dissolved	ug/L		ND	500	500	100	70-130
Thallium, Dissolved	ug/L		ND	1000	911	91	70-130
Zinc, Dissolved	ug/L		ND	1000	1000	99	70-130

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch: MSV/55691 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151296001, 60151296002

METHOD BLANK: 1239406 Matrix: Water

Associated Lab Samples: 60151296001, 60151296002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/21/13 17:11	
Benzene	ug/L	ND	1.0	08/21/13 17:11	
Bromodichloromethane	ug/L	ND	1.0	08/21/13 17:11	
Bromoform	ug/L	ND	1.0	08/21/13 17:11	
Bromomethane	ug/L	ND	5.0	08/21/13 17:11	
Carbon tetrachloride	ug/L	ND	1.0	08/21/13 17:11	
Chloroethane	ug/L	ND	1.0	08/21/13 17:11	
Chloroform	ug/L	ND	1.0	08/21/13 17:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Ethylbenzene	ug/L	ND	1.0	08/21/13 17:11	
Methylene chloride	ug/L	ND	1.0	08/21/13 17:11	
Tetrachloroethene	ug/L	ND	1.0	08/21/13 17:11	
Toluene	ug/L	ND	1.0	08/21/13 17:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Trichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Vinyl chloride	ug/L	ND	1.0	08/21/13 17:11	
Xylene (Total)	ug/L	ND	3.0	08/21/13 17:11	
1,2-Dichloroethane-d4 (S)	%	105	80-120	08/21/13 17:11	
4-Bromofluorobenzene (S)	%	103	80-120	08/21/13 17:11	
Toluene-d8 (S)	%	99	80-120	08/21/13 17:11	

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.7	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	106	59-138	
1,1,2-Trichloroethane	ug/L	20	16.4	82	69-127	
1,2-Dichloroethane	ug/L	20	19.0	95	71-129	
1,4-Dichlorobenzene	ug/L	20	17.8	89	68-124	
Benzene	ug/L	20	18.6	93	73-129	
Bromodichloromethane	ug/L	20	17.8	89	63-129	
Bromoform	ug/L	20	18.4	92	52-123	
Bromomethane	ug/L	20	15.1	75	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	17.8	89	42-160	
Chloroform	ug/L	20	17.9	89	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.5	93	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.0	90	66-133	
Methylene chloride	ug/L	20	19.4	97	56-135	
Tetrachloroethene	ug/L	20	17.2	86	64-143	
Toluene	ug/L	20	17.5	87	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.0	90	67-149	
Trichloroethene	ug/L	20	16.9	84	71-130	
Vinyl chloride	ug/L	20	17.6	88	41-160	
Xylene (Total)	ug/L	60	52.8	88	67-130	
1,2-Dichloroethane-d4 (S)	%			107	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1239408

Parameter	Units	60151250001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4090	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4470	112	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3470	87	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3980	99	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3990	98	18-147	
Benzene	ug/L	ND	4000	3870	97	37-151	
Bromodichloromethane	ug/L	ND	4000	3860	96	35-155	
Bromoform	ug/L	ND	4000	3780	95	45-133	
Bromomethane	ug/L	ND	4000	2650	66	10-160	
Carbon tetrachloride	ug/L	ND	4000	4240	106	70-140	
Chloroethane	ug/L	ND	4000	3660	91	14-160	
Chloroform	ug/L	ND	4000	3900	96	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3900	98	19-160	
Ethylbenzene	ug/L	ND	4000	4170	104	37-154	
Methylene chloride	ug/L	ND	4000	3960	99	15-156	
Tetrachloroethene	ug/L	ND	4000	4170	103	64-148	
Toluene	ug/L	ND	4000	3890	97	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3770	94	54-156	
Trichloroethene	ug/L	ND	4000	3680	92	71-157	
Vinyl chloride	ug/L	ND	4000	3580	90	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				102	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch: OEXT/39993

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60151296001

METHOD BLANK: 1239937

Matrix: Water

Associated Lab Samples: 60151296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/23/13 13:27	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/23/13 13:27	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/23/13 13:27	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/23/13 13:27	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/23/13 13:27	
Hexachloroethane	ug/L	ND	5.0	08/23/13 13:27	
Naphthalene	ug/L	ND	5.0	08/23/13 13:27	
Nitrobenzene	ug/L	ND	5.0	08/23/13 13:27	
Pentachlorophenol	ug/L	ND	5.0	08/23/13 13:27	
Phenol	ug/L	ND	5.0	08/23/13 13:27	
2,4,6-Tribromophenol (S)	%	77	39-119	08/23/13 13:27	
2-Fluorobiphenyl (S)	%	84	36-120	08/23/13 13:27	
2-Fluorophenol (S)	%	38	18-120	08/23/13 13:27	
Nitrobenzene-d5 (S)	%	80	32-120	08/23/13 13:27	
Phenol-d6 (S)	%	27	12-120	08/23/13 13:27	
Terphenyl-d14 (S)	%	92	44-120	08/23/13 13:27	

LABORATORY CONTROL SAMPLE: 1239938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	38.3	77	44-120	
2,4,6-Trichlorophenol	ug/L	50	39.2	78	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	42.1	84	31-147	
Hexachloro-1,3-butadiene	ug/L	50	37.5	75	41-116	
Hexachlorocyclopentadiene	ug/L	100	58.2	58	31-120	
Hexachloroethane	ug/L	50	39.5	79	40-113	
Naphthalene	ug/L	50	39.7	79	48-120	
Nitrobenzene	ug/L	50	41.0	82	47-120	
Pentachlorophenol	ug/L	50	40.2	80	43-127	
Phenol	ug/L	50	16.0	32	15-112	
2,4,6-Tribromophenol (S)	%			82	39-119	
2-Fluorobiphenyl (S)	%			80	36-120	
2-Fluorophenol (S)	%			37	18-120	
Nitrobenzene-d5 (S)	%			78	32-120	
Phenol-d6 (S)	%			27	12-120	
Terphenyl-d14 (S)	%			86	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

MATRIX SPIKE SAMPLE:		1239939					
Parameter	Units	60151362001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	37.8	76	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	41.9	84	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	45.2	90	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	37.5	75	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	71.7	72	11-120	
Hexachloroethane	ug/L	ND	50	38.7	77	40-113	
Naphthalene	ug/L	ND	50	40.3	81	32-120	
Nitrobenzene	ug/L	ND	50	43.6	87	35-128	
Pentachlorophenol	ug/L	ND	50	48.8	98	38-133	
Phenol	ug/L	ND	50	15.8	32	13-112	
2,4,6-Tribromophenol (S)	%				83	39-119	
2-Fluorobiphenyl (S)	%				80	36-120	
2-Fluorophenol (S)	%				34	18-120	
Nitrobenzene-d5 (S)	%				77	32-120	
Phenol-d6 (S)	%				27	12-120	
Terphenyl-d14 (S)	%				89	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch: WET/42958

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60151296001

METHOD BLANK: 1238545

Matrix: Water

Associated Lab Samples: 60151296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/20/13 07:01	

LABORATORY CONTROL SAMPLE: 1238546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.8	104	78-114	

MATRIX SPIKE SAMPLE: 1238547

Parameter	Units	60151301001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	46.5	46.3	95	78-114	

SAMPLE DUPLICATE: 1238548

Parameter	Units	60150921001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	ND	ND		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch: WET/43002

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151296001

METHOD BLANK: 1240048

Matrix: Water

Associated Lab Samples: 60151296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/22/13 11:37	

LABORATORY CONTROL SAMPLE: 1240049

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.7	104	64-132	

MATRIX SPIKE SAMPLE: 1240059

Parameter	Units	60151389002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	18.3	20	27.9	48	64-132	M1

SAMPLE DUPLICATE: 1240060

Parameter	Units	60151296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	3.4J		34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch: WET/42959

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151296001

METHOD BLANK: 1238590

Matrix: Water

Associated Lab Samples: 60151296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/20/13 08:22	

SAMPLE DUPLICATE: 1238591

Parameter	Units	60151300001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1238592

Parameter	Units	60151247001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	5.0		25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch: WET/42971 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60151296001

SAMPLE DUPLICATE: 1238946

Parameter	Units	60151295001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.5	5.5	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch: WETA/25860

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151296001

METHOD BLANK: 1238623

Matrix: Water

Associated Lab Samples: 60151296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/20/13 14:26	

LABORATORY CONTROL SAMPLE: 1238624

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1238625

Parameter	Units	60151132001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	1.8	92	90-110	

MATRIX SPIKE SAMPLE: 1238627

Parameter	Units	60151131001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.15	2	2.2	105	90-110	

SAMPLE DUPLICATE: 1238626

Parameter	Units	60151158002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

QC Batch:	WETA/25906	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151296001		

METHOD BLANK: 1240709 Matrix: Water
Associated Lab Samples: 60151296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/23/13 12:48	

LABORATORY CONTROL SAMPLE: 1240710

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.9	102	90-110	

MATRIX SPIKE SAMPLE: 1240711

Parameter	Units	60151111003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	165	100	258	93	90-110	

SAMPLE DUPLICATE: 1240712

Parameter	Units	60151250001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	68700	62300	10	25	

SAMPLE DUPLICATE: 1240713

Parameter	Units	60151295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	57500	53100	8	25	

SAMPLE DUPLICATE: 1240714

Parameter	Units	60151296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	54700	54000	1	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D9 Dissolved result is greater than the total. Data is within laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-046

Pace Project No.: 60151296

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151296001	316-046	EPA 200.7	MPRP/23909	EPA 200.7	ICP/18714
60151296001	316-046	EPA 200.7	MPRP/23964	EPA 200.7	ICP/18749
60151296001	316-046	EPA 245.1	MERP/7625	EPA 245.1	MERC/7580
60151296001	316-046	EPA 245.1	MERP/7638	EPA 245.1	MERC/7592
60151296001	316-046	EPA 625	OEXT/39993	EPA 625	MSSV/12686
60151296001	316-046	EPA 624 Low	MSV/55691		
60151296002	TRIP BLANK	EPA 624 Low	MSV/55691		
60151296001	316-046	EPA 1664A	WET/42958		
60151296001	316-046	EPA 1664A	WET/43002		
60151296001	316-046	SM 2540D	WET/42959		
60151296001	316-046	SM 4500-H+B	WET/42971		
60151296001	316-046	EPA 350.1	WETA/25860		
60151296001	316-046	EPA 410.4	WETA/25906		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151296



60151296

Client Name: BarrCourier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XpressTracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐Thermometer Used: T-112 / T-194Type of Ice: wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)Cooler Temperature: 5.1Date and initials of person examining contents: 8/19

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ 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	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>wt</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	BP3N & BP3S initial pH ~6.0; Added 2.5ml HNO ₃ 2 ml H ₂ SO ₄ no change
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	14.
Exceptions: VOA, coliform, TOC, <u>2,4,6</u> WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>8/19</u> Lot # of added preservative <u>12510 / 12518</u>
Trip Blank present:	☒ Yes ☒ No ☐ N/A	
Pace Trip Blank lot # (if purchased): <u>4912</u>		15.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	16. <u>5.8 5 sample vials</u>
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]Date: 8/21/13

August 27, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-047
Pace Project No.: 60151386

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 21, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-047

Pace Project No.: 60151386

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-047

Pace Project No.: 60151386

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151386001	316-047	Water	08/19/13 13:30	08/21/13 01:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-047

Pace Project No.: 60151386

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151386001	316-047	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-047

Pace Project No.: 60151386

Sample: 316-047		Lab ID: 60151386001	Collected: 08/19/13 13:30	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	37100	mg/L	2.0	1	08/21/13 09:36	08/26/13 09:42		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151386

QC Batch: WET/42980

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151386001

METHOD BLANK: 1239176

Matrix: Water

Associated Lab Samples: 60151386001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/26/13 08:43	

LABORATORY CONTROL SAMPLE: 1239177

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	178	90	85-115	

SAMPLE DUPLICATE: 1239178

Parameter	Units	60151307001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	5.5	5.4	2	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-047

Pace Project No.: 60151386

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-047

Pace Project No.: 60151386

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151386001	316-047	SM 5210B	WET/42980	SM 5210B	WET/43056

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151386



Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ 2 PIC

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.1

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 8/21/13

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>ROD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>WT</u>		15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		18.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☐ N ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/21/13

Page : 1 Of 1

Section C

Invoice Information:

Attention: TABITHA PROVINCE

Company Name:	REPUBLIC SERVICES
---------------	-------------------

Address: BRIDGETON, MO 63044

Pace Quote Reference	130426 7588
----------------------	-------------

Pace Project Manager	Brown, Angie
----------------------	--------------

Pace Profile #: 6787 LINE 5

State / Location

Missouri

Page 10 of 10

August 28, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-047
Pace Project No.: 60151388

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 21, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151388001	316-047	Water	08/19/13 13:30	08/21/13 01:40
60151388002	TRIP BLANK	Water	08/19/13 13:30	08/21/13 01:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151388001	316-047	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151388002	TRIP BLANK	EPA 624 Low	JKL	25

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

Sample: 316-047		Lab ID: 60151388001	Collected: 08/19/13 13:30	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	7080 ug/L		375	5	08/22/13 16:00	08/23/13 17:59	7429-90-5	
Antimony	ND ug/L		50.0	5	08/22/13 16:00	08/23/13 17:59	7440-36-0	D3
Arsenic	814 ug/L		50.0	5	08/22/13 16:00	08/23/13 17:59	7440-38-2	
Beryllium	ND ug/L		5.0	5	08/22/13 16:00	08/23/13 17:59	7440-41-7	D3
Cadmium	ND ug/L		25.0	5	08/22/13 16:00	08/23/13 17:59	7440-43-9	D3
Chromium	261 ug/L		25.0	5	08/22/13 16:00	08/23/13 17:59	7440-47-3	
Cobalt	52.8 ug/L		25.0	5	08/22/13 16:00	08/23/13 17:59	7440-48-4	
Copper	ND ug/L		50.0	5	08/22/13 16:00	08/23/13 17:59	7440-50-8	D3
Iron	752000 ug/L		250	5	08/22/13 16:00	08/23/13 17:59	7439-89-6	
Lead	1310 ug/L		25.0	5	08/22/13 16:00	08/26/13 12:01	7439-92-1	
Nickel	145 ug/L		25.0	5	08/22/13 16:00	08/23/13 17:59	7440-02-0	
Selenium	ND ug/L		75.0	5	08/22/13 16:00	08/23/13 17:59	7782-49-2	D3
Silver	ND ug/L		35.0	5	08/22/13 16:00	08/23/13 17:59	7440-22-4	D3
Thallium	ND ug/L		100	5	08/22/13 16:00	08/23/13 17:59	7440-28-0	D3
Zinc	12300 ug/L		1000	20	08/22/13 16:00	08/23/13 18:06	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2930 ug/L		150	2	08/24/13 10:25	08/26/13 19:05	7429-90-5	
Antimony, Dissolved	56.5 ug/L		20.0	2	08/24/13 10:25	08/26/13 19:05	7440-36-0	D9
Arsenic, Dissolved	784 ug/L		20.0	2	08/24/13 10:25	08/26/13 19:05	7440-38-2	
Beryllium, Dissolved	ND ug/L		20.0	20	08/24/13 10:25	08/26/13 19:49	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	08/24/13 10:25	08/26/13 19:05	7440-43-9	D3
Chromium, Dissolved	214 ug/L		25.0	5	08/24/13 10:25	08/26/13 19:20	7440-47-3	
Cobalt, Dissolved	47.5 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:05	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/24/13 10:25	08/26/13 19:05	7440-50-8	D3
Iron, Dissolved	483000 ug/L		100	2	08/24/13 10:25	08/26/13 19:05	7439-89-6	
Lead, Dissolved	56.6 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:05	7439-92-1	
Nickel, Dissolved	124 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:05	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/24/13 10:25	08/26/13 19:20	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/24/13 10:25	08/26/13 19:05	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/24/13 10:25	08/26/13 19:20	7440-28-0	D3
Zinc, Dissolved	10000 ug/L		1000	20	08/24/13 10:25	08/26/13 19:49	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	1.9 ug/L		0.20	1	08/22/13 17:05	08/23/13 10:02	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/24/13 15:00	08/26/13 12:15	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/23/13 00:00	08/26/13 15:04	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:04	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:04	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:04	67-72-1	
Naphthalene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:04	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:04	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

Sample: 316-047		Lab ID: 60151388001	Collected: 08/19/13 13:30	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:04	87-86-5	
Phenol	17800 ug/L		1000	20	08/23/13 00:00	08/26/13 15:04	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:04	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:04	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/23/13 00:00	08/26/13 15:04	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/23/13 00:00	08/26/13 15:04	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/23/13 00:00	08/26/13 15:04	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/23/13 00:00	08/26/13 15:04	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/23/13 00:00	08/26/13 15:04	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/23/13 00:00	08/26/13 15:04	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/21/13 20:45	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/21/13 20:45	75-27-4	
Bromoform	ND ug/L		200	200		08/21/13 20:45	75-25-2	
Bromomethane	ND ug/L		1000	200		08/21/13 20:45	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/21/13 20:45	56-23-5	
Chloroethane	ND ug/L		200	200		08/21/13 20:45	75-00-3	
Chloroform	ND ug/L		200	200		08/21/13 20:45	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/21/13 20:45	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/21/13 20:45	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 20:45	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 20:45	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/21/13 20:45	100-41-4	
Methylene chloride	ND ug/L		200	200		08/21/13 20:45	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/21/13 20:45	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/21/13 20:45	127-18-4	
Toluene	ND ug/L		200	200		08/21/13 20:45	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/21/13 20:45	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/21/13 20:45	79-00-5	
Trichloroethene	ND ug/L		200	200		08/21/13 20:45	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/21/13 20:45	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/21/13 20:45	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	103 %		80-120	200		08/21/13 20:45	460-00-4	D3,HS
Toluene-d8 (S)	100 %		80-120	200		08/21/13 20:45	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	200		08/21/13 20:45	17060-07-0	
Preservation pH	6.0		1.0	200		08/21/13 20:45		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	414 mg/L		5.0	1		08/23/13 07:05		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	10.2 mg/L		5.0	1		08/27/13 14:33		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

Sample: 316-047		Lab ID: 60151388001	Collected: 08/19/13 13:30	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	1860	mg/L	5.0	1		08/22/13 10:24		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		08/22/13 07:55		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	755	mg/L	20.0	200		08/21/13 13:00	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	52600	mg/L	5000	500		08/26/13 17:08		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

Sample: TRIP BLANK		Lab ID: 60151388002	Collected: 08/19/13 13:30	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/21/13 21:06	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/21/13 21:06	75-27-4	
Bromoform	ND ug/L		1.0	1		08/21/13 21:06	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/21/13 21:06	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/21/13 21:06	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/21/13 21:06	75-00-3	
Chloroform	ND ug/L		1.0	1		08/21/13 21:06	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/21/13 21:06	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/21/13 21:06	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 21:06	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 21:06	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/21/13 21:06	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/21/13 21:06	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/21/13 21:06	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/21/13 21:06	127-18-4	
Toluene	ND ug/L		1.0	1		08/21/13 21:06	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/21/13 21:06	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/21/13 21:06	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/21/13 21:06	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/21/13 21:06	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/21/13 21:06	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	1		08/21/13 21:06	460-00-4	
Toluene-d8 (S)	97 %		80-120	1		08/21/13 21:06	2037-26-5	
1,2-Dichloroethane-d4 (S)	100 %		80-120	1		08/21/13 21:06	17060-07-0	
Preservation pH	6.0		1.0	1		08/21/13 21:06		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch: MERP/7634

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151388001

METHOD BLANK: 1240679

Matrix: Water

Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/23/13 09:48	

LABORATORY CONTROL SAMPLE: 1240680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	89	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1240681 1240682

Parameter	Units	60151485001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	1.1	0.93	21	19	70-130	13	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch:	MERP/7638	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60151388001		

METHOD BLANK: 1241876 Matrix: Water

Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/26/13 11:59	

LABORATORY CONTROL SAMPLE: 1241877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241878 1241879

Parameter	Units	60151485001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	0.86	0.90	17	18	70-130	5	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047
Pace Project No.: 60151388

QC Batch: MPRP/23943 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60151388001

METHOD BLANK: 1240394 Matrix: Water
Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/23/13 16:33	
Antimony	ug/L	ND	10.0	08/23/13 16:33	
Arsenic	ug/L	ND	10.0	08/23/13 16:33	
Beryllium	ug/L	ND	1.0	08/23/13 16:33	
Cadmium	ug/L	ND	5.0	08/23/13 16:33	
Chromium	ug/L	ND	5.0	08/23/13 16:33	
Cobalt	ug/L	ND	5.0	08/23/13 16:33	
Copper	ug/L	ND	10.0	08/23/13 16:33	
Iron	ug/L	ND	50.0	08/23/13 16:33	
Lead	ug/L	ND	5.0	08/26/13 11:17	
Nickel	ug/L	ND	5.0	08/23/13 16:33	
Selenium	ug/L	ND	15.0	08/23/13 16:33	
Silver	ug/L	ND	7.0	08/23/13 16:33	
Thallium	ug/L	ND	20.0	08/23/13 16:33	
Zinc	ug/L	ND	50.0	08/23/13 16:33	

LABORATORY CONTROL SAMPLE: 1240395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10600	106	85-115	
Antimony	ug/L	1000	970	97	85-115	
Arsenic	ug/L	1000	951	95	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Cadmium	ug/L	1000	984	98	85-115	
Chromium	ug/L	1000	1040	104	85-115	
Cobalt	ug/L	1000	1020	102	85-115	
Copper	ug/L	1000	946	95	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1020	102	85-115	
Nickel	ug/L	1000	1040	104	85-115	
Selenium	ug/L	1000	967	97	85-115	
Silver	ug/L	500	488	98	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	1060	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1240396 1240397

Parameter	Units	60151126001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	395	10000	10000	11200	11100	108	107	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1240396 1240397											
Parameter	Units	60151126001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	957	963	96	96	70-130	1	7
Arsenic	ug/L	ND	1000	1000	965	964	96	96	70-130	0	10
Beryllium	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	7
Cadmium	ug/L	ND	1000	1000	978	980	98	98	70-130	0	10
Chromium	ug/L	ND	1000	1000	1020	1020	102	101	70-130	1	10
Cobalt	ug/L	15.4	1000	1000	1000	1010	99	99	70-130	0	6
Copper	ug/L	17.3	1000	1000	978	978	96	96	70-130	0	11
Iron	ug/L	3530	10000	10000	13500	13500	100	100	70-130	0	10
Lead	ug/L	ND	1000	1000	1000	1040	100	104	70-130	4	10
Nickel	ug/L	ND	1000	1000	1010	1010	100	100	70-130	0	10
Selenium	ug/L	ND	1000	1000	958	964	96	96	70-130	1	10
Silver	ug/L	ND	500	500	489	491	98	98	70-130	0	10
Thallium	ug/L	ND	1000	1000	958	953	96	95	70-130	0	6
Zinc	ug/L	ND	1000	1000	1070	1070	104	104	70-130	0	11

MATRIX SPIKE SAMPLE: 1240398							
Parameter	Units	60151366001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	10100	101	70-130	
Antimony	ug/L	ND	1000	968	97	70-130	
Arsenic	ug/L	ND	1000	951	95	70-130	
Beryllium	ug/L	ND	1000	976	98	70-130	
Cadmium	ug/L	ND	1000	971	97	70-130	
Chromium	ug/L	ND	1000	985	98	70-130	
Cobalt	ug/L	ND	1000	990	99	70-130	
Copper	ug/L	14.4	1000	953	94	70-130	
Iron	ug/L	ND	10000	9760	97	70-130	
Lead	ug/L	ND	1000	999	100	70-130	
Nickel	ug/L	ND	1000	1010	101	70-130	
Selenium	ug/L	ND	1000	963	96	70-130	
Silver	ug/L	ND	500	482	96	70-130	
Thallium	ug/L	ND	1000	958	96	70-130	
Zinc	ug/L	ND	1000	1060	103	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047
Pace Project No.: 60151388

QC Batch: MPRP/23964 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151388001

METHOD BLANK: 1241871 Matrix: Water
Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/26/13 15:47	
Antimony, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Arsenic, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Beryllium, Dissolved	ug/L	ND	1.0	08/26/13 15:47	
Cadmium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Chromium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Cobalt, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Copper, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Iron, Dissolved	ug/L	ND	50.0	08/26/13 15:47	
Lead, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Nickel, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Selenium, Dissolved	ug/L	ND	15.0	08/26/13 15:47	
Silver, Dissolved	ug/L	ND	7.0	08/26/13 15:47	
Thallium, Dissolved	ug/L	ND	20.0	08/26/13 15:47	
Zinc, Dissolved	ug/L	ND	50.0	08/26/13 15:47	

LABORATORY CONTROL SAMPLE: 1241872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9950	100	85-115	
Antimony, Dissolved	ug/L	1000	991	99	85-115	
Arsenic, Dissolved	ug/L	1000	952	95	85-115	
Beryllium, Dissolved	ug/L	1000	1000	100	85-115	
Cadmium, Dissolved	ug/L	1000	979	98	85-115	
Chromium, Dissolved	ug/L	1000	985	98	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	962	96	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	998	100	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	981	98	85-115	
Silver, Dissolved	ug/L	500	490	98	85-115	
Thallium, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874

Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	9990	9960	100	100	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874											
Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	1000	1000	1000	999	100	100	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	973	963	97	96	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	996	100	100	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	982	974	98	97	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	985	983	98	98	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	984	974	98	97	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	965	967	96	97	70-130	0	11
Iron, Dissolved	ug/L	ND	10000	10000	9920	9870	99	99	70-130	0	10
Lead, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	10
Nickel, Dissolved	ug/L	1.1J	1000	1000	992	984	99	98	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	982	977	98	98	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	494	490	99	98	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	990	981	99	98	70-130	1	6
Zinc, Dissolved	ug/L	9.8J	1000	1000	991	976	98	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1241875							
Parameter	Units	60151591001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	ND	10000	10100	101	70-130	
Antimony, Dissolved	ug/L	ND	1000	1020	102	70-130	
Arsenic, Dissolved	ug/L	ND	1000	1000	100	70-130	
Beryllium, Dissolved	ug/L	ND	1000	1020	102	70-130	
Cadmium, Dissolved	ug/L	ND	1000	1000	100	70-130	
Chromium, Dissolved	ug/L	ND	1000	968	97	70-130	
Cobalt, Dissolved	ug/L	ND	1000	986	99	70-130	
Copper, Dissolved	ug/L	ND	1000	994	99	70-130	
Iron, Dissolved	ug/L	ND	10000	10100	101	70-130	
Lead, Dissolved	ug/L	ND	1000	954	95	70-130	
Nickel, Dissolved	ug/L	16.3	1000	1010	100	70-130	
Selenium, Dissolved	ug/L	ND	1000	1030	103	70-130	
Silver, Dissolved	ug/L	ND	500	500	100	70-130	
Thallium, Dissolved	ug/L	ND	1000	911	91	70-130	
Zinc, Dissolved	ug/L	ND	1000	1000	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch: MSV/55691 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151388001, 60151388002

METHOD BLANK: 1239406 Matrix: Water

Associated Lab Samples: 60151388001, 60151388002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/21/13 17:11	
Benzene	ug/L	ND	1.0	08/21/13 17:11	
Bromodichloromethane	ug/L	ND	1.0	08/21/13 17:11	
Bromoform	ug/L	ND	1.0	08/21/13 17:11	
Bromomethane	ug/L	ND	5.0	08/21/13 17:11	
Carbon tetrachloride	ug/L	ND	1.0	08/21/13 17:11	
Chloroethane	ug/L	ND	1.0	08/21/13 17:11	
Chloroform	ug/L	ND	1.0	08/21/13 17:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Ethylbenzene	ug/L	ND	1.0	08/21/13 17:11	
Methylene chloride	ug/L	ND	1.0	08/21/13 17:11	
Tetrachloroethene	ug/L	ND	1.0	08/21/13 17:11	
Toluene	ug/L	ND	1.0	08/21/13 17:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Trichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Vinyl chloride	ug/L	ND	1.0	08/21/13 17:11	
Xylene (Total)	ug/L	ND	3.0	08/21/13 17:11	
1,2-Dichloroethane-d4 (S)	%	105	80-120	08/21/13 17:11	
4-Bromofluorobenzene (S)	%	103	80-120	08/21/13 17:11	
Toluene-d8 (S)	%	99	80-120	08/21/13 17:11	

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.7	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	106	59-138	
1,1,2-Trichloroethane	ug/L	20	16.4	82	69-127	
1,2-Dichloroethane	ug/L	20	19.0	95	71-129	
1,4-Dichlorobenzene	ug/L	20	17.8	89	68-124	
Benzene	ug/L	20	18.6	93	73-129	
Bromodichloromethane	ug/L	20	17.8	89	63-129	
Bromoform	ug/L	20	18.4	92	52-123	
Bromomethane	ug/L	20	15.1	75	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	17.8	89	42-160	
Chloroform	ug/L	20	17.9	89	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.5	93	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.0	90	66-133	
Methylene chloride	ug/L	20	19.4	97	56-135	
Tetrachloroethene	ug/L	20	17.2	86	64-143	
Toluene	ug/L	20	17.5	87	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.0	90	67-149	
Trichloroethene	ug/L	20	16.9	84	71-130	
Vinyl chloride	ug/L	20	17.6	88	41-160	
Xylene (Total)	ug/L	60	52.8	88	67-130	
1,2-Dichloroethane-d4 (S)	%			107	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1239408

Parameter	Units	60151250001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4090	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4470	112	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3470	87	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3980	99	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3990	98	18-147	
Benzene	ug/L	ND	4000	3870	97	37-151	
Bromodichloromethane	ug/L	ND	4000	3860	96	35-155	
Bromoform	ug/L	ND	4000	3780	95	45-133	
Bromomethane	ug/L	ND	4000	2650	66	10-160	
Carbon tetrachloride	ug/L	ND	4000	4240	106	70-140	
Chloroethane	ug/L	ND	4000	3660	91	14-160	
Chloroform	ug/L	ND	4000	3900	96	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3900	98	19-160	
Ethylbenzene	ug/L	ND	4000	4170	104	37-154	
Methylene chloride	ug/L	ND	4000	3960	99	15-156	
Tetrachloroethene	ug/L	ND	4000	4170	103	64-148	
Toluene	ug/L	ND	4000	3890	97	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3770	94	54-156	
Trichloroethene	ug/L	ND	4000	3680	92	71-157	
Vinyl chloride	ug/L	ND	4000	3580	90	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				102	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch: OEXT/40018

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60151388001

METHOD BLANK: 1240832

Matrix: Water

Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/26/13 14:22	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/26/13 14:22	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/26/13 14:22	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/26/13 14:22	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/26/13 14:22	
Hexachloroethane	ug/L	ND	5.0	08/26/13 14:22	
Naphthalene	ug/L	ND	5.0	08/26/13 14:22	
Nitrobenzene	ug/L	ND	5.0	08/26/13 14:22	
Pentachlorophenol	ug/L	ND	5.0	08/26/13 14:22	
Phenol	ug/L	ND	5.0	08/26/13 14:22	
2,4,6-Tribromophenol (S)	%	80	39-119	08/26/13 14:22	
2-Fluorobiphenyl (S)	%	81	36-120	08/26/13 14:22	
2-Fluorophenol (S)	%	46	18-120	08/26/13 14:22	
Nitrobenzene-d5 (S)	%	77	32-120	08/26/13 14:22	
Phenol-d6 (S)	%	31	12-120	08/26/13 14:22	
Terphenyl-d14 (S)	%	85	44-120	08/26/13 14:22	

LABORATORY CONTROL SAMPLE: 1240833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.0	78	44-120	
2,4,6-Trichlorophenol	ug/L	50	39.9	80	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	50.3	101	31-147	
Hexachloro-1,3-butadiene	ug/L	50	39.6	79	41-116	
Hexachlorocyclopentadiene	ug/L	100	61.8	62	31-120	
Hexachloroethane	ug/L	50	37.5	75	40-113	
Naphthalene	ug/L	50	40.3	81	48-120	
Nitrobenzene	ug/L	50	40.4	81	47-120	
Pentachlorophenol	ug/L	50	40.0	80	43-127	
Phenol	ug/L	50	17.4	35	15-112	
2,4,6-Tribromophenol (S)	%			90	39-119	
2-Fluorobiphenyl (S)	%			81	36-120	
2-Fluorophenol (S)	%			45	18-120	
Nitrobenzene-d5 (S)	%			78	32-120	
Phenol-d6 (S)	%			31	12-120	
Terphenyl-d14 (S)	%			89	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

MATRIX SPIKE SAMPLE:		1240874					
Parameter	Units	60151426001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.73	50	37.8	76	44-120	
2,4,6-Trichlorophenol	ug/L	<1.5	50	34.5	69	37-121	
4,6-Dinitro-2-methylphenol	ug/L	<0.71	50	50.4	101	27-146	
Hexachloro-1,3-butadiene	ug/L	<0.98	50	37.3	75	27-116	
Hexachlorocyclopentadiene	ug/L	<2.1	100	65.1	65	11-120	
Hexachloroethane	ug/L	<0.62	50	35.5	71	40-113	
Naphthalene	ug/L	<0.58	50	39.0	78	32-120	
Nitrobenzene	ug/L	<0.65	50	40.1	80	35-128	
Pentachlorophenol	ug/L	<1.7	50	38.0	76	38-133	
Phenol	ug/L	<0.51	50	15.9	32	13-112	
2,4,6-Tribromophenol (S)	%				76	39-119	
2-Fluorobiphenyl (S)	%				78	36-120	
2-Fluorophenol (S)	%				44	18-120	
Nitrobenzene-d5 (S)	%				75	32-120	
Phenol-d6 (S)	%				30	12-120	
Terphenyl-d14 (S)	%				86	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch: WET/43023

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60151388001

METHOD BLANK: 1240818

Matrix: Water

Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/23/13 07:04	

LABORATORY CONTROL SAMPLE: 1240819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.1	105	78-114	

MATRIX SPIKE SAMPLE: 1240822

Parameter	Units	60151135001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	46.1	105	78-114	

SAMPLE DUPLICATE: 1240823

Parameter	Units	60151135003 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	37.3	43.7	16	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch: WET/43080

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151388001

METHOD BLANK: 1243173

Matrix: Water

Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/27/13 14:32	

LABORATORY CONTROL SAMPLE: 1243174

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.2	106	64-132	

MATRIX SPIKE SAMPLE: 1243183

Parameter	Units	60151494001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.7	20.8	22.4	61	64-132	M1

SAMPLE DUPLICATE: 1243184

Parameter	Units	60151723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	7.0	10.6	41	34	D6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch: WET/43004

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151388001

METHOD BLANK: 1240120

Matrix: Water

Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/22/13 10:22	

SAMPLE DUPLICATE: 1240121

Parameter	Units	60151431001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1240122

Parameter	Units	60151332001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch: WET/42999 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60151388001

SAMPLE DUPLICATE: 1239985

Parameter	Units	60151311001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.4	1	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch: WETA/25878

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151388001

METHOD BLANK: 1239315

Matrix: Water

Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/21/13 12:58	

LABORATORY CONTROL SAMPLE: 1239316

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1239317

Parameter	Units	60151209013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	1.5	76	90-110	M1

MATRIX SPIKE SAMPLE: 1239319

Parameter	Units	60151209015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	18.8	20	36.6	89	90-110	M1

SAMPLE DUPLICATE: 1239318

Parameter	Units	60151209014 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	1.1	1.1	2	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

QC Batch: WETA/25925

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 60151388001

METHOD BLANK: 1241822

Matrix: Water

Associated Lab Samples: 60151388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/26/13 16:56	

LABORATORY CONTROL SAMPLE: 1241823

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	48.1	96	90-110	

MATRIX SPIKE SAMPLE: 1241824

Parameter	Units	60150879001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	19.3	50	75.0	111	90-110	M1

MATRIX SPIKE SAMPLE: 1241826

Parameter	Units	60151020001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	248	250	504	102	90-110	

SAMPLE DUPLICATE: 1241825

Parameter	Units	60150908001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	33.0	33.2	1	25	

SAMPLE DUPLICATE: 1242735

Parameter	Units	60151388001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	52600	45800	14	25	

SAMPLE DUPLICATE: 1242736

Parameter	Units	60151393001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	63100	60200	5	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

- | | |
|----|---|
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| D6 | The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits. |
| D9 | Dissolved result is greater than the total. Data is within laboratory control limits. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| HS | Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter). |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| S4 | Surrogate recovery not evaluated against control limits due to sample dilution. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-047

Pace Project No.: 60151388

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151388001	316-047	EPA 200.7	MPRP/23943	EPA 200.7	ICP/18739
60151388001	316-047	EPA 200.7	MPRP/23964	EPA 200.7	ICP/18749
60151388001	316-047	EPA 245.1	MERP/7634	EPA 245.1	MERC/7588
60151388001	316-047	EPA 245.1	MERP/7638	EPA 245.1	MERC/7592
60151388001	316-047	EPA 625	OEXT/40018	EPA 625	MSSV/12688
60151388001	316-047	EPA 624 Low	MSV/55691		
60151388002	TRIP BLANK	EPA 624 Low	MSV/55691		
60151388001	316-047	EPA 1664A	WET/43023		
60151388001	316-047	EPA 1664A	WET/43080		
60151388001	316-047	SM 2540D	WET/43004		
60151388001	316-047	SM 4500-H+B	WET/42999		
60151388001	316-047	EPA 350.1	WETA/25878		
60151388001	316-047	EPA 410.4	WETA/25925		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151388



Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ ZPIC

Thermometer Used: T-112 / T-194

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.1

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 8/21/13

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5. <u>8/21/13</u>
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>PH</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>WT</u>		15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics <u>VOA</u>	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>071513-3</u>		20.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N

Field Data Required? Y ☒ N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/21/13



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company:	BARR ENGINEERING		
Address:			
Email To:			
Phone:	(816) 285-8410	Fax:	
Requested Due Date/TAT:	10 Day (Default)		

Section B

Required Project Information:

Report To:	ED GALBRAITH/BARR
Copy To:	SCOTT FEDAK/FEEZOR
	DANA BAKER/MARGARET TREANOR -BARR
Purchase Order No.	PO 3727110
Client Project ID:	BRIDGETON LF
Container Order Number:	

Section C

Invoice Information:

Attention:	TABITHA PROVINCE
Company Name:	REPUBLIC SERVICES
Address:	BRIDGETON, MO 63044
Pace Quote Reference:	130426_7588
Pace Project Manager:	Brown, Angie
Pace Profile #:	6787 LINE 2

Page : 1 Of 1

Regulatory Agency

State / Location

Missouri

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample IDs must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL CL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Y/N	Requested Analysis Filtered (Y/N)														Residual Chlorine (Y/N)
						START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2SO3	Methanol	Other	Analyses Test	COD EPA 410		pH SM 4500H+B	LF DIS. METALS 200.7/245	TOTAL METALS 200.7/245	AMMONIA EPA 350	O/G EPA 1664	625 SVOCs	VOCs EPA 624	TSS SM2540D	TPH/HEM-SGT 1664						
						DATE	TIME	DATE	TIME																												
1	316-047 1BPSU18PZN 40 1B35 2D64UTB			OT	G			8/19/13	1330			13	9	1	1	2	3464	3464	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	5D64UTB			
2	TRIP BLANK											2	2																								
3																																					
4																																					
5																																					
6																																					
7																																					
8																																					
9																																					
10																																					
11																																					
12																																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
SITE CONTACT: BILL ABERNATHY 314-502-1299	Julie Croak	8-20-13	1620	Bill 554	8/20/13	1620	
SITE ADDRESS: BRIDGETON LF				PAGE	8/20/13	0140	11
3570 ST. CHARLES ROCK RD					8/21/13		
BRIDGETON MO 63044							

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: John Powell					
SIGNATURE of SAMPLER: [Signature]					

August 27, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-048
Pace Project No.: 60151392

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 21, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-048

Pace Project No.: 60151392

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-048

Pace Project No.: 60151392

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151392001	316-048	Water	08/20/13 12:20	08/21/13 01:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-048

Pace Project No.: 60151392

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151392001	316-048	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-048

Pace Project No.: 60151392

Sample: 316-048		Lab ID: 60151392001	Collected: 08/20/13 12:20	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	37100	mg/L	2.0	1	08/21/13 15:14	08/26/13 10:10		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151392

QC Batch: WET/42980

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151392001

METHOD BLANK: 1239176

Matrix: Water

Associated Lab Samples: 60151392001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/26/13 08:43	

LABORATORY CONTROL SAMPLE: 1239177

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	178	90	85-115	

SAMPLE DUPLICATE: 1239178

Parameter	Units	60151307001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	5.5	5.4	2	17	

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QUALIFIERS

Project: BRIDGETON LF 316-048

Pace Project No.: 60151392

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-048

Pace Project No.: 60151392

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151392001	316-048	SM 5210B	WET/42980	SM 5210B	WET/43056

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151392



60151392

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ 2P1C

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.9

Date and initials of person examining contents: 2/8/21/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BoD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 2/8/21/13

August 28, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-048
Pace Project No.: 60151393

Dear Ed Galbraith:

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

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



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CERTIFICATIONS

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

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WY STR Certification #: 2456.01

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Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151393001	316-048	Water	08/20/13 12:20	08/21/13 01:40
60151393002	TRIP BLANK	Water	08/20/13 12:20	08/21/13 01:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151393001	316-048	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	LEM	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151393002	TRIP BLANK	EPA 624 Low	JKL	25

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

Sample: 316-048		Lab ID: 60151393001	Collected: 08/20/13 12:20	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6050 ug/L		375	5	08/22/13 16:00	08/23/13 18:03	7429-90-5	
Antimony	ND ug/L		50.0	5	08/22/13 16:00	08/23/13 18:03	7440-36-0	D3
Arsenic	748 ug/L		50.0	5	08/22/13 16:00	08/23/13 18:03	7440-38-2	
Beryllium	ND ug/L		5.0	5	08/22/13 16:00	08/23/13 18:03	7440-41-7	D3
Cadmium	ND ug/L		25.0	5	08/22/13 16:00	08/23/13 18:03	7440-43-9	D3
Chromium	252 ug/L		25.0	5	08/22/13 16:00	08/23/13 18:03	7440-47-3	
Cobalt	49.0 ug/L		25.0	5	08/22/13 16:00	08/23/13 18:03	7440-48-4	
Copper	ND ug/L		50.0	5	08/22/13 16:00	08/23/13 18:03	7440-50-8	D3
Iron	606000 ug/L		250	5	08/22/13 16:00	08/23/13 18:03	7439-89-6	
Lead	86.2 ug/L		25.0	5	08/22/13 16:00	08/26/13 18:46	7439-92-1	
Nickel	140 ug/L		25.0	5	08/22/13 16:00	08/23/13 18:03	7440-02-0	
Selenium	ND ug/L		75.0	5	08/22/13 16:00	08/23/13 18:03	7782-49-2	D3
Silver	ND ug/L		35.0	5	08/22/13 16:00	08/23/13 18:03	7440-22-4	D3
Thallium	ND ug/L		100	5	08/22/13 16:00	08/23/13 18:03	7440-28-0	D3
Zinc	12000 ug/L		1000	20	08/22/13 16:00	08/23/13 18:09	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2880 ug/L		150	2	08/24/13 10:25	08/26/13 19:09	7429-90-5	
Antimony, Dissolved	49.0 ug/L		20.0	2	08/24/13 10:25	08/26/13 19:09	7440-36-0	D9
Arsenic, Dissolved	744 ug/L		20.0	2	08/24/13 10:25	08/26/13 19:09	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/24/13 10:25	08/26/13 19:23	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	08/24/13 10:25	08/26/13 19:09	7440-43-9	D3
Chromium, Dissolved	212 ug/L		25.0	5	08/24/13 10:25	08/26/13 19:23	7440-47-3	
Cobalt, Dissolved	45.8 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:09	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/24/13 10:25	08/26/13 19:09	7440-50-8	D3
Iron, Dissolved	505000 ug/L		100	2	08/24/13 10:25	08/26/13 19:09	7439-89-6	
Lead, Dissolved	61.2 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:09	7439-92-1	
Nickel, Dissolved	122 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:09	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/24/13 10:25	08/26/13 19:23	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/24/13 10:25	08/26/13 19:09	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/24/13 10:25	08/26/13 19:23	7440-28-0	D3
Zinc, Dissolved	9830 ug/L		1000	20	08/24/13 10:25	08/26/13 19:52	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	1.7 ug/L		0.20	1	08/22/13 17:05	08/23/13 10:04	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/24/13 15:00	08/26/13 12:17	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/23/13 00:00	08/26/13 15:25	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:25	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:25	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:25	67-72-1	
Naphthalene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:25	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:25	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

Sample: 316-048		Lab ID: 60151393001	Collected: 08/20/13 12:20	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:25	87-86-5	
Phenol	16300 ug/L		1000	20	08/23/13 00:00	08/26/13 15:25	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:25	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:25	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/23/13 00:00	08/26/13 15:25	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/23/13 00:00	08/26/13 15:25	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/23/13 00:00	08/26/13 15:25	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/23/13 00:00	08/26/13 15:25	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/23/13 00:00	08/26/13 15:25	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/23/13 00:00	08/26/13 15:25	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/21/13 21:27	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/21/13 21:27	75-27-4	
Bromoform	ND ug/L		200	200		08/21/13 21:27	75-25-2	
Bromomethane	ND ug/L		1000	200		08/21/13 21:27	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/21/13 21:27	56-23-5	
Chloroethane	ND ug/L		200	200		08/21/13 21:27	75-00-3	
Chloroform	ND ug/L		200	200		08/21/13 21:27	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/21/13 21:27	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/21/13 21:27	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 21:27	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/21/13 21:27	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/21/13 21:27	100-41-4	
Methylene chloride	ND ug/L		200	200		08/21/13 21:27	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/21/13 21:27	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/21/13 21:27	127-18-4	
Toluene	ND ug/L		200	200		08/21/13 21:27	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/21/13 21:27	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/21/13 21:27	79-00-5	
Trichloroethene	ND ug/L		200	200		08/21/13 21:27	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/21/13 21:27	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/21/13 21:27	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	200		08/21/13 21:27	460-00-4	D3
Toluene-d8 (S)	98 %		80-120	200		08/21/13 21:27	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	200		08/21/13 21:27	17060-07-0	
Preservation pH	6.0		1.0	200		08/21/13 21:27		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	588 mg/L		5.0	1		08/23/13 07:05		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	9.1 mg/L		5.0	1		08/27/13 14:33		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

Sample: 316-048		Lab ID: 60151393001	Collected: 08/20/13 12:20	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3680	mg/L	5.0	1		08/22/13 10:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		08/22/13 07:55		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	717	mg/L	20.0	200		08/21/13 13:02	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	63100	mg/L	5000	500		08/26/13 17:12		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

Sample: TRIP BLANK		Lab ID: 60151393002	Collected: 08/20/13 12:20	Received: 08/21/13 01:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/21/13 21:49	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/21/13 21:49	75-27-4	
Bromoform	ND ug/L		1.0	1		08/21/13 21:49	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/21/13 21:49	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/21/13 21:49	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/21/13 21:49	75-00-3	
Chloroform	ND ug/L		1.0	1		08/21/13 21:49	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/21/13 21:49	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/21/13 21:49	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 21:49	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/21/13 21:49	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/21/13 21:49	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/21/13 21:49	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/21/13 21:49	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/21/13 21:49	127-18-4	
Toluene	ND ug/L		1.0	1		08/21/13 21:49	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/21/13 21:49	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/21/13 21:49	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/21/13 21:49	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/21/13 21:49	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/21/13 21:49	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		08/21/13 21:49	460-00-4	
Toluene-d8 (S)	97 %		80-120	1		08/21/13 21:49	2037-26-5	
1,2-Dichloroethane-d4 (S)	97 %		80-120	1		08/21/13 21:49	17060-07-0	
Preservation pH	6.0		1.0	1		08/21/13 21:49		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch: MERP/7634

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151393001

METHOD BLANK: 1240679

Matrix: Water

Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/23/13 09:48	

LABORATORY CONTROL SAMPLE: 1240680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	89	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1240681 1240682

Parameter	Units	60151485001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	1.1	0.93	21	19	70-130	13	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch: MERP/7638

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60151393001

METHOD BLANK: 1241876

Matrix: Water

Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/26/13 11:59	

LABORATORY CONTROL SAMPLE: 1241877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241878 1241879

Parameter	Units	60151485001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	0.86	0.90	17	18	70-130	5	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048
Pace Project No.: 60151393

QC Batch: MPRP/23943 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60151393001

METHOD BLANK: 1240394 Matrix: Water
Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/23/13 16:33	
Antimony	ug/L	ND	10.0	08/23/13 16:33	
Arsenic	ug/L	ND	10.0	08/23/13 16:33	
Beryllium	ug/L	ND	1.0	08/23/13 16:33	
Cadmium	ug/L	ND	5.0	08/23/13 16:33	
Chromium	ug/L	ND	5.0	08/23/13 16:33	
Cobalt	ug/L	ND	5.0	08/23/13 16:33	
Copper	ug/L	ND	10.0	08/23/13 16:33	
Iron	ug/L	ND	50.0	08/23/13 16:33	
Lead	ug/L	ND	5.0	08/26/13 11:17	
Nickel	ug/L	ND	5.0	08/23/13 16:33	
Selenium	ug/L	ND	15.0	08/23/13 16:33	
Silver	ug/L	ND	7.0	08/23/13 16:33	
Thallium	ug/L	ND	20.0	08/23/13 16:33	
Zinc	ug/L	ND	50.0	08/23/13 16:33	

LABORATORY CONTROL SAMPLE: 1240395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10600	106	85-115	
Antimony	ug/L	1000	970	97	85-115	
Arsenic	ug/L	1000	951	95	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Cadmium	ug/L	1000	984	98	85-115	
Chromium	ug/L	1000	1040	104	85-115	
Cobalt	ug/L	1000	1020	102	85-115	
Copper	ug/L	1000	946	95	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1020	102	85-115	
Nickel	ug/L	1000	1040	104	85-115	
Selenium	ug/L	1000	967	97	85-115	
Silver	ug/L	500	488	98	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	1060	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1240396 1240397

Parameter	Units	60151126001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	395	10000	10000	11200	11100	108	107	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1240396 1240397											
Parameter	Units	60151126001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	957	963	96	96	70-130	1	7
Arsenic	ug/L	ND	1000	1000	965	964	96	96	70-130	0	10
Beryllium	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	7
Cadmium	ug/L	ND	1000	1000	978	980	98	98	70-130	0	10
Chromium	ug/L	ND	1000	1000	1020	1020	102	101	70-130	1	10
Cobalt	ug/L	15.4	1000	1000	1000	1010	99	99	70-130	0	6
Copper	ug/L	17.3	1000	1000	978	978	96	96	70-130	0	11
Iron	ug/L	3530	10000	10000	13500	13500	100	100	70-130	0	10
Lead	ug/L	ND	1000	1000	1000	1040	100	104	70-130	4	10
Nickel	ug/L	ND	1000	1000	1010	1010	100	100	70-130	0	10
Selenium	ug/L	ND	1000	1000	958	964	96	96	70-130	1	10
Silver	ug/L	ND	500	500	489	491	98	98	70-130	0	10
Thallium	ug/L	ND	1000	1000	958	953	96	95	70-130	0	6
Zinc	ug/L	ND	1000	1000	1070	1070	104	104	70-130	0	11

MATRIX SPIKE SAMPLE: 1240398							
Parameter	Units	60151366001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	10100	101	70-130	
Antimony	ug/L	ND	1000	968	97	70-130	
Arsenic	ug/L	ND	1000	951	95	70-130	
Beryllium	ug/L	ND	1000	976	98	70-130	
Cadmium	ug/L	ND	1000	971	97	70-130	
Chromium	ug/L	ND	1000	985	98	70-130	
Cobalt	ug/L	ND	1000	990	99	70-130	
Copper	ug/L	14.4	1000	953	94	70-130	
Iron	ug/L	ND	10000	9760	97	70-130	
Lead	ug/L	ND	1000	999	100	70-130	
Nickel	ug/L	ND	1000	1010	101	70-130	
Selenium	ug/L	ND	1000	963	96	70-130	
Silver	ug/L	ND	500	482	96	70-130	
Thallium	ug/L	ND	1000	958	96	70-130	
Zinc	ug/L	ND	1000	1060	103	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch:	MPRP/23964	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60151393001		

METHOD BLANK: 1241871 Matrix: Water

Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/26/13 15:47	
Antimony, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Arsenic, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Beryllium, Dissolved	ug/L	ND	1.0	08/26/13 15:47	
Cadmium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Chromium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Cobalt, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Copper, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Iron, Dissolved	ug/L	ND	50.0	08/26/13 15:47	
Lead, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Nickel, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Selenium, Dissolved	ug/L	ND	15.0	08/26/13 15:47	
Silver, Dissolved	ug/L	ND	7.0	08/26/13 15:47	
Thallium, Dissolved	ug/L	ND	20.0	08/26/13 15:47	
Zinc, Dissolved	ug/L	ND	50.0	08/26/13 15:47	

LABORATORY CONTROL SAMPLE: 1241872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9950	100	85-115	
Antimony, Dissolved	ug/L	1000	991	99	85-115	
Arsenic, Dissolved	ug/L	1000	952	95	85-115	
Beryllium, Dissolved	ug/L	1000	1000	100	85-115	
Cadmium, Dissolved	ug/L	1000	979	98	85-115	
Chromium, Dissolved	ug/L	1000	985	98	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	962	96	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	998	100	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	981	98	85-115	
Silver, Dissolved	ug/L	500	490	98	85-115	
Thallium, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874

Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	9990	9960	100	100	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874											
Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	1000	1000	1000	999	100	100	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	973	963	97	96	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	996	100	100	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	982	974	98	97	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	985	983	98	98	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	984	974	98	97	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	965	967	96	97	70-130	0	11
Iron, Dissolved	ug/L	ND	10000	10000	9920	9870	99	99	70-130	0	10
Lead, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	10
Nickel, Dissolved	ug/L	1.1J	1000	1000	992	984	99	98	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	982	977	98	98	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	494	490	99	98	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	990	981	99	98	70-130	1	6
Zinc, Dissolved	ug/L	9.8J	1000	1000	991	976	98	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1241875							
Parameter	Units	60151591001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	ND	10000	10100	101	70-130	
Antimony, Dissolved	ug/L	ND	1000	1020	102	70-130	
Arsenic, Dissolved	ug/L	ND	1000	1000	100	70-130	
Beryllium, Dissolved	ug/L	ND	1000	1020	102	70-130	
Cadmium, Dissolved	ug/L	ND	1000	1000	100	70-130	
Chromium, Dissolved	ug/L	ND	1000	968	97	70-130	
Cobalt, Dissolved	ug/L	ND	1000	986	99	70-130	
Copper, Dissolved	ug/L	ND	1000	994	99	70-130	
Iron, Dissolved	ug/L	ND	10000	10100	101	70-130	
Lead, Dissolved	ug/L	ND	1000	954	95	70-130	
Nickel, Dissolved	ug/L	16.3	1000	1010	100	70-130	
Selenium, Dissolved	ug/L	ND	1000	1030	103	70-130	
Silver, Dissolved	ug/L	ND	500	500	100	70-130	
Thallium, Dissolved	ug/L	ND	1000	911	91	70-130	
Zinc, Dissolved	ug/L	ND	1000	1000	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch: MSV/55691 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151393001, 60151393002

METHOD BLANK: 1239406 Matrix: Water

Associated Lab Samples: 60151393001, 60151393002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/21/13 17:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/21/13 17:11	
Benzene	ug/L	ND	1.0	08/21/13 17:11	
Bromodichloromethane	ug/L	ND	1.0	08/21/13 17:11	
Bromoform	ug/L	ND	1.0	08/21/13 17:11	
Bromomethane	ug/L	ND	5.0	08/21/13 17:11	
Carbon tetrachloride	ug/L	ND	1.0	08/21/13 17:11	
Chloroethane	ug/L	ND	1.0	08/21/13 17:11	
Chloroform	ug/L	ND	1.0	08/21/13 17:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Ethylbenzene	ug/L	ND	1.0	08/21/13 17:11	
Methylene chloride	ug/L	ND	1.0	08/21/13 17:11	
Tetrachloroethene	ug/L	ND	1.0	08/21/13 17:11	
Toluene	ug/L	ND	1.0	08/21/13 17:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Trichloroethene	ug/L	ND	1.0	08/21/13 17:11	
Vinyl chloride	ug/L	ND	1.0	08/21/13 17:11	
Xylene (Total)	ug/L	ND	3.0	08/21/13 17:11	
1,2-Dichloroethane-d4 (S)	%	105	80-120	08/21/13 17:11	
4-Bromofluorobenzene (S)	%	103	80-120	08/21/13 17:11	
Toluene-d8 (S)	%	99	80-120	08/21/13 17:11	

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.7	94	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	21.3	106	59-138	
1,1,2-Trichloroethane	ug/L	20	16.4	82	69-127	
1,2-Dichloroethane	ug/L	20	19.0	95	71-129	
1,4-Dichlorobenzene	ug/L	20	17.8	89	68-124	
Benzene	ug/L	20	18.6	93	73-129	
Bromodichloromethane	ug/L	20	17.8	89	63-129	
Bromoform	ug/L	20	18.4	92	52-123	
Bromomethane	ug/L	20	15.1	75	10-160	
Carbon tetrachloride	ug/L	20	18.6	93	70-140	
Chloroethane	ug/L	20	17.8	89	42-160	
Chloroform	ug/L	20	17.9	89	60-120	
cis-1,2-Dichloroethene	ug/L	20	18.5	93	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

LABORATORY CONTROL SAMPLE: 1239407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.0	90	66-133	
Methylene chloride	ug/L	20	19.4	97	56-135	
Tetrachloroethene	ug/L	20	17.2	86	64-143	
Toluene	ug/L	20	17.5	87	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.0	90	67-149	
Trichloroethene	ug/L	20	16.9	84	71-130	
Vinyl chloride	ug/L	20	17.6	88	41-160	
Xylene (Total)	ug/L	60	52.8	88	67-130	
1,2-Dichloroethane-d4 (S)	%			107	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1239408

Parameter	Units	60151250001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	4090	102	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4470	112	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3470	87	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3980	99	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3990	98	18-147	
Benzene	ug/L	ND	4000	3870	97	37-151	
Bromodichloromethane	ug/L	ND	4000	3860	96	35-155	
Bromoform	ug/L	ND	4000	3780	95	45-133	
Bromomethane	ug/L	ND	4000	2650	66	10-160	
Carbon tetrachloride	ug/L	ND	4000	4240	106	70-140	
Chloroethane	ug/L	ND	4000	3660	91	14-160	
Chloroform	ug/L	ND	4000	3900	96	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3900	98	19-160	
Ethylbenzene	ug/L	ND	4000	4170	104	37-154	
Methylene chloride	ug/L	ND	4000	3960	99	15-156	
Tetrachloroethene	ug/L	ND	4000	4170	103	64-148	
Toluene	ug/L	ND	4000	3890	97	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3770	94	54-156	
Trichloroethene	ug/L	ND	4000	3680	92	71-157	
Vinyl chloride	ug/L	ND	4000	3580	90	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				102	80-120	
4-Bromofluorobenzene (S)	%				101	80-120	
Toluene-d8 (S)	%				100	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048
Pace Project No.: 60151393

QC Batch:	OEXT/40018	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60151393001		

METHOD BLANK: 1240832 Matrix: Water
Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/26/13 14:22	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/26/13 14:22	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/26/13 14:22	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/26/13 14:22	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/26/13 14:22	
Hexachloroethane	ug/L	ND	5.0	08/26/13 14:22	
Naphthalene	ug/L	ND	5.0	08/26/13 14:22	
Nitrobenzene	ug/L	ND	5.0	08/26/13 14:22	
Pentachlorophenol	ug/L	ND	5.0	08/26/13 14:22	
Phenol	ug/L	ND	5.0	08/26/13 14:22	
2,4,6-Tribromophenol (S)	%	80	39-119	08/26/13 14:22	
2-Fluorobiphenyl (S)	%	81	36-120	08/26/13 14:22	
2-Fluorophenol (S)	%	46	18-120	08/26/13 14:22	
Nitrobenzene-d5 (S)	%	77	32-120	08/26/13 14:22	
Phenol-d6 (S)	%	31	12-120	08/26/13 14:22	
Terphenyl-d14 (S)	%	85	44-120	08/26/13 14:22	

LABORATORY CONTROL SAMPLE: 1240833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.0	78	44-120	
2,4,6-Trichlorophenol	ug/L	50	39.9	80	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	50.3	101	31-147	
Hexachloro-1,3-butadiene	ug/L	50	39.6	79	41-116	
Hexachlorocyclopentadiene	ug/L	100	61.8	62	31-120	
Hexachloroethane	ug/L	50	37.5	75	40-113	
Naphthalene	ug/L	50	40.3	81	48-120	
Nitrobenzene	ug/L	50	40.4	81	47-120	
Pentachlorophenol	ug/L	50	40.0	80	43-127	
Phenol	ug/L	50	17.4	35	15-112	
2,4,6-Tribromophenol (S)	%			90	39-119	
2-Fluorobiphenyl (S)	%			81	36-120	
2-Fluorophenol (S)	%			45	18-120	
Nitrobenzene-d5 (S)	%			78	32-120	
Phenol-d6 (S)	%			31	12-120	
Terphenyl-d14 (S)	%			89	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

MATRIX SPIKE SAMPLE:		1240874					
Parameter	Units	60151426001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.73	50	37.8	76	44-120	
2,4,6-Trichlorophenol	ug/L	<1.5	50	34.5	69	37-121	
4,6-Dinitro-2-methylphenol	ug/L	<0.71	50	50.4	101	27-146	
Hexachloro-1,3-butadiene	ug/L	<0.98	50	37.3	75	27-116	
Hexachlorocyclopentadiene	ug/L	<2.1	100	65.1	65	11-120	
Hexachloroethane	ug/L	<0.62	50	35.5	71	40-113	
Naphthalene	ug/L	<0.58	50	39.0	78	32-120	
Nitrobenzene	ug/L	<0.65	50	40.1	80	35-128	
Pentachlorophenol	ug/L	<1.7	50	38.0	76	38-133	
Phenol	ug/L	<0.51	50	15.9	32	13-112	
2,4,6-Tribromophenol (S)	%				76	39-119	
2-Fluorobiphenyl (S)	%				78	36-120	
2-Fluorophenol (S)	%				44	18-120	
Nitrobenzene-d5 (S)	%				75	32-120	
Phenol-d6 (S)	%				30	12-120	
Terphenyl-d14 (S)	%				86	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch: WET/43023

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60151393001

METHOD BLANK: 1240818

Matrix: Water

Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/23/13 07:04	

LABORATORY CONTROL SAMPLE: 1240819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	42.1	105	78-114	

MATRIX SPIKE SAMPLE: 1240822

Parameter	Units	60151135001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40.4	46.1	105	78-114	

SAMPLE DUPLICATE: 1240823

Parameter	Units	60151135003 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	37.3	43.7	16	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch: WET/43080

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151393001

METHOD BLANK: 1243173

Matrix: Water

Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/27/13 14:32	

LABORATORY CONTROL SAMPLE: 1243174

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.2	106	64-132	

MATRIX SPIKE SAMPLE: 1243183

Parameter	Units	60151494001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.7	20.8	22.4	61	64-132	M1

SAMPLE DUPLICATE: 1243184

Parameter	Units	60151723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	7.0	10.6	41	34	D6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch: WET/43004

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151393001

METHOD BLANK: 1240120

Matrix: Water

Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/22/13 10:22	

SAMPLE DUPLICATE: 1240121

Parameter	Units	60151431001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

SAMPLE DUPLICATE: 1240122

Parameter	Units	60151332001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch: WET/42999 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60151393001

SAMPLE DUPLICATE: 1239985

Parameter	Units	60151311001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.4	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch: WETA/25878

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151393001

METHOD BLANK: 1239315

Matrix: Water

Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/21/13 12:58	

LABORATORY CONTROL SAMPLE: 1239316

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 1239317

Parameter	Units	60151209013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	1.5	76	90-110	M1

MATRIX SPIKE SAMPLE: 1239319

Parameter	Units	60151209015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	18.8	20	36.6	89	90-110	M1

SAMPLE DUPLICATE: 1239318

Parameter	Units	60151209014 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	1.1	1.1	2	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

QC Batch: WETA/25925

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 60151393001

METHOD BLANK: 1241822

Matrix: Water

Associated Lab Samples: 60151393001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/26/13 16:56	

LABORATORY CONTROL SAMPLE: 1241823

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	48.1	96	90-110	

MATRIX SPIKE SAMPLE: 1241824

Parameter	Units	60150879001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	19.3	50	75.0	111	90-110	M1

MATRIX SPIKE SAMPLE: 1241826

Parameter	Units	60151020001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	248	250	504	102	90-110	

SAMPLE DUPLICATE: 1241825

Parameter	Units	60150908001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	33.0	33.2	1	25	

SAMPLE DUPLICATE: 1242735

Parameter	Units	60151388001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	52600	45800	14	25	

SAMPLE DUPLICATE: 1242736

Parameter	Units	60151393001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	63100	60200	5	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

- | | |
|----|---|
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| D6 | The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits. |
| D9 | Dissolved result is greater than the total. Data is within laboratory control limits. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| S4 | Surrogate recovery not evaluated against control limits due to sample dilution. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-048

Pace Project No.: 60151393

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151393001	316-048	EPA 200.7	MPRP/23943	EPA 200.7	ICP/18739
60151393001	316-048	EPA 200.7	MPRP/23964	EPA 200.7	ICP/18749
60151393001	316-048	EPA 245.1	MERP/7634	EPA 245.1	MERC/7588
60151393001	316-048	EPA 245.1	MERP/7638	EPA 245.1	MERC/7592
60151393001	316-048	EPA 625	OEXT/40018	EPA 625	MSSV/12688
60151393001	316-048	EPA 624 Low	MSV/55691		
60151393002	TRIP BLANK	EPA 624 Low	MSV/55691		
60151393001	316-048	EPA 1664A	WET/43023		
60151393001	316-048	EPA 1664A	WET/43080		
60151393001	316-048	SM 2540D	WET/43004		
60151393001	316-048	SM 4500-H+B	WET/42999		
60151393001	316-048	EPA 350.1	WETA/25878		
60151393001	316-048	EPA 410.4	WETA/25925		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151393



60151393

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☐ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ 2 P/C

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.9

Temperature should be above freezing to 6°C

Date and initials of person examining contents: PLB/21/13

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>PH</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>LT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased): <u>071513-3</u>		18.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/21/13



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company:	BARR ENGINEERING	
Address:		
Email To:		
Phone:	(816) 285-8410	Fax
Requested Due Date/TAT:	10 Day (Default)	

Section B

Required Project Information:

Report To:	ED GALBRAITH/BARR	
Copy To:	SCOTT FEDAK/FEEZOR	
	DANA BAKER/MARGARET TREANOR -BARR	
Purchase Order No.	PO 3727110	
Client Project ID:	BRIDGETON LF	
Container Order Number:		

Section C

Invoice Information:

Attention:	TABITHA PROVINCE	
Company Name:	REPUBLIC SERVICES	
Address:	BRIDGETON, MO 63044	
Pace Quote Reference:	130426_7588	
Pace Project Manager:	Brown, Angie	
Pace Profile #:	6787 LINE 2	

Page : 1 Of 1

Regulatory Agency

State / Location

Missouri

ITEM#	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample IDs must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Y/N	Requested Analysis Filtered (Y/N)														Residual Chlorine (Y/N)
						START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test	COD EPA 410		pH SM 4500H+B	LF DIS METALS 200.7/245	TOTAL METALS 200.7/245	AMMONIA EPA 350	O/G EPA 1664	625 SVOCs	VOCs EPA 624	TSS SM2540D	TPH/HEM-SGT 1664						
						DATE	TIME	DATE	TIME																												
1	316-048 1BP3U 1BP2U 1BP3N ⁴⁰			OT	G	8/20/13	1620	1835 ³⁰		13	9	1	1	2	3461U	3461H		X	X	X	X	X	X	X	X	X	X	X	X	X	X	50694	METALS LIST total & LF Dis:				
2	TRIP BLANK 2069U									2	2																						Al, Sb, As, Be, Cd, Cr,				
3																																Co, Cu, Fe, Pb, Ni, Se, Ag, Ti, Zn					
4																																and Mercury					
5																																					
6																																					
7																																					
8																																					
9																																					
10																																					
11																																					
12																																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
SITE CONTACT: BILL ABERNATHY 314-502-1299	Julie Crook	8-20-13	1620	John Powell	8/20/13	1620	
SITE ADDRESS: BRIDGETON LF				John Powell	8/21/13	0140	1-9 Y Y Y
13570 ST. CHARLES ROCK RD							
BRIDGETON MO 63044							

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:						
SIGNATURE of SAMPLER:		DATE Signed:				
John Powell		8-20-13				

August 29, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-049
Pace Project No.: 60151493

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 22, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-049

Pace Project No.: 60151493

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-049

Pace Project No.: 60151493

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151493001	316-049	Water	08/21/13 11:40	08/22/13 01:35

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-049

Pace Project No.: 60151493

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151493001	316-049	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-049

Pace Project No.: 60151493

Sample: 316-049		Lab ID: 60151493001	Collected: 08/21/13 11:40	Received: 08/22/13 01:35	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	34000	mg/L	2.0	1	08/23/13 08:51	08/28/13 08:37		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151493

QC Batch: WET/43025

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151493001

METHOD BLANK: 1240869

Matrix: Water

Associated Lab Samples: 60151493001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/28/13 08:05	

LABORATORY CONTROL SAMPLE: 1240870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	175	89	85-115	

SAMPLE DUPLICATE: 1240871

Parameter	Units	60151493001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	34000	32400	5	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-049

Pace Project No.: 60151493

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-049

Pace Project No.: 60151493

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151493001	316-049	SM 5210B	WET/43025	SM 5210B	WET/43096

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Sample Condition Upon Receipt

WO#: 60151493



Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ 2 P/C

Thermometer Used: T-112 / T-194 Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 2-3

Temperature should be above freezing to 6°C

Date and initials of person examining contents: pu 6/22/13

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>ROD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		18.
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y N

Field Data Required? Y N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

August 30, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-049
Pace Project No.: 60151494

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 22, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151494001	316-049	Water	08/21/13 11:40	08/22/13 01:35
60151494002	TRIP BLANK	Water	08/21/13 11:40	08/22/13 01:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151494001	316-049	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151494002	TRIP BLANK	EPA 624 Low	JKL	25

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

Sample: 316-049		Lab ID: 60151494001	Collected: 08/21/13 11:40	Received: 08/22/13 01:35	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	7580 ug/L		150	2	08/26/13 10:15	08/28/13 12:15	7429-90-5	
Antimony	40.7 ug/L		20.0	2	08/26/13 10:15	08/28/13 12:15	7440-36-0	
Arsenic	920 ug/L		20.0	2	08/26/13 10:15	08/28/13 12:15	7440-38-2	
Beryllium	ND ug/L		5.0	5	08/26/13 10:15	08/28/13 12:19	7440-41-7	D3
Cadmium	14.7 ug/L		10.0	2	08/26/13 10:15	08/28/13 12:15	7440-43-9	
Chromium	256 ug/L		25.0	5	08/26/13 10:15	08/28/13 12:19	7440-47-3	
Cobalt	55.1 ug/L		10.0	2	08/26/13 10:15	08/28/13 12:15	7440-48-4	
Copper	ND ug/L		20.0	2	08/26/13 10:15	08/28/13 12:15	7440-50-8	D3
Iron	716000 ug/L		100	2	08/26/13 10:15	08/28/13 12:15	7439-89-6	
Lead	194 ug/L		10.0	2	08/26/13 10:15	08/28/13 12:15	7439-92-1	
Nickel	148 ug/L		10.0	2	08/26/13 10:15	08/28/13 12:15	7440-02-0	
Selenium	ND ug/L		75.0	5	08/26/13 10:15	08/28/13 12:19	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/26/13 10:15	08/28/13 12:15	7440-22-4	D3
Thallium	ND ug/L		100	5	08/26/13 10:15	08/28/13 12:19	7440-28-0	D3
Zinc	10500 ug/L		1000	20	08/26/13 10:15	08/28/13 12:22	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2590 ug/L		150	2	08/24/13 10:25	08/26/13 19:12	7429-90-5	
Antimony, Dissolved	50.3 ug/L		20.0	2	08/24/13 10:25	08/26/13 19:12	7440-36-0	D9
Arsenic, Dissolved	723 ug/L		20.0	2	08/24/13 10:25	08/26/13 19:12	7440-38-2	
Beryllium, Dissolved	ND ug/L		20.0	20	08/24/13 10:25	08/26/13 19:55	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	08/24/13 10:25	08/26/13 19:12	7440-43-9	D3
Chromium, Dissolved	209 ug/L		25.0	5	08/24/13 10:25	08/26/13 19:26	7440-47-3	
Cobalt, Dissolved	41.3 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:12	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/24/13 10:25	08/26/13 19:12	7440-50-8	D3
Iron, Dissolved	450000 ug/L		100	2	08/24/13 10:25	08/26/13 19:12	7439-89-6	
Lead, Dissolved	53.2 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:12	7439-92-1	
Nickel, Dissolved	124 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:12	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/24/13 10:25	08/26/13 19:26	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/24/13 10:25	08/26/13 19:12	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/24/13 10:25	08/26/13 19:26	7440-28-0	D3
Zinc, Dissolved	8720 ug/L		1000	20	08/24/13 10:25	08/26/13 19:55	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.45 ug/L		0.20	1	08/29/13 16:35	08/30/13 09:07	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/24/13 15:00	08/26/13 12:19	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/23/13 00:00	08/26/13 15:45	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:45	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:45	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:45	67-72-1	
Naphthalene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:45	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:45	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

Sample: 316-049		Lab ID: 60151494001	Collected: 08/21/13 11:40	Received: 08/22/13 01:35	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:45	87-86-5	
Phenol	15500 ug/L		1000	20	08/23/13 00:00	08/26/13 15:45	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:45	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/23/13 00:00	08/26/13 15:45	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/23/13 00:00	08/26/13 15:45	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/23/13 00:00	08/26/13 15:45	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/23/13 00:00	08/26/13 15:45	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/23/13 00:00	08/26/13 15:45	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/23/13 00:00	08/26/13 15:45	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/23/13 00:00	08/26/13 15:45	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/27/13 14:58	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/27/13 14:58	75-27-4	
Bromoform	ND ug/L		200	200		08/27/13 14:58	75-25-2	
Bromomethane	ND ug/L		1000	200		08/27/13 14:58	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/27/13 14:58	56-23-5	
Chloroethane	ND ug/L		200	200		08/27/13 14:58	75-00-3	
Chloroform	ND ug/L		200	200		08/27/13 14:58	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/27/13 14:58	106-46-7	L3
1,2-Dichloroethane	ND ug/L		200	200		08/27/13 14:58	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 14:58	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 14:58	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/27/13 14:58	100-41-4	
Methylene chloride	ND ug/L		200	200		08/27/13 14:58	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/27/13 14:58	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/27/13 14:58	127-18-4	
Toluene	ND ug/L		200	200		08/27/13 14:58	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/27/13 14:58	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/27/13 14:58	79-00-5	
Trichloroethene	ND ug/L		200	200		08/27/13 14:58	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/27/13 14:58	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/27/13 14:58	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	200		08/27/13 14:58	460-00-4	D3
Toluene-d8 (S)	97 %		80-120	200		08/27/13 14:58	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		08/27/13 14:58	17060-07-0	
Preservation pH	7.0		1.0	200		08/27/13 14:58		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	274 mg/L		5.0	1		08/26/13 14:34		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	9.7 mg/L		5.0	1		08/27/13 14:37		M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

Sample: 316-049		Lab ID: 60151494001	Collected: 08/21/13 11:40	Received: 08/22/13 01:35	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2780	mg/L	5.0	1		08/27/13 13:40		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.7	Std. Units	0.10	1		08/27/13 15:20		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	763	mg/L	20.0	200		08/26/13 10:18	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	56000	mg/L	5000	500		08/28/13 12:14		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

Sample: TRIP BLANK		Lab ID: 60151494002	Collected: 08/21/13 11:40	Received: 08/22/13 01:35	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/27/13 12:48	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/27/13 12:48	75-27-4	
Bromoform	ND ug/L		1.0	1		08/27/13 12:48	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/27/13 12:48	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/27/13 12:48	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/27/13 12:48	75-00-3	
Chloroform	ND ug/L		1.0	1		08/27/13 12:48	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/27/13 12:48	106-46-7	L3
1,2-Dichloroethane	ND ug/L		1.0	1		08/27/13 12:48	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 12:48	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 12:48	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/27/13 12:48	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/27/13 12:48	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/27/13 12:48	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/27/13 12:48	127-18-4	
Toluene	ND ug/L		1.0	1		08/27/13 12:48	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/27/13 12:48	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/27/13 12:48	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/27/13 12:48	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/27/13 12:48	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/27/13 12:48	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	1		08/27/13 12:48	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		08/27/13 12:48	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	1		08/27/13 12:48	17060-07-0	
Preservation pH	6.0		1.0	1		08/27/13 12:48		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch: MERP/7653

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151494001

METHOD BLANK: 1243877

Matrix: Water

Associated Lab Samples: 60151494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/30/13 08:49	

LABORATORY CONTROL SAMPLE: 1243878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243879 1243880

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	.15J	ND	1	2	70-130		20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch:	MERP/7638	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60151494001		

METHOD BLANK:	1241876	Matrix:	Water
Associated Lab Samples:	60151494001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/26/13 11:59	

LABORATORY CONTROL SAMPLE: 1241877						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241878												1241879		
Parameter	Units	60151485001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual		
Mercury, Dissolved	ug/L	ND	5	5	0.86	0.90	17	18	70-130	5	20	M1		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049
Pace Project No.: 60151494

QC Batch: MPRP/23970 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60151494001

METHOD BLANK: 1242325 Matrix: Water
Associated Lab Samples: 60151494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/28/13 10:53	
Antimony	ug/L	ND	10.0	08/28/13 10:53	
Arsenic	ug/L	ND	10.0	08/28/13 10:53	
Beryllium	ug/L	ND	1.0	08/28/13 10:53	
Cadmium	ug/L	ND	5.0	08/28/13 10:53	
Chromium	ug/L	ND	5.0	08/28/13 10:53	
Cobalt	ug/L	ND	5.0	08/28/13 10:53	
Copper	ug/L	ND	10.0	08/28/13 10:53	
Iron	ug/L	ND	50.0	08/28/13 10:53	
Lead	ug/L	ND	5.0	08/28/13 10:53	
Nickel	ug/L	ND	5.0	08/28/13 10:53	
Selenium	ug/L	ND	15.0	08/28/13 10:53	
Silver	ug/L	ND	7.0	08/28/13 10:53	
Thallium	ug/L	ND	20.0	08/28/13 10:53	
Zinc	ug/L	ND	50.0	08/28/13 10:53	

LABORATORY CONTROL SAMPLE: 1242326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9880	99	85-115	
Antimony	ug/L	1000	998	100	85-115	
Arsenic	ug/L	1000	976	98	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Cadmium	ug/L	1000	981	98	85-115	
Chromium	ug/L	1000	998	100	85-115	
Cobalt	ug/L	1000	1000	100	85-115	
Copper	ug/L	1000	972	97	85-115	
Iron	ug/L	10000	9980	100	85-115	
Lead	ug/L	1000	1010	101	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1000	100	85-115	
Silver	ug/L	500	487	97	85-115	
Thallium	ug/L	1000	1020	102	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1242327 1242328

Parameter	Units	60151385001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	2070	10000	10000	13300	13100	112	111	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1242327 1242328											
Parameter	Units	60151385001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1020	1010	101	101	70-130	0	7
Arsenic	ug/L	ND	1000	1000	1020	1010	101	101	70-130	0	10
Beryllium	ug/L	ND	1000	1000	999	1000	100	100	70-130	0	7
Cadmium	ug/L	ND	1000	1000	992	991	99	99	70-130	0	10
Chromium	ug/L	ND	1000	1000	989	992	98	99	70-130	0	10
Cobalt	ug/L	ND	1000	1000	994	993	99	99	70-130	0	6
Copper	ug/L	ND	1000	1000	997	1000	99	100	70-130	0	11
Iron	ug/L	1650	10000	10000	12000	11900	103	102	70-130	1	10
Lead	ug/L	ND	1000	1000	994	991	99	99	70-130	0	10
Nickel	ug/L	6.2	1000	1000	1020	1020	101	101	70-130	0	10
Selenium	ug/L	ND	1000	1000	1030	1030	102	102	70-130	0	10
Silver	ug/L	ND	500	500	488	488	98	98	70-130	0	10
Thallium	ug/L	ND	1000	1000	974	974	97	97	70-130	0	6
Zinc	ug/L	53.8	1000	1000	1070	1070	102	101	70-130	0	11

MATRIX SPIKE SAMPLE: 1242329							
Parameter	Units	60151522001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	55.7J	10000	9770	97	70-130	
Antimony	ug/L	ND	1000	1070	107	70-130	
Arsenic	ug/L	ND	1000	1040	104	70-130	
Beryllium	ug/L	ND	1000	981	98	70-130	
Cadmium	ug/L	2.6J	1000	1020	102	70-130	
Chromium	ug/L	ND	1000	950	95	70-130	
Cobalt	ug/L	16.7	1000	1000	99	70-130	
Copper	ug/L	3.9J	1000	1020	102	70-130	
Iron	ug/L	76.4	10000	9700	96	70-130	
Lead	ug/L	4.6J	1000	989	98	70-130	
Nickel	ug/L	35.5	1000	1040	100	70-130	
Selenium	ug/L	ND	1000	1060	106	70-130	
Silver	ug/L	ND	500	489	98	70-130	
Thallium	ug/L	ND	1000	997	99	70-130	
Zinc	ug/L	1710	1000	2600	89	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049
Pace Project No.: 60151494

QC Batch: MPRP/23964 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151494001

METHOD BLANK: 1241871 Matrix: Water
Associated Lab Samples: 60151494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/26/13 15:47	
Antimony, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Arsenic, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Beryllium, Dissolved	ug/L	ND	1.0	08/26/13 15:47	
Cadmium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Chromium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Cobalt, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Copper, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Iron, Dissolved	ug/L	ND	50.0	08/26/13 15:47	
Lead, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Nickel, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Selenium, Dissolved	ug/L	ND	15.0	08/26/13 15:47	
Silver, Dissolved	ug/L	ND	7.0	08/26/13 15:47	
Thallium, Dissolved	ug/L	ND	20.0	08/26/13 15:47	
Zinc, Dissolved	ug/L	ND	50.0	08/26/13 15:47	

LABORATORY CONTROL SAMPLE: 1241872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9950	100	85-115	
Antimony, Dissolved	ug/L	1000	991	99	85-115	
Arsenic, Dissolved	ug/L	1000	952	95	85-115	
Beryllium, Dissolved	ug/L	1000	1000	100	85-115	
Cadmium, Dissolved	ug/L	1000	979	98	85-115	
Chromium, Dissolved	ug/L	1000	985	98	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	962	96	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	998	100	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	981	98	85-115	
Silver, Dissolved	ug/L	500	490	98	85-115	
Thallium, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874

Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	9990	9960	100	100	70-130	0	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874											
Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	1000	1000	1000	999	100	100	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	973	963	97	96	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	996	100	100	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	982	974	98	97	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	985	983	98	98	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	984	974	98	97	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	965	967	96	97	70-130	0	11
Iron, Dissolved	ug/L	ND	10000	10000	9920	9870	99	99	70-130	0	10
Lead, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	10
Nickel, Dissolved	ug/L	1.1J	1000	1000	992	984	99	98	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	982	977	98	98	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	494	490	99	98	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	990	981	99	98	70-130	1	6
Zinc, Dissolved	ug/L	9.8J	1000	1000	991	976	98	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1241875							
Parameter	Units	60151591001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	ND	10000	10100	101	70-130	
Antimony, Dissolved	ug/L	ND	1000	1020	102	70-130	
Arsenic, Dissolved	ug/L	ND	1000	1000	100	70-130	
Beryllium, Dissolved	ug/L	ND	1000	1020	102	70-130	
Cadmium, Dissolved	ug/L	ND	1000	1000	100	70-130	
Chromium, Dissolved	ug/L	ND	1000	968	97	70-130	
Cobalt, Dissolved	ug/L	ND	1000	986	99	70-130	
Copper, Dissolved	ug/L	ND	1000	994	99	70-130	
Iron, Dissolved	ug/L	ND	10000	10100	101	70-130	
Lead, Dissolved	ug/L	ND	1000	954	95	70-130	
Nickel, Dissolved	ug/L	16.3	1000	1010	100	70-130	
Selenium, Dissolved	ug/L	ND	1000	1030	103	70-130	
Silver, Dissolved	ug/L	ND	500	500	100	70-130	
Thallium, Dissolved	ug/L	ND	1000	911	91	70-130	
Zinc, Dissolved	ug/L	ND	1000	1000	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch: MSV/55839 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151494001, 60151494002

METHOD BLANK: 1242924 Matrix: Water

Associated Lab Samples: 60151494001, 60151494002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/27/13 10:11	
Benzene	ug/L	ND	1.0	08/27/13 10:11	
Bromodichloromethane	ug/L	ND	1.0	08/27/13 10:11	
Bromoform	ug/L	ND	1.0	08/27/13 10:11	
Bromomethane	ug/L	ND	5.0	08/27/13 10:11	
Carbon tetrachloride	ug/L	ND	1.0	08/27/13 10:11	
Chloroethane	ug/L	ND	1.0	08/27/13 10:11	
Chloroform	ug/L	ND	1.0	08/27/13 10:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Ethylbenzene	ug/L	ND	1.0	08/27/13 10:11	
Methylene chloride	ug/L	ND	1.0	08/27/13 10:11	
Tetrachloroethene	ug/L	ND	1.0	08/27/13 10:11	
Toluene	ug/L	ND	1.0	08/27/13 10:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Trichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Vinyl chloride	ug/L	ND	1.0	08/27/13 10:11	
Xylene (Total)	ug/L	ND	3.0	08/27/13 10:11	
1,2-Dichloroethane-d4 (S)	%	98	80-120	08/27/13 10:11	
4-Bromofluorobenzene (S)	%	102	80-120	08/27/13 10:11	
Toluene-d8 (S)	%	98	80-120	08/27/13 10:11	

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	24.2	121	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	24.3	121	59-138	
1,1,2-Trichloroethane	ug/L	20	19.9	100	69-127	
1,2-Dichloroethane	ug/L	20	22.2	111	71-129	
1,4-Dichlorobenzene	ug/L	20	25.1	126	68-124	L0
Benzene	ug/L	20	22.4	112	73-129	
Bromodichloromethane	ug/L	20	22.0	110	63-129	
Bromoform	ug/L	20	23.8	119	52-123	
Bromomethane	ug/L	20	20.2	101	10-160	
Carbon tetrachloride	ug/L	20	25.8	129	70-140	
Chloroethane	ug/L	20	22.3	111	42-160	
Chloroform	ug/L	20	21.5	107	60-120	
cis-1,2-Dichloroethene	ug/L	20	22.2	111	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	24.4	122	66-133	
Methylene chloride	ug/L	20	22.5	112	56-135	
Tetrachloroethene	ug/L	20	23.5	117	64-143	
Toluene	ug/L	20	21.9	109	70-130	
trans-1,2-Dichloroethene	ug/L	20	22.2	111	67-149	
Trichloroethene	ug/L	20	20.5	103	71-130	
Vinyl chloride	ug/L	20	22.5	113	41-160	
Xylene (Total)	ug/L	60	72.4	121	67-130	
1,2-Dichloroethane-d4 (S)	%			108	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1242926

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3940	99	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4520	113	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3410	85	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3630	91	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	4600	115	18-147	
Benzene	ug/L	ND	4000	3660	91	37-151	
Bromodichloromethane	ug/L	ND	4000	3630	91	35-155	
Bromoform	ug/L	ND	4000	4030	101	45-133	
Bromomethane	ug/L	ND	4000	2570	64	10-160	
Carbon tetrachloride	ug/L	ND	4000	4120	103	70-140	
Chloroethane	ug/L	ND	4000	3420	85	14-160	
Chloroform	ug/L	ND	4000	3500	87	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3610	90	19-160	
Ethylbenzene	ug/L	ND	4000	4240	106	37-154	
Methylene chloride	ug/L	ND	4000	3600	90	15-156	
Tetrachloroethene	ug/L	ND	4000	3940	99	64-148	
Toluene	ug/L	ND	4000	3700	92	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3470	87	54-156	
Trichloroethene	ug/L	ND	4000	3360	84	71-157	
Vinyl chloride	ug/L	ND	4000	3350	84	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120 HS	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			7.0		7.0		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch: OEXT/40018

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60151494001

METHOD BLANK: 1240832

Matrix: Water

Associated Lab Samples: 60151494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/26/13 14:22	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/26/13 14:22	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/26/13 14:22	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/26/13 14:22	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/26/13 14:22	
Hexachloroethane	ug/L	ND	5.0	08/26/13 14:22	
Naphthalene	ug/L	ND	5.0	08/26/13 14:22	
Nitrobenzene	ug/L	ND	5.0	08/26/13 14:22	
Pentachlorophenol	ug/L	ND	5.0	08/26/13 14:22	
Phenol	ug/L	ND	5.0	08/26/13 14:22	
2,4,6-Tribromophenol (S)	%	80	39-119	08/26/13 14:22	
2-Fluorobiphenyl (S)	%	81	36-120	08/26/13 14:22	
2-Fluorophenol (S)	%	46	18-120	08/26/13 14:22	
Nitrobenzene-d5 (S)	%	77	32-120	08/26/13 14:22	
Phenol-d6 (S)	%	31	12-120	08/26/13 14:22	
Terphenyl-d14 (S)	%	85	44-120	08/26/13 14:22	

LABORATORY CONTROL SAMPLE: 1240833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.0	78	44-120	
2,4,6-Trichlorophenol	ug/L	50	39.9	80	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	50.3	101	31-147	
Hexachloro-1,3-butadiene	ug/L	50	39.6	79	41-116	
Hexachlorocyclopentadiene	ug/L	100	61.8	62	31-120	
Hexachloroethane	ug/L	50	37.5	75	40-113	
Naphthalene	ug/L	50	40.3	81	48-120	
Nitrobenzene	ug/L	50	40.4	81	47-120	
Pentachlorophenol	ug/L	50	40.0	80	43-127	
Phenol	ug/L	50	17.4	35	15-112	
2,4,6-Tribromophenol (S)	%			90	39-119	
2-Fluorobiphenyl (S)	%			81	36-120	
2-Fluorophenol (S)	%			45	18-120	
Nitrobenzene-d5 (S)	%			78	32-120	
Phenol-d6 (S)	%			31	12-120	
Terphenyl-d14 (S)	%			89	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

MATRIX SPIKE SAMPLE:		1240874					
Parameter	Units	60151426001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	<0.73	50	37.8	76	44-120	
2,4,6-Trichlorophenol	ug/L	<1.5	50	34.5	69	37-121	
4,6-Dinitro-2-methylphenol	ug/L	<0.71	50	50.4	101	27-146	
Hexachloro-1,3-butadiene	ug/L	<0.98	50	37.3	75	27-116	
Hexachlorocyclopentadiene	ug/L	<2.1	100	65.1	65	11-120	
Hexachloroethane	ug/L	<0.62	50	35.5	71	40-113	
Naphthalene	ug/L	<0.58	50	39.0	78	32-120	
Nitrobenzene	ug/L	<0.65	50	40.1	80	35-128	
Pentachlorophenol	ug/L	<1.7	50	38.0	76	38-133	
Phenol	ug/L	<0.51	50	15.9	32	13-112	
2,4,6-Tribromophenol (S)	%				76	39-119	
2-Fluorobiphenyl (S)	%				78	36-120	
2-Fluorophenol (S)	%				44	18-120	
Nitrobenzene-d5 (S)	%				75	32-120	
Phenol-d6 (S)	%				30	12-120	
Terphenyl-d14 (S)	%				86	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch: WET/43064

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60151494001

METHOD BLANK: 1242579

Matrix: Water

Associated Lab Samples: 60151494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/26/13 14:30	

LABORATORY CONTROL SAMPLE: 1242580

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.3	103	78-114	

MATRIX SPIKE SAMPLE: 1242583

Parameter	Units	60151494001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	274	41.7	307	78	78-114	

SAMPLE DUPLICATE: 1242584

Parameter	Units	60151723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	220	185	17	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch: WET/43080

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151494001

METHOD BLANK: 1243173

Matrix: Water

Associated Lab Samples: 60151494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/27/13 14:32	

LABORATORY CONTROL SAMPLE: 1243174

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.2	106	64-132	

MATRIX SPIKE SAMPLE: 1243183

Parameter	Units	60151494001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.7	20.8	22.4	61	64-132	M1

SAMPLE DUPLICATE: 1243184

Parameter	Units	60151723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	7.0	10.6	41	34	D6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch: WET/43076

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151494001

METHOD BLANK: 1243044

Matrix: Water

Associated Lab Samples: 60151494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/27/13 13:35	

SAMPLE DUPLICATE: 1243045

Parameter	Units	60151607001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	91.4	91.4	0	25	

SAMPLE DUPLICATE: 1243046

Parameter	Units	60151598004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	7.0	7.0	0	25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch:	WET/43083	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60151494001		

SAMPLE DUPLICATE: 1243220

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.7	1	5	H6

SAMPLE DUPLICATE: 1243222

Parameter	Units	60151790001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.6	5.7	1	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch: WETA/25930

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151494001

METHOD BLANK: 1242221

Matrix: Water

Associated Lab Samples: 60151494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/26/13 10:11	

LABORATORY CONTROL SAMPLE: 1242222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	103	90-110	

MATRIX SPIKE SAMPLE: 1242223

Parameter	Units	60151616001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	718	400	1040	81	90-110	M1

SAMPLE DUPLICATE: 1242224

Parameter	Units	60151723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	703	696	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

QC Batch:	WETA/25952	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151494001		

METHOD BLANK: 1242775 Matrix: Water

Associated Lab Samples: 60151494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/28/13 12:08	

LABORATORY CONTROL SAMPLE: 1242776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	45.3	91	90-110	

MATRIX SPIKE SAMPLE: 1242785

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	49700	25000	78000	113	90-110	M1

SAMPLE DUPLICATE: 1242784

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	56000	51800	8	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
D9	Dissolved result is greater than the total. Data is within laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-049

Pace Project No.: 60151494

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151494001	316-049	EPA 200.7	MPRP/23970	EPA 200.7	ICP/18752
60151494001	316-049	EPA 200.7	MPRP/23964	EPA 200.7	ICP/18749
60151494001	316-049	EPA 245.1	MERP/7653	EPA 245.1	MERC/7608
60151494001	316-049	EPA 245.1	MERP/7638	EPA 245.1	MERC/7592
60151494001	316-049	EPA 625	OEXT/40018	EPA 625	MSSV/12688
60151494001	316-049	EPA 624 Low	MSV/55839		
60151494002	TRIP BLANK	EPA 624 Low	MSV/55839		
60151494001	316-049	EPA 1664A	WET/43064		
60151494001	316-049	EPA 1664A	WET/43080		
60151494001	316-049	SM 2540D	WET/43076		
60151494001	316-049	SM 4500-H+B	WET/43083		
60151494001	316-049	EPA 350.1	WETA/25930		
60151494001	316-049	EPA 410.4	WETA/25952		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151494



60151494

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ 22pic

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2-3

Date and initials of person examining contents: pv 8/22/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>PH</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	17.
Exceptions: <u>VOA</u> , coliform, TOC, <u>D&G</u> , WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased): <u>091513-3</u>		
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐

Field Data Required? Y ☒ N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/22/13

August 29, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-050
Pace Project No.: 60151615

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-050

Pace Project No.: 60151615

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-050

Pace Project No.: 60151615

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151615001	316-050	Water	08/22/13 13:45	08/23/13 01:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-050

Pace Project No.: 60151615

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151615001	316-050	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-050

Pace Project No.: 60151615

Sample: 316-050		Lab ID: 60151615001	Collected: 08/22/13 13:45	Received: 08/23/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	29000	mg/L	2.0	1	08/23/13 15:41	08/28/13 14:32		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151615

QC Batch: WET/43039

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151615001

METHOD BLANK: 1241386

Matrix: Water

Associated Lab Samples: 60151615001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/28/13 14:21	

LABORATORY CONTROL SAMPLE: 1241387

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	176	89	85-115	

SAMPLE DUPLICATE: 1241388

Parameter	Units	60151615001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	29000	31800	9	17	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-050

Pace Project No.: 60151615

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-050

Pace Project No.: 60151615

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151615001	316-050	SM 5210B	WET/43039	SM 5210B	WET/43104

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151615



Client Name: BAR P

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ ZIP

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.5

Date and initials of person examining contents: _____

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses Matrix: <u>WT</u>		13.
All containers needing preservation have been checked.	☐ Yes ☒ No ☐ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased): <u>Aug 1/9</u>	<u>8-8/23</u>	15.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	17. List State: _____

Client Notification/ Resolution:

Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 2/2/21

August 30, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-050
Pace Project No.: 60151616

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151616001	316-050	Water	08/22/13 13:45	08/23/13 01:00
60151616002	TRIP BLANK	Water	08/22/13 08:00	08/23/13 01:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151616001	316-050	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151616002	TRIP BLANK	EPA 624 Low	JKL	25

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

Sample: 316-050		Lab ID: 60151616001	Collected: 08/22/13 13:45	Received: 08/23/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5480 ug/L		150	2	08/27/13 10:30	08/29/13 15:52	7429-90-5	
Antimony	48.9 ug/L		20.0	2	08/27/13 10:30	08/29/13 15:52	7440-36-0	
Arsenic	745 ug/L		20.0	2	08/27/13 10:30	08/29/13 15:52	7440-38-2	
Beryllium	ND ug/L		2.0	2	08/27/13 10:30	08/29/13 15:52	7440-41-7	D3
Cadmium	ND ug/L		10.0	2	08/27/13 10:30	08/29/13 15:52	7440-43-9	D3
Chromium	218 ug/L		25.0	5	08/27/13 10:30	08/29/13 15:55	7440-47-3	
Cobalt	50.5 ug/L		10.0	2	08/27/13 10:30	08/29/13 15:52	7440-48-4	
Copper	ND ug/L		20.0	2	08/27/13 10:30	08/29/13 15:52	7440-50-8	D3
Iron	641000 ug/L		100	2	08/27/13 10:30	08/29/13 15:52	7439-89-6	
Lead	143 ug/L		10.0	2	08/27/13 10:30	08/29/13 15:52	7439-92-1	
Nickel	140 ug/L		10.0	2	08/27/13 10:30	08/29/13 15:52	7440-02-0	
Selenium	ND ug/L		75.0	5	08/27/13 10:30	08/29/13 15:55	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/27/13 10:30	08/29/13 15:52	7440-22-4	D3
Thallium	ND ug/L		100	5	08/27/13 10:30	08/29/13 15:55	7440-28-0	D3
Zinc	10100 ug/L		1000	20	08/27/13 10:30	08/29/13 15:59	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2190 ug/L		150	2	08/24/13 10:25	08/26/13 19:16	7429-90-5	
Antimony, Dissolved	43.2 ug/L		20.0	2	08/24/13 10:25	08/26/13 19:16	7440-36-0	
Arsenic, Dissolved	604 ug/L		20.0	2	08/24/13 10:25	08/26/13 19:16	7440-38-2	
Beryllium, Dissolved	ND ug/L		20.0	20	08/24/13 10:25	08/26/13 19:58	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	08/24/13 10:25	08/26/13 19:16	7440-43-9	D3
Chromium, Dissolved	184 ug/L		25.0	5	08/24/13 10:25	08/26/13 19:46	7440-47-3	
Cobalt, Dissolved	40.8 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:16	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/24/13 10:25	08/26/13 19:16	7440-50-8	D3
Iron, Dissolved	381000 ug/L		100	2	08/24/13 10:25	08/26/13 19:16	7439-89-6	
Lead, Dissolved	47.3 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:16	7439-92-1	
Nickel, Dissolved	118 ug/L		10.0	2	08/24/13 10:25	08/26/13 19:16	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/24/13 10:25	08/26/13 19:46	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/24/13 10:25	08/26/13 19:16	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/24/13 10:25	08/26/13 19:46	7440-28-0	D3
Zinc, Dissolved	8060 ug/L		1000	20	08/24/13 10:25	08/26/13 19:58	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.31 ug/L		0.20	1	08/29/13 16:35	08/30/13 09:09	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/24/13 15:00	08/26/13 12:26	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/26/13 00:00	08/27/13 13:57	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 13:57	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 13:57	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/26/13 00:00	08/27/13 13:57	67-72-1	
Naphthalene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 13:57	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 13:57	98-95-3	

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

Sample: 316-050		Lab ID: 60151616001	Collected: 08/22/13 13:45	Received: 08/23/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/26/13 00:00	08/27/13 13:57	87-86-5	
Phenol	16300 ug/L		1000	20	08/26/13 00:00	08/27/13 13:57	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 13:57	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/26/13 00:00	08/27/13 13:57	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/26/13 00:00	08/27/13 13:57	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/26/13 00:00	08/27/13 13:57	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/26/13 00:00	08/27/13 13:57	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/26/13 00:00	08/27/13 13:57	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/26/13 00:00	08/27/13 13:57	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/26/13 00:00	08/27/13 13:57	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/27/13 15:19	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/27/13 15:19	75-27-4	
Bromoform	ND ug/L		200	200		08/27/13 15:19	75-25-2	
Bromomethane	ND ug/L		1000	200		08/27/13 15:19	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/27/13 15:19	56-23-5	
Chloroethane	ND ug/L		200	200		08/27/13 15:19	75-00-3	
Chloroform	ND ug/L		200	200		08/27/13 15:19	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/27/13 15:19	106-46-7	L3
1,2-Dichloroethane	ND ug/L		200	200		08/27/13 15:19	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 15:19	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 15:19	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/27/13 15:19	100-41-4	
Methylene chloride	ND ug/L		200	200		08/27/13 15:19	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/27/13 15:19	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/27/13 15:19	127-18-4	
Toluene	ND ug/L		200	200		08/27/13 15:19	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/27/13 15:19	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/27/13 15:19	79-00-5	
Trichloroethene	ND ug/L		200	200		08/27/13 15:19	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/27/13 15:19	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/27/13 15:19	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	200		08/27/13 15:19	460-00-4	D3,HS
Toluene-d8 (S)	99 %		80-120	200		08/27/13 15:19	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	200		08/27/13 15:19	17060-07-0	
Preservation pH	7.0		1.0	200		08/27/13 15:19		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	514 mg/L		5.0	1		08/30/13 07:03		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	5.6 mg/L		5.0	1		08/30/13 07:07		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

Sample: 316-050		Lab ID: 60151616001	Collected: 08/22/13 13:45	Received: 08/23/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3040	mg/L	5.0	1		08/27/13 13:40		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.9	Std. Units	0.10	1		08/27/13 15:20		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	718	mg/L	20.0	200		08/26/13 10:13	7664-41-7	M1
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	47900	mg/L	5000	500		08/28/13 12:14		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

Sample: TRIP BLANK		Lab ID: 60151616002	Collected: 08/22/13 08:00	Received: 08/23/13 01:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/27/13 13:10	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/27/13 13:10	75-27-4	
Bromoform	ND ug/L		1.0	1		08/27/13 13:10	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/27/13 13:10	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/27/13 13:10	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/27/13 13:10	75-00-3	
Chloroform	ND ug/L		1.0	1		08/27/13 13:10	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/27/13 13:10	106-46-7	L3
1,2-Dichloroethane	ND ug/L		1.0	1		08/27/13 13:10	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 13:10	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 13:10	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/27/13 13:10	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/27/13 13:10	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/27/13 13:10	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/27/13 13:10	127-18-4	
Toluene	ND ug/L		1.0	1		08/27/13 13:10	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/27/13 13:10	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/27/13 13:10	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/27/13 13:10	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/27/13 13:10	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/27/13 13:10	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102 %		80-120	1		08/27/13 13:10	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		08/27/13 13:10	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	1		08/27/13 13:10	17060-07-0	
Preservation pH	6.0		1.0	1		08/27/13 13:10		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

QC Batch: MERP/7653

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151616001

METHOD BLANK: 1243877

Matrix: Water

Associated Lab Samples: 60151616001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/30/13 08:49	

LABORATORY CONTROL SAMPLE: 1243878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243879 1243880

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	.15J	ND	1	2	70-130		20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

QC Batch:	MERP/7638	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60151616001		

METHOD BLANK:	1241876	Matrix:	Water
Associated Lab Samples:	60151616001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/26/13 11:59	

LABORATORY CONTROL SAMPLE: 1241877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241878 1241879

Parameter	Units	60151485001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	0.86	0.90	17	18	70-130	5	20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050
Pace Project No.: 60151616

QC Batch: MPRP/23989 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60151616001

METHOD BLANK: 1242855 Matrix: Water
Associated Lab Samples: 60151616001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/29/13 15:15	
Antimony	ug/L	ND	10.0	08/29/13 15:15	
Arsenic	ug/L	ND	10.0	08/29/13 15:15	
Beryllium	ug/L	ND	1.0	08/29/13 15:15	
Cadmium	ug/L	ND	5.0	08/29/13 15:15	
Chromium	ug/L	ND	5.0	08/29/13 15:15	
Cobalt	ug/L	ND	5.0	08/29/13 15:15	
Copper	ug/L	ND	10.0	08/29/13 15:15	
Iron	ug/L	ND	50.0	08/29/13 15:15	
Lead	ug/L	ND	5.0	08/29/13 15:15	
Nickel	ug/L	ND	5.0	08/29/13 15:15	
Selenium	ug/L	ND	15.0	08/29/13 15:15	
Silver	ug/L	ND	7.0	08/29/13 15:15	
Thallium	ug/L	ND	20.0	08/29/13 15:15	
Zinc	ug/L	ND	50.0	08/29/13 15:15	

LABORATORY CONTROL SAMPLE: 1242856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10200	102	85-115	
Antimony	ug/L	1000	976	98	85-115	
Arsenic	ug/L	1000	945	94	85-115	
Beryllium	ug/L	1000	995	99	85-115	
Cadmium	ug/L	1000	964	96	85-115	
Chromium	ug/L	1000	922	92	85-115	
Cobalt	ug/L	1000	965	96	85-115	
Copper	ug/L	1000	950	95	85-115	
Iron	ug/L	10000	9600	96	85-115	
Lead	ug/L	1000	945	94	85-115	
Nickel	ug/L	1000	996	100	85-115	
Selenium	ug/L	1000	987	99	85-115	
Silver	ug/L	500	462	92	85-115	
Thallium	ug/L	1000	987	99	85-115	
Zinc	ug/L	1000	948	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1242857 1242858

Parameter	Units	60151557001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	9940	9630	99	96	70-130	3	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1242857 1242858											
Parameter	Units	60151557001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	ND	1000	1000	1000	964	100	96	70-130	4	7
Arsenic	ug/L	ND	1000	1000	966	936	97	94	70-130	3	10
Beryllium	ug/L	ND	1000	1000	985	954	98	95	70-130	3	7
Cadmium	ug/L	ND	1000	1000	980	943	98	94	70-130	4	10
Chromium	ug/L	ND	1000	1000	930	893	93	89	70-130	4	10
Cobalt	ug/L	ND	1000	1000	974	936	97	94	70-130	4	6
Copper	ug/L	ND	1000	1000	973	936	97	93	70-130	4	11
Iron	ug/L	0.065 mg/L	10000	10000	9440	9170	94	91	70-130	3	10
Lead	ug/L	ND	1000	1000	944	909	94	91	70-130	4	10
Nickel	ug/L	0.018 mg/L	1000	1000	1020	987	100	97	70-130	3	10
Selenium	ug/L	ND	1000	1000	1010	977	101	98	70-130	3	10
Silver	ug/L	ND	500	500	466	445	93	89	70-130	4	10
Thallium	ug/L	ND	1000	1000	983	947	98	95	70-130	4	6
Zinc	ug/L	ND	1000	1000	972	937	96	92	70-130	4	11

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050
Pace Project No.: 60151616

QC Batch: MPRP/23964 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151616001

METHOD BLANK: 1241871 Matrix: Water
Associated Lab Samples: 60151616001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/26/13 15:47	
Antimony, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Arsenic, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Beryllium, Dissolved	ug/L	ND	1.0	08/26/13 15:47	
Cadmium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Chromium, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Cobalt, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Copper, Dissolved	ug/L	ND	10.0	08/26/13 15:47	
Iron, Dissolved	ug/L	ND	50.0	08/26/13 15:47	
Lead, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Nickel, Dissolved	ug/L	ND	5.0	08/26/13 15:47	
Selenium, Dissolved	ug/L	ND	15.0	08/26/13 15:47	
Silver, Dissolved	ug/L	ND	7.0	08/26/13 15:47	
Thallium, Dissolved	ug/L	ND	20.0	08/26/13 15:47	
Zinc, Dissolved	ug/L	ND	50.0	08/26/13 15:47	

LABORATORY CONTROL SAMPLE: 1241872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	9950	100	85-115	
Antimony, Dissolved	ug/L	1000	991	99	85-115	
Arsenic, Dissolved	ug/L	1000	952	95	85-115	
Beryllium, Dissolved	ug/L	1000	1000	100	85-115	
Cadmium, Dissolved	ug/L	1000	979	98	85-115	
Chromium, Dissolved	ug/L	1000	985	98	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	962	96	85-115	
Iron, Dissolved	ug/L	10000	10000	100	85-115	
Lead, Dissolved	ug/L	1000	998	100	85-115	
Nickel, Dissolved	ug/L	1000	1010	101	85-115	
Selenium, Dissolved	ug/L	1000	981	98	85-115	
Silver, Dissolved	ug/L	500	490	98	85-115	
Thallium, Dissolved	ug/L	1000	1000	100	85-115	
Zinc, Dissolved	ug/L	1000	994	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874

Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	ND	10000	10000	9990	9960	100	100	70-130	0	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1241873 1241874											
Parameter	Units	60151516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony, Dissolved	ug/L	ND	1000	1000	1000	999	100	100	70-130	1	7
Arsenic, Dissolved	ug/L	ND	1000	1000	973	963	97	96	70-130	1	10
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	996	100	100	70-130	0	7
Cadmium, Dissolved	ug/L	ND	1000	1000	982	974	98	97	70-130	1	10
Chromium, Dissolved	ug/L	ND	1000	1000	985	983	98	98	70-130	0	10
Cobalt, Dissolved	ug/L	ND	1000	1000	984	974	98	97	70-130	1	6
Copper, Dissolved	ug/L	ND	1000	1000	965	967	96	97	70-130	0	11
Iron, Dissolved	ug/L	ND	10000	10000	9920	9870	99	99	70-130	0	10
Lead, Dissolved	ug/L	ND	1000	1000	987	980	99	98	70-130	1	10
Nickel, Dissolved	ug/L	1.1J	1000	1000	992	984	99	98	70-130	1	10
Selenium, Dissolved	ug/L	ND	1000	1000	982	977	98	98	70-130	1	10
Silver, Dissolved	ug/L	ND	500	500	494	490	99	98	70-130	1	10
Thallium, Dissolved	ug/L	ND	1000	1000	990	981	99	98	70-130	1	6
Zinc, Dissolved	ug/L	9.8J	1000	1000	991	976	98	97	70-130	2	11

MATRIX SPIKE SAMPLE: 1241875							
Parameter	Units	60151591001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	ND	10000	10100	101	70-130	
Antimony, Dissolved	ug/L	ND	1000	1020	102	70-130	
Arsenic, Dissolved	ug/L	ND	1000	1000	100	70-130	
Beryllium, Dissolved	ug/L	ND	1000	1020	102	70-130	
Cadmium, Dissolved	ug/L	ND	1000	1000	100	70-130	
Chromium, Dissolved	ug/L	ND	1000	968	97	70-130	
Cobalt, Dissolved	ug/L	ND	1000	986	99	70-130	
Copper, Dissolved	ug/L	ND	1000	994	99	70-130	
Iron, Dissolved	ug/L	ND	10000	10100	101	70-130	
Lead, Dissolved	ug/L	ND	1000	954	95	70-130	
Nickel, Dissolved	ug/L	16.3	1000	1010	100	70-130	
Selenium, Dissolved	ug/L	ND	1000	1030	103	70-130	
Silver, Dissolved	ug/L	ND	500	500	100	70-130	
Thallium, Dissolved	ug/L	ND	1000	911	91	70-130	
Zinc, Dissolved	ug/L	ND	1000	1000	99	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

QC Batch: MSV/55839 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151616001, 60151616002

METHOD BLANK: 1242924 Matrix: Water

Associated Lab Samples: 60151616001, 60151616002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/27/13 10:11	
Benzene	ug/L	ND	1.0	08/27/13 10:11	
Bromodichloromethane	ug/L	ND	1.0	08/27/13 10:11	
Bromoform	ug/L	ND	1.0	08/27/13 10:11	
Bromomethane	ug/L	ND	5.0	08/27/13 10:11	
Carbon tetrachloride	ug/L	ND	1.0	08/27/13 10:11	
Chloroethane	ug/L	ND	1.0	08/27/13 10:11	
Chloroform	ug/L	ND	1.0	08/27/13 10:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Ethylbenzene	ug/L	ND	1.0	08/27/13 10:11	
Methylene chloride	ug/L	ND	1.0	08/27/13 10:11	
Tetrachloroethene	ug/L	ND	1.0	08/27/13 10:11	
Toluene	ug/L	ND	1.0	08/27/13 10:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Trichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Vinyl chloride	ug/L	ND	1.0	08/27/13 10:11	
Xylene (Total)	ug/L	ND	3.0	08/27/13 10:11	
1,2-Dichloroethane-d4 (S)	%	98	80-120	08/27/13 10:11	
4-Bromofluorobenzene (S)	%	102	80-120	08/27/13 10:11	
Toluene-d8 (S)	%	98	80-120	08/27/13 10:11	

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	24.2	121	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	24.3	121	59-138	
1,1,2-Trichloroethane	ug/L	20	19.9	100	69-127	
1,2-Dichloroethane	ug/L	20	22.2	111	71-129	
1,4-Dichlorobenzene	ug/L	20	25.1	126	68-124	L0
Benzene	ug/L	20	22.4	112	73-129	
Bromodichloromethane	ug/L	20	22.0	110	63-129	
Bromoform	ug/L	20	23.8	119	52-123	
Bromomethane	ug/L	20	20.2	101	10-160	
Carbon tetrachloride	ug/L	20	25.8	129	70-140	
Chloroethane	ug/L	20	22.3	111	42-160	
Chloroform	ug/L	20	21.5	107	60-120	
cis-1,2-Dichloroethene	ug/L	20	22.2	111	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	24.4	122	66-133	
Methylene chloride	ug/L	20	22.5	112	56-135	
Tetrachloroethene	ug/L	20	23.5	117	64-143	
Toluene	ug/L	20	21.9	109	70-130	
trans-1,2-Dichloroethene	ug/L	20	22.2	111	67-149	
Trichloroethene	ug/L	20	20.5	103	71-130	
Vinyl chloride	ug/L	20	22.5	113	41-160	
Xylene (Total)	ug/L	60	72.4	121	67-130	
1,2-Dichloroethane-d4 (S)	%			108	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1242926

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3940	99	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4520	113	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3410	85	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3630	91	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	4600	115	18-147	
Benzene	ug/L	ND	4000	3660	91	37-151	
Bromodichloromethane	ug/L	ND	4000	3630	91	35-155	
Bromoform	ug/L	ND	4000	4030	101	45-133	
Bromomethane	ug/L	ND	4000	2570	64	10-160	
Carbon tetrachloride	ug/L	ND	4000	4120	103	70-140	
Chloroethane	ug/L	ND	4000	3420	85	14-160	
Chloroform	ug/L	ND	4000	3500	87	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3610	90	19-160	
Ethylbenzene	ug/L	ND	4000	4240	106	37-154	
Methylene chloride	ug/L	ND	4000	3600	90	15-156	
Tetrachloroethene	ug/L	ND	4000	3940	99	64-148	
Toluene	ug/L	ND	4000	3700	92	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3470	87	54-156	
Trichloroethene	ug/L	ND	4000	3360	84	71-157	
Vinyl chloride	ug/L	ND	4000	3350	84	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120 HS	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			7.0		7.0		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050
Pace Project No.: 60151616

QC Batch:	OEXT/40057	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60151616001		

METHOD BLANK: 1242185 Matrix: Water
Associated Lab Samples: 60151616001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/27/13 10:51	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/27/13 10:51	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/27/13 10:51	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/27/13 10:51	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/27/13 10:51	
Hexachloroethane	ug/L	ND	5.0	08/27/13 10:51	
Naphthalene	ug/L	ND	5.0	08/27/13 10:51	
Nitrobenzene	ug/L	ND	5.0	08/27/13 10:51	
Pentachlorophenol	ug/L	ND	5.0	08/27/13 10:51	
Phenol	ug/L	ND	5.0	08/27/13 10:51	
2,4,6-Tribromophenol (S)	%	85	39-119	08/27/13 10:51	
2-Fluorobiphenyl (S)	%	78	36-120	08/27/13 10:51	
2-Fluorophenol (S)	%	45	18-120	08/27/13 10:51	
Nitrobenzene-d5 (S)	%	77	32-120	08/27/13 10:51	
Phenol-d6 (S)	%	31	12-120	08/27/13 10:51	
Terphenyl-d14 (S)	%	83	44-120	08/27/13 10:51	

LABORATORY CONTROL SAMPLE: 1242186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.6	79	44-120	
2,4,6-Trichlorophenol	ug/L	50	40.4	81	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	51.2	102	31-147	
Hexachloro-1,3-butadiene	ug/L	50	38.5	77	41-116	
Hexachlorocyclopentadiene	ug/L	100	60.6	61	31-120	
Hexachloroethane	ug/L	50	38.0	76	40-113	
Naphthalene	ug/L	50	40.5	81	48-120	
Nitrobenzene	ug/L	50	40.7	81	47-120	
Pentachlorophenol	ug/L	50	45.8	92	43-127	
Phenol	ug/L	50	17.8	36	15-112	
2,4,6-Tribromophenol (S)	%			89	39-119	
2-Fluorobiphenyl (S)	%			79	36-120	
2-Fluorophenol (S)	%			45	18-120	
Nitrobenzene-d5 (S)	%			79	32-120	
Phenol-d6 (S)	%			32	12-120	
Terphenyl-d14 (S)	%			86	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

MATRIX SPIKE SAMPLE:		1242188					
Parameter	Units	60151534001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	35.6	71	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	38.9	78	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	46.6	93	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	34.5	69	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	58.8	59	11-120	
Hexachloroethane	ug/L	ND	50	32.5	65	40-113	
Naphthalene	ug/L	ND	50	37.0	74	32-120	
Nitrobenzene	ug/L	ND	50	36.5	73	35-128	
Pentachlorophenol	ug/L	ND	50	45.6	91	38-133	
Phenol	ug/L	ND	50	15.6	31	13-112	
2,4,6-Tribromophenol (S)	%				85	39-119	
2-Fluorobiphenyl (S)	%				72	36-120	
2-Fluorophenol (S)	%				37	18-120	
Nitrobenzene-d5 (S)	%				71	32-120	
Phenol-d6 (S)	%				27	12-120	
Terphenyl-d14 (S)	%				75	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

QC Batch:	WET/43154	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60151616001		

METHOD BLANK:	1244890	Matrix:	Water
Associated Lab Samples:	60151616001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/30/13 06:58	

LABORATORY CONTROL SAMPLE: 1244891						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.7	104	78-114	

MATRIX SPIKE SAMPLE: 1244894							
Parameter	Units	60152046002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	20.4	42.6	62.6	99	78-114	

SAMPLE DUPLICATE: 1244895						
Parameter	Units	60151616001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	514	502	2	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

QC Batch: WET/43155

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151616001

METHOD BLANK: 1244896

Matrix: Water

Associated Lab Samples: 60151616001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/30/13 07:05	

LABORATORY CONTROL SAMPLE: 1244897

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.5	108	64-132	

MATRIX SPIKE SAMPLE: 1244901

Parameter	Units	60152015001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	21.1	23.2	107	64-132	

SAMPLE DUPLICATE: 1244902

Parameter	Units	60151616001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	5.6	3.5J		34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

QC Batch: WET/43076

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151616001

METHOD BLANK: 1243044

Matrix: Water

Associated Lab Samples: 60151616001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/27/13 13:35	

SAMPLE DUPLICATE: 1243045

Parameter	Units	60151607001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	91.4	91.4	0	25	

SAMPLE DUPLICATE: 1243046

Parameter	Units	60151598004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	7.0	7.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

QC Batch:	WET/43083	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60151616001		

SAMPLE DUPLICATE: 1243220

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.7	1	5	H6

SAMPLE DUPLICATE: 1243222

Parameter	Units	60151790001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.6	5.7	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

QC Batch: WETA/25930

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151616001

METHOD BLANK: 1242221

Matrix: Water

Associated Lab Samples: 60151616001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/26/13 10:11	

LABORATORY CONTROL SAMPLE: 1242222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	103	90-110	

MATRIX SPIKE SAMPLE: 1242223

Parameter	Units	60151616001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	718	400	1040	81	90-110	M1

SAMPLE DUPLICATE: 1242224

Parameter	Units	60151723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	703	696	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

QC Batch:	WETA/25952	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151616001		

METHOD BLANK: 1242775 Matrix: Water

Associated Lab Samples: 60151616001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/28/13 12:08	

LABORATORY CONTROL SAMPLE: 1242776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	45.3	91	90-110	

MATRIX SPIKE SAMPLE: 1242785

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	49700	25000	78000	113	90-110	M1

SAMPLE DUPLICATE: 1242784

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	56000	51800	8	25	

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QUALIFIERS

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-050

Pace Project No.: 60151616

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151616001	316-050	EPA 200.7	MPRP/23989	EPA 200.7	ICP/18766
60151616001	316-050	EPA 200.7	MPRP/23964	EPA 200.7	ICP/18749
60151616001	316-050	EPA 245.1	MERP/7653	EPA 245.1	MERC/7608
60151616001	316-050	EPA 245.1	MERP/7638	EPA 245.1	MERC/7592
60151616001	316-050	EPA 625	OEXT/40057	EPA 625	MSSV/12697
60151616001	316-050	EPA 624 Low	MSV/55839		
60151616002	TRIP BLANK	EPA 624 Low	MSV/55839		
60151616001	316-050	EPA 1664A	WET/43154		
60151616001	316-050	EPA 1664A	WET/43155		
60151616001	316-050	SM 2540D	WET/43076		
60151616001	316-050	SM 4500-H+B	WET/43083		
60151616001	316-050	EPA 350.1	WETA/25930		
60151616001	316-050	EPA 410.4	WETA/25952		

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Sample Condition Upon Receipt

WO#: 60151616



Client Name: BARR

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Zip

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.5

Date and initials of person examining contents: _____

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. PH
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>Aug 19</u>		20.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 8/19/12

September 03, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-051
Pace Project No.: 60151723

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 24, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151723001	316-051	Water	08/23/13 10:15	08/24/13 01:15
60151723002	TRIP BLANK	Water	08/23/13 08:00	08/24/13 01:15
60151722001	316-051	Water	08/23/13 10:15	08/24/13 01:15

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151723001	316-051	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151723002	TRIP BLANK	EPA 624 Low	JKL	25
60151722001	316-051	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

Sample: 316-051		Lab ID: 60151723001	Collected: 08/23/13 10:15	Received: 08/24/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6410 ug/L		150	2	08/27/13 16:20	08/30/13 10:20	7429-90-5	
Antimony	44.2 ug/L		20.0	2	08/27/13 16:20	08/30/13 10:20	7440-36-0	
Arsenic	691 ug/L		20.0	2	08/27/13 16:20	08/30/13 10:20	7440-38-2	
Beryllium	ND ug/L		5.0	5	08/27/13 16:20	08/30/13 10:34	7440-41-7	D3
Cadmium	10.3 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:20	7440-43-9	
Chromium	218 ug/L		25.0	5	08/27/13 16:20	08/30/13 10:34	7440-47-3	
Cobalt	44.2 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:20	7440-48-4	
Copper	ND ug/L		20.0	2	08/27/13 16:20	08/30/13 10:20	7440-50-8	D3
Iron	594000 ug/L		100	2	08/27/13 16:20	08/30/13 10:20	7439-89-6	
Lead	134 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:20	7439-92-1	
Nickel	126 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:20	7440-02-0	
Selenium	ND ug/L		75.0	5	08/27/13 16:20	08/30/13 10:34	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/27/13 16:20	08/30/13 10:20	7440-22-4	D3
Thallium	ND ug/L		100	5	08/27/13 16:20	08/30/13 10:34	7440-28-0	D3
Zinc	10500 ug/L		1000	20	08/27/13 16:20	08/30/13 11:06	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2770 ug/L		150	2	08/28/13 16:00	08/30/13 11:49	7429-90-5	
Antimony, Dissolved	37.9 ug/L		20.0	2	08/28/13 16:00	08/30/13 11:49	7440-36-0	
Arsenic, Dissolved	640 ug/L		20.0	2	08/28/13 16:00	08/30/13 11:49	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/28/13 16:00	08/30/13 14:16	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	08/28/13 16:00	08/30/13 11:49	7440-43-9	D3
Chromium, Dissolved	194 ug/L		25.0	5	08/28/13 16:00	08/30/13 14:16	7440-47-3	
Cobalt, Dissolved	40.5 ug/L		10.0	2	08/28/13 16:00	08/30/13 11:49	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/28/13 16:00	08/30/13 11:49	7440-50-8	D3
Iron, Dissolved	431000 ug/L		100	2	08/28/13 16:00	08/30/13 11:49	7439-89-6	
Lead, Dissolved	83.0 ug/L		10.0	2	08/28/13 16:00	08/30/13 11:49	7439-92-1	
Nickel, Dissolved	120 ug/L		10.0	2	08/28/13 16:00	08/30/13 11:49	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/28/13 16:00	08/30/13 14:16	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/28/13 16:00	08/30/13 11:49	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/28/13 16:00	08/30/13 14:16	7440-28-0	D3
Zinc, Dissolved	9230 ug/L		1000	20	08/28/13 16:00	08/30/13 14:59	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.54 ug/L		0.20	1	08/29/13 16:35	08/30/13 09:00	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/29/13 09:00	08/29/13 12:02	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/26/13 00:00	08/27/13 14:18	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 14:18	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 14:18	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/26/13 00:00	08/27/13 14:18	67-72-1	
Naphthalene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 14:18	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 14:18	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

Sample: 316-051		Lab ID: 60151723001	Collected: 08/23/13 10:15	Received: 08/24/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/26/13 00:00	08/27/13 14:18	87-86-5	
Phenol	12900 ug/L		1000	20	08/26/13 00:00	08/27/13 14:18	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/26/13 00:00	08/27/13 14:18	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/26/13 00:00	08/27/13 14:18	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/26/13 00:00	08/27/13 14:18	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/26/13 00:00	08/27/13 14:18	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/26/13 00:00	08/27/13 14:18	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/26/13 00:00	08/27/13 14:18	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/26/13 00:00	08/27/13 14:18	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/26/13 00:00	08/27/13 14:18	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/27/13 15:41	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/27/13 15:41	75-27-4	
Bromoform	ND ug/L		200	200		08/27/13 15:41	75-25-2	
Bromomethane	ND ug/L		1000	200		08/27/13 15:41	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/27/13 15:41	56-23-5	
Chloroethane	ND ug/L		200	200		08/27/13 15:41	75-00-3	
Chloroform	ND ug/L		200	200		08/27/13 15:41	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/27/13 15:41	106-46-7	L3
1,2-Dichloroethane	ND ug/L		200	200		08/27/13 15:41	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 15:41	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 15:41	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/27/13 15:41	100-41-4	
Methylene chloride	ND ug/L		200	200		08/27/13 15:41	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/27/13 15:41	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/27/13 15:41	127-18-4	
Toluene	ND ug/L		200	200		08/27/13 15:41	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/27/13 15:41	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/27/13 15:41	79-00-5	
Trichloroethene	ND ug/L		200	200		08/27/13 15:41	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/27/13 15:41	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/27/13 15:41	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		08/27/13 15:41	460-00-4	D3
Toluene-d8 (S)	97 %		80-120	200		08/27/13 15:41	2037-26-5	
1,2-Dichloroethane-d4 (S)	102 %		80-120	200		08/27/13 15:41	17060-07-0	
Preservation pH	7.0		1.0	200		08/27/13 15:41		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	220 mg/L		5.0	1		08/26/13 14:35		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	7.0 mg/L		5.0	1		08/27/13 14:37		D6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

Sample: 316-051		Lab ID: 60151723001	Collected: 08/23/13 10:15	Received: 08/24/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2640	mg/L	5.0	1		08/29/13 11:09		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.8	Std. Units	0.10	1		08/27/13 15:20		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	703	mg/L	20.0	200		08/26/13 10:16	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	47800	mg/L	5000	500		08/28/13 12:14		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

Sample: TRIP BLANK		Lab ID: 60151723002	Collected: 08/23/13 08:00	Received: 08/24/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/27/13 13:31	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/27/13 13:31	75-27-4	
Bromoform	ND ug/L		1.0	1		08/27/13 13:31	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/27/13 13:31	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/27/13 13:31	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/27/13 13:31	75-00-3	
Chloroform	ND ug/L		1.0	1		08/27/13 13:31	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/27/13 13:31	106-46-7	L3
1,2-Dichloroethane	ND ug/L		1.0	1		08/27/13 13:31	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 13:31	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 13:31	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/27/13 13:31	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/27/13 13:31	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/27/13 13:31	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/27/13 13:31	127-18-4	
Toluene	ND ug/L		1.0	1		08/27/13 13:31	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/27/13 13:31	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/27/13 13:31	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/27/13 13:31	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/27/13 13:31	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/27/13 13:31	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		08/27/13 13:31	460-00-4	
Toluene-d8 (S)	98 %		80-120	1		08/27/13 13:31	2037-26-5	
1,2-Dichloroethane-d4 (S)	103 %		80-120	1		08/27/13 13:31	17060-07-0	
Preservation pH	6.0		1.0	1		08/27/13 13:31		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

Sample: 316-051		Lab ID: 60151722001	Collected: 08/23/13 10:15	Received: 08/24/13 01:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	24300	mg/L	2.0	1	08/24/13 11:23	08/29/13 17:02		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch: MERP/7653

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151723001

METHOD BLANK: 1243877

Matrix: Water

Associated Lab Samples: 60151723001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/30/13 08:49	

LABORATORY CONTROL SAMPLE: 1243878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243879 1243880

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	.15J	ND	1	2	70-130		20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch: MERP/7652

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60151723001

METHOD BLANK: 1243868

Matrix: Water

Associated Lab Samples: 60151723001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/29/13 11:44	

LABORATORY CONTROL SAMPLE: 1243869

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243870 1243871

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	0.61	0.68	11	13	70-130	11	20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051
Pace Project No.: 60151723

QC Batch: MPRP/24002 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60151723001

METHOD BLANK: 1243147 Matrix: Water
Associated Lab Samples: 60151723001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/29/13 16:23	
Antimony	ug/L	ND	10.0	08/29/13 16:23	
Arsenic	ug/L	ND	10.0	08/29/13 16:23	
Beryllium	ug/L	ND	1.0	08/29/13 16:23	
Cadmium	ug/L	ND	5.0	08/29/13 16:23	
Chromium	ug/L	ND	5.0	08/29/13 16:23	
Cobalt	ug/L	ND	5.0	08/29/13 16:23	
Copper	ug/L	ND	10.0	08/29/13 16:23	
Iron	ug/L	ND	50.0	08/29/13 16:23	
Lead	ug/L	ND	5.0	08/29/13 16:23	
Nickel	ug/L	ND	5.0	08/29/13 16:23	
Selenium	ug/L	ND	15.0	08/29/13 16:23	
Silver	ug/L	ND	7.0	08/29/13 16:23	
Thallium	ug/L	ND	20.0	08/29/13 16:23	
Zinc	ug/L	ND	50.0	08/29/13 16:23	

LABORATORY CONTROL SAMPLE: 1243148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9810	98	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	967	97	85-115	
Beryllium	ug/L	1000	964	96	85-115	
Cadmium	ug/L	1000	984	98	85-115	
Chromium	ug/L	1000	940	94	85-115	
Cobalt	ug/L	1000	986	99	85-115	
Copper	ug/L	1000	970	97	85-115	
Iron	ug/L	10000	9140	91	85-115	
Lead	ug/L	1000	963	96	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1010	101	85-115	
Silver	ug/L	500	467	93	85-115	
Thallium	ug/L	1000	1010	101	85-115	
Zinc	ug/L	1000	969	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243149 1243150

Parameter	Units	60151447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10000	9930	100	99	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243149 1243150											
Parameter	Units	60151447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1050	1030	105	103	70-130	2	7
Arsenic	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Beryllium	ug/L	ND	1000	1000	986	975	99	98	70-130	1	7
Cadmium	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Chromium	ug/L	ND	1000	1000	928	922	93	92	70-130	1	10
Cobalt	ug/L	ND	1000	1000	961	951	96	95	70-130	1	6
Copper	ug/L	ND	1000	1000	1000	987	99	98	70-130	2	11
Iron	ug/L	ND	10000	10000	9140	9080	91	91	70-130	1	10
Lead	ug/L	ND	1000	1000	916	908	92	91	70-130	1	10
Nickel	ug/L	ND	1000	1000	995	987	99	98	70-130	1	10
Selenium	ug/L	ND	1000	1000	1050	1040	105	104	70-130	1	10
Silver	ug/L	ND	500	500	476	470	95	94	70-130	1	10
Thallium	ug/L	ND	1000	1000	916	908	91	91	70-130	1	6
Zinc	ug/L	ND	1000	1000	998	995	96	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1243151							
Parameter	Units	60151450002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	1170	10000	11400	103	70-130	
Antimony	ug/L	ND	1000	1030	102	70-130	
Arsenic	ug/L	ND	1000	1010	100	70-130	
Beryllium	ug/L	ND	1000	970	97	70-130	
Cadmium	ug/L	ND	1000	996	100	70-130	
Chromium	ug/L	ND	1000	911	91	70-130	
Cobalt	ug/L	ND	1000	954	95	70-130	
Copper	ug/L	87.1	1000	1080	99	70-130	
Iron	ug/L	1640	10000	10800	91	70-130	
Lead	ug/L	5.6	1000	915	91	70-130	
Nickel	ug/L	18.7	1000	1000	98	70-130	
Selenium	ug/L	ND	1000	941	93	70-130	
Silver	ug/L	ND	500	463	93	70-130	
Thallium	ug/L	ND	1000	918	92	70-130	
Zinc	ug/L	102	1000	1060	96	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch: MPRP/24028

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Dissolved

Associated Lab Samples: 60151723001

METHOD BLANK: 1243827

Matrix: Water

Associated Lab Samples: 60151723001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/30/13 11:38	
Antimony, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Arsenic, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Beryllium, Dissolved	ug/L	ND	1.0	08/30/13 11:38	
Cadmium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Chromium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Cobalt, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Copper, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Iron, Dissolved	ug/L	ND	50.0	08/30/13 11:38	
Lead, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Nickel, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Selenium, Dissolved	ug/L	ND	15.0	08/30/13 11:38	
Silver, Dissolved	ug/L	ND	7.0	08/30/13 11:38	
Thallium, Dissolved	ug/L	ND	20.0	08/30/13 11:38	
Zinc, Dissolved	ug/L	ND	50.0	08/30/13 11:38	

LABORATORY CONTROL SAMPLE: 1243828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10200	102	85-115	
Antimony, Dissolved	ug/L	1000	994	99	85-115	
Arsenic, Dissolved	ug/L	1000	955	96	85-115	
Beryllium, Dissolved	ug/L	1000	966	97	85-115	
Cadmium, Dissolved	ug/L	1000	970	97	85-115	
Chromium, Dissolved	ug/L	1000	986	99	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	957	96	85-115	
Iron, Dissolved	ug/L	10000	9710	97	85-115	
Lead, Dissolved	ug/L	1000	959	96	85-115	
Nickel, Dissolved	ug/L	1000	1000	100	85-115	
Selenium, Dissolved	ug/L	1000	957	96	85-115	
Silver, Dissolved	ug/L	500	464	93	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829

1243830

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2730	10000	10000	13800	13500	111	108	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829 1243830											
Parameter	Units	60151790001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	42.9	1000	1000	1000	1040	1010	100	96	70-130	4
Arsenic, Dissolved	ug/L	588	1000	1000	1000	1730	1710	114	112	70-130	1
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	974	990	97	99	70-130	2
Cadmium, Dissolved	ug/L	ND	1000	1000	1000	1120	1100	111	109	70-130	2
Chromium, Dissolved	ug/L	204	1000	1000	1000	1150	1170	95	97	70-130	2
Cobalt, Dissolved	ug/L	41.3	1000	1000	1000	1010	995	97	95	70-130	2
Copper, Dissolved	ug/L	ND	1000	1000	1000	1040	988	103	99	70-130	5
Iron, Dissolved	ug/L	447000	10000	10000	10000	458000	451000	112	42	70-130	2
Lead, Dissolved	ug/L	79.3	1000	1000	1000	947	928	87	85	70-130	2
Nickel, Dissolved	ug/L	123	1000	1000	1000	1080	1060	96	94	70-130	2
Selenium, Dissolved	ug/L	ND	1000	1000	1000	1090	1060	109	106	70-130	3
Silver, Dissolved	ug/L	ND	500	500	500	56.4	103	10	19	70-130	58
Thallium, Dissolved	ug/L	ND	1000	1000	1000	832	846	83	85	70-130	2
Zinc, Dissolved	ug/L	10500	1000	1000	1000	12100	12600	156	207	70-130	4

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch: MSV/55839 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151723001, 60151723002

METHOD BLANK: 1242924 Matrix: Water

Associated Lab Samples: 60151723001, 60151723002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/27/13 10:11	
Benzene	ug/L	ND	1.0	08/27/13 10:11	
Bromodichloromethane	ug/L	ND	1.0	08/27/13 10:11	
Bromoform	ug/L	ND	1.0	08/27/13 10:11	
Bromomethane	ug/L	ND	5.0	08/27/13 10:11	
Carbon tetrachloride	ug/L	ND	1.0	08/27/13 10:11	
Chloroethane	ug/L	ND	1.0	08/27/13 10:11	
Chloroform	ug/L	ND	1.0	08/27/13 10:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Ethylbenzene	ug/L	ND	1.0	08/27/13 10:11	
Methylene chloride	ug/L	ND	1.0	08/27/13 10:11	
Tetrachloroethene	ug/L	ND	1.0	08/27/13 10:11	
Toluene	ug/L	ND	1.0	08/27/13 10:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Trichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Vinyl chloride	ug/L	ND	1.0	08/27/13 10:11	
Xylene (Total)	ug/L	ND	3.0	08/27/13 10:11	
1,2-Dichloroethane-d4 (S)	%	98	80-120	08/27/13 10:11	
4-Bromofluorobenzene (S)	%	102	80-120	08/27/13 10:11	
Toluene-d8 (S)	%	98	80-120	08/27/13 10:11	

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	24.2	121	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	24.3	121	59-138	
1,1,2-Trichloroethane	ug/L	20	19.9	100	69-127	
1,2-Dichloroethane	ug/L	20	22.2	111	71-129	
1,4-Dichlorobenzene	ug/L	20	25.1	126	68-124	L0
Benzene	ug/L	20	22.4	112	73-129	
Bromodichloromethane	ug/L	20	22.0	110	63-129	
Bromoform	ug/L	20	23.8	119	52-123	
Bromomethane	ug/L	20	20.2	101	10-160	
Carbon tetrachloride	ug/L	20	25.8	129	70-140	
Chloroethane	ug/L	20	22.3	111	42-160	
Chloroform	ug/L	20	21.5	107	60-120	
cis-1,2-Dichloroethene	ug/L	20	22.2	111	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	24.4	122	66-133	
Methylene chloride	ug/L	20	22.5	112	56-135	
Tetrachloroethene	ug/L	20	23.5	117	64-143	
Toluene	ug/L	20	21.9	109	70-130	
trans-1,2-Dichloroethene	ug/L	20	22.2	111	67-149	
Trichloroethene	ug/L	20	20.5	103	71-130	
Vinyl chloride	ug/L	20	22.5	113	41-160	
Xylene (Total)	ug/L	60	72.4	121	67-130	
1,2-Dichloroethane-d4 (S)	%			108	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1242926

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3940	99	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4520	113	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3410	85	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3630	91	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	4600	115	18-147	
Benzene	ug/L	ND	4000	3660	91	37-151	
Bromodichloromethane	ug/L	ND	4000	3630	91	35-155	
Bromoform	ug/L	ND	4000	4030	101	45-133	
Bromomethane	ug/L	ND	4000	2570	64	10-160	
Carbon tetrachloride	ug/L	ND	4000	4120	103	70-140	
Chloroethane	ug/L	ND	4000	3420	85	14-160	
Chloroform	ug/L	ND	4000	3500	87	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3610	90	19-160	
Ethylbenzene	ug/L	ND	4000	4240	106	37-154	
Methylene chloride	ug/L	ND	4000	3600	90	15-156	
Tetrachloroethene	ug/L	ND	4000	3940	99	64-148	
Toluene	ug/L	ND	4000	3700	92	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3470	87	54-156	
Trichloroethene	ug/L	ND	4000	3360	84	71-157	
Vinyl chloride	ug/L	ND	4000	3350	84	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120 HS	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			7.0	7.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051
Pace Project No.: 60151723

QC Batch:	OEXT/40057	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60151723001		

METHOD BLANK: 1242185 Matrix: Water
Associated Lab Samples: 60151723001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/27/13 10:51	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/27/13 10:51	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/27/13 10:51	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/27/13 10:51	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/27/13 10:51	
Hexachloroethane	ug/L	ND	5.0	08/27/13 10:51	
Naphthalene	ug/L	ND	5.0	08/27/13 10:51	
Nitrobenzene	ug/L	ND	5.0	08/27/13 10:51	
Pentachlorophenol	ug/L	ND	5.0	08/27/13 10:51	
Phenol	ug/L	ND	5.0	08/27/13 10:51	
2,4,6-Tribromophenol (S)	%	85	39-119	08/27/13 10:51	
2-Fluorobiphenyl (S)	%	78	36-120	08/27/13 10:51	
2-Fluorophenol (S)	%	45	18-120	08/27/13 10:51	
Nitrobenzene-d5 (S)	%	77	32-120	08/27/13 10:51	
Phenol-d6 (S)	%	31	12-120	08/27/13 10:51	
Terphenyl-d14 (S)	%	83	44-120	08/27/13 10:51	

LABORATORY CONTROL SAMPLE: 1242186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	39.6	79	44-120	
2,4,6-Trichlorophenol	ug/L	50	40.4	81	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	51.2	102	31-147	
Hexachloro-1,3-butadiene	ug/L	50	38.5	77	41-116	
Hexachlorocyclopentadiene	ug/L	100	60.6	61	31-120	
Hexachloroethane	ug/L	50	38.0	76	40-113	
Naphthalene	ug/L	50	40.5	81	48-120	
Nitrobenzene	ug/L	50	40.7	81	47-120	
Pentachlorophenol	ug/L	50	45.8	92	43-127	
Phenol	ug/L	50	17.8	36	15-112	
2,4,6-Tribromophenol (S)	%			89	39-119	
2-Fluorobiphenyl (S)	%			79	36-120	
2-Fluorophenol (S)	%			45	18-120	
Nitrobenzene-d5 (S)	%			79	32-120	
Phenol-d6 (S)	%			32	12-120	
Terphenyl-d14 (S)	%			86	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

MATRIX SPIKE SAMPLE:		1242188					
Parameter	Units	60151534001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	35.6	71	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	38.9	78	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	46.6	93	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	34.5	69	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	58.8	59	11-120	
Hexachloroethane	ug/L	ND	50	32.5	65	40-113	
Naphthalene	ug/L	ND	50	37.0	74	32-120	
Nitrobenzene	ug/L	ND	50	36.5	73	35-128	
Pentachlorophenol	ug/L	ND	50	45.6	91	38-133	
Phenol	ug/L	ND	50	15.6	31	13-112	
2,4,6-Tribromophenol (S)	%				85	39-119	
2-Fluorobiphenyl (S)	%				72	36-120	
2-Fluorophenol (S)	%				37	18-120	
Nitrobenzene-d5 (S)	%				71	32-120	
Phenol-d6 (S)	%				27	12-120	
Terphenyl-d14 (S)	%				75	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch:	WET/43064	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60151723001		

METHOD BLANK:	1242579	Matrix:	Water
Associated Lab Samples:	60151723001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	08/26/13 14:30	

LABORATORY CONTROL SAMPLE: 1242580						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.3	103	78-114	

MATRIX SPIKE SAMPLE: 1242583							
Parameter	Units	60151494001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	274	41.7	307	78	78-114	

SAMPLE DUPLICATE: 1242584						
Parameter	Units	60151723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	220	185	17	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch: WET/43080

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151723001

METHOD BLANK: 1243173

Matrix: Water

Associated Lab Samples: 60151723001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	08/27/13 14:32	

LABORATORY CONTROL SAMPLE: 1243174

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	21.2	106	64-132	

MATRIX SPIKE SAMPLE: 1243183

Parameter	Units	60151494001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.7	20.8	22.4	61	64-132	M1

SAMPLE DUPLICATE: 1243184

Parameter	Units	60151723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	7.0	10.6	41	34	D6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch: WET/43128

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151723001

METHOD BLANK: 1244293

Matrix: Water

Associated Lab Samples: 60151723001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/29/13 11:05	

SAMPLE DUPLICATE: 1244294

Parameter	Units	60151721002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	215	239	11	25	

SAMPLE DUPLICATE: 1244295

Parameter	Units	60151839002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	65.0	65.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch:	WET/43083	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60151723001		

SAMPLE DUPLICATE: 1243220

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.7	1	5	H6

SAMPLE DUPLICATE: 1243222

Parameter	Units	60151790001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.6	5.7	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch: WET/43047

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151722001

METHOD BLANK: 1241910

Matrix: Water

Associated Lab Samples: 60151722001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/29/13 16:46	

LABORATORY CONTROL SAMPLE: 1241911

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	176	89	85-115	

SAMPLE DUPLICATE: 1241912

Parameter	Units	60151718001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	873	857	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch: WETA/25930

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151723001

METHOD BLANK: 1242221

Matrix: Water

Associated Lab Samples: 60151723001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/26/13 10:11	

LABORATORY CONTROL SAMPLE: 1242222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	103	90-110	

MATRIX SPIKE SAMPLE: 1242223

Parameter	Units	60151616001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	718	400	1040	81	90-110	M1

SAMPLE DUPLICATE: 1242224

Parameter	Units	60151723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	703	696	1	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

QC Batch:	WETA/25952	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151723001		

METHOD BLANK: 1242775 Matrix: Water

Associated Lab Samples: 60151723001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/28/13 12:08	

LABORATORY CONTROL SAMPLE: 1242776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	45.3	91	90-110	

MATRIX SPIKE SAMPLE: 1242785

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	49700	25000	78000	113	90-110	M1

SAMPLE DUPLICATE: 1242784

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	56000	51800	8	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-051

Pace Project No.: 60151723

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151723001	316-051	EPA 200.7	MPRP/24002	EPA 200.7	ICP/18773
60151723001	316-051	EPA 200.7	MPRP/24028	EPA 200.7	ICP/18782
60151723001	316-051	EPA 245.1	MERP/7653	EPA 245.1	MERC/7608
60151723001	316-051	EPA 245.1	MERP/7652	EPA 245.1	MERC/7607
60151723001	316-051	EPA 625	OEXT/40057	EPA 625	MSSV/12697
60151723001	316-051	EPA 624 Low	MSV/55839		
60151723002	TRIP BLANK	EPA 624 Low	MSV/55839		
60151723001	316-051	EPA 1664A	WET/43064		
60151723001	316-051	EPA 1664A	WET/43080		
60151723001	316-051	SM 2540D	WET/43128		
60151723001	316-051	SM 4500-H+B	WET/43083		
60151722001	316-051	SM 5210B	WET/43047	SM 5210B	WET/43144
60151723001	316-051	EPA 350.1	WETA/25930		
60151723001	316-051	EPA 410.4	WETA/25952		

REPORT OF LABORATORY ANALYSIS

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WO#: 60151723



60151723



Sample Condition Upon Receipt

Client Name: BarrCourier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ XroadTracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ 2 PUCThermometer Used: T-112 / T-194Type of Ice: We Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)Cooler Temperature: 1.9Date and initials of person examining contents: PV 8/24/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>pH</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses Matrix: <u>WT</u>		15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions <u>VOA</u> , coliform, TOC, <u>U&G</u> WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>PV</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative <u>12510 MSIB</u>
Pace Trip Blank lot # (if purchased): <u>071513-3</u>		18.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	20. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 8/24/13

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Required Client Information:		Report To: ED GALBRAITH/BARR		Attention: TABITHA PROVINCE	
Company: BARR ENGINEERING		Copy To: SCOTT FEDAK/FEEZOR		Company Name: REPUBLIC SERVICES	
Address:		DANA BAKER/MARGARET TREANOR -BARR		Address: BRIDGETON, MO 63044	
Email To:		Purchase Order No. PO 3727110		Pace Quote Reference: 130426_7588	
Phone: (816) 285-8410 Fax		Client Project ID: BRIDGETON LF		Pace Project Manager: Brown, Angie	
Requested Due Date/TAT: 10 Day (Default)		Container Order Number:		Pace Profile #: 6787 LINE 2	
				Missouri	
				Regulatory Agency	
				State / Location	

[illegible]

September 03, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-052
Pace Project No.: 60151787

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Mary Jane Walls for
Angie Brown
Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151787001	316-052	Water	08/24/13 15:40	08/26/13 13:15
60151787002	TRIP BLANK	Water	08/24/13 08:00	08/26/13 13:15
60151786001	316-052	Water	08/24/13 15:40	08/26/13 13:15

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151787001	316-052	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151787002	TRIP BLANK	EPA 624 Low	JKL	25
60151786001	316-052	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-052
Pace Project No.: 60151787

Sample: 316-052		Lab ID: 60151787001	Collected: 08/24/13 15:40	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	4580 ug/L		150	2	08/27/13 16:20	08/30/13 10:23	7429-90-5	
Antimony	47.3 ug/L		20.0	2	08/27/13 16:20	08/30/13 10:23	7440-36-0	
Arsenic	718 ug/L		20.0	2	08/27/13 16:20	08/30/13 10:23	7440-38-2	
Beryllium	ND ug/L		5.0	5	08/27/13 16:20	08/30/13 10:37	7440-41-7	D3
Cadmium	10.6 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:23	7440-43-9	
Chromium	240 ug/L		25.0	5	08/27/13 16:20	08/30/13 10:37	7440-47-3	
Cobalt	53.9 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:23	7440-48-4	
Copper	ND ug/L		20.0	2	08/27/13 16:20	08/30/13 10:23	7440-50-8	D3
Iron	653000 ug/L		100	2	08/27/13 16:20	08/30/13 10:23	7439-89-6	
Lead	126 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:23	7439-92-1	
Nickel	141 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:23	7440-02-0	
Selenium	ND ug/L		75.0	5	08/27/13 16:20	08/30/13 10:37	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/27/13 16:20	08/30/13 10:23	7440-22-4	D3
Thallium	ND ug/L		100	5	08/27/13 16:20	08/30/13 10:37	7440-28-0	D3
Zinc	11600 ug/L		1000	20	08/27/13 16:20	08/30/13 11:09	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2790 ug/L		150	2	08/28/13 16:00	08/30/13 12:06	7429-90-5	
Antimony, Dissolved	42.0 ug/L		20.0	2	08/28/13 16:00	08/30/13 12:06	7440-36-0	
Arsenic, Dissolved	631 ug/L		20.0	2	08/28/13 16:00	08/30/13 12:06	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/28/13 16:00	08/30/13 14:45	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	08/28/13 16:00	08/30/13 12:06	7440-43-9	D3
Chromium, Dissolved	204 ug/L		25.0	5	08/28/13 16:00	08/30/13 14:45	7440-47-3	
Cobalt, Dissolved	47.3 ug/L		10.0	2	08/28/13 16:00	08/30/13 12:06	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/28/13 16:00	08/30/13 12:06	7440-50-8	D3
Iron, Dissolved	424000 ug/L		100	2	08/28/13 16:00	08/30/13 12:06	7439-89-6	
Lead, Dissolved	73.7 ug/L		10.0	2	08/28/13 16:00	08/30/13 12:06	7439-92-1	
Nickel, Dissolved	130 ug/L		10.0	2	08/28/13 16:00	08/30/13 12:06	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/28/13 16:00	08/30/13 14:45	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/28/13 16:00	08/30/13 12:06	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	08/28/13 16:00	08/30/13 14:45	7440-28-0	D3
Zinc, Dissolved	10100 ug/L		1000	20	08/28/13 16:00	08/30/13 15:27	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND ug/L		0.20	1	08/29/13 16:35	08/30/13 09:02	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/29/13 09:00	08/29/13 12:04	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/28/13 00:00	08/29/13 11:28	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:28	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:28	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:28	67-72-1	
Naphthalene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:28	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:28	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

Sample: 316-052		Lab ID: 60151787001	Collected: 08/24/13 15:40	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:28	87-86-5	
Phenol	7370 ug/L		1000	20	08/28/13 00:00	08/29/13 11:28	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:28	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:28	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/28/13 00:00	08/29/13 11:28	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/28/13 00:00	08/29/13 11:28	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/28/13 00:00	08/29/13 11:28	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/28/13 00:00	08/29/13 11:28	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/28/13 00:00	08/29/13 11:28	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/28/13 00:00	08/29/13 11:28	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/27/13 16:02	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/27/13 16:02	75-27-4	
Bromoform	ND ug/L		200	200		08/27/13 16:02	75-25-2	
Bromomethane	ND ug/L		1000	200		08/27/13 16:02	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/27/13 16:02	56-23-5	
Chloroethane	ND ug/L		200	200		08/27/13 16:02	75-00-3	
Chloroform	ND ug/L		200	200		08/27/13 16:02	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/27/13 16:02	106-46-7	L3
1,2-Dichloroethane	ND ug/L		200	200		08/27/13 16:02	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 16:02	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 16:02	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/27/13 16:02	100-41-4	
Methylene chloride	ND ug/L		200	200		08/27/13 16:02	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/27/13 16:02	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/27/13 16:02	127-18-4	
Toluene	ND ug/L		200	200		08/27/13 16:02	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/27/13 16:02	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/27/13 16:02	79-00-5	
Trichloroethene	ND ug/L		200	200		08/27/13 16:02	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/27/13 16:02	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/27/13 16:02	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	200		08/27/13 16:02	460-00-4	D3,HS
Toluene-d8 (S)	97 %		80-120	200		08/27/13 16:02	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		08/27/13 16:02	17060-07-0	
Preservation pH	7.0		1.0	200		08/27/13 16:02		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	340 mg/L		5.0	1		09/03/13 07:46		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	14.4 mg/L		5.0	1		09/03/13 07:40		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

Sample: 316-052		Lab ID: 60151787001	Collected: 08/24/13 15:40	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2600	mg/L	5.0	1		08/29/13 11:09		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.7	Std. Units	0.10	1		08/27/13 15:20		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	756	mg/L	20.0	200		08/28/13 11:14	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	53400	mg/L	5000	500		08/28/13 12:14		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

Sample: TRIP BLANK		Lab ID: 60151787002	Collected: 08/24/13 08:00	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/27/13 13:52	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/27/13 13:52	75-27-4	
Bromoform	ND ug/L		1.0	1		08/27/13 13:52	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/27/13 13:52	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/27/13 13:52	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/27/13 13:52	75-00-3	
Chloroform	ND ug/L		1.0	1		08/27/13 13:52	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/27/13 13:52	106-46-7	L3
1,2-Dichloroethane	ND ug/L		1.0	1		08/27/13 13:52	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 13:52	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 13:52	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/27/13 13:52	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/27/13 13:52	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/27/13 13:52	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/27/13 13:52	127-18-4	
Toluene	ND ug/L		1.0	1		08/27/13 13:52	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/27/13 13:52	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/27/13 13:52	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/27/13 13:52	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/27/13 13:52	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/27/13 13:52	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		08/27/13 13:52	460-00-4	
Toluene-d8 (S)	98 %		80-120	1		08/27/13 13:52	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	1		08/27/13 13:52	17060-07-0	
Preservation pH	6.0		1.0	1		08/27/13 13:52		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

Sample: 316-052		Lab ID: 60151786001	Collected: 08/24/13 15:40	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	26800	mg/L	2.0	1	08/26/13 15:03	08/31/13 10:51		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch: MERP/7653

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151787001

METHOD BLANK: 1243877

Matrix: Water

Associated Lab Samples: 60151787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/30/13 08:49	

LABORATORY CONTROL SAMPLE: 1243878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243879 1243880

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	.15J	ND	1	2	70-130		20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch:	MERP/7652	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60151787001		

METHOD BLANK:	1243868	Matrix:	Water
Associated Lab Samples:	60151787001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/29/13 11:44	

LABORATORY CONTROL SAMPLE: 1243869						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243870													1243871		
Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual			
Mercury, Dissolved	ug/L	ND	5	5	0.61	0.68	11	13	70-130	11	20	M1			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch: MPRP/24002

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60151787001

METHOD BLANK: 1243147

Matrix: Water

Associated Lab Samples: 60151787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/29/13 16:23	
Antimony	ug/L	ND	10.0	08/29/13 16:23	
Arsenic	ug/L	ND	10.0	08/29/13 16:23	
Beryllium	ug/L	ND	1.0	08/29/13 16:23	
Cadmium	ug/L	ND	5.0	08/29/13 16:23	
Chromium	ug/L	ND	5.0	08/29/13 16:23	
Cobalt	ug/L	ND	5.0	08/29/13 16:23	
Copper	ug/L	ND	10.0	08/29/13 16:23	
Iron	ug/L	ND	50.0	08/29/13 16:23	
Lead	ug/L	ND	5.0	08/29/13 16:23	
Nickel	ug/L	ND	5.0	08/29/13 16:23	
Selenium	ug/L	ND	15.0	08/29/13 16:23	
Silver	ug/L	ND	7.0	08/29/13 16:23	
Thallium	ug/L	ND	20.0	08/29/13 16:23	
Zinc	ug/L	ND	50.0	08/29/13 16:23	

LABORATORY CONTROL SAMPLE: 1243148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9810	98	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	967	97	85-115	
Beryllium	ug/L	1000	964	96	85-115	
Cadmium	ug/L	1000	984	98	85-115	
Chromium	ug/L	1000	940	94	85-115	
Cobalt	ug/L	1000	986	99	85-115	
Copper	ug/L	1000	970	97	85-115	
Iron	ug/L	10000	9140	91	85-115	
Lead	ug/L	1000	963	96	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1010	101	85-115	
Silver	ug/L	500	467	93	85-115	
Thallium	ug/L	1000	1010	101	85-115	
Zinc	ug/L	1000	969	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243149

1243150

Parameter	Units	60151447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10000	9930	100	99	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243149 1243150											
Parameter	Units	60151447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1050	1030	105	103	70-130	2	7
Arsenic	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Beryllium	ug/L	ND	1000	1000	986	975	99	98	70-130	1	7
Cadmium	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Chromium	ug/L	ND	1000	1000	928	922	93	92	70-130	1	10
Cobalt	ug/L	ND	1000	1000	961	951	96	95	70-130	1	6
Copper	ug/L	ND	1000	1000	1000	987	99	98	70-130	2	11
Iron	ug/L	ND	10000	10000	9140	9080	91	91	70-130	1	10
Lead	ug/L	ND	1000	1000	916	908	92	91	70-130	1	10
Nickel	ug/L	ND	1000	1000	995	987	99	98	70-130	1	10
Selenium	ug/L	ND	1000	1000	1050	1040	105	104	70-130	1	10
Silver	ug/L	ND	500	500	476	470	95	94	70-130	1	10
Thallium	ug/L	ND	1000	1000	916	908	91	91	70-130	1	6
Zinc	ug/L	ND	1000	1000	998	995	96	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1243151							
Parameter	Units	60151450002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	1170	10000	11400	103	70-130	
Antimony	ug/L	ND	1000	1030	102	70-130	
Arsenic	ug/L	ND	1000	1010	100	70-130	
Beryllium	ug/L	ND	1000	970	97	70-130	
Cadmium	ug/L	ND	1000	996	100	70-130	
Chromium	ug/L	ND	1000	911	91	70-130	
Cobalt	ug/L	ND	1000	954	95	70-130	
Copper	ug/L	87.1	1000	1080	99	70-130	
Iron	ug/L	1640	10000	10800	91	70-130	
Lead	ug/L	5.6	1000	915	91	70-130	
Nickel	ug/L	18.7	1000	1000	98	70-130	
Selenium	ug/L	ND	1000	941	93	70-130	
Silver	ug/L	ND	500	463	93	70-130	
Thallium	ug/L	ND	1000	918	92	70-130	
Zinc	ug/L	102	1000	1060	96	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052
Pace Project No.: 60151787

QC Batch: MPRP/24028 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151787001

METHOD BLANK: 1243827 Matrix: Water
Associated Lab Samples: 60151787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/30/13 11:38	
Antimony, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Arsenic, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Beryllium, Dissolved	ug/L	ND	1.0	08/30/13 11:38	
Cadmium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Chromium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Cobalt, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Copper, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Iron, Dissolved	ug/L	ND	50.0	08/30/13 11:38	
Lead, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Nickel, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Selenium, Dissolved	ug/L	ND	15.0	08/30/13 11:38	
Silver, Dissolved	ug/L	ND	7.0	08/30/13 11:38	
Thallium, Dissolved	ug/L	ND	20.0	08/30/13 11:38	
Zinc, Dissolved	ug/L	ND	50.0	08/30/13 11:38	

LABORATORY CONTROL SAMPLE: 1243828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10200	102	85-115	
Antimony, Dissolved	ug/L	1000	994	99	85-115	
Arsenic, Dissolved	ug/L	1000	955	96	85-115	
Beryllium, Dissolved	ug/L	1000	966	97	85-115	
Cadmium, Dissolved	ug/L	1000	970	97	85-115	
Chromium, Dissolved	ug/L	1000	986	99	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	957	96	85-115	
Iron, Dissolved	ug/L	10000	9710	97	85-115	
Lead, Dissolved	ug/L	1000	959	96	85-115	
Nickel, Dissolved	ug/L	1000	1000	100	85-115	
Selenium, Dissolved	ug/L	1000	957	96	85-115	
Silver, Dissolved	ug/L	500	464	93	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829 1243830

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2730	10000	10000	13800	13500	111	108	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829 1243830											
Parameter	Units	60151790001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	42.9	1000	1000	1000	1040	1010	100	96	70-130	4
Arsenic, Dissolved	ug/L	588	1000	1000	1000	1730	1710	114	112	70-130	1
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	974	990	97	99	70-130	2
Cadmium, Dissolved	ug/L	ND	1000	1000	1000	1120	1100	111	109	70-130	2
Chromium, Dissolved	ug/L	204	1000	1000	1000	1150	1170	95	97	70-130	2
Cobalt, Dissolved	ug/L	41.3	1000	1000	1000	1010	995	97	95	70-130	2
Copper, Dissolved	ug/L	ND	1000	1000	1000	1040	988	103	99	70-130	5
Iron, Dissolved	ug/L	447000	10000	10000	10000	458000	451000	112	42	70-130	2
Lead, Dissolved	ug/L	79.3	1000	1000	1000	947	928	87	85	70-130	2
Nickel, Dissolved	ug/L	123	1000	1000	1000	1080	1060	96	94	70-130	2
Selenium, Dissolved	ug/L	ND	1000	1000	1000	1090	1060	109	106	70-130	3
Silver, Dissolved	ug/L	ND	500	500	500	56.4	103	10	19	70-130	58
Thallium, Dissolved	ug/L	ND	1000	1000	1000	832	846	83	85	70-130	2
Zinc, Dissolved	ug/L	10500	1000	1000	1000	12100	12600	156	207	70-130	4

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch: MSV/55839 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151787001, 60151787002

METHOD BLANK: 1242924 Matrix: Water

Associated Lab Samples: 60151787001, 60151787002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/27/13 10:11	
Benzene	ug/L	ND	1.0	08/27/13 10:11	
Bromodichloromethane	ug/L	ND	1.0	08/27/13 10:11	
Bromoform	ug/L	ND	1.0	08/27/13 10:11	
Bromomethane	ug/L	ND	5.0	08/27/13 10:11	
Carbon tetrachloride	ug/L	ND	1.0	08/27/13 10:11	
Chloroethane	ug/L	ND	1.0	08/27/13 10:11	
Chloroform	ug/L	ND	1.0	08/27/13 10:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Ethylbenzene	ug/L	ND	1.0	08/27/13 10:11	
Methylene chloride	ug/L	ND	1.0	08/27/13 10:11	
Tetrachloroethene	ug/L	ND	1.0	08/27/13 10:11	
Toluene	ug/L	ND	1.0	08/27/13 10:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Trichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Vinyl chloride	ug/L	ND	1.0	08/27/13 10:11	
Xylene (Total)	ug/L	ND	3.0	08/27/13 10:11	
1,2-Dichloroethane-d4 (S)	%	98	80-120	08/27/13 10:11	
4-Bromofluorobenzene (S)	%	102	80-120	08/27/13 10:11	
Toluene-d8 (S)	%	98	80-120	08/27/13 10:11	

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	24.2	121	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	24.3	121	59-138	
1,1,2-Trichloroethane	ug/L	20	19.9	100	69-127	
1,2-Dichloroethane	ug/L	20	22.2	111	71-129	
1,4-Dichlorobenzene	ug/L	20	25.1	126	68-124	L0
Benzene	ug/L	20	22.4	112	73-129	
Bromodichloromethane	ug/L	20	22.0	110	63-129	
Bromoform	ug/L	20	23.8	119	52-123	
Bromomethane	ug/L	20	20.2	101	10-160	
Carbon tetrachloride	ug/L	20	25.8	129	70-140	
Chloroethane	ug/L	20	22.3	111	42-160	
Chloroform	ug/L	20	21.5	107	60-120	
cis-1,2-Dichloroethene	ug/L	20	22.2	111	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	24.4	122	66-133	
Methylene chloride	ug/L	20	22.5	112	56-135	
Tetrachloroethene	ug/L	20	23.5	117	64-143	
Toluene	ug/L	20	21.9	109	70-130	
trans-1,2-Dichloroethene	ug/L	20	22.2	111	67-149	
Trichloroethene	ug/L	20	20.5	103	71-130	
Vinyl chloride	ug/L	20	22.5	113	41-160	
Xylene (Total)	ug/L	60	72.4	121	67-130	
1,2-Dichloroethane-d4 (S)	%			108	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1242926

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3940	99	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4520	113	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3410	85	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3630	91	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	4600	115	18-147	
Benzene	ug/L	ND	4000	3660	91	37-151	
Bromodichloromethane	ug/L	ND	4000	3630	91	35-155	
Bromoform	ug/L	ND	4000	4030	101	45-133	
Bromomethane	ug/L	ND	4000	2570	64	10-160	
Carbon tetrachloride	ug/L	ND	4000	4120	103	70-140	
Chloroethane	ug/L	ND	4000	3420	85	14-160	
Chloroform	ug/L	ND	4000	3500	87	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3610	90	19-160	
Ethylbenzene	ug/L	ND	4000	4240	106	37-154	
Methylene chloride	ug/L	ND	4000	3600	90	15-156	
Tetrachloroethene	ug/L	ND	4000	3940	99	64-148	
Toluene	ug/L	ND	4000	3700	92	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3470	87	54-156	
Trichloroethene	ug/L	ND	4000	3360	84	71-157	
Vinyl chloride	ug/L	ND	4000	3350	84	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120 HS	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			7.0	7.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052
Pace Project No.: 60151787

QC Batch:	OEXT/40115	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60151787001		

METHOD BLANK: 1243299 Matrix: Water
Associated Lab Samples: 60151787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/29/13 09:23	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/29/13 09:23	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/29/13 09:23	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/29/13 09:23	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/29/13 09:23	
Hexachloroethane	ug/L	ND	5.0	08/29/13 09:23	
Naphthalene	ug/L	ND	5.0	08/29/13 09:23	
Nitrobenzene	ug/L	ND	5.0	08/29/13 09:23	
Pentachlorophenol	ug/L	ND	5.0	08/29/13 09:23	
Phenol	ug/L	ND	5.0	08/29/13 09:23	
2,4,6-Tribromophenol (S)	%	107	39-119	08/29/13 09:23	
2-Fluorobiphenyl (S)	%	96	36-120	08/29/13 09:23	
2-Fluorophenol (S)	%	55	18-120	08/29/13 09:23	
Nitrobenzene-d5 (S)	%	95	32-120	08/29/13 09:23	
Phenol-d6 (S)	%	37	12-120	08/29/13 09:23	
Terphenyl-d14 (S)	%	103	44-120	08/29/13 09:23	

LABORATORY CONTROL SAMPLE: 1243300

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	43.4	87	44-120	
2,4,6-Trichlorophenol	ug/L	50	48.0	96	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	61.1	122	31-147	
Hexachloro-1,3-butadiene	ug/L	50	40.9	82	41-116	
Hexachlorocyclopentadiene	ug/L	100	63.0	63	31-120	
Hexachloroethane	ug/L	50	42.3	85	40-113	
Naphthalene	ug/L	50	45.6	91	48-120	
Nitrobenzene	ug/L	50	45.9	92	47-120	
Pentachlorophenol	ug/L	50	56.2	112	43-127	
Phenol	ug/L	50	21.0	42	15-112	
2,4,6-Tribromophenol (S)	%			99	39-119	
2-Fluorobiphenyl (S)	%			89	36-120	
2-Fluorophenol (S)	%			54	18-120	
Nitrobenzene-d5 (S)	%			87	32-120	M4
Phenol-d6 (S)	%			36	12-120	
Terphenyl-d14 (S)	%			93	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

MATRIX SPIKE SAMPLE:		1243301					
Parameter	Units	60151663001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	45.2	90	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	48.4	97	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	55.3	111	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	44.8	90	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	75.7	76	11-120	
Hexachloroethane	ug/L	ND	50	42.9	86	40-113	
Naphthalene	ug/L	ND	50	47.3	95	32-120	
Nitrobenzene	ug/L	ND	50	49.9	100	35-128	
Pentachlorophenol	ug/L	ND	50	60.5	121	38-133	
Phenol	ug/L	ND	50	18.0	36	13-112	
2,4,6-Tribromophenol (S)	%				95	39-119	
2-Fluorobiphenyl (S)	%				94	36-120	
2-Fluorophenol (S)	%				49	18-120	
Nitrobenzene-d5 (S)	%				87	32-120	
Phenol-d6 (S)	%				32	12-120	
Terphenyl-d14 (S)	%				94	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052
Pace Project No.: 60151787

QC Batch:	WET/43185	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60151787001		

METHOD BLANK: 1246408 Matrix: Water
Associated Lab Samples: 60151787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	09/03/13 07:43	

LABORATORY CONTROL SAMPLE: 1246409

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.9	105	78-114	

MATRIX SPIKE SAMPLE: 1246412

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	493	40	563	175	78-114	M1

SAMPLE DUPLICATE: 1246413

Parameter	Units	60151787001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	340	296	14	18	

SAMPLE DUPLICATE: 1246414

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	484	456	6	18	

SAMPLE DUPLICATE: 1246415

Parameter	Units	60151872001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	472	506	7	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch: WET/43184

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151787001

METHOD BLANK: 1246404

Matrix: Water

Associated Lab Samples: 60151787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	09/03/13 07:38	

LABORATORY CONTROL SAMPLE: 1246405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1246406

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	15.5	20	30.1	73	64-132	

SAMPLE DUPLICATE: 1246444

Parameter	Units	60151787001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	14.4	15.4	7	34	

SAMPLE DUPLICATE: 1246445

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	6.6	7.8	16	34	

SAMPLE DUPLICATE: 1246446

Parameter	Units	60151872001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.2	6.0	43	34	D6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch: WET/43128

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151787001

METHOD BLANK: 1244293

Matrix: Water

Associated Lab Samples: 60151787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/29/13 11:05	

SAMPLE DUPLICATE: 1244294

Parameter	Units	60151721002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	215	239	11	25	

SAMPLE DUPLICATE: 1244295

Parameter	Units	60151839002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	65.0	65.0	0	25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch:	WET/43083	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60151787001		

SAMPLE DUPLICATE: 1243220

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.7	1	5	H6

SAMPLE DUPLICATE: 1243222

Parameter	Units	60151790001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.6	5.7	1	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch: WET/43063

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151786001

METHOD BLANK: 1242563

Matrix: Water

Associated Lab Samples: 60151786001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/31/13 10:48	

LABORATORY CONTROL SAMPLE: 1242564

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	183	93	85-115	

SAMPLE DUPLICATE: 1242565

Parameter	Units	60151786001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	26800	31800	17	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch: WETA/25964

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151787001

METHOD BLANK: 1243238

Matrix: Water

Associated Lab Samples: 60151787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/28/13 11:10	

LABORATORY CONTROL SAMPLE: 1243239

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1243240

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	777	400	1140	91	90-110	

SAMPLE DUPLICATE: 1243241

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	821	817	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

QC Batch:	WETA/25952	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151787001		

METHOD BLANK: 1242775 Matrix: Water

Associated Lab Samples: 60151787001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/28/13 12:08	

LABORATORY CONTROL SAMPLE: 1242776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	45.3	91	90-110	

MATRIX SPIKE SAMPLE: 1242785

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	49700	25000	78000	113	90-110	M1

SAMPLE DUPLICATE: 1242784

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	56000	51800	8	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M4	A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-052

Pace Project No.: 60151787

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151787001	316-052	EPA 200.7	MPRP/24002	EPA 200.7	ICP/18773
60151787001	316-052	EPA 200.7	MPRP/24028	EPA 200.7	ICP/18782
60151787001	316-052	EPA 245.1	MERP/7653	EPA 245.1	MERC/7608
60151787001	316-052	EPA 245.1	MERP/7652	EPA 245.1	MERC/7607
60151787001	316-052	EPA 625	OEXT/40115	EPA 625	MSSV/12709
60151787001	316-052	EPA 624 Low	MSV/55839		
60151787002	TRIP BLANK	EPA 624 Low	MSV/55839		
60151787001	316-052	EPA 1664A	WET/43185		
60151787001	316-052	EPA 1664A	WET/43184		
60151787001	316-052	SM 2540D	WET/43128		
60151787001	316-052	SM 4500-H+B	WET/43083		
60151786001	316-052	SM 5210B	WET/43063	SM 5210B	WET/43177
60151787001	316-052	EPA 350.1	WETA/25964		
60151787001	316-052	EPA 410.4	WETA/25952		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151787



60151787

Client Name: Bert Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.5

Date and initials of person examining contents: TH 6/26/13 1330

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☐ No ☐ N/A	6. <u>BOD, pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☒ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>water</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed
Trip Blank present:	☒ Yes ☐ No ☐ N/A	Lot # of added preservative <u>1250-1-3</u>
Pace Trip Blank lot # (if purchased): <u>covered</u>		15.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	16. <u>all sample vials have headspace</u>
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☐ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

September 06, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-053
Pace Project No.: 60151790

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report September 5th to correct sample collection date for the Trip Blank.

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

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151790001	316-053	Water	08/25/13 11:15	08/26/13 13:15
60151790002	TRIP BLANK	Water	08/25/13 00:00	08/26/13 13:15
60151789001	316-053	Water	08/25/13 11:15	08/26/13 13:15

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151790001	316-053	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151790002	TRIP BLANK	EPA 624 Low	JKL	25
60151789001	316-053	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-053
Pace Project No.: 60151790

Sample: 316-053		Lab ID: 60151790001	Collected: 08/25/13 11:15	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5120 ug/L		150	2	08/27/13 16:20	08/30/13 10:27	7429-90-5	
Antimony	44.9 ug/L		20.0	2	08/27/13 16:20	08/30/13 10:27	7440-36-0	
Arsenic	671 ug/L		20.0	2	08/27/13 16:20	08/30/13 10:27	7440-38-2	
Beryllium	ND ug/L		5.0	5	08/27/13 16:20	08/30/13 10:59	7440-41-7	D3
Cadmium	11.1 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:27	7440-43-9	
Chromium	250 ug/L		25.0	5	08/27/13 16:20	08/30/13 10:59	7440-47-3	
Cobalt	52.9 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:27	7440-48-4	
Copper	ND ug/L		20.0	2	08/27/13 16:20	08/30/13 10:27	7440-50-8	D3
Iron	672000 ug/L		100	2	08/27/13 16:20	08/30/13 10:27	7439-89-6	
Lead	133 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:27	7439-92-1	
Nickel	138 ug/L		10.0	2	08/27/13 16:20	08/30/13 10:27	7440-02-0	
Selenium	ND ug/L		75.0	5	08/27/13 16:20	08/30/13 10:59	7782-49-2	D3
Silver	ND ug/L		14.0	2	08/27/13 16:20	08/30/13 10:27	7440-22-4	D3
Thallium	ND ug/L		100	5	08/27/13 16:20	08/30/13 10:59	7440-28-0	D3
Zinc	12800 ug/L		1000	20	08/27/13 16:20	08/30/13 11:12	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2730 ug/L		150	2	08/28/13 16:00	08/30/13 14:05	7429-90-5	
Antimony, Dissolved	42.9 ug/L		20.0	2	08/28/13 16:00	08/30/13 14:05	7440-36-0	
Arsenic, Dissolved	588 ug/L		20.0	2	08/28/13 16:00	08/30/13 14:05	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	08/28/13 16:00	08/30/13 14:48	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	08/28/13 16:00	08/30/13 14:05	7440-43-9	D3
Chromium, Dissolved	204 ug/L		25.0	5	08/28/13 16:00	08/30/13 14:48	7440-47-3	
Cobalt, Dissolved	41.3 ug/L		10.0	2	08/28/13 16:00	08/30/13 14:05	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	08/28/13 16:00	08/30/13 14:05	7440-50-8	D3
Iron, Dissolved	447000 ug/L		100	2	08/28/13 16:00	08/30/13 14:05	7439-89-6	M1
Lead, Dissolved	79.3 ug/L		10.0	2	08/28/13 16:00	08/30/13 14:05	7439-92-1	
Nickel, Dissolved	123 ug/L		10.0	2	08/28/13 16:00	08/30/13 14:05	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	08/28/13 16:00	08/30/13 14:48	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	08/28/13 16:00	08/30/13 14:05	7440-22-4	D3,M1, R1
Thallium, Dissolved	ND ug/L		100	5	08/28/13 16:00	08/30/13 14:48	7440-28-0	D3
Zinc, Dissolved	10500 ug/L		1000	20	08/28/13 16:00	08/30/13 15:30	7440-66-6	M1
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND ug/L		0.20	1	08/29/13 16:35	08/30/13 08:53	7439-97-6	M1
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	08/29/13 09:00	08/29/13 11:55	7439-97-6	M1
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/28/13 00:00	08/29/13 11:49	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:49	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:49	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:49	67-72-1	
Naphthalene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:49	91-20-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

Sample: 316-053		Lab ID: 60151790001	Collected: 08/25/13 11:15	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Nitrobenzene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:49	98-95-3	
Pentachlorophenol	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:49	87-86-5	
Phenol	4180 ug/L		1000	20	08/28/13 00:00	08/29/13 11:49	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:49	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/28/13 00:00	08/29/13 11:49	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/28/13 00:00	08/29/13 11:49	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/28/13 00:00	08/29/13 11:49	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/28/13 00:00	08/29/13 11:49	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/28/13 00:00	08/29/13 11:49	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/28/13 00:00	08/29/13 11:49	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/28/13 00:00	08/29/13 11:49	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/27/13 16:23	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/27/13 16:23	75-27-4	
Bromoform	ND ug/L		200	200		08/27/13 16:23	75-25-2	
Bromomethane	ND ug/L		1000	200		08/27/13 16:23	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/27/13 16:23	56-23-5	
Chloroethane	ND ug/L		200	200		08/27/13 16:23	75-00-3	
Chloroform	ND ug/L		200	200		08/27/13 16:23	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/27/13 16:23	106-46-7	L3
1,2-Dichloroethane	ND ug/L		200	200		08/27/13 16:23	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 16:23	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 16:23	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/27/13 16:23	100-41-4	
Methylene chloride	ND ug/L		200	200		08/27/13 16:23	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/27/13 16:23	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/27/13 16:23	127-18-4	
Toluene	ND ug/L		200	200		08/27/13 16:23	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/27/13 16:23	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/27/13 16:23	79-00-5	
Trichloroethene	ND ug/L		200	200		08/27/13 16:23	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/27/13 16:23	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/27/13 16:23	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	200		08/27/13 16:23	460-00-4	D3,HS
Toluene-d8 (S)	95 %		80-120	200		08/27/13 16:23	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		08/27/13 16:23	17060-07-0	
Preservation pH	7.0		1.0	200		08/27/13 16:23		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	493 mg/L		5.0	1		09/03/13 07:47		M1
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	15.5 mg/L		5.0	1		09/03/13 07:39		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

Sample: 316-053		Lab ID: 60151790001	Collected: 08/25/13 11:15	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	4060	mg/L	5.0	1		08/29/13 11:09		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		08/27/13 15:20		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	777	mg/L	20.0	200		08/28/13 11:12	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	49700	mg/L	5000	500		08/28/13 12:14		M1

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

Sample: TRIP BLANK		Lab ID: 60151790002	Collected: 08/25/13 00:00	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/27/13 14:14	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/27/13 14:14	75-27-4	
Bromoform	ND ug/L		1.0	1		08/27/13 14:14	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/27/13 14:14	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/27/13 14:14	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/27/13 14:14	75-00-3	
Chloroform	ND ug/L		1.0	1		08/27/13 14:14	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/27/13 14:14	106-46-7	L3
1,2-Dichloroethane	ND ug/L		1.0	1		08/27/13 14:14	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 14:14	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 14:14	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/27/13 14:14	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/27/13 14:14	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/27/13 14:14	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/27/13 14:14	127-18-4	
Toluene	ND ug/L		1.0	1		08/27/13 14:14	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/27/13 14:14	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/27/13 14:14	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/27/13 14:14	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/27/13 14:14	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/27/13 14:14	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		08/27/13 14:14	460-00-4	
Toluene-d8 (S)	96 %		80-120	1		08/27/13 14:14	2037-26-5	
1,2-Dichloroethane-d4 (S)	98 %		80-120	1		08/27/13 14:14	17060-07-0	
Preservation pH	5.0		1.0	1		08/27/13 14:14		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

Sample: 316-053		Lab ID: 60151789001	Collected: 08/25/13 11:15	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	36500	mg/L	2.0	1	08/26/13 15:24	08/31/13 10:56		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch: MERP/7653

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151790001

METHOD BLANK: 1243877

Matrix: Water

Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/30/13 08:49	

LABORATORY CONTROL SAMPLE: 1243878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243879 1243880

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	.15J	ND	1	2	70-130		20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch: MERP/7652

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60151790001

METHOD BLANK: 1243868

Matrix: Water

Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/29/13 11:44	

LABORATORY CONTROL SAMPLE: 1243869

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243870 1243871

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	0.61	0.68	11	13	70-130	11	20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch: MPRP/24002

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60151790001

METHOD BLANK: 1243147

Matrix: Water

Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/29/13 16:23	
Antimony	ug/L	ND	10.0	08/29/13 16:23	
Arsenic	ug/L	ND	10.0	08/29/13 16:23	
Beryllium	ug/L	ND	1.0	08/29/13 16:23	
Cadmium	ug/L	ND	5.0	08/29/13 16:23	
Chromium	ug/L	ND	5.0	08/29/13 16:23	
Cobalt	ug/L	ND	5.0	08/29/13 16:23	
Copper	ug/L	ND	10.0	08/29/13 16:23	
Iron	ug/L	ND	50.0	08/29/13 16:23	
Lead	ug/L	ND	5.0	08/29/13 16:23	
Nickel	ug/L	ND	5.0	08/29/13 16:23	
Selenium	ug/L	ND	15.0	08/29/13 16:23	
Silver	ug/L	ND	7.0	08/29/13 16:23	
Thallium	ug/L	ND	20.0	08/29/13 16:23	
Zinc	ug/L	ND	50.0	08/29/13 16:23	

LABORATORY CONTROL SAMPLE: 1243148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9810	98	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	967	97	85-115	
Beryllium	ug/L	1000	964	96	85-115	
Cadmium	ug/L	1000	984	98	85-115	
Chromium	ug/L	1000	940	94	85-115	
Cobalt	ug/L	1000	986	99	85-115	
Copper	ug/L	1000	970	97	85-115	
Iron	ug/L	10000	9140	91	85-115	
Lead	ug/L	1000	963	96	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1010	101	85-115	
Silver	ug/L	500	467	93	85-115	
Thallium	ug/L	1000	1010	101	85-115	
Zinc	ug/L	1000	969	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243149

1243150

Parameter	Units	60151447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10000	9930	100	99	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243149 1243150											
Parameter	Units	60151447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1050	1030	105	103	70-130	2	7
Arsenic	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Beryllium	ug/L	ND	1000	1000	986	975	99	98	70-130	1	7
Cadmium	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Chromium	ug/L	ND	1000	1000	928	922	93	92	70-130	1	10
Cobalt	ug/L	ND	1000	1000	961	951	96	95	70-130	1	6
Copper	ug/L	ND	1000	1000	1000	987	99	98	70-130	2	11
Iron	ug/L	ND	10000	10000	9140	9080	91	91	70-130	1	10
Lead	ug/L	ND	1000	1000	916	908	92	91	70-130	1	10
Nickel	ug/L	ND	1000	1000	995	987	99	98	70-130	1	10
Selenium	ug/L	ND	1000	1000	1050	1040	105	104	70-130	1	10
Silver	ug/L	ND	500	500	476	470	95	94	70-130	1	10
Thallium	ug/L	ND	1000	1000	916	908	91	91	70-130	1	6
Zinc	ug/L	ND	1000	1000	998	995	96	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1243151							
Parameter	Units	60151450002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	1170	10000	11400	103	70-130	
Antimony	ug/L	ND	1000	1030	102	70-130	
Arsenic	ug/L	ND	1000	1010	100	70-130	
Beryllium	ug/L	ND	1000	970	97	70-130	
Cadmium	ug/L	ND	1000	996	100	70-130	
Chromium	ug/L	ND	1000	911	91	70-130	
Cobalt	ug/L	ND	1000	954	95	70-130	
Copper	ug/L	87.1	1000	1080	99	70-130	
Iron	ug/L	1640	10000	10800	91	70-130	
Lead	ug/L	5.6	1000	915	91	70-130	
Nickel	ug/L	18.7	1000	1000	98	70-130	
Selenium	ug/L	ND	1000	941	93	70-130	
Silver	ug/L	ND	500	463	93	70-130	
Thallium	ug/L	ND	1000	918	92	70-130	
Zinc	ug/L	102	1000	1060	96	70-130	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053
Pace Project No.: 60151790

QC Batch: MPRP/24028 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151790001

METHOD BLANK: 1243827 Matrix: Water
Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/30/13 11:38	
Antimony, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Arsenic, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Beryllium, Dissolved	ug/L	ND	1.0	08/30/13 11:38	
Cadmium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Chromium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Cobalt, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Copper, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Iron, Dissolved	ug/L	ND	50.0	08/30/13 11:38	
Lead, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Nickel, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Selenium, Dissolved	ug/L	ND	15.0	08/30/13 11:38	
Silver, Dissolved	ug/L	ND	7.0	08/30/13 11:38	
Thallium, Dissolved	ug/L	ND	20.0	08/30/13 11:38	
Zinc, Dissolved	ug/L	ND	50.0	08/30/13 11:38	

LABORATORY CONTROL SAMPLE: 1243828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10200	102	85-115	
Antimony, Dissolved	ug/L	1000	994	99	85-115	
Arsenic, Dissolved	ug/L	1000	955	96	85-115	
Beryllium, Dissolved	ug/L	1000	966	97	85-115	
Cadmium, Dissolved	ug/L	1000	970	97	85-115	
Chromium, Dissolved	ug/L	1000	986	99	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	957	96	85-115	
Iron, Dissolved	ug/L	10000	9710	97	85-115	
Lead, Dissolved	ug/L	1000	959	96	85-115	
Nickel, Dissolved	ug/L	1000	1000	100	85-115	
Selenium, Dissolved	ug/L	1000	957	96	85-115	
Silver, Dissolved	ug/L	500	464	93	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829 1243830

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2730	10000	10000	13800	13500	111	108	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829 1243830											
Parameter	Units	60151790001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	42.9	1000	1000	1000	1040	1010	100	96	70-130	4
Arsenic, Dissolved	ug/L	588	1000	1000	1000	1730	1710	114	112	70-130	1
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	974	990	97	99	70-130	2
Cadmium, Dissolved	ug/L	ND	1000	1000	1000	1120	1100	111	109	70-130	2
Chromium, Dissolved	ug/L	204	1000	1000	1000	1150	1170	95	97	70-130	2
Cobalt, Dissolved	ug/L	41.3	1000	1000	1000	1010	995	97	95	70-130	2
Copper, Dissolved	ug/L	ND	1000	1000	1000	1040	988	103	99	70-130	5
Iron, Dissolved	ug/L	447000	10000	10000	10000	458000	451000	112	42	70-130	2
Lead, Dissolved	ug/L	79.3	1000	1000	1000	947	928	87	85	70-130	2
Nickel, Dissolved	ug/L	123	1000	1000	1000	1080	1060	96	94	70-130	2
Selenium, Dissolved	ug/L	ND	1000	1000	1000	1090	1060	109	106	70-130	3
Silver, Dissolved	ug/L	ND	500	500	500	56.4	103	10	19	70-130	58
Thallium, Dissolved	ug/L	ND	1000	1000	1000	832	846	83	85	70-130	2
Zinc, Dissolved	ug/L	10500	1000	1000	1000	12100	12600	156	207	70-130	4

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch: MSV/55839 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151790001, 60151790002

METHOD BLANK: 1242924 Matrix: Water

Associated Lab Samples: 60151790001, 60151790002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/27/13 10:11	
Benzene	ug/L	ND	1.0	08/27/13 10:11	
Bromodichloromethane	ug/L	ND	1.0	08/27/13 10:11	
Bromoform	ug/L	ND	1.0	08/27/13 10:11	
Bromomethane	ug/L	ND	5.0	08/27/13 10:11	
Carbon tetrachloride	ug/L	ND	1.0	08/27/13 10:11	
Chloroethane	ug/L	ND	1.0	08/27/13 10:11	
Chloroform	ug/L	ND	1.0	08/27/13 10:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Ethylbenzene	ug/L	ND	1.0	08/27/13 10:11	
Methylene chloride	ug/L	ND	1.0	08/27/13 10:11	
Tetrachloroethene	ug/L	ND	1.0	08/27/13 10:11	
Toluene	ug/L	ND	1.0	08/27/13 10:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Trichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Vinyl chloride	ug/L	ND	1.0	08/27/13 10:11	
Xylene (Total)	ug/L	ND	3.0	08/27/13 10:11	
1,2-Dichloroethane-d4 (S)	%	98	80-120	08/27/13 10:11	
4-Bromofluorobenzene (S)	%	102	80-120	08/27/13 10:11	
Toluene-d8 (S)	%	98	80-120	08/27/13 10:11	

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	24.2	121	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	24.3	121	59-138	
1,1,2-Trichloroethane	ug/L	20	19.9	100	69-127	
1,2-Dichloroethane	ug/L	20	22.2	111	71-129	
1,4-Dichlorobenzene	ug/L	20	25.1	126	68-124	L0
Benzene	ug/L	20	22.4	112	73-129	
Bromodichloromethane	ug/L	20	22.0	110	63-129	
Bromoform	ug/L	20	23.8	119	52-123	
Bromomethane	ug/L	20	20.2	101	10-160	
Carbon tetrachloride	ug/L	20	25.8	129	70-140	
Chloroethane	ug/L	20	22.3	111	42-160	
Chloroform	ug/L	20	21.5	107	60-120	
cis-1,2-Dichloroethene	ug/L	20	22.2	111	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	24.4	122	66-133	
Methylene chloride	ug/L	20	22.5	112	56-135	
Tetrachloroethene	ug/L	20	23.5	117	64-143	
Toluene	ug/L	20	21.9	109	70-130	
trans-1,2-Dichloroethene	ug/L	20	22.2	111	67-149	
Trichloroethene	ug/L	20	20.5	103	71-130	
Vinyl chloride	ug/L	20	22.5	113	41-160	
Xylene (Total)	ug/L	60	72.4	121	67-130	
1,2-Dichloroethane-d4 (S)	%			108	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1242926

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3940	99	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4520	113	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3410	85	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3630	91	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	4600	115	18-147	
Benzene	ug/L	ND	4000	3660	91	37-151	
Bromodichloromethane	ug/L	ND	4000	3630	91	35-155	
Bromoform	ug/L	ND	4000	4030	101	45-133	
Bromomethane	ug/L	ND	4000	2570	64	10-160	
Carbon tetrachloride	ug/L	ND	4000	4120	103	70-140	
Chloroethane	ug/L	ND	4000	3420	85	14-160	
Chloroform	ug/L	ND	4000	3500	87	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3610	90	19-160	
Ethylbenzene	ug/L	ND	4000	4240	106	37-154	
Methylene chloride	ug/L	ND	4000	3600	90	15-156	
Tetrachloroethene	ug/L	ND	4000	3940	99	64-148	
Toluene	ug/L	ND	4000	3700	92	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3470	87	54-156	
Trichloroethene	ug/L	ND	4000	3360	84	71-157	
Vinyl chloride	ug/L	ND	4000	3350	84	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120 HS	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			7.0		7.0		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch: OEXT/40115

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60151790001

METHOD BLANK: 1243299

Matrix: Water

Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/29/13 09:23	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/29/13 09:23	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/29/13 09:23	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/29/13 09:23	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/29/13 09:23	
Hexachloroethane	ug/L	ND	5.0	08/29/13 09:23	
Naphthalene	ug/L	ND	5.0	08/29/13 09:23	
Nitrobenzene	ug/L	ND	5.0	08/29/13 09:23	
Pentachlorophenol	ug/L	ND	5.0	08/29/13 09:23	
Phenol	ug/L	ND	5.0	08/29/13 09:23	
2,4,6-Tribromophenol (S)	%	107	39-119	08/29/13 09:23	
2-Fluorobiphenyl (S)	%	96	36-120	08/29/13 09:23	
2-Fluorophenol (S)	%	55	18-120	08/29/13 09:23	
Nitrobenzene-d5 (S)	%	95	32-120	08/29/13 09:23	
Phenol-d6 (S)	%	37	12-120	08/29/13 09:23	
Terphenyl-d14 (S)	%	103	44-120	08/29/13 09:23	

LABORATORY CONTROL SAMPLE: 1243300

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	43.4	87	44-120	
2,4,6-Trichlorophenol	ug/L	50	48.0	96	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	61.1	122	31-147	
Hexachloro-1,3-butadiene	ug/L	50	40.9	82	41-116	
Hexachlorocyclopentadiene	ug/L	100	63.0	63	31-120	
Hexachloroethane	ug/L	50	42.3	85	40-113	
Naphthalene	ug/L	50	45.6	91	48-120	
Nitrobenzene	ug/L	50	45.9	92	47-120	
Pentachlorophenol	ug/L	50	56.2	112	43-127	
Phenol	ug/L	50	21.0	42	15-112	
2,4,6-Tribromophenol (S)	%			99	39-119	
2-Fluorobiphenyl (S)	%			89	36-120	
2-Fluorophenol (S)	%			54	18-120	
Nitrobenzene-d5 (S)	%			87	32-120	M4
Phenol-d6 (S)	%			36	12-120	
Terphenyl-d14 (S)	%			93	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

MATRIX SPIKE SAMPLE:		1243301					
Parameter	Units	60151663001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	45.2	90	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	48.4	97	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	55.3	111	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	44.8	90	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	75.7	76	11-120	
Hexachloroethane	ug/L	ND	50	42.9	86	40-113	
Naphthalene	ug/L	ND	50	47.3	95	32-120	
Nitrobenzene	ug/L	ND	50	49.9	100	35-128	
Pentachlorophenol	ug/L	ND	50	60.5	121	38-133	
Phenol	ug/L	ND	50	18.0	36	13-112	
2,4,6-Tribromophenol (S)	%				95	39-119	
2-Fluorobiphenyl (S)	%				94	36-120	
2-Fluorophenol (S)	%				49	18-120	
Nitrobenzene-d5 (S)	%				87	32-120	
Phenol-d6 (S)	%				32	12-120	
Terphenyl-d14 (S)	%				94	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch:	WET/43185	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	60151790001		

METHOD BLANK: 1246408 Matrix: Water

Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	09/03/13 07:43	

LABORATORY CONTROL SAMPLE: 1246409

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.9	105	78-114	

MATRIX SPIKE SAMPLE: 1246412

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	493	40	563	175	78-114	M1

SAMPLE DUPLICATE: 1246413

Parameter	Units	60151787001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	340	296	14	18	

SAMPLE DUPLICATE: 1246414

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	484	456	6	18	

SAMPLE DUPLICATE: 1246415

Parameter	Units	60151872001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	472	506	7	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053
Pace Project No.: 60151790

QC Batch:	WET/43184	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 SGT-HEM, TPH
Associated Lab Samples:	60151790001		

METHOD BLANK: 1246404 Matrix: Water
Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	09/03/13 07:38	

LABORATORY CONTROL SAMPLE: 1246405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1246406

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	15.5	20	30.1	73	64-132	

SAMPLE DUPLICATE: 1246444

Parameter	Units	60151787001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	14.4	15.4	7	34	

SAMPLE DUPLICATE: 1246445

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	6.6	7.8	16	34	

SAMPLE DUPLICATE: 1246446

Parameter	Units	60151872001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.2	6.0	43	34	D6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch: WET/43128

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151790001

METHOD BLANK: 1244293

Matrix: Water

Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/29/13 11:05	

SAMPLE DUPLICATE: 1244294

Parameter	Units	60151721002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	215	239	11	25	

SAMPLE DUPLICATE: 1244295

Parameter	Units	60151839002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	65.0	65.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch:	WET/43083	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60151790001		

SAMPLE DUPLICATE: 1243220

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.7	1	5	H6

SAMPLE DUPLICATE: 1243222

Parameter	Units	60151790001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.6	5.7	1	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch: WET/43063

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151789001

METHOD BLANK: 1242563

Matrix: Water

Associated Lab Samples: 60151789001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/31/13 10:48	

LABORATORY CONTROL SAMPLE: 1242564

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	183	93	85-115	

SAMPLE DUPLICATE: 1242565

Parameter	Units	60151786001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	26800	31800	17	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch: WETA/25964

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151790001

METHOD BLANK: 1243238

Matrix: Water

Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/28/13 11:10	

LABORATORY CONTROL SAMPLE: 1243239

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1243240

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	777	400	1140	91	90-110	

SAMPLE DUPLICATE: 1243241

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	821	817	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

QC Batch:	WETA/25952	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151790001		

METHOD BLANK: 1242775 Matrix: Water

Associated Lab Samples: 60151790001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/28/13 12:08	

LABORATORY CONTROL SAMPLE: 1242776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	45.3	91	90-110	

MATRIX SPIKE SAMPLE: 1242785

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	49700	25000	78000	113	90-110	M1

SAMPLE DUPLICATE: 1242784

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	56000	51800	8	25	

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QUALIFIERS

Project: BRIDGETON LF 316-053
Pace Project No.: 60151790

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M4	A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-053

Pace Project No.: 60151790

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151790001	316-053	EPA 200.7	MPRP/24002	EPA 200.7	ICP/18773
60151790001	316-053	EPA 200.7	MPRP/24028	EPA 200.7	ICP/18782
60151790001	316-053	EPA 245.1	MERP/7653	EPA 245.1	MERC/7608
60151790001	316-053	EPA 245.1	MERP/7652	EPA 245.1	MERC/7607
60151790001	316-053	EPA 625	OEXT/40115	EPA 625	MSSV/12709
60151790001	316-053	EPA 624 Low	MSV/55839		
60151790002	TRIP BLANK	EPA 624 Low	MSV/55839		
60151790001	316-053	EPA 1664A	WET/43185		
60151790001	316-053	EPA 1664A	WET/43184		
60151790001	316-053	SM 2540D	WET/43128		
60151790001	316-053	SM 4500-H+B	WET/43083		
60151789001	316-053	SM 5210B	WET/43063	SM 5210B	WET/43177
60151790001	316-053	EPA 350.1	WETA/25964		
60151790001	316-053	EPA 410.4	WETA/25952		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151790



60151790

Client Name: Bur Ing.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.3

Temperature should be above freezing to 6°C

Date and initials of person examining contents: Dr. 6/26/13 185

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, pH</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16. <u>BOD + BPS - samples not able to be preserved.</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17. Initial when completed <u>Dr</u> Lot # of added preservative <u>12510-7-3</u>
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>covered</u>		20.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	21. <u>all sample vials have headspace.</u>
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 6/26/13

September 04, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-054
Pace Project No.: 60151792

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151792001	316-054	Water	08/26/13 07:05	08/26/13 13:15
60151792002	TRIP BLANK	Water	08/26/13 08:00	08/26/13 13:15
60151791001	316-054	Water	08/26/13 07:05	08/26/13 13:15

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151792001	316-054	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151792002	TRIP BLANK	EPA 624 Low	JKL	25
60151791001	316-054	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-054
Pace Project No.: 60151792

Sample: 316-054		Lab ID: 60151792001	Collected: 08/26/13 07:05	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	6440	ug/L	150	2	08/27/13 16:20	08/30/13 10:30	7429-90-5	
Antimony	43.3	ug/L	20.0	2	08/27/13 16:20	08/30/13 10:30	7440-36-0	
Arsenic	698	ug/L	20.0	2	08/27/13 16:20	08/30/13 10:30	7440-38-2	
Beryllium	ND	ug/L	5.0	5	08/27/13 16:20	08/30/13 11:03	7440-41-7	D3
Cadmium	12.6	ug/L	10.0	2	08/27/13 16:20	08/30/13 10:30	7440-43-9	
Chromium	264	ug/L	25.0	5	08/27/13 16:20	08/30/13 11:03	7440-47-3	
Cobalt	53.0	ug/L	10.0	2	08/27/13 16:20	08/30/13 10:30	7440-48-4	
Copper	ND	ug/L	20.0	2	08/27/13 16:20	08/30/13 10:30	7440-50-8	D3
Iron	780000	ug/L	100	2	08/27/13 16:20	08/30/13 10:30	7439-89-6	
Lead	164	ug/L	10.0	2	08/27/13 16:20	08/30/13 10:30	7439-92-1	
Nickel	142	ug/L	10.0	2	08/27/13 16:20	08/30/13 10:30	7440-02-0	
Selenium	ND	ug/L	75.0	5	08/27/13 16:20	08/30/13 11:03	7782-49-2	D3
Silver	ND	ug/L	14.0	2	08/27/13 16:20	08/30/13 10:30	7440-22-4	D3
Thallium	ND	ug/L	100	5	08/27/13 16:20	08/30/13 11:03	7440-28-0	D3
Zinc	12800	ug/L	1000	20	08/27/13 16:20	08/30/13 11:16	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2660	ug/L	150	2	08/28/13 16:00	08/30/13 14:09	7429-90-5	
Antimony, Dissolved	41.4	ug/L	20.0	2	08/28/13 16:00	08/30/13 14:09	7440-36-0	
Arsenic, Dissolved	592	ug/L	20.0	2	08/28/13 16:00	08/30/13 14:09	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	5	08/28/13 16:00	08/30/13 14:52	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	08/28/13 16:00	08/30/13 14:09	7440-43-9	D3
Chromium, Dissolved	220	ug/L	25.0	5	08/28/13 16:00	08/30/13 14:52	7440-47-3	
Cobalt, Dissolved	44.1	ug/L	10.0	2	08/28/13 16:00	08/30/13 14:09	7440-48-4	
Copper, Dissolved	ND	ug/L	20.0	2	08/28/13 16:00	08/30/13 14:09	7440-50-8	D3
Iron, Dissolved	439000	ug/L	100	2	08/28/13 16:00	08/30/13 14:09	7439-89-6	
Lead, Dissolved	73.5	ug/L	10.0	2	08/28/13 16:00	08/30/13 14:09	7439-92-1	
Nickel, Dissolved	129	ug/L	10.0	2	08/28/13 16:00	08/30/13 14:09	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	08/28/13 16:00	08/30/13 14:52	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	08/28/13 16:00	08/30/13 14:09	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	08/28/13 16:00	08/30/13 14:52	7440-28-0	D3
Zinc, Dissolved	10700	ug/L	1000	20	08/28/13 16:00	08/30/13 15:34	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.20	1	08/29/13 16:35	08/30/13 09:04	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/13 09:00	08/29/13 12:06	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	08/28/13 00:00	08/29/13 12:09	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:09	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:09	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:09	67-72-1	
Naphthalene	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:09	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:09	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

Sample: 316-054		Lab ID: 60151792001	Collected: 08/26/13 07:05	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/28/13 00:00	08/29/13 12:09	87-86-5	
Phenol	6980 ug/L		1000	20	08/28/13 00:00	08/29/13 12:09	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 12:09	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/28/13 00:00	08/29/13 12:09	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/28/13 00:00	08/29/13 12:09	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/28/13 00:00	08/29/13 12:09	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/28/13 00:00	08/29/13 12:09	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/28/13 00:00	08/29/13 12:09	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/28/13 00:00	08/29/13 12:09	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/28/13 00:00	08/29/13 12:09	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/27/13 17:06	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/27/13 17:06	75-27-4	
Bromoform	ND ug/L		200	200		08/27/13 17:06	75-25-2	
Bromomethane	ND ug/L		1000	200		08/27/13 17:06	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/27/13 17:06	56-23-5	
Chloroethane	ND ug/L		200	200		08/27/13 17:06	75-00-3	
Chloroform	ND ug/L		200	200		08/27/13 17:06	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/27/13 17:06	106-46-7	L3
1,2-Dichloroethane	ND ug/L		200	200		08/27/13 17:06	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 17:06	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/27/13 17:06	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/27/13 17:06	100-41-4	
Methylene chloride	ND ug/L		200	200		08/27/13 17:06	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/27/13 17:06	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/27/13 17:06	127-18-4	
Toluene	ND ug/L		200	200		08/27/13 17:06	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/27/13 17:06	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/27/13 17:06	79-00-5	
Trichloroethene	ND ug/L		200	200		08/27/13 17:06	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/27/13 17:06	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/27/13 17:06	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	200		08/27/13 17:06	460-00-4	D3,HS
Toluene-d8 (S)	98 %		80-120	200		08/27/13 17:06	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		08/27/13 17:06	17060-07-0	
Preservation pH	7.0		1.0	200		08/27/13 17:06		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	484 mg/L		5.0	1		09/03/13 07:47		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	6.6 mg/L		5.0	1		09/03/13 07:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

Sample: 316-054		Lab ID: 60151792001	Collected: 08/26/13 07:05	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	2980	mg/L	5.0	1		08/29/13 11:10		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.8	Std. Units	0.10	1		08/27/13 15:20		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	821	mg/L	20.0	200		08/28/13 11:15	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	45300	mg/L	5000	500		08/28/13 12:15		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

Sample: TRIP BLANK		Lab ID: 60151792002	Collected: 08/26/13 08:00	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/27/13 14:37	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/27/13 14:37	75-27-4	
Bromoform	ND ug/L		1.0	1		08/27/13 14:37	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/27/13 14:37	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/27/13 14:37	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/27/13 14:37	75-00-3	
Chloroform	ND ug/L		1.0	1		08/27/13 14:37	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/27/13 14:37	106-46-7	L3
1,2-Dichloroethane	ND ug/L		1.0	1		08/27/13 14:37	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 14:37	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/27/13 14:37	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/27/13 14:37	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/27/13 14:37	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/27/13 14:37	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/27/13 14:37	127-18-4	
Toluene	ND ug/L		1.0	1		08/27/13 14:37	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/27/13 14:37	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/27/13 14:37	79-00-5	
Trichloroethene	ND ug/L		1.0	1		08/27/13 14:37	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/27/13 14:37	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/27/13 14:37	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	1		08/27/13 14:37	460-00-4	
Toluene-d8 (S)	97 %		80-120	1		08/27/13 14:37	2037-26-5	
1,2-Dichloroethane-d4 (S)	97 %		80-120	1		08/27/13 14:37	17060-07-0	
Preservation pH	7.0		1.0	1		08/27/13 14:37		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

Sample: 316-054		Lab ID: 60151791001	Collected: 08/26/13 07:05	Received: 08/26/13 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	29200	mg/L	2.0	1	08/26/13 15:28	08/31/13 11:00		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch: MERP/7653

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151792001

METHOD BLANK: 1243877

Matrix: Water

Associated Lab Samples: 60151792001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/30/13 08:49	

LABORATORY CONTROL SAMPLE: 1243878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243879 1243880

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	.15J	ND	1	2	70-130		20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch:	MERP/7652	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60151792001		

METHOD BLANK:	1243868	Matrix:	Water
Associated Lab Samples:	60151792001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/29/13 11:44	

LABORATORY CONTROL SAMPLE: 1243869						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243870													1243871		
Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual			
Mercury, Dissolved	ug/L	ND	5	5	0.61	0.68	11	13	70-130	11	20	M1			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch: MPRP/24002

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60151792001

METHOD BLANK: 1243147

Matrix: Water

Associated Lab Samples: 60151792001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/29/13 16:23	
Antimony	ug/L	ND	10.0	08/29/13 16:23	
Arsenic	ug/L	ND	10.0	08/29/13 16:23	
Beryllium	ug/L	ND	1.0	08/29/13 16:23	
Cadmium	ug/L	ND	5.0	08/29/13 16:23	
Chromium	ug/L	ND	5.0	08/29/13 16:23	
Cobalt	ug/L	ND	5.0	08/29/13 16:23	
Copper	ug/L	ND	10.0	08/29/13 16:23	
Iron	ug/L	ND	50.0	08/29/13 16:23	
Lead	ug/L	ND	5.0	08/29/13 16:23	
Nickel	ug/L	ND	5.0	08/29/13 16:23	
Selenium	ug/L	ND	15.0	08/29/13 16:23	
Silver	ug/L	ND	7.0	08/29/13 16:23	
Thallium	ug/L	ND	20.0	08/29/13 16:23	
Zinc	ug/L	ND	50.0	08/29/13 16:23	

LABORATORY CONTROL SAMPLE: 1243148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9810	98	85-115	
Antimony	ug/L	1000	1010	101	85-115	
Arsenic	ug/L	1000	967	97	85-115	
Beryllium	ug/L	1000	964	96	85-115	
Cadmium	ug/L	1000	984	98	85-115	
Chromium	ug/L	1000	940	94	85-115	
Cobalt	ug/L	1000	986	99	85-115	
Copper	ug/L	1000	970	97	85-115	
Iron	ug/L	10000	9140	91	85-115	
Lead	ug/L	1000	963	96	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1010	101	85-115	
Silver	ug/L	500	467	93	85-115	
Thallium	ug/L	1000	1010	101	85-115	
Zinc	ug/L	1000	969	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243149

1243150

Parameter	Units	60151447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	10000	10000	10000	9930	100	99	70-130	1	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243149 1243150											
Parameter	Units	60151447002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Antimony	ug/L	ND	1000	1000	1050	1030	105	103	70-130	2	7
Arsenic	ug/L	ND	1000	1000	1020	1010	102	101	70-130	1	10
Beryllium	ug/L	ND	1000	1000	986	975	99	98	70-130	1	7
Cadmium	ug/L	ND	1000	1000	1010	1000	101	100	70-130	1	10
Chromium	ug/L	ND	1000	1000	928	922	93	92	70-130	1	10
Cobalt	ug/L	ND	1000	1000	961	951	96	95	70-130	1	6
Copper	ug/L	ND	1000	1000	1000	987	99	98	70-130	2	11
Iron	ug/L	ND	10000	10000	9140	9080	91	91	70-130	1	10
Lead	ug/L	ND	1000	1000	916	908	92	91	70-130	1	10
Nickel	ug/L	ND	1000	1000	995	987	99	98	70-130	1	10
Selenium	ug/L	ND	1000	1000	1050	1040	105	104	70-130	1	10
Silver	ug/L	ND	500	500	476	470	95	94	70-130	1	10
Thallium	ug/L	ND	1000	1000	916	908	91	91	70-130	1	6
Zinc	ug/L	ND	1000	1000	998	995	96	96	70-130	0	11

MATRIX SPIKE SAMPLE: 1243151							
Parameter	Units	60151450002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	1170	10000	11400	103	70-130	
Antimony	ug/L	ND	1000	1030	102	70-130	
Arsenic	ug/L	ND	1000	1010	100	70-130	
Beryllium	ug/L	ND	1000	970	97	70-130	
Cadmium	ug/L	ND	1000	996	100	70-130	
Chromium	ug/L	ND	1000	911	91	70-130	
Cobalt	ug/L	ND	1000	954	95	70-130	
Copper	ug/L	87.1	1000	1080	99	70-130	
Iron	ug/L	1640	10000	10800	91	70-130	
Lead	ug/L	5.6	1000	915	91	70-130	
Nickel	ug/L	18.7	1000	1000	98	70-130	
Selenium	ug/L	ND	1000	941	93	70-130	
Silver	ug/L	ND	500	463	93	70-130	
Thallium	ug/L	ND	1000	918	92	70-130	
Zinc	ug/L	102	1000	1060	96	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054
Pace Project No.: 60151792

QC Batch: MPRP/24028 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151792001

METHOD BLANK: 1243827 Matrix: Water
Associated Lab Samples: 60151792001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/30/13 11:38	
Antimony, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Arsenic, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Beryllium, Dissolved	ug/L	ND	1.0	08/30/13 11:38	
Cadmium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Chromium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Cobalt, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Copper, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Iron, Dissolved	ug/L	ND	50.0	08/30/13 11:38	
Lead, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Nickel, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Selenium, Dissolved	ug/L	ND	15.0	08/30/13 11:38	
Silver, Dissolved	ug/L	ND	7.0	08/30/13 11:38	
Thallium, Dissolved	ug/L	ND	20.0	08/30/13 11:38	
Zinc, Dissolved	ug/L	ND	50.0	08/30/13 11:38	

LABORATORY CONTROL SAMPLE: 1243828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10200	102	85-115	
Antimony, Dissolved	ug/L	1000	994	99	85-115	
Arsenic, Dissolved	ug/L	1000	955	96	85-115	
Beryllium, Dissolved	ug/L	1000	966	97	85-115	
Cadmium, Dissolved	ug/L	1000	970	97	85-115	
Chromium, Dissolved	ug/L	1000	986	99	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	957	96	85-115	
Iron, Dissolved	ug/L	10000	9710	97	85-115	
Lead, Dissolved	ug/L	1000	959	96	85-115	
Nickel, Dissolved	ug/L	1000	1000	100	85-115	
Selenium, Dissolved	ug/L	1000	957	96	85-115	
Silver, Dissolved	ug/L	500	464	93	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829 1243830

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2730	10000	10000	13800	13500	111	108	70-130	2	8	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829 1243830											
Parameter	Units	60151790001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	42.9	1000	1000	1000	1040	1010	100	96	70-130	4
Arsenic, Dissolved	ug/L	588	1000	1000	1000	1730	1710	114	112	70-130	1
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	974	990	97	99	70-130	2
Cadmium, Dissolved	ug/L	ND	1000	1000	1000	1120	1100	111	109	70-130	2
Chromium, Dissolved	ug/L	204	1000	1000	1000	1150	1170	95	97	70-130	2
Cobalt, Dissolved	ug/L	41.3	1000	1000	1000	1010	995	97	95	70-130	2
Copper, Dissolved	ug/L	ND	1000	1000	1000	1040	988	103	99	70-130	5
Iron, Dissolved	ug/L	447000	10000	10000	10000	458000	451000	112	42	70-130	2
Lead, Dissolved	ug/L	79.3	1000	1000	1000	947	928	87	85	70-130	2
Nickel, Dissolved	ug/L	123	1000	1000	1000	1080	1060	96	94	70-130	2
Selenium, Dissolved	ug/L	ND	1000	1000	1000	1090	1060	109	106	70-130	3
Silver, Dissolved	ug/L	ND	500	500	500	56.4	103	10	19	70-130	58
Thallium, Dissolved	ug/L	ND	1000	1000	1000	832	846	83	85	70-130	2
Zinc, Dissolved	ug/L	10500	1000	1000	1000	12100	12600	156	207	70-130	4

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch: MSV/55839 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151792001, 60151792002

METHOD BLANK: 1242924 Matrix: Water

Associated Lab Samples: 60151792001, 60151792002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,2-Dichloroethane	ug/L	ND	1.0	08/27/13 10:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/27/13 10:11	
Benzene	ug/L	ND	1.0	08/27/13 10:11	
Bromodichloromethane	ug/L	ND	1.0	08/27/13 10:11	
Bromoform	ug/L	ND	1.0	08/27/13 10:11	
Bromomethane	ug/L	ND	5.0	08/27/13 10:11	
Carbon tetrachloride	ug/L	ND	1.0	08/27/13 10:11	
Chloroethane	ug/L	ND	1.0	08/27/13 10:11	
Chloroform	ug/L	ND	1.0	08/27/13 10:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Ethylbenzene	ug/L	ND	1.0	08/27/13 10:11	
Methylene chloride	ug/L	ND	1.0	08/27/13 10:11	
Tetrachloroethene	ug/L	ND	1.0	08/27/13 10:11	
Toluene	ug/L	ND	1.0	08/27/13 10:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Trichloroethene	ug/L	ND	1.0	08/27/13 10:11	
Vinyl chloride	ug/L	ND	1.0	08/27/13 10:11	
Xylene (Total)	ug/L	ND	3.0	08/27/13 10:11	
1,2-Dichloroethane-d4 (S)	%	98	80-120	08/27/13 10:11	
4-Bromofluorobenzene (S)	%	102	80-120	08/27/13 10:11	
Toluene-d8 (S)	%	98	80-120	08/27/13 10:11	

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	24.2	121	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	24.3	121	59-138	
1,1,2-Trichloroethane	ug/L	20	19.9	100	69-127	
1,2-Dichloroethane	ug/L	20	22.2	111	71-129	
1,4-Dichlorobenzene	ug/L	20	25.1	126	68-124	L0
Benzene	ug/L	20	22.4	112	73-129	
Bromodichloromethane	ug/L	20	22.0	110	63-129	
Bromoform	ug/L	20	23.8	119	52-123	
Bromomethane	ug/L	20	20.2	101	10-160	
Carbon tetrachloride	ug/L	20	25.8	129	70-140	
Chloroethane	ug/L	20	22.3	111	42-160	
Chloroform	ug/L	20	21.5	107	60-120	
cis-1,2-Dichloroethene	ug/L	20	22.2	111	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

LABORATORY CONTROL SAMPLE: 1242925

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	24.4	122	66-133	
Methylene chloride	ug/L	20	22.5	112	56-135	
Tetrachloroethene	ug/L	20	23.5	117	64-143	
Toluene	ug/L	20	21.9	109	70-130	
trans-1,2-Dichloroethene	ug/L	20	22.2	111	67-149	
Trichloroethene	ug/L	20	20.5	103	71-130	
Vinyl chloride	ug/L	20	22.5	113	41-160	
Xylene (Total)	ug/L	60	72.4	121	67-130	
1,2-Dichloroethane-d4 (S)	%			108	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE SAMPLE: 1242926

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3940	99	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4520	113	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3410	85	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3630	91	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	4600	115	18-147	
Benzene	ug/L	ND	4000	3660	91	37-151	
Bromodichloromethane	ug/L	ND	4000	3630	91	35-155	
Bromoform	ug/L	ND	4000	4030	101	45-133	
Bromomethane	ug/L	ND	4000	2570	64	10-160	
Carbon tetrachloride	ug/L	ND	4000	4120	103	70-140	
Chloroethane	ug/L	ND	4000	3420	85	14-160	
Chloroform	ug/L	ND	4000	3500	87	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3610	90	19-160	
Ethylbenzene	ug/L	ND	4000	4240	106	37-154	
Methylene chloride	ug/L	ND	4000	3600	90	15-156	
Tetrachloroethene	ug/L	ND	4000	3940	99	64-148	
Toluene	ug/L	ND	4000	3700	92	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3470	87	54-156	
Trichloroethene	ug/L	ND	4000	3360	84	71-157	
Vinyl chloride	ug/L	ND	4000	3350	84	10-160	
Xylene (Total)	ug/L	ND	12000	12600	105	12-153	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120 HS	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			7.0	7.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054
Pace Project No.: 60151792

QC Batch: OEXT/40115 Analysis Method: EPA 625
QC Batch Method: EPA 625 Analysis Description: 625 MSS
Associated Lab Samples: 60151792001

METHOD BLANK: 1243299 Matrix: Water
Associated Lab Samples: 60151792001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/29/13 09:23	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/29/13 09:23	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/29/13 09:23	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/29/13 09:23	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/29/13 09:23	
Hexachloroethane	ug/L	ND	5.0	08/29/13 09:23	
Naphthalene	ug/L	ND	5.0	08/29/13 09:23	
Nitrobenzene	ug/L	ND	5.0	08/29/13 09:23	
Pentachlorophenol	ug/L	ND	5.0	08/29/13 09:23	
Phenol	ug/L	ND	5.0	08/29/13 09:23	
2,4,6-Tribromophenol (S)	%	107	39-119	08/29/13 09:23	
2-Fluorobiphenyl (S)	%	96	36-120	08/29/13 09:23	
2-Fluorophenol (S)	%	55	18-120	08/29/13 09:23	
Nitrobenzene-d5 (S)	%	95	32-120	08/29/13 09:23	
Phenol-d6 (S)	%	37	12-120	08/29/13 09:23	
Terphenyl-d14 (S)	%	103	44-120	08/29/13 09:23	

LABORATORY CONTROL SAMPLE: 1243300

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	43.4	87	44-120	
2,4,6-Trichlorophenol	ug/L	50	48.0	96	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	61.1	122	31-147	
Hexachloro-1,3-butadiene	ug/L	50	40.9	82	41-116	
Hexachlorocyclopentadiene	ug/L	100	63.0	63	31-120	
Hexachloroethane	ug/L	50	42.3	85	40-113	
Naphthalene	ug/L	50	45.6	91	48-120	
Nitrobenzene	ug/L	50	45.9	92	47-120	
Pentachlorophenol	ug/L	50	56.2	112	43-127	
Phenol	ug/L	50	21.0	42	15-112	
2,4,6-Tribromophenol (S)	%			99	39-119	
2-Fluorobiphenyl (S)	%			89	36-120	
2-Fluorophenol (S)	%			54	18-120	
Nitrobenzene-d5 (S)	%			87	32-120	M4
Phenol-d6 (S)	%			36	12-120	
Terphenyl-d14 (S)	%			93	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

MATRIX SPIKE SAMPLE:		1243301					
Parameter	Units	60151663001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	45.2	90	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	48.4	97	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	55.3	111	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	44.8	90	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	75.7	76	11-120	
Hexachloroethane	ug/L	ND	50	42.9	86	40-113	
Naphthalene	ug/L	ND	50	47.3	95	32-120	
Nitrobenzene	ug/L	ND	50	49.9	100	35-128	
Pentachlorophenol	ug/L	ND	50	60.5	121	38-133	
Phenol	ug/L	ND	50	18.0	36	13-112	
2,4,6-Tribromophenol (S)	%				95	39-119	
2-Fluorobiphenyl (S)	%				94	36-120	
2-Fluorophenol (S)	%				49	18-120	
Nitrobenzene-d5 (S)	%				87	32-120	
Phenol-d6 (S)	%				32	12-120	
Terphenyl-d14 (S)	%				94	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch: WET/43185

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60151792001

METHOD BLANK: 1246408

Matrix: Water

Associated Lab Samples: 60151792001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	09/03/13 07:43	

LABORATORY CONTROL SAMPLE: 1246409

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.9	105	78-114	

MATRIX SPIKE SAMPLE: 1246412

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	493	40	563	175	78-114	M1

SAMPLE DUPLICATE: 1246413

Parameter	Units	60151787001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	340	296	14	18	

SAMPLE DUPLICATE: 1246414

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	484	456	6	18	

SAMPLE DUPLICATE: 1246415

Parameter	Units	60151872001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	472	506	7	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054
Pace Project No.: 60151792

QC Batch:	WET/43184	Analysis Method:	EPA 1664A
QC Batch Method:	EPA 1664A	Analysis Description:	1664 SGT-HEM, TPH
Associated Lab Samples:	60151792001		

METHOD BLANK: 1246404 Matrix: Water
Associated Lab Samples: 60151792001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	09/03/13 07:38	

LABORATORY CONTROL SAMPLE: 1246405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1246406

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	15.5	20	30.1	73	64-132	

SAMPLE DUPLICATE: 1246444

Parameter	Units	60151787001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	14.4	15.4	7	34	

SAMPLE DUPLICATE: 1246445

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	6.6	7.8	16	34	

SAMPLE DUPLICATE: 1246446

Parameter	Units	60151872001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.2	6.0	43	34	D6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch: WET/43128

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151792001

METHOD BLANK: 1244293

Matrix: Water

Associated Lab Samples: 60151792001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/29/13 11:05	

SAMPLE DUPLICATE: 1244294

Parameter	Units	60151721002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	215	239	11	25	

SAMPLE DUPLICATE: 1244295

Parameter	Units	60151839002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	65.0	65.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch:	WET/43083	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Samples:	60151792001		

SAMPLE DUPLICATE: 1243220

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.7	1	5	H6

SAMPLE DUPLICATE: 1243222

Parameter	Units	60151790001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.6	5.7	1	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch: WET/43063

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151791001

METHOD BLANK: 1242563

Matrix: Water

Associated Lab Samples: 60151791001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	08/31/13 10:48	

LABORATORY CONTROL SAMPLE: 1242564

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	183	93	85-115	

SAMPLE DUPLICATE: 1242565

Parameter	Units	60151786001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	26800	31800	17	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch: WETA/25964

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151792001

METHOD BLANK: 1243238

Matrix: Water

Associated Lab Samples: 60151792001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/28/13 11:10	

LABORATORY CONTROL SAMPLE: 1243239

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1243240

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	777	400	1140	91	90-110	

SAMPLE DUPLICATE: 1243241

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	821	817	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

QC Batch:	WETA/25952	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151792001		

METHOD BLANK: 1242775 Matrix: Water

Associated Lab Samples: 60151792001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	08/28/13 12:08	

LABORATORY CONTROL SAMPLE: 1242776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	45.3	91	90-110	

MATRIX SPIKE SAMPLE: 1242785

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	49700	25000	78000	113	90-110	M1

SAMPLE DUPLICATE: 1242784

Parameter	Units	60151494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	56000	51800	8	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M4	A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-054

Pace Project No.: 60151792

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151792001	316-054	EPA 200.7	MPRP/24002	EPA 200.7	ICP/18773
60151792001	316-054	EPA 200.7	MPRP/24028	EPA 200.7	ICP/18782
60151792001	316-054	EPA 245.1	MERP/7653	EPA 245.1	MERC/7608
60151792001	316-054	EPA 245.1	MERP/7652	EPA 245.1	MERC/7607
60151792001	316-054	EPA 625	OEXT/40115	EPA 625	MSSV/12709
60151792001	316-054	EPA 624 Low	MSV/55839		
60151792002	TRIP BLANK	EPA 624 Low	MSV/55839		
60151792001	316-054	EPA 1664A	WET/43185		
60151792001	316-054	EPA 1664A	WET/43184		
60151792001	316-054	SM 2540D	WET/43128		
60151792001	316-054	SM 4500-H+B	WET/43083		
60151791001	316-054	SM 5210B	WET/43063	SM 5210B	WET/43177
60151792001	316-054	EPA 350.1	WETA/25964		
60151792001	316-054	EPA 410.4	WETA/25952		

REPORT OF LABORATORY ANALYSIS

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WO#: 60151792



60151792



Sample Condition Upon Receipt

Client Name: Barr Eng.Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other ☒ NRTracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐Packing Material: Bubble Wrap ☒ Bubble Bags ☒ Foam ☐ None ☐ Other ☐Thermometer Used: T-112 / T-194Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)Cooler Temperature: 1.7

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JMS 8/26/13 170

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD, P1A</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>water</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18.
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19.
Pace Trip Blank lot # (if purchased): <u>covered</u>		20.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	21.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	22.

Client Notification/ Resolution:

Copy COC to Client? Y ☐ / N ☒Field Data Required? Y ☒ / N ☐

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 8/26/13

September 10, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-055
Pace Project No.: 60151872

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 28, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended report revised 09/10/13 for pH sample analyses date correction.

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

Sincerely,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60151872001	316-055	Water	08/27/13 07:25	08/28/13 02:20
60151872002	TRIP BLANK	Water	08/27/13 07:25	08/28/13 02:20
60151873001	316-055	Water	08/27/13 07:25	08/28/13 02:20

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60151872001	316-055	EPA 200.7	NDJ	15
		EPA 200.7	JGP	15
		EPA 245.1	TJT	1
		EPA 245.1	TJT	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60151872002	TRIP BLANK	EPA 624 Low	JKL	25
60151873001	316-055	SM 5210B	DJR	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

Sample: 316-055		Lab ID: 60151872001	Collected: 08/27/13 07:25	Received: 08/28/13 02:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	7030	ug/L	150	2	08/30/13 16:00	09/04/13 12:52	7429-90-5	
Antimony	ND	ug/L	50.0	5	08/30/13 16:00	09/04/13 12:54	7440-36-0	D3
Arsenic	708	ug/L	50.0	5	08/30/13 16:00	09/04/13 12:54	7440-38-2	
Beryllium	ND	ug/L	2.0	2	08/30/13 16:00	09/04/13 12:52	7440-41-7	D3
Cadmium	ND	ug/L	25.0	5	08/30/13 16:00	09/04/13 12:54	7440-43-9	
Chromium	253	ug/L	25.0	5	08/30/13 16:00	09/04/13 12:54	7440-47-3	
Cobalt	42.3	ug/L	25.0	5	08/30/13 16:00	09/04/13 12:54	7440-48-4	
Copper	ND	ug/L	50.0	5	08/30/13 16:00	09/04/13 12:54	7440-50-8	
Iron	751000	ug/L	100	2	08/30/13 16:00	09/04/13 12:52	7439-89-6	
Lead	159	ug/L	25.0	5	08/30/13 16:00	09/04/13 12:54	7439-92-1	
Nickel	150	ug/L	25.0	5	08/30/13 16:00	09/04/13 12:54	7440-02-0	
Selenium	ND	ug/L	75.0	5	08/30/13 16:00	09/04/13 12:54	7782-49-2	
Silver	ND	ug/L	35.0	5	08/30/13 16:00	09/04/13 12:54	7440-22-4	
Thallium	ND	ug/L	100	5	08/30/13 16:00	09/04/13 12:54	7440-28-0	
Zinc	13500	ug/L	1000	20	08/30/13 16:00	09/04/13 13:01	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2960	ug/L	150	2	08/28/13 16:00	08/30/13 14:12	7429-90-5	
Antimony, Dissolved	39.5	ug/L	20.0	2	08/28/13 16:00	08/30/13 14:12	7440-36-0	D9
Arsenic, Dissolved	606	ug/L	20.0	2	08/28/13 16:00	08/30/13 14:12	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	5	08/28/13 16:00	08/30/13 14:55	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	08/28/13 16:00	08/30/13 14:12	7440-43-9	D3
Chromium, Dissolved	219	ug/L	25.0	5	08/28/13 16:00	08/30/13 14:55	7440-47-3	
Cobalt, Dissolved	44.0	ug/L	10.0	2	08/28/13 16:00	08/30/13 14:12	7440-48-4	D9
Copper, Dissolved	ND	ug/L	20.0	2	08/28/13 16:00	08/30/13 14:12	7440-50-8	D3
Iron, Dissolved	471000	ug/L	100	2	08/28/13 16:00	08/30/13 14:12	7439-89-6	
Lead, Dissolved	77.8	ug/L	10.0	2	08/28/13 16:00	08/30/13 14:12	7439-92-1	
Nickel, Dissolved	124	ug/L	10.0	2	08/28/13 16:00	08/30/13 14:12	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	08/28/13 16:00	08/30/13 14:55	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	08/28/13 16:00	08/30/13 14:12	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	08/28/13 16:00	08/30/13 14:55	7440-28-0	D3
Zinc, Dissolved	11500	ug/L	1000	20	08/28/13 16:00	08/30/13 15:37	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.24	ug/L	0.20	1	08/29/13 16:35	08/30/13 09:16	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/13 09:00	08/29/13 12:09	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	08/28/13 00:00	08/29/13 12:30	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:30	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:30	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:30	67-72-1	
Naphthalene	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:30	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	08/28/13 00:00	08/29/13 12:30	98-95-3	

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

Sample: 316-055		Lab ID: 60151872001	Collected: 08/27/13 07:25	Received: 08/28/13 02:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/28/13 00:00	08/29/13 12:30	87-86-5	
Phenol	8980 ug/L		1000	20	08/28/13 00:00	08/29/13 12:30	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/28/13 00:00	08/29/13 12:30	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/28/13 00:00	08/29/13 12:30	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/28/13 00:00	08/29/13 12:30	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/28/13 00:00	08/29/13 12:30	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/28/13 00:00	08/29/13 12:30	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/28/13 00:00	08/29/13 12:30	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/28/13 00:00	08/29/13 12:30	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/28/13 00:00	08/29/13 12:30	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/30/13 14:58	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/30/13 14:58	75-27-4	
Bromoform	ND ug/L		200	200		08/30/13 14:58	75-25-2	
Bromomethane	ND ug/L		1000	200		08/30/13 14:58	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/30/13 14:58	56-23-5	
Chloroethane	ND ug/L		200	200		08/30/13 14:58	75-00-3	
Chloroform	218 ug/L		200	200		08/30/13 14:58	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/30/13 14:58	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/30/13 14:58	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/30/13 14:58	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/30/13 14:58	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/30/13 14:58	100-41-4	
Methylene chloride	ND ug/L		200	200		08/30/13 14:58	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/30/13 14:58	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/30/13 14:58	127-18-4	
Toluene	ND ug/L		200	200		08/30/13 14:58	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/30/13 14:58	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/30/13 14:58	79-00-5	L2
Trichloroethene	ND ug/L		200	200		08/30/13 14:58	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/30/13 14:58	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/30/13 14:58	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100 %		80-120	200		08/30/13 14:58	460-00-4	
Toluene-d8 (S)	97 %		80-120	200		08/30/13 14:58	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	200		08/30/13 14:58	17060-07-0	
Preservation pH	6.0		1.0	200		08/30/13 14:58		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	472 mg/L		5.0	1		09/03/13 07:48		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	9.2 mg/L		5.0	1		09/03/13 07:40		D6

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

Sample: 316-055		Lab ID: 60151872001	Collected: 08/27/13 07:25	Received: 08/28/13 02:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3340	mg/L	5.0	1		08/29/13 11:10		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.7	Std. Units	0.10	1		08/28/13 19:48		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	749	mg/L	20.0	200		08/30/13 16:25	7664-41-7	M1
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	65700	mg/L	10000	1000		09/05/13 14:17		M1

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

Sample: TRIP BLANK		Lab ID: 60151872002	Collected: 08/27/13 07:25	Received: 08/28/13 02:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/30/13 13:54	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/30/13 13:54	75-27-4	
Bromoform	ND ug/L		1.0	1		08/30/13 13:54	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/30/13 13:54	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/30/13 13:54	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/30/13 13:54	75-00-3	
Chloroform	ND ug/L		1.0	1		08/30/13 13:54	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/30/13 13:54	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/30/13 13:54	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/30/13 13:54	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/30/13 13:54	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/30/13 13:54	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/30/13 13:54	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/30/13 13:54	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/30/13 13:54	127-18-4	
Toluene	ND ug/L		1.0	1		08/30/13 13:54	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/30/13 13:54	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/30/13 13:54	79-00-5	L2
Trichloroethene	ND ug/L		1.0	1		08/30/13 13:54	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/30/13 13:54	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/30/13 13:54	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		08/30/13 13:54	460-00-4	
Toluene-d8 (S)	98 %		80-120	1		08/30/13 13:54	2037-26-5	
1,2-Dichloroethane-d4 (S)	95 %		80-120	1		08/30/13 13:54	17060-07-0	
Preservation pH	6.0		1.0	1		08/30/13 13:54		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

Sample: 316-055		Lab ID: 60151873001	Collected: 08/27/13 07:25	Received: 08/28/13 02:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	30100	mg/L	2.0	1	08/28/13 17:00	09/02/13 12:24		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch: MERP/7653

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60151872001

METHOD BLANK: 1243877

Matrix: Water

Associated Lab Samples: 60151872001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/30/13 08:49	

LABORATORY CONTROL SAMPLE: 1243878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243879 1243880

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	.15J	ND	1	2	70-130		20	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch:	MERP/7652	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60151872001		

METHOD BLANK:	1243868	Matrix:	Water
Associated Lab Samples:	60151872001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/29/13 11:44	

LABORATORY CONTROL SAMPLE: 1243869						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243870													1243871		
Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual			
Mercury, Dissolved	ug/L	ND	5	5	0.61	0.68	11	13	70-130	11	20	M1			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055
Pace Project No.: 60151872

QC Batch:	MPRP/24054	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
Associated Lab Samples:	60151872001		

METHOD BLANK: 1245153 Matrix: Water
Associated Lab Samples: 60151872001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	09/04/13 11:53	
Antimony	ug/L	ND	10.0	09/04/13 11:53	
Arsenic	ug/L	ND	10.0	09/04/13 11:53	
Beryllium	ug/L	ND	1.0	09/04/13 11:53	
Cadmium	ug/L	ND	5.0	09/04/13 11:53	
Chromium	ug/L	ND	5.0	09/04/13 11:53	
Cobalt	ug/L	ND	5.0	09/04/13 11:53	
Copper	ug/L	ND	10.0	09/04/13 11:53	
Iron	ug/L	ND	50.0	09/04/13 11:53	
Lead	ug/L	ND	5.0	09/04/13 11:53	
Nickel	ug/L	ND	5.0	09/04/13 11:53	
Selenium	ug/L	ND	15.0	09/04/13 11:53	
Silver	ug/L	ND	7.0	09/04/13 11:53	
Thallium	ug/L	ND	20.0	09/04/13 11:53	
Zinc	ug/L	ND	50.0	09/04/13 11:53	

LABORATORY CONTROL SAMPLE: 1245154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	9900	99	85-115	
Antimony	ug/L	1000	1030	103	85-115	
Arsenic	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	996	100	85-115	
Cadmium	ug/L	1000	1010	101	85-115	
Chromium	ug/L	1000	982	98	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Copper	ug/L	1000	978	98	85-115	
Iron	ug/L	10000	9680	97	85-115	
Lead	ug/L	1000	1040	104	85-115	
Nickel	ug/L	1000	1060	106	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	490	98	85-115	
Thallium	ug/L	1000	1070	107	85-115	
Zinc	ug/L	1000	1030	103	85-115	

MATRIX SPIKE SAMPLE: 1245155

Parameter	Units	60151424002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	9920	99	70-130	
Antimony	ug/L	ND	1000	1040	104	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

MATRIX SPIKE SAMPLE:		1245155					
Parameter	Units	60151424002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	1000	1050	105	70-130	
Beryllium	ug/L	ND	1000	996	100	70-130	
Cadmium	ug/L	ND	1000	1020	102	70-130	
Chromium	ug/L	ND	1000	978	98	70-130	
Cobalt	ug/L	ND	1000	1010	101	70-130	
Copper	ug/L	ND	1000	992	99	70-130	
Iron	ug/L	ND	10000	9680	97	70-130	
Lead	ug/L	5.6	1000	1020	101	70-130	
Nickel	ug/L	ND	1000	1030	103	70-130	
Selenium	ug/L	ND	1000	1040	104	70-130	
Silver	ug/L	ND	500	496	99	70-130	
Thallium	ug/L	ND	1000	1010	101	70-130	
Zinc	ug/L	ND	1000	1060	102	70-130	

MATRIX SPIKE SAMPLE:		1245156					
Parameter	Units	60151663001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	112	10000	9710	96	70-130	
Antimony	ug/L	ND	1000	1010	101	70-130	
Arsenic	ug/L	ND	1000	994	99	70-130	
Beryllium	ug/L	ND	1000	967	97	70-130	
Cadmium	ug/L	ND	1000	976	98	70-130	
Chromium	ug/L	ND	1000	915	91	70-130	
Cobalt	ug/L	ND	1000	995	99	70-130	
Copper	ug/L	30.9	1000	964	93	70-130	
Iron	ug/L	5880	10000	14900	90	70-130	
Lead	ug/L	ND	1000	985	98	70-130	
Nickel	ug/L	19.5	1000	1020	100	70-130	
Selenium	ug/L	ND	1000	998	100	70-130	
Silver	ug/L	ND	500	465	93	70-130	
Thallium	ug/L	ND	1000	984	98	70-130	
Zinc	ug/L	90.8	1000	1050	96	70-130	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055
Pace Project No.: 60151872

QC Batch: MPRP/24028 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60151872001

METHOD BLANK: 1243827 Matrix: Water
Associated Lab Samples: 60151872001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	08/30/13 11:38	
Antimony, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Arsenic, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Beryllium, Dissolved	ug/L	ND	1.0	08/30/13 11:38	
Cadmium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Chromium, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Cobalt, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Copper, Dissolved	ug/L	ND	10.0	08/30/13 11:38	
Iron, Dissolved	ug/L	ND	50.0	08/30/13 11:38	
Lead, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Nickel, Dissolved	ug/L	ND	5.0	08/30/13 11:38	
Selenium, Dissolved	ug/L	ND	15.0	08/30/13 11:38	
Silver, Dissolved	ug/L	ND	7.0	08/30/13 11:38	
Thallium, Dissolved	ug/L	ND	20.0	08/30/13 11:38	
Zinc, Dissolved	ug/L	ND	50.0	08/30/13 11:38	

LABORATORY CONTROL SAMPLE: 1243828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10200	102	85-115	
Antimony, Dissolved	ug/L	1000	994	99	85-115	
Arsenic, Dissolved	ug/L	1000	955	96	85-115	
Beryllium, Dissolved	ug/L	1000	966	97	85-115	
Cadmium, Dissolved	ug/L	1000	970	97	85-115	
Chromium, Dissolved	ug/L	1000	986	99	85-115	
Cobalt, Dissolved	ug/L	1000	1000	100	85-115	
Copper, Dissolved	ug/L	1000	957	96	85-115	
Iron, Dissolved	ug/L	10000	9710	97	85-115	
Lead, Dissolved	ug/L	1000	959	96	85-115	
Nickel, Dissolved	ug/L	1000	1000	100	85-115	
Selenium, Dissolved	ug/L	1000	957	96	85-115	
Silver, Dissolved	ug/L	500	464	93	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	974	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829 1243830

Parameter	Units	60151790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2730	10000	10000	13800	13500	111	108	70-130	2	8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1243829 1243830											
Parameter	Units	60151790001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike						
				Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD
Antimony, Dissolved	ug/L	42.9	1000	1000	1000	1040	1010	100	96	70-130	4
Arsenic, Dissolved	ug/L	588	1000	1000	1000	1730	1710	114	112	70-130	1
Beryllium, Dissolved	ug/L	ND	1000	1000	1000	974	990	97	99	70-130	2
Cadmium, Dissolved	ug/L	ND	1000	1000	1000	1120	1100	111	109	70-130	2
Chromium, Dissolved	ug/L	204	1000	1000	1000	1150	1170	95	97	70-130	2
Cobalt, Dissolved	ug/L	41.3	1000	1000	1000	1010	995	97	95	70-130	2
Copper, Dissolved	ug/L	ND	1000	1000	1000	1040	988	103	99	70-130	5
Iron, Dissolved	ug/L	447000	10000	10000	10000	458000	451000	112	42	70-130	2
Lead, Dissolved	ug/L	79.3	1000	1000	1000	947	928	87	85	70-130	2
Nickel, Dissolved	ug/L	123	1000	1000	1000	1080	1060	96	94	70-130	2
Selenium, Dissolved	ug/L	ND	1000	1000	1000	1090	1060	109	106	70-130	3
Silver, Dissolved	ug/L	ND	500	500	500	56.4	103	10	19	70-130	58
Thallium, Dissolved	ug/L	ND	1000	1000	1000	832	846	83	85	70-130	2
Zinc, Dissolved	ug/L	10500	1000	1000	1000	12100	12600	156	207	70-130	4

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch: MSV/55936 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60151872001, 60151872002

METHOD BLANK: 1245309 Matrix: Water

Associated Lab Samples: 60151872001, 60151872002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,2-Dichloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/30/13 12:07	
Benzene	ug/L	ND	1.0	08/30/13 12:07	
Bromodichloromethane	ug/L	ND	1.0	08/30/13 12:07	
Bromoform	ug/L	ND	1.0	08/30/13 12:07	
Bromomethane	ug/L	ND	5.0	08/30/13 12:07	
Carbon tetrachloride	ug/L	ND	1.0	08/30/13 12:07	
Chloroethane	ug/L	ND	1.0	08/30/13 12:07	
Chloroform	ug/L	ND	1.0	08/30/13 12:07	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/30/13 12:07	
Ethylbenzene	ug/L	ND	1.0	08/30/13 12:07	
Methylene chloride	ug/L	ND	1.0	08/30/13 12:07	
Tetrachloroethene	ug/L	ND	1.0	08/30/13 12:07	
Toluene	ug/L	ND	1.0	08/30/13 12:07	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/30/13 12:07	
Trichloroethene	ug/L	ND	1.0	08/30/13 12:07	
Vinyl chloride	ug/L	ND	1.0	08/30/13 12:07	
Xylene (Total)	ug/L	ND	3.0	08/30/13 12:07	
1,2-Dichloroethane-d4 (S)	%	102	80-120	08/30/13 12:07	
4-Bromofluorobenzene (S)	%	100	80-120	08/30/13 12:07	
Toluene-d8 (S)	%	99	80-120	08/30/13 12:07	

LABORATORY CONTROL SAMPLE: 1245310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	16.2	81	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	16.3	81	59-138	
1,1,2-Trichloroethane	ug/L	20	13.3	67	69-127	L0
1,2-Dichloroethane	ug/L	20	15.3	76	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	93	68-124	
Benzene	ug/L	20	15.6	78	73-129	
Bromodichloromethane	ug/L	20	14.8	74	63-129	
Bromoform	ug/L	20	14.9	75	52-123	
Bromomethane	ug/L	20	10.4	52	10-160	
Carbon tetrachloride	ug/L	20	17.3	87	70-140	
Chloroethane	ug/L	20	15.5	77	42-160	
Chloroform	ug/L	20	15.0	75	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.3	76	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

LABORATORY CONTROL SAMPLE: 1245310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.0	90	66-133	
Methylene chloride	ug/L	20	15.6	78	56-135	
Tetrachloroethene	ug/L	20	17.6	88	64-143	
Toluene	ug/L	20	15.9	79	70-130	
trans-1,2-Dichloroethene	ug/L	20	14.7	74	67-149	
Trichloroethene	ug/L	20	15.3	76	71-130	
Vinyl chloride	ug/L	20	12.5	62	41-160	
Xylene (Total)	ug/L	60	54.6	91	67-130	
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE SAMPLE: 1245311

Parameter	Units	60151872001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3540	89	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3550	89	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	2910	73	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3350	84	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3940	99	18-147	
Benzene	ug/L	ND	4000	3440	86	37-151	
Bromodichloromethane	ug/L	ND	4000	3320	83	35-155	
Bromoform	ug/L	ND	4000	3270	82	45-133	
Bromomethane	ug/L	ND	4000	1760	44	10-160	
Carbon tetrachloride	ug/L	ND	4000	3750	94	70-140	
Chloroethane	ug/L	ND	4000	2900	73	14-160	
Chloroform	ug/L	218	4000	3350	78	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3280	82	19-160	
Ethylbenzene	ug/L	ND	4000	3900	97	37-154	
Methylene chloride	ug/L	ND	4000	3270	80	15-156	
Tetrachloroethene	ug/L	ND	4000	3800	95	64-148	
Toluene	ug/L	ND	4000	3430	86	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3080	77	54-156	
Trichloroethene	ug/L	ND	4000	3300	82	71-157	
Vinyl chloride	ug/L	ND	4000	2370	59	10-160	
Xylene (Total)	ug/L	ND	12000	11600	97	12-153	
1,2-Dichloroethane-d4 (S)	%				101	80-120	
4-Bromofluorobenzene (S)	%				101	80-120 HS	
Toluene-d8 (S)	%				98	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch: OEXT/40115

Analysis Method: EPA 625

QC Batch Method: EPA 625

Analysis Description: 625 MSS

Associated Lab Samples: 60151872001

METHOD BLANK: 1243299

Matrix: Water

Associated Lab Samples: 60151872001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/29/13 09:23	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/29/13 09:23	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/29/13 09:23	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/29/13 09:23	
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/29/13 09:23	
Hexachloroethane	ug/L	ND	5.0	08/29/13 09:23	
Naphthalene	ug/L	ND	5.0	08/29/13 09:23	
Nitrobenzene	ug/L	ND	5.0	08/29/13 09:23	
Pentachlorophenol	ug/L	ND	5.0	08/29/13 09:23	
Phenol	ug/L	ND	5.0	08/29/13 09:23	
2,4,6-Tribromophenol (S)	%	107	39-119	08/29/13 09:23	
2-Fluorobiphenyl (S)	%	96	36-120	08/29/13 09:23	
2-Fluorophenol (S)	%	55	18-120	08/29/13 09:23	
Nitrobenzene-d5 (S)	%	95	32-120	08/29/13 09:23	
Phenol-d6 (S)	%	37	12-120	08/29/13 09:23	
Terphenyl-d14 (S)	%	103	44-120	08/29/13 09:23	

LABORATORY CONTROL SAMPLE: 1243300

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	43.4	87	44-120	
2,4,6-Trichlorophenol	ug/L	50	48.0	96	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	61.1	122	31-147	
Hexachloro-1,3-butadiene	ug/L	50	40.9	82	41-116	
Hexachlorocyclopentadiene	ug/L	100	63.0	63	31-120	
Hexachloroethane	ug/L	50	42.3	85	40-113	
Naphthalene	ug/L	50	45.6	91	48-120	
Nitrobenzene	ug/L	50	45.9	92	47-120	
Pentachlorophenol	ug/L	50	56.2	112	43-127	
Phenol	ug/L	50	21.0	42	15-112	
2,4,6-Tribromophenol (S)	%			99	39-119	
2-Fluorobiphenyl (S)	%			89	36-120	
2-Fluorophenol (S)	%			54	18-120	
Nitrobenzene-d5 (S)	%			87	32-120	M4
Phenol-d6 (S)	%			36	12-120	
Terphenyl-d14 (S)	%			93	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

MATRIX SPIKE SAMPLE:		1243301					
Parameter	Units	60151663001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	50	45.2	90	44-120	
2,4,6-Trichlorophenol	ug/L	ND	50	48.4	97	37-121	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	55.3	111	27-146	
Hexachloro-1,3-butadiene	ug/L	ND	50	44.8	90	27-116	
Hexachlorocyclopentadiene	ug/L	ND	100	75.7	76	11-120	
Hexachloroethane	ug/L	ND	50	42.9	86	40-113	
Naphthalene	ug/L	ND	50	47.3	95	32-120	
Nitrobenzene	ug/L	ND	50	49.9	100	35-128	
Pentachlorophenol	ug/L	ND	50	60.5	121	38-133	
Phenol	ug/L	ND	50	18.0	36	13-112	
2,4,6-Tribromophenol (S)	%				95	39-119	
2-Fluorobiphenyl (S)	%				94	36-120	
2-Fluorophenol (S)	%				49	18-120	
Nitrobenzene-d5 (S)	%				87	32-120	
Phenol-d6 (S)	%				32	12-120	
Terphenyl-d14 (S)	%				94	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch: WET/43185

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60151872001

METHOD BLANK: 1246408

Matrix: Water

Associated Lab Samples: 60151872001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	09/03/13 07:43	

LABORATORY CONTROL SAMPLE: 1246409

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.9	105	78-114	

MATRIX SPIKE SAMPLE: 1246412

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	493	40	563	175	78-114	M1

SAMPLE DUPLICATE: 1246413

Parameter	Units	60151787001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	340	296	14	18	

SAMPLE DUPLICATE: 1246414

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	484	456	6	18	

SAMPLE DUPLICATE: 1246415

Parameter	Units	60151872001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	472	506	7	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch: WET/43184

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60151872001

METHOD BLANK: 1246404

Matrix: Water

Associated Lab Samples: 60151872001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	09/03/13 07:38	

LABORATORY CONTROL SAMPLE: 1246405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.6	103	64-132	

MATRIX SPIKE SAMPLE: 1246406

Parameter	Units	60151790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	15.5	20	30.1	73	64-132	

SAMPLE DUPLICATE: 1246444

Parameter	Units	60151787001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	14.4	15.4	7	34	

SAMPLE DUPLICATE: 1246445

Parameter	Units	60151792001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	6.6	7.8	16	34	

SAMPLE DUPLICATE: 1246446

Parameter	Units	60151872001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	9.2	6.0	43	34	D6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch: WET/43128

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60151872001

METHOD BLANK: 1244293

Matrix: Water

Associated Lab Samples: 60151872001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/29/13 11:05	

SAMPLE DUPLICATE: 1244294

Parameter	Units	60151721002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	215	239	11	25	

SAMPLE DUPLICATE: 1244295

Parameter	Units	60151839002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	65.0	65.0	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch: WET/43111 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60151872001

SAMPLE DUPLICATE: 1244042

Parameter	Units	60151872001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.7	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch: WET/43106

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60151873001

METHOD BLANK: 1243985

Matrix: Water

Associated Lab Samples: 60151873001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	09/02/13 12:19	

LABORATORY CONTROL SAMPLE: 1243986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	172	87	85-115	

SAMPLE DUPLICATE: 1243987

Parameter	Units	60151873001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	30100	29400	3	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch: WETA/26020

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60151872001

METHOD BLANK: 1245379

Matrix: Water

Associated Lab Samples: 60151872001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/30/13 16:23	

LABORATORY CONTROL SAMPLE: 1245380

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.0	100	90-110	

MATRIX SPIKE SAMPLE: 1245381

Parameter	Units	60151872001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	749	400	1060	79	90-110	M1

SAMPLE DUPLICATE: 1245382

Parameter	Units	60152102001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	708	718	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

QC Batch:	WETA/26075	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60151872001		

METHOD BLANK: 1247049 Matrix: Water

Associated Lab Samples: 60151872001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	09/05/13 14:12	

LABORATORY CONTROL SAMPLE: 1247050

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	49.7	99	90-110	

MATRIX SPIKE SAMPLE: 1247051

Parameter	Units	60151872001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	65700	50000	100000	69	90-110	M1

SAMPLE DUPLICATE: 1247053

Parameter	Units	60152283001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	54200	53000	2	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
D9	Dissolved result is greater than the total. Data is within laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M4	A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-055

Pace Project No.: 60151872

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60151872001	316-055	EPA 200.7	MPRP/24054	EPA 200.7	ICP/18811
60151872001	316-055	EPA 200.7	MPRP/24028	EPA 200.7	ICP/18782
60151872001	316-055	EPA 245.1	MERP/7653	EPA 245.1	MERC/7608
60151872001	316-055	EPA 245.1	MERP/7652	EPA 245.1	MERC/7607
60151872001	316-055	EPA 625	OEXT/40115	EPA 625	MSSV/12709
60151872001	316-055	EPA 624 Low	MSV/55936		
60151872002	TRIP BLANK	EPA 624 Low	MSV/55936		
60151872001	316-055	EPA 1664A	WET/43185		
60151872001	316-055	EPA 1664A	WET/43184		
60151872001	316-055	SM 2540D	WET/43128		
60151872001	316-055	SM 4500-H+B	WET/43111		
60151873001	316-055	SM 5210B	WET/43106	SM 5210B	WET/43201
60151872001	316-055	EPA 350.1	WETA/26020		
60151872001	316-055	EPA 410.4	WETA/26075		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60151872



Client Name: BARR

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ ZIP

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 0.7

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 8/28

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. PH
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☒ No ☐ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	hnd3 add to 316-022 BP3N SS/3.5
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	h2S04 add to 316-022 BP3 S SS/3.0
Exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>8</u> Lot # of added preservative
Trip Blank present:	☒ Yes ☐ No ☐ N/A	
Pace Trip Blank lot # (if purchased): <u>Aug05</u>		15.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	16. 5 of 5 316-055
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	17. List State: <u>Footnote based on historical</u>

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 8/29/13



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company:	BARR ENGINEERING	
Address:		
Email To:		
Phone:	(816) 285-8410	Fax
Requested Due Date/TAT:	10 Day (Default)	

Section B

Required Project Information:

Report To:	ED GALBRAITH/BARR	
Copy To:	SCOTT FEDAK/FEEZOR	
	DANA BAKER/MARGARET TREANOR -BARR	
Purchase Order No.	PO 3727110	
Client Project ID:	BRIDGETON LF	
Container Order Number:		

Section C

Invoice Information:

Attention:	TABITHA PROVINCE	
Company Name:	REPUBLIC SERVICES	
Address:	BRIDGETON, MO 63044	
Pace Quote Reference:	130426_7588	
Pace Project Manager:	Brown, Angie	
Pace Profile #:	6787 LINE 2	

Page : 1 Of 1

Regulatory Agency

State / Location

Missouri

ITEM#	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample IDs must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analyses Test Y/N	Requested Analysis Filtered (Y/N)															Residual Chlorine (Y/N)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
						START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	COD EPA 410	pH SM 4500H+B		LF DIS. METALS 200.7/245	TOTAL METALS 200.7/245	AMMONIA EPA 350	O/G EPA 1664	625 SVOCs	VOCs EPA 624	TSS SM2540D	TPH/HEM-SGT 1664																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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1	316-055 3(A614), 3(A61H)			OT	G	8/22/13	0725	BP34	BP24	13	9	1	1	2	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	BP25	BP26	BP27	BP28	BP29	BP30	BP31	BP32	BP33	BP34	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	BP25	BP26	BP27	BP28	BP29	BP30	BP31	BP32	BP33	BP34	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	BP25	BP26	BP27	BP28	BP29	BP30	BP31	BP32	BP33	BP34	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	BP25	BP26	BP27	BP28	BP29	BP30	BP31	BP32	BP33	BP34	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	BP25	BP26	BP27	BP28	BP29	BP30	BP31	BP32	BP33	BP34	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	BP25	BP26	BP27	BP28	BP29	BP30	BP31	BP32	BP33	BP34	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	BP25	BP26	BP27	BP28	BP29	BP30	BP31	BP32	BP33	BP34	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	BP25	BP26	BP27	BP28	BP29	BP30	BP31	BP32	BP33	BP34	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	BP25	BP26	BP27	BP28	BP29	BP30	BP31	BP32	BP33	BP34	BP35	BP36	BP37	BP38	BP39	BP40	BP41	BP42	BP43	BP44	BP45	BP46	BP47	BP48	BP49	BP50	BP51	BP52	BP53	BP54	BP55	BP56	BP57	BP58	BP59	BP60	BP61	BP62	BP63	BP64	BP65	BP66	BP67	BP68	BP69	BP70	BP71	BP72	BP73	BP74	BP75	BP76	BP77	BP78	BP79	BP80	BP81	BP82	BP83	BP84	BP85	BP86	BP87	BP88	BP89	BP90	BP91	BP92	BP93	BP94	BP95	BP96	BP97	BP98	BP99	BP00	BP01	BP02	BP03	BP04	BP05	BP06	BP07	BP08	BP09	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17	BP18	BP19	BP20	BP21	BP22	BP23	BP24	B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Sample Condition Upon Receipt

WO#: 60151873



Client Name: BAER

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 0.7

Date and initials of person examining contents: 8/28

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☒ <u>8/28</u> ☐ N/A	6. <u>BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☒ No ☐ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>wt</u>	15.
All containers needing preservation have been checked.	☐ Yes ☒ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		18.
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	19.
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	20. List State:

Client Notification/ Resolution: Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 8/28/13

September 06, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-056
Pace Project No.: 60152008

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 29, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

CERTIFICATIONS

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60152008001	316-056	Water	08/28/13 08:15	08/29/13 00:45
60152008002	TRIP BLANK	Water	08/28/13 08:15	08/29/13 00:45
60152007001	316-056	Water	08/28/13 08:15	08/29/13 00:45

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60152008001	316-056	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TDS	1
		EPA 245.1	TDS	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60152008002	TRIP BLANK	EPA 624 Low	JKL	25
60152007001	316-056	SM 5210B	DJR	1

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

Sample: 316-056		Lab ID: 60152008001	Collected: 08/28/13 08:15	Received: 08/29/13 00:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	5770 ug/L		150	2	09/04/13 16:45	09/05/13 12:36	7429-90-5	
Antimony	48.6 ug/L		20.0	2	09/04/13 16:45	09/05/13 12:36	7440-36-0	
Arsenic	668 ug/L		20.0	2	09/04/13 16:45	09/05/13 12:36	7440-38-2	
Beryllium	ND ug/L		5.0	5	09/04/13 16:45	09/05/13 13:15	7440-41-7	D3
Cadmium	12.2 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:36	7440-43-9	
Chromium	245 ug/L		25.0	5	09/04/13 16:45	09/05/13 13:15	7440-47-3	
Cobalt	50.3 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:36	7440-48-4	
Copper	ND ug/L		20.0	2	09/04/13 16:45	09/05/13 12:36	7440-50-8	D3
Iron	640000 ug/L		100	2	09/04/13 16:45	09/05/13 12:36	7439-89-6	
Lead	140 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:36	7439-92-1	
Nickel	126 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:36	7440-02-0	
Selenium	ND ug/L		75.0	5	09/04/13 16:45	09/05/13 13:15	7782-49-2	D3
Silver	ND ug/L		14.0	2	09/04/13 16:45	09/05/13 12:36	7440-22-4	D3
Thallium	ND ug/L		100	5	09/04/13 16:45	09/05/13 13:15	7440-28-0	D3
Zinc	12200 ug/L		1000	20	09/04/13 16:45	09/05/13 14:02	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2830 ug/L		150	2	09/04/13 16:45	09/05/13 15:56	7429-90-5	
Antimony, Dissolved	39.8 ug/L		20.0	2	09/04/13 16:45	09/05/13 15:56	7440-36-0	
Arsenic, Dissolved	630 ug/L		20.0	2	09/04/13 16:45	09/05/13 15:56	7440-38-2	
Beryllium, Dissolved	ND ug/L		20.0	20	09/04/13 16:45	09/05/13 17:44	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	09/04/13 16:45	09/05/13 15:56	7440-43-9	D3
Chromium, Dissolved	219 ug/L		25.0	5	09/04/13 16:45	09/05/13 17:02	7440-47-3	
Cobalt, Dissolved	43.4 ug/L		10.0	2	09/04/13 16:45	09/05/13 15:56	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	09/04/13 16:45	09/05/13 15:56	7440-50-8	D3
Iron, Dissolved	433000 ug/L		100	2	09/04/13 16:45	09/05/13 15:56	7439-89-6	
Lead, Dissolved	76.7 ug/L		10.0	2	09/04/13 16:45	09/05/13 15:56	7439-92-1	
Nickel, Dissolved	123 ug/L		10.0	2	09/04/13 16:45	09/05/13 15:56	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	09/04/13 16:45	09/05/13 17:02	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	09/04/13 16:45	09/05/13 15:56	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	09/04/13 16:45	09/05/13 17:02	7440-28-0	D3
Zinc, Dissolved	11000 ug/L		1000	20	09/04/13 16:45	09/05/13 17:44	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	0.43 ug/L		0.20	1	09/05/13 08:37	09/05/13 13:11	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	09/05/13 15:30	09/06/13 09:05	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	08/30/13 00:00	09/03/13 17:03	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	08/30/13 00:00	09/03/13 17:03	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	08/30/13 00:00	09/03/13 17:03	77-47-4	
Hexachloroethane	ND ug/L		1000	20	08/30/13 00:00	09/03/13 17:03	67-72-1	
Naphthalene	ND ug/L		1000	20	08/30/13 00:00	09/03/13 17:03	91-20-3	
Nitrobenzene	ND ug/L		1000	20	08/30/13 00:00	09/03/13 17:03	98-95-3	

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-056
Pace Project No.: 60152008

Sample: 316-056		Lab ID: 60152008001	Collected: 08/28/13 08:15	Received: 08/29/13 00:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	08/30/13 00:00	09/03/13 17:03	87-86-5	
Phenol	8140 ug/L		1000	20	08/30/13 00:00	09/03/13 17:03	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	08/30/13 00:00	09/03/13 17:03	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	08/30/13 00:00	09/03/13 17:03	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	08/30/13 00:00	09/03/13 17:03	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	08/30/13 00:00	09/03/13 17:03	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	08/30/13 00:00	09/03/13 17:03	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	08/30/13 00:00	09/03/13 17:03	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	08/30/13 00:00	09/03/13 17:03	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	08/30/13 00:00	09/03/13 17:03	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		08/30/13 15:41	71-43-2	
Bromodichloromethane	ND ug/L		200	200		08/30/13 15:41	75-27-4	
Bromoform	ND ug/L		200	200		08/30/13 15:41	75-25-2	
Bromomethane	ND ug/L		1000	200		08/30/13 15:41	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		08/30/13 15:41	56-23-5	
Chloroethane	ND ug/L		200	200		08/30/13 15:41	75-00-3	
Chloroform	205 ug/L		200	200		08/30/13 15:41	67-66-3	
1,4-Dichlorobenzene	ND ug/L		200	200		08/30/13 15:41	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		08/30/13 15:41	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		08/30/13 15:41	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		08/30/13 15:41	156-60-5	
Ethylbenzene	ND ug/L		200	200		08/30/13 15:41	100-41-4	
Methylene chloride	ND ug/L		200	200		08/30/13 15:41	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		08/30/13 15:41	79-34-5	
Tetrachloroethene	ND ug/L		200	200		08/30/13 15:41	127-18-4	
Toluene	ND ug/L		200	200		08/30/13 15:41	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		08/30/13 15:41	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		08/30/13 15:41	79-00-5	L2
Trichloroethene	ND ug/L		200	200		08/30/13 15:41	79-01-6	
Vinyl chloride	ND ug/L		200	200		08/30/13 15:41	75-01-4	
Xylene (Total)	ND ug/L		600	200		08/30/13 15:41	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	200		08/30/13 15:41	460-00-4	
Toluene-d8 (S)	97 %		80-120	200		08/30/13 15:41	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	200		08/30/13 15:41	17060-07-0	
Preservation pH	6.0		1.0	200		08/30/13 15:41		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	568 mg/L		5.0	1		09/03/13 15:07		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	13.1 mg/L		5.0	1		09/04/13 12:11		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

Sample: 316-056		Lab ID: 60152008001	Collected: 08/28/13 08:15	Received: 08/29/13 00:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	3800	mg/L	5.0	1		09/04/13 13:37		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.6	Std. Units	0.10	1		08/29/13 17:30		H6
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	682	mg/L	20.0	200		08/30/13 16:27	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	61900	mg/L	5000	500		09/03/13 10:49		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

Sample: TRIP BLANK		Lab ID: 60152008002	Collected: 08/28/13 08:15	Received: 08/29/13 00:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/30/13 14:15	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/30/13 14:15	75-27-4	
Bromoform	ND ug/L		1.0	1		08/30/13 14:15	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/30/13 14:15	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/30/13 14:15	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/30/13 14:15	75-00-3	
Chloroform	1.0 ug/L		1.0	1		08/30/13 14:15	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/30/13 14:15	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/30/13 14:15	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/30/13 14:15	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/30/13 14:15	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/30/13 14:15	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/30/13 14:15	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/30/13 14:15	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/30/13 14:15	127-18-4	
Toluene	ND ug/L		1.0	1		08/30/13 14:15	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/30/13 14:15	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/30/13 14:15	79-00-5	L2
Trichloroethene	ND ug/L		1.0	1		08/30/13 14:15	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/30/13 14:15	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/30/13 14:15	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	1		08/30/13 14:15	460-00-4	
Toluene-d8 (S)	98 %		80-120	1		08/30/13 14:15	2037-26-5	
1,2-Dichloroethane-d4 (S)	96 %		80-120	1		08/30/13 14:15	17060-07-0	
Preservation pH	6.0		1.0	1		08/30/13 14:15		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

Sample: 316-056		Lab ID: 60152007001	Collected: 08/28/13 08:15	Received: 08/29/13 00:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	27500	mg/L	2.0	1	08/29/13 16:34	09/03/13 09:23		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch: MERP/7664

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60152008001

METHOD BLANK: 1247196

Matrix: Water

Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	09/05/13 12:34	

LABORATORY CONTROL SAMPLE: 1247197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247205 1247206

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	2.0	2.3	36	42	70-130	14	20	M1

MATRIX SPIKE SAMPLE: 1247207

Parameter	Units	60152283001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L		1.1	5	9.9	177	70-130 M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch:	MERP/7672	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60152008001		

METHOD BLANK: 1248210 Matrix: Water

Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	09/06/13 08:48	

LABORATORY CONTROL SAMPLE: 1248211

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1248212 1248213

Parameter	Units	60152326001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	3.0	4.6	61	91	70-130	39	20	M1, R1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch: MPRP/24109

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60152008001

METHOD BLANK: 1247468

Matrix: Water

Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	09/05/13 12:19	
Antimony	ug/L	ND	10.0	09/05/13 12:19	
Arsenic	ug/L	ND	10.0	09/05/13 12:19	
Beryllium	ug/L	ND	1.0	09/05/13 12:19	
Cadmium	ug/L	ND	5.0	09/05/13 12:19	
Chromium	ug/L	ND	5.0	09/05/13 12:19	
Cobalt	ug/L	ND	5.0	09/05/13 12:19	
Copper	ug/L	ND	10.0	09/05/13 12:19	
Iron	ug/L	1370	50.0	09/05/13 12:19	
Lead	ug/L	ND	5.0	09/05/13 12:19	
Nickel	ug/L	ND	5.0	09/05/13 12:19	
Selenium	ug/L	ND	15.0	09/05/13 12:19	
Silver	ug/L	ND	7.0	09/05/13 12:19	
Thallium	ug/L	ND	20.0	09/05/13 12:19	
Zinc	ug/L	ND	50.0	09/05/13 12:19	

LABORATORY CONTROL SAMPLE: 1247469

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10300	103	85-115	
Antimony	ug/L	1000	989	99	85-115	
Arsenic	ug/L	1000	971	97	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	983	98	85-115	
Iron	ug/L	10000	10800	108	85-115	
Lead	ug/L	1000	1020	102	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	972	97	85-115	
Silver	ug/L	500	495	99	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247470

1247471

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	9140	10000	10000	22400	22000	132	128	70-130	2	8 M1	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247470 1247471											
Parameter	Units	60152102001		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	54.3	1000	1000	1000	785	785	73	73	70-130	0
Arsenic	ug/L	729	1000	1000	1000	1840	1840	111	111	70-130	0
Beryllium	ug/L	ND	1000	1000	1000	919	910	92	91	70-130	1
Cadmium	ug/L	17.2	1000	1000	1000	1080	1070	106	106	70-130	1
Chromium	ug/L	274	1000	1000	1000	1200	1210	93	93	70-130	0
Cobalt	ug/L	59.3	1000	1000	1000	948	941	89	88	70-130	1
Copper	ug/L	24.4	1000	1000	1000	1020	1020	100	99	70-130	0
Iron	ug/L	868000	10000	10000	10000	860000	860000	-84	-80	70-130	0
Lead	ug/L	217	1000	1000	1000	1030	1030	82	81	70-130	0
Nickel	ug/L	143	1000	1000	1000	1030	1030	89	88	70-130	1
Selenium	ug/L	ND	1000	1000	1000	997	1000	100	100	70-130	0
Silver	ug/L	ND	500	500	500	30.1	31.1	5	6	70-130	3
Thallium	ug/L	ND	1000	1000	1000	809	792	81	79	70-130	2
Zinc	ug/L	13700	1000	1000	1000	14400	14600	77	97	70-130	1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056
Pace Project No.: 60152008

QC Batch: MPRP/24108 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60152008001

METHOD BLANK: 1247462 Matrix: Water
Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	09/05/13 15:39	
Antimony, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Arsenic, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Beryllium, Dissolved	ug/L	ND	1.0	09/05/13 15:39	
Cadmium, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Chromium, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Cobalt, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Copper, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Iron, Dissolved	ug/L	ND	50.0	09/05/13 15:39	
Lead, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Nickel, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Selenium, Dissolved	ug/L	ND	15.0	09/05/13 15:39	
Silver, Dissolved	ug/L	ND	7.0	09/05/13 15:39	
Thallium, Dissolved	ug/L	ND	20.0	09/05/13 15:39	
Zinc, Dissolved	ug/L	ND	50.0	09/05/13 15:39	

LABORATORY CONTROL SAMPLE: 1247463

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10100	101	85-115	
Antimony, Dissolved	ug/L	1000	980	98	85-115	
Arsenic, Dissolved	ug/L	1000	961	96	85-115	
Beryllium, Dissolved	ug/L	1000	1020	102	85-115	
Cadmium, Dissolved	ug/L	1000	971	97	85-115	
Chromium, Dissolved	ug/L	1000	984	98	85-115	
Cobalt, Dissolved	ug/L	1000	990	99	85-115	
Copper, Dissolved	ug/L	1000	950	95	85-115	
Iron, Dissolved	ug/L	10000	9690	97	85-115	
Lead, Dissolved	ug/L	1000	990	99	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	983	98	85-115	
Silver, Dissolved	ug/L	500	476	95	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247464 1247465

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2750	20000	20000	13100	12800	52	50	70-130	2	8 M1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247464 1247465												
Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Antimony, Dissolved	ug/L	41.8	2000	2000	976	997	47	48	70-130	2	7	M1
Arsenic, Dissolved	ug/L	594	2000	2000	1740	1700	57	55	70-130	2	10	M1
Beryllium, Dissolved	ug/L	ND	2000	2000	906	892	45	45	70-130	1	7	M1
Cadmium, Dissolved	ug/L	ND	2000	2000	1090	1080	54	53	70-130	2	10	M1
Chromium, Dissolved	ug/L	216	2000	2000	1150	1130	47	46	70-130	2	10	M1
Cobalt, Dissolved	ug/L	42.6	2000	2000	952	939	45	45	70-130	1	6	M1
Copper, Dissolved	ug/L	ND	2000	2000	1010	1000	50	50	70-130	1	11	M1
Iron, Dissolved	ug/L	418000	20000	20000	434000	409000	81	-43	70-130	6	10	M1
Lead, Dissolved	ug/L	78.3	2000	2000	914	899	42	41	70-130	2	10	M1
Nickel, Dissolved	ug/L	123	2000	2000	1040	1020	46	45	70-130	2	10	M1
Selenium, Dissolved	ug/L	ND	2000	2000	1110	1110	56	55	70-130	0	10	M1
Silver, Dissolved	ug/L	ND	1000	1000	34.1	90.3	3	9	70-130	90	10	M1, R1
Thallium, Dissolved	ug/L	ND	2000	2000	836	807	42	40	70-130	4	6	M1
Zinc, Dissolved	ug/L	11300	2000	2000	12400	11700	55	20	70-130	6	11	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch: MSV/55936 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60152008001, 60152008002

METHOD BLANK: 1245309 Matrix: Water

Associated Lab Samples: 60152008001, 60152008002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,2-Dichloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/30/13 12:07	
Benzene	ug/L	ND	1.0	08/30/13 12:07	
Bromodichloromethane	ug/L	ND	1.0	08/30/13 12:07	
Bromoform	ug/L	ND	1.0	08/30/13 12:07	
Bromomethane	ug/L	ND	5.0	08/30/13 12:07	
Carbon tetrachloride	ug/L	ND	1.0	08/30/13 12:07	
Chloroethane	ug/L	ND	1.0	08/30/13 12:07	
Chloroform	ug/L	ND	1.0	08/30/13 12:07	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/30/13 12:07	
Ethylbenzene	ug/L	ND	1.0	08/30/13 12:07	
Methylene chloride	ug/L	ND	1.0	08/30/13 12:07	
Tetrachloroethene	ug/L	ND	1.0	08/30/13 12:07	
Toluene	ug/L	ND	1.0	08/30/13 12:07	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/30/13 12:07	
Trichloroethene	ug/L	ND	1.0	08/30/13 12:07	
Vinyl chloride	ug/L	ND	1.0	08/30/13 12:07	
Xylene (Total)	ug/L	ND	3.0	08/30/13 12:07	
1,2-Dichloroethane-d4 (S)	%	102	80-120	08/30/13 12:07	
4-Bromofluorobenzene (S)	%	100	80-120	08/30/13 12:07	
Toluene-d8 (S)	%	99	80-120	08/30/13 12:07	

LABORATORY CONTROL SAMPLE: 1245310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	16.2	81	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	16.3	81	59-138	
1,1,2-Trichloroethane	ug/L	20	13.3	67	69-127	L0
1,2-Dichloroethane	ug/L	20	15.3	76	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	93	68-124	
Benzene	ug/L	20	15.6	78	73-129	
Bromodichloromethane	ug/L	20	14.8	74	63-129	
Bromoform	ug/L	20	14.9	75	52-123	
Bromomethane	ug/L	20	10.4	52	10-160	
Carbon tetrachloride	ug/L	20	17.3	87	70-140	
Chloroethane	ug/L	20	15.5	77	42-160	
Chloroform	ug/L	20	15.0	75	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.3	76	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

LABORATORY CONTROL SAMPLE: 1245310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.0	90	66-133	
Methylene chloride	ug/L	20	15.6	78	56-135	
Tetrachloroethene	ug/L	20	17.6	88	64-143	
Toluene	ug/L	20	15.9	79	70-130	
trans-1,2-Dichloroethene	ug/L	20	14.7	74	67-149	
Trichloroethene	ug/L	20	15.3	76	71-130	
Vinyl chloride	ug/L	20	12.5	62	41-160	
Xylene (Total)	ug/L	60	54.6	91	67-130	
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE SAMPLE: 1245311

Parameter	Units	60151872001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3540	89	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3550	89	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	2910	73	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3350	84	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3940	99	18-147	
Benzene	ug/L	ND	4000	3440	86	37-151	
Bromodichloromethane	ug/L	ND	4000	3320	83	35-155	
Bromoform	ug/L	ND	4000	3270	82	45-133	
Bromomethane	ug/L	ND	4000	1760	44	10-160	
Carbon tetrachloride	ug/L	ND	4000	3750	94	70-140	
Chloroethane	ug/L	ND	4000	2900	73	14-160	
Chloroform	ug/L	218	4000	3350	78	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3280	82	19-160	
Ethylbenzene	ug/L	ND	4000	3900	97	37-154	
Methylene chloride	ug/L	ND	4000	3270	80	15-156	
Tetrachloroethene	ug/L	ND	4000	3800	95	64-148	
Toluene	ug/L	ND	4000	3430	86	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3080	77	54-156	
Trichloroethene	ug/L	ND	4000	3300	82	71-157	
Vinyl chloride	ug/L	ND	4000	2370	59	10-160	
Xylene (Total)	ug/L	ND	12000	11600	97	12-153	
1,2-Dichloroethane-d4 (S)	%				101	80-120	
4-Bromofluorobenzene (S)	%				101	80-120 HS	
Toluene-d8 (S)	%				98	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056
Pace Project No.: 60152008

QC Batch: OEXT/40171 Analysis Method: EPA 625
QC Batch Method: EPA 625 Analysis Description: 625 MSS
Associated Lab Samples: 60152008001

METHOD BLANK: 1244919 Matrix: Water
Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	09/03/13 09:48	
2,4,6-Trichlorophenol	ug/L	ND	5.0	09/03/13 09:48	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	09/03/13 09:48	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	09/03/13 09:48	
Hexachlorocyclopentadiene	ug/L	ND	5.0	09/03/13 09:48	
Hexachloroethane	ug/L	ND	5.0	09/03/13 09:48	
Naphthalene	ug/L	ND	5.0	09/03/13 09:48	
Nitrobenzene	ug/L	ND	5.0	09/03/13 09:48	
Pentachlorophenol	ug/L	ND	5.0	09/03/13 09:48	
Phenol	ug/L	ND	5.0	09/03/13 09:48	
2,4,6-Tribromophenol (S)	%	72	39-119	09/03/13 09:48	
2-Fluorobiphenyl (S)	%	76	36-120	09/03/13 09:48	
2-Fluorophenol (S)	%	37	18-120	09/03/13 09:48	
Nitrobenzene-d5 (S)	%	75	32-120	09/03/13 09:48	
Phenol-d6 (S)	%	23	12-120	09/03/13 09:48	
Terphenyl-d14 (S)	%	76	44-120	09/03/13 09:48	

LABORATORY CONTROL SAMPLE: 1244920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	35.0	70	44-120	
2,4,6-Trichlorophenol	ug/L	50	39.3	79	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	52.2	104	31-147	
Hexachloro-1,3-butadiene	ug/L	50	34.3	69	41-116	
Hexachlorocyclopentadiene	ug/L	100	42.2	42	31-120	
Hexachloroethane	ug/L	50	32.5	65	40-113	
Naphthalene	ug/L	50	37.6	75	48-120	
Nitrobenzene	ug/L	50	39.7	79	47-120	
Pentachlorophenol	ug/L	50	41.5	83	43-127	
Phenol	ug/L	50	14.5	29	15-112	
2,4,6-Tribromophenol (S)	%			81	39-119	
2-Fluorobiphenyl (S)	%			81	36-120	
2-Fluorophenol (S)	%			40	18-120	
Nitrobenzene-d5 (S)	%			79	32-120	M4
Phenol-d6 (S)	%			26	12-120	
Terphenyl-d14 (S)	%			82	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch: WET/43205

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60152008001

METHOD BLANK: 1246759

Matrix: Water

Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	09/03/13 15:06	

LABORATORY CONTROL SAMPLE: 1246760

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.8	104	78-114	

MATRIX SPIKE SAMPLE: 1246764

Parameter	Units	60152102001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	505	42.6	662	368	78-114	M1

SAMPLE DUPLICATE: 1246763

Parameter	Units	60152008001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	568	553	3	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch: WET/43217

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60152008001

METHOD BLANK: 1247230

Matrix: Water

Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	09/04/13 12:09	

LABORATORY CONTROL SAMPLE: 1247231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	18.4	92	64-132	

MATRIX SPIKE SAMPLE: 1247238

Parameter	Units	60152102001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	10.8	21.3	25.7	70	64-132	

SAMPLE DUPLICATE: 1247236

Parameter	Units	60152008001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	13.1	13.7	4	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch: WET/43219

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60152008001

METHOD BLANK: 1247261

Matrix: Water

Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	09/04/13 13:33	

SAMPLE DUPLICATE: 1247262

Parameter	Units	60152068001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	14.0	11.0	24	25	

SAMPLE DUPLICATE: 1247263

Parameter	Units	60152008001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	3800	3520	8	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch: WET/43146 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60152008001

SAMPLE DUPLICATE: 1244837

Parameter	Units	60152008001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.6	5.6	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch: WET/43137

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60152007001

METHOD BLANK: 1244720

Matrix: Water

Associated Lab Samples: 60152007001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	09/03/13 09:13	

LABORATORY CONTROL SAMPLE: 1244721

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	175	88	85-115	

SAMPLE DUPLICATE: 1244722

Parameter	Units	60150839001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	25600	28500	10	17	H1

SAMPLE DUPLICATE: 1244724

Parameter	Units	60152007001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	27500	26100	5	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch: WETA/26020

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60152008001

METHOD BLANK: 1245379

Matrix: Water

Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/30/13 16:23	

LABORATORY CONTROL SAMPLE: 1245380

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.0	100	90-110	

MATRIX SPIKE SAMPLE: 1245381

Parameter	Units	60151872001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	749	400	1060	79	90-110	M1

SAMPLE DUPLICATE: 1245382

Parameter	Units	60152102001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	708	718	1	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

QC Batch:	WETA/26016	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60152008001		

METHOD BLANK: 1245171 Matrix: Water

Associated Lab Samples: 60152008001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	09/03/13 10:48	

LABORATORY CONTROL SAMPLE: 1245172

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	54.0	108	90-110	

SAMPLE DUPLICATE: 1245174

Parameter	Units	60152102001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	60700	57200	6	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
H1	Analysis conducted outside the EPA method holding time.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M4	A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-056

Pace Project No.: 60152008

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60152008001	316-056	EPA 200.7	MPRP/24109	EPA 200.7	ICP/18843
60152008001	316-056	EPA 200.7	MPRP/24108	EPA 200.7	ICP/18842
60152008001	316-056	EPA 245.1	MERP/7664	EPA 245.1	MERC/7622
60152008001	316-056	EPA 245.1	MERP/7672	EPA 245.1	MERC/7628
60152008001	316-056	EPA 625	OEXT/40171	EPA 625	MSSV/12731
60152008001	316-056	EPA 624 Low	MSV/55936		
60152008002	TRIP BLANK	EPA 624 Low	MSV/55936		
60152008001	316-056	EPA 1664A	WET/43205		
60152008001	316-056	EPA 1664A	WET/43217		
60152008001	316-056	SM 2540D	WET/43219		
60152008001	316-056	SM 4500-H+B	WET/43146		
60152007001	316-056	SM 5210B	WET/43137	SM 5210B	WET/43196
60152008001	316-056	EPA 350.1	WETA/26020		
60152008001	316-056	EPA 410.4	WETA/26016		

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Sample Condition Upon Receipt

WO#: 60152008



Client Name: BARC

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ X-Roads

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☒ Ziploc

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.3

Date and initials of person examining contents: S 8/29

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>PH, BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☒ No ☐ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed <u>S</u>
Trip Blank present:	☐ Yes ☒ No ☐ N/A	Lot # of added preservative <u>12510-1-3</u>
Pace Trip Blank lot # (if purchased):		<u>12518-1-2</u>
Headspace in VOA vials (>6mm):	☐ Yes ☒ No ☐ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☒ No ☐ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☒ N ☐

Person Contacted:

Date/Time:

Comments/ Resolution: MOVED BOD to report w/ remaining leachates parameters

Project Manager Review: [Signature]

Date: 8/29/13

Section C

Required Project Information:

Invoice Information:

Page : 1 Of

Regulatory Agency
State / Location
Missouri

Page 29 of 30

Section: A

Required Client Information:

Company: BARR ENGINEERING	
Address:	
Email To:	
Phone: (816) 285-8410	Fax:
Requested Due Date/TAT: 10 Day (Default)	

Section B

Required Project Information:

Report To:	ED GALBRAITH/BARR
Copy To:	SCOTT FEDAK/FEEZOR
	DANA BAKER/MARGARET TREANOR -BARR
Purchase Order No.	PO 3727110
Client Project ID:	BRIDGETON LF
Container Order Number:	

Section C

Invoice Information:

Attention:	TABITHA PROVINCE
Company Name:	REPUBLIC SERVICES
Address:	BRIDGETON, MO 63044
Pace Quote Reference:	130426 7588
Pace Project Manager:	Brown, Angie
Pace Profile #:	6787 LINE 5

Regulatory Agency

	Regulatory Agency
	State / Location
	Missouri

[illegible]

September 10, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-057
Pace Project No.: 60152102

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 30, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60152102001	316-057	Water	08/29/13 08:10	08/30/13 00:45
60152102002	TRIP BLANK	Water	08/29/13 08:10	08/30/13 00:45

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60152102001	316-057	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TDS	1
		EPA 245.1	TDS	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60152102002	TRIP BLANK	EPA 624 Low	JKL	25

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

Sample: 316-057		Lab ID: 60152102001	Collected: 08/29/13 08:10	Received: 08/30/13 00:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	9140 ug/L		150	2	09/04/13 16:45	09/05/13 12:25	7429-90-5	M1
Antimony	54.3 ug/L		20.0	2	09/04/13 16:45	09/05/13 12:25	7440-36-0	
Arsenic	729 ug/L		20.0	2	09/04/13 16:45	09/05/13 12:25	7440-38-2	
Beryllium	ND ug/L		5.0	5	09/04/13 16:45	09/05/13 13:05	7440-41-7	D3
Cadmium	17.2 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:25	7440-43-9	
Chromium	274 ug/L		25.0	5	09/04/13 16:45	09/05/13 13:05	7440-47-3	
Cobalt	59.3 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:25	7440-48-4	
Copper	24.4 ug/L		20.0	2	09/04/13 16:45	09/05/13 12:25	7440-50-8	
Iron	868000 ug/L		100	2	09/04/13 16:45	09/05/13 12:25	7439-89-6	M1
Lead	217 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:25	7439-92-1	
Nickel	143 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:25	7440-02-0	
Selenium	ND ug/L		75.0	5	09/04/13 16:45	09/05/13 13:05	7782-49-2	D3
Silver	ND ug/L		14.0	2	09/04/13 16:45	09/05/13 12:25	7440-22-4	D3,M1
Thallium	ND ug/L		100	5	09/04/13 16:45	09/05/13 13:05	7440-28-0	D3
Zinc	13700 ug/L		1000	20	09/04/13 16:45	09/05/13 13:52	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2750 ug/L		150	2	09/04/13 16:45	09/05/13 15:45	7429-90-5	M1
Antimony, Dissolved	41.8 ug/L		20.0	2	09/04/13 16:45	09/05/13 15:45	7440-36-0	M1
Arsenic, Dissolved	594 ug/L		20.0	2	09/04/13 16:45	09/05/13 15:45	7440-38-2	M1
Beryllium, Dissolved	ND ug/L		5.0	5	09/04/13 16:45	09/05/13 16:33	7440-41-7	D3,M1
Cadmium, Dissolved	ND ug/L		10.0	2	09/04/13 16:45	09/05/13 15:45	7440-43-9	D3,M1
Chromium, Dissolved	216 ug/L		25.0	5	09/04/13 16:45	09/05/13 16:33	7440-47-3	M1
Cobalt, Dissolved	42.6 ug/L		10.0	2	09/04/13 16:45	09/05/13 15:45	7440-48-4	M1
Copper, Dissolved	ND ug/L		20.0	2	09/04/13 16:45	09/05/13 15:45	7440-50-8	D3,M1
Iron, Dissolved	418000 ug/L		100	2	09/04/13 16:45	09/05/13 15:45	7439-89-6	M1
Lead, Dissolved	78.3 ug/L		10.0	2	09/04/13 16:45	09/05/13 15:45	7439-92-1	M1
Nickel, Dissolved	123 ug/L		10.0	2	09/04/13 16:45	09/05/13 15:45	7440-02-0	M1
Selenium, Dissolved	ND ug/L		75.0	5	09/04/13 16:45	09/05/13 16:33	7782-49-2	D3,M1
Silver, Dissolved	ND ug/L		14.0	2	09/04/13 16:45	09/05/13 15:45	7440-22-4	D3,M1, R1
Thallium, Dissolved	ND ug/L		100	5	09/04/13 16:45	09/05/13 16:33	7440-28-0	D3,M1
Zinc, Dissolved	11300 ug/L		1000	20	09/04/13 16:45	09/05/13 17:22	7440-66-6	M1
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND ug/L		0.20	1	09/05/13 08:37	09/05/13 13:14	7439-97-6	M1
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	09/05/13 15:30	09/06/13 09:08	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	09/05/13 00:00	09/09/13 21:55	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	09/05/13 00:00	09/09/13 21:55	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	09/05/13 00:00	09/09/13 21:55	77-47-4	
Hexachloroethane	ND ug/L		1000	20	09/05/13 00:00	09/09/13 21:55	67-72-1	
Naphthalene	ND ug/L		1000	20	09/05/13 00:00	09/09/13 21:55	91-20-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

Sample: 316-057		Lab ID: 60152102001	Collected: 08/29/13 08:10	Received: 08/30/13 00:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Nitrobenzene	ND	ug/L	1000	20	09/05/13 00:00	09/09/13 21:55	98-95-3	
Pentachlorophenol	ND	ug/L	1000	20	09/05/13 00:00	09/09/13 21:55	87-86-5	
Phenol	5450	ug/L	1000	20	09/05/13 00:00	09/09/13 21:55	108-95-2	
1,2,4-Trichlorobenzene	ND	ug/L	1000	20	09/05/13 00:00	09/09/13 21:55	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	1000	20	09/05/13 00:00	09/09/13 21:55	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	09/05/13 00:00	09/09/13 21:55	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	09/05/13 00:00	09/09/13 21:55	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	09/05/13 00:00	09/09/13 21:55	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	09/05/13 00:00	09/09/13 21:55	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	09/05/13 00:00	09/09/13 21:55	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	09/05/13 00:00	09/09/13 21:55	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND	ug/L	200	200		08/30/13 16:02	71-43-2	
Bromodichloromethane	ND	ug/L	200	200		08/30/13 16:02	75-27-4	
Bromoform	ND	ug/L	200	200		08/30/13 16:02	75-25-2	
Bromomethane	ND	ug/L	1000	200		08/30/13 16:02	74-83-9	
Carbon tetrachloride	ND	ug/L	200	200		08/30/13 16:02	56-23-5	
Chloroethane	ND	ug/L	200	200		08/30/13 16:02	75-00-3	
Chloroform	307	ug/L	200	200		08/30/13 16:02	67-66-3	
1,4-Dichlorobenzene	ND	ug/L	200	200		08/30/13 16:02	106-46-7	
1,2-Dichloroethane	ND	ug/L	200	200		08/30/13 16:02	107-06-2	
cis-1,2-Dichloroethene	ND	ug/L	200	200		08/30/13 16:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	200	200		08/30/13 16:02	156-60-5	
Ethylbenzene	ND	ug/L	200	200		08/30/13 16:02	100-41-4	
Methylene chloride	ND	ug/L	200	200		08/30/13 16:02	75-09-2	
1,1,1,2-Tetrachloroethane	ND	ug/L	200	200		08/30/13 16:02	79-34-5	
Tetrachloroethene	ND	ug/L	200	200		08/30/13 16:02	127-18-4	
Toluene	ND	ug/L	200	200		08/30/13 16:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	200	200		08/30/13 16:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	200	200		08/30/13 16:02	79-00-5	L2
Trichloroethene	ND	ug/L	200	200		08/30/13 16:02	79-01-6	
Vinyl chloride	ND	ug/L	200	200		08/30/13 16:02	75-01-4	
Xylene (Total)	ND	ug/L	600	200		08/30/13 16:02	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		08/30/13 16:02	460-00-4	
Toluene-d8 (S)	98 %		80-120	200		08/30/13 16:02	2037-26-5	
1,2-Dichloroethane-d4 (S)	101 %		80-120	200		08/30/13 16:02	17060-07-0	
Preservation pH	6.0		1.0	200		08/30/13 16:02		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	505	mg/L	5.0	1		09/03/13 15:07		M1
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	10.8	mg/L	5.0	1		09/04/13 12:12		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

Sample: 316-057		Lab ID: 60152102001	Collected: 08/29/13 08:10	Received: 08/30/13 00:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	6700	mg/L	5.0	1		09/05/13 14:09		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.7	Std. Units	0.10	1		08/30/13 17:55		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	25200	mg/L	2.0	1	08/30/13 16:51	09/04/13 09:10		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	708	mg/L	20.0	200		08/30/13 16:28	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	60700	mg/L	5000	500		09/03/13 10:49		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

Sample: TRIP BLANK		Lab ID: 60152102002	Collected: 08/29/13 08:10	Received: 08/30/13 00:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		08/30/13 14:37	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		08/30/13 14:37	75-27-4	
Bromoform	ND ug/L		1.0	1		08/30/13 14:37	75-25-2	
Bromomethane	ND ug/L		5.0	1		08/30/13 14:37	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		08/30/13 14:37	56-23-5	
Chloroethane	ND ug/L		1.0	1		08/30/13 14:37	75-00-3	
Chloroform	1.0 ug/L		1.0	1		08/30/13 14:37	67-66-3	
1,4-Dichlorobenzene	ND ug/L		1.0	1		08/30/13 14:37	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		08/30/13 14:37	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		08/30/13 14:37	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		08/30/13 14:37	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		08/30/13 14:37	100-41-4	
Methylene chloride	ND ug/L		1.0	1		08/30/13 14:37	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		08/30/13 14:37	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		08/30/13 14:37	127-18-4	
Toluene	ND ug/L		1.0	1		08/30/13 14:37	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		08/30/13 14:37	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		08/30/13 14:37	79-00-5	L2
Trichloroethene	ND ug/L		1.0	1		08/30/13 14:37	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		08/30/13 14:37	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		08/30/13 14:37	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101 %		80-120	1		08/30/13 14:37	460-00-4	
Toluene-d8 (S)	98 %		80-120	1		08/30/13 14:37	2037-26-5	
1,2-Dichloroethane-d4 (S)	98 %		80-120	1		08/30/13 14:37	17060-07-0	
Preservation pH	6.0		1.0	1		08/30/13 14:37		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch: MERP/7664

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60152102001

METHOD BLANK: 1247196

Matrix: Water

Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	09/05/13 12:34	

LABORATORY CONTROL SAMPLE: 1247197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247205 1247206

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	2.0	2.3	36	42	70-130	14	20	M1

MATRIX SPIKE SAMPLE: 1247207

Parameter	Units	60152283001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1.1	5	9.9	177	70-130	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch: MERP/7672

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury - Dissolved

Associated Lab Samples: 60152102001

METHOD BLANK: 1248210

Matrix: Water

Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	09/06/13 08:48	

LABORATORY CONTROL SAMPLE: 1248211

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1248212 1248213

Parameter	Units	60152326001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	3.0	4.6	61	91	70-130	39	20	M1, R1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057
Pace Project No.: 60152102

QC Batch: MPRP/24109 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60152102001

METHOD BLANK: 1247468 Matrix: Water
Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	09/05/13 12:19	
Antimony	ug/L	ND	10.0	09/05/13 12:19	
Arsenic	ug/L	ND	10.0	09/05/13 12:19	
Beryllium	ug/L	ND	1.0	09/05/13 12:19	
Cadmium	ug/L	ND	5.0	09/05/13 12:19	
Chromium	ug/L	ND	5.0	09/05/13 12:19	
Cobalt	ug/L	ND	5.0	09/05/13 12:19	
Copper	ug/L	ND	10.0	09/05/13 12:19	
Iron	ug/L	1370	50.0	09/05/13 12:19	
Lead	ug/L	ND	5.0	09/05/13 12:19	
Nickel	ug/L	ND	5.0	09/05/13 12:19	
Selenium	ug/L	ND	15.0	09/05/13 12:19	
Silver	ug/L	ND	7.0	09/05/13 12:19	
Thallium	ug/L	ND	20.0	09/05/13 12:19	
Zinc	ug/L	ND	50.0	09/05/13 12:19	

LABORATORY CONTROL SAMPLE: 1247469

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10300	103	85-115	
Antimony	ug/L	1000	989	99	85-115	
Arsenic	ug/L	1000	971	97	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	983	98	85-115	
Iron	ug/L	10000	10800	108	85-115	
Lead	ug/L	1000	1020	102	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	972	97	85-115	
Silver	ug/L	500	495	99	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247470 1247471

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	9140	10000	10000	22400	22000	132	128	70-130	2	8 M1	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247470 1247471											
Parameter	Units	60152102001		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	54.3	1000	1000	1000	785	785	73	73	70-130	0
Arsenic	ug/L	729	1000	1000	1000	1840	1840	111	111	70-130	0
Beryllium	ug/L	ND	1000	1000	1000	919	910	92	91	70-130	1
Cadmium	ug/L	17.2	1000	1000	1000	1080	1070	106	106	70-130	1
Chromium	ug/L	274	1000	1000	1000	1200	1210	93	93	70-130	0
Cobalt	ug/L	59.3	1000	1000	1000	948	941	89	88	70-130	1
Copper	ug/L	24.4	1000	1000	1000	1020	1020	100	99	70-130	0
Iron	ug/L	868000	10000	10000	10000	860000	860000	-84	-80	70-130	0
Lead	ug/L	217	1000	1000	1000	1030	1030	82	81	70-130	0
Nickel	ug/L	143	1000	1000	1000	1030	1030	89	88	70-130	1
Selenium	ug/L	ND	1000	1000	1000	997	1000	100	100	70-130	0
Silver	ug/L	ND	500	500	500	30.1	31.1	5	6	70-130	3
Thallium	ug/L	ND	1000	1000	1000	809	792	81	79	70-130	2
Zinc	ug/L	13700	1000	1000	1000	14400	14600	77	97	70-130	1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057
Pace Project No.: 60152102

QC Batch: MPRP/24108 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60152102001

METHOD BLANK: 1247462 Matrix: Water
Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	09/05/13 15:39	
Antimony, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Arsenic, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Beryllium, Dissolved	ug/L	ND	1.0	09/05/13 15:39	
Cadmium, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Chromium, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Cobalt, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Copper, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Iron, Dissolved	ug/L	ND	50.0	09/05/13 15:39	
Lead, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Nickel, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Selenium, Dissolved	ug/L	ND	15.0	09/05/13 15:39	
Silver, Dissolved	ug/L	ND	7.0	09/05/13 15:39	
Thallium, Dissolved	ug/L	ND	20.0	09/05/13 15:39	
Zinc, Dissolved	ug/L	ND	50.0	09/05/13 15:39	

LABORATORY CONTROL SAMPLE: 1247463

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10100	101	85-115	
Antimony, Dissolved	ug/L	1000	980	98	85-115	
Arsenic, Dissolved	ug/L	1000	961	96	85-115	
Beryllium, Dissolved	ug/L	1000	1020	102	85-115	
Cadmium, Dissolved	ug/L	1000	971	97	85-115	
Chromium, Dissolved	ug/L	1000	984	98	85-115	
Cobalt, Dissolved	ug/L	1000	990	99	85-115	
Copper, Dissolved	ug/L	1000	950	95	85-115	
Iron, Dissolved	ug/L	10000	9690	97	85-115	
Lead, Dissolved	ug/L	1000	990	99	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	983	98	85-115	
Silver, Dissolved	ug/L	500	476	95	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247464 1247465

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2750	20000	20000	13100	12800	52	50	70-130	2	8 M1	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247464 1247465												
Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Antimony, Dissolved	ug/L	41.8	2000	2000	976	997	47	48	70-130	2	7	M1
Arsenic, Dissolved	ug/L	594	2000	2000	1740	1700	57	55	70-130	2	10	M1
Beryllium, Dissolved	ug/L	ND	2000	2000	906	892	45	45	70-130	1	7	M1
Cadmium, Dissolved	ug/L	ND	2000	2000	1090	1080	54	53	70-130	2	10	M1
Chromium, Dissolved	ug/L	216	2000	2000	1150	1130	47	46	70-130	2	10	M1
Cobalt, Dissolved	ug/L	42.6	2000	2000	952	939	45	45	70-130	1	6	M1
Copper, Dissolved	ug/L	ND	2000	2000	1010	1000	50	50	70-130	1	11	M1
Iron, Dissolved	ug/L	418000	20000	20000	434000	409000	81	-43	70-130	6	10	M1
Lead, Dissolved	ug/L	78.3	2000	2000	914	899	42	41	70-130	2	10	M1
Nickel, Dissolved	ug/L	123	2000	2000	1040	1020	46	45	70-130	2	10	M1
Selenium, Dissolved	ug/L	ND	2000	2000	1110	1110	56	55	70-130	0	10	M1
Silver, Dissolved	ug/L	ND	1000	1000	34.1	90.3	3	9	70-130	90	10	M1, R1
Thallium, Dissolved	ug/L	ND	2000	2000	836	807	42	40	70-130	4	6	M1
Zinc, Dissolved	ug/L	11300	2000	2000	12400	11700	55	20	70-130	6	11	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch: MSV/55936 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60152102001, 60152102002

METHOD BLANK: 1245309 Matrix: Water

Associated Lab Samples: 60152102001, 60152102002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,2-Dichloroethane	ug/L	ND	1.0	08/30/13 12:07	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/30/13 12:07	
Benzene	ug/L	ND	1.0	08/30/13 12:07	
Bromodichloromethane	ug/L	ND	1.0	08/30/13 12:07	
Bromoform	ug/L	ND	1.0	08/30/13 12:07	
Bromomethane	ug/L	ND	5.0	08/30/13 12:07	
Carbon tetrachloride	ug/L	ND	1.0	08/30/13 12:07	
Chloroethane	ug/L	ND	1.0	08/30/13 12:07	
Chloroform	ug/L	ND	1.0	08/30/13 12:07	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/30/13 12:07	
Ethylbenzene	ug/L	ND	1.0	08/30/13 12:07	
Methylene chloride	ug/L	ND	1.0	08/30/13 12:07	
Tetrachloroethene	ug/L	ND	1.0	08/30/13 12:07	
Toluene	ug/L	ND	1.0	08/30/13 12:07	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/30/13 12:07	
Trichloroethene	ug/L	ND	1.0	08/30/13 12:07	
Vinyl chloride	ug/L	ND	1.0	08/30/13 12:07	
Xylene (Total)	ug/L	ND	3.0	08/30/13 12:07	
1,2-Dichloroethane-d4 (S)	%	102	80-120	08/30/13 12:07	
4-Bromofluorobenzene (S)	%	100	80-120	08/30/13 12:07	
Toluene-d8 (S)	%	99	80-120	08/30/13 12:07	

LABORATORY CONTROL SAMPLE: 1245310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	16.2	81	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	16.3	81	59-138	
1,1,2-Trichloroethane	ug/L	20	13.3	67	69-127	L0
1,2-Dichloroethane	ug/L	20	15.3	76	71-129	
1,4-Dichlorobenzene	ug/L	20	18.7	93	68-124	
Benzene	ug/L	20	15.6	78	73-129	
Bromodichloromethane	ug/L	20	14.8	74	63-129	
Bromoform	ug/L	20	14.9	75	52-123	
Bromomethane	ug/L	20	10.4	52	10-160	
Carbon tetrachloride	ug/L	20	17.3	87	70-140	
Chloroethane	ug/L	20	15.5	77	42-160	
Chloroform	ug/L	20	15.0	75	60-120	
cis-1,2-Dichloroethene	ug/L	20	15.3	76	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

LABORATORY CONTROL SAMPLE: 1245310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	18.0	90	66-133	
Methylene chloride	ug/L	20	15.6	78	56-135	
Tetrachloroethene	ug/L	20	17.6	88	64-143	
Toluene	ug/L	20	15.9	79	70-130	
trans-1,2-Dichloroethene	ug/L	20	14.7	74	67-149	
Trichloroethene	ug/L	20	15.3	76	71-130	
Vinyl chloride	ug/L	20	12.5	62	41-160	
Xylene (Total)	ug/L	60	54.6	91	67-130	
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE SAMPLE: 1245311

Parameter	Units	60151872001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3540	89	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	3550	89	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	2910	73	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3350	84	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3940	99	18-147	
Benzene	ug/L	ND	4000	3440	86	37-151	
Bromodichloromethane	ug/L	ND	4000	3320	83	35-155	
Bromoform	ug/L	ND	4000	3270	82	45-133	
Bromomethane	ug/L	ND	4000	1760	44	10-160	
Carbon tetrachloride	ug/L	ND	4000	3750	94	70-140	
Chloroethane	ug/L	ND	4000	2900	73	14-160	
Chloroform	ug/L	218	4000	3350	78	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3280	82	19-160	
Ethylbenzene	ug/L	ND	4000	3900	97	37-154	
Methylene chloride	ug/L	ND	4000	3270	80	15-156	
Tetrachloroethene	ug/L	ND	4000	3800	95	64-148	
Toluene	ug/L	ND	4000	3430	86	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3080	77	54-156	
Trichloroethene	ug/L	ND	4000	3300	82	71-157	
Vinyl chloride	ug/L	ND	4000	2370	59	10-160	
Xylene (Total)	ug/L	ND	12000	11600	97	12-153	
1,2-Dichloroethane-d4 (S)	%				101	80-120	
4-Bromofluorobenzene (S)	%				101	80-120 HS	
Toluene-d8 (S)	%				98	80-120	
Preservation pH			6.0	6.0			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057
Pace Project No.: 60152102

QC Batch:	OEXT/40248	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60152102001		

METHOD BLANK: 1247598 Matrix: Water
Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	09/09/13 20:31	
2,4,6-Trichlorophenol	ug/L	ND	5.0	09/09/13 20:31	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	09/09/13 20:31	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	09/09/13 20:31	
Hexachlorocyclopentadiene	ug/L	ND	5.0	09/09/13 20:31	
Hexachloroethane	ug/L	ND	5.0	09/09/13 20:31	
Naphthalene	ug/L	ND	5.0	09/09/13 20:31	
Nitrobenzene	ug/L	ND	5.0	09/09/13 20:31	
Pentachlorophenol	ug/L	ND	5.0	09/09/13 20:31	
Phenol	ug/L	ND	5.0	09/09/13 20:31	
2,4,6-Tribromophenol (S)	%	85	39-119	09/09/13 20:31	
2-Fluorobiphenyl (S)	%	90	36-120	09/09/13 20:31	
2-Fluorophenol (S)	%	42	18-120	09/09/13 20:31	
Nitrobenzene-d5 (S)	%	79	32-120	09/09/13 20:31	
Phenol-d6 (S)	%	27	12-120	09/09/13 20:31	
Terphenyl-d14 (S)	%	103	44-120	09/09/13 20:31	

LABORATORY CONTROL SAMPLE: 1247599

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	41.2	82	44-120	
2,4,6-Trichlorophenol	ug/L	50	43.9	88	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	39.5	79	31-147	
Hexachloro-1,3-butadiene	ug/L	50	40.5	81	41-116	
Hexachlorocyclopentadiene	ug/L	100	74.2	74	31-120	
Hexachloroethane	ug/L	50	38.3	77	40-113	
Naphthalene	ug/L	50	41.5	83	48-120	
Nitrobenzene	ug/L	50	42.4	85	47-120	
Pentachlorophenol	ug/L	50	48.0	96	43-127	
Phenol	ug/L	50	12.9	26	15-112	
2,4,6-Tribromophenol (S)	%			99	39-119	
2-Fluorobiphenyl (S)	%			88	36-120	
2-Fluorophenol (S)	%			40	18-120	
Nitrobenzene-d5 (S)	%			79	32-120	M4
Phenol-d6 (S)	%			25	12-120	
Terphenyl-d14 (S)	%			92	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch: WET/43205

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60152102001

METHOD BLANK: 1246759

Matrix: Water

Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	09/03/13 15:06	

LABORATORY CONTROL SAMPLE: 1246760

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	41.8	104	78-114	

MATRIX SPIKE SAMPLE: 1246764

Parameter	Units	60152102001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	505	42.6	662	368	78-114	M1

SAMPLE DUPLICATE: 1246763

Parameter	Units	60152008001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	568	553	3	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch: WET/43217

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60152102001

METHOD BLANK: 1247230

Matrix: Water

Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	09/04/13 12:09	

LABORATORY CONTROL SAMPLE: 1247231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	18.4	92	64-132	

MATRIX SPIKE SAMPLE: 1247238

Parameter	Units	60152102001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	10.8	21.3	25.7	70	64-132	

SAMPLE DUPLICATE: 1247236

Parameter	Units	60152008001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	13.1	13.7	4	34	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch: WET/43245

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60152102001

METHOD BLANK: 1248182

Matrix: Water

Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	09/05/13 14:05	

SAMPLE DUPLICATE: 1248183

Parameter	Units	60152105002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	27.0	21.0	25	25	

SAMPLE DUPLICATE: 1248184

Parameter	Units	60152102001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6700	6720	0	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch: WET/43172 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60152102001

SAMPLE DUPLICATE: 1245874

Parameter	Units	60152102001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.7	0	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch: WET/43165

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60152102001

METHOD BLANK: 1245622

Matrix: Water

Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	09/04/13 09:06	

LABORATORY CONTROL SAMPLE: 1245623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	180	91	85-115	

SAMPLE DUPLICATE: 1245624

Parameter	Units	60152102001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	25200	25700	2	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch: WETA/26020

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60152102001

METHOD BLANK: 1245379

Matrix: Water

Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	08/30/13 16:23	

LABORATORY CONTROL SAMPLE: 1245380

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.0	100	90-110	

MATRIX SPIKE SAMPLE: 1245381

Parameter	Units	60151872001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	749	400	1060	79	90-110	M1

SAMPLE DUPLICATE: 1245382

Parameter	Units	60152102001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	708	718	1	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

QC Batch:	WETA/26016	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60152102001		

METHOD BLANK: 1245171 Matrix: Water

Associated Lab Samples: 60152102001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	09/03/13 10:48	

LABORATORY CONTROL SAMPLE: 1245172

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	54.0	108	90-110	

SAMPLE DUPLICATE: 1245174

Parameter	Units	60152102001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	60700	57200	6	25	

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QUALIFIERS

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M4	A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-057

Pace Project No.: 60152102

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60152102001	316-057	EPA 200.7	MPRP/24109	EPA 200.7	ICP/18843
60152102001	316-057	EPA 200.7	MPRP/24108	EPA 200.7	ICP/18842
60152102001	316-057	EPA 245.1	MERP/7664	EPA 245.1	MERC/7622
60152102001	316-057	EPA 245.1	MERP/7672	EPA 245.1	MERC/7628
60152102001	316-057	EPA 625	OEXT/40248	EPA 625	MSSV/12755
60152102001	316-057	EPA 624 Low	MSV/55936		
60152102002	TRIP BLANK	EPA 624 Low	MSV/55936		
60152102001	316-057	EPA 1664A	WET/43205		
60152102001	316-057	EPA 1664A	WET/43217		
60152102001	316-057	SM 2540D	WET/43245		
60152102001	316-057	SM 4500-H+B	WET/43172		
60152102001	316-057	SM 5210B	WET/43165	SM 5210B	WET/43295
60152102001	316-057	EPA 350.1	WETA/26020		
60152102001	316-057	EPA 410.4	WETA/26016		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60152102



60152102

Client Name: Barr Eng.

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ 2pc

Thermometer Used: T-112 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2-3

Date and initials of person examining contents: 8-30-13 BA

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Boo</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	17.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☒ No	Initial when completed
Trip Blank present:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☒ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y ☐ N ☒

Field Data Required? Y ☐ N ☒

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/30/13

September 10, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-058
Pace Project No.: 60152198

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on August 31, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60152198001	316-058	Water	08/30/13 07:15	08/31/13 00:50
60152198002	TRIP BLANK	Water	08/30/13 07:15	08/31/13 00:50

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60152198001	316-058	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TDS	1
		EPA 245.1	TDS	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		SM 5210B	DJR	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
60152198002	TRIP BLANK	EPA 624 Low	JKL	25

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

Sample: 316-058		Lab ID: 60152198001	Collected: 08/30/13 07:15	Received: 08/31/13 00:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	12000 ug/L		150	2	09/04/13 16:45	09/05/13 12:39	7429-90-5	
Antimony	48.8 ug/L		20.0	2	09/04/13 16:45	09/05/13 12:39	7440-36-0	
Arsenic	732 ug/L		20.0	2	09/04/13 16:45	09/05/13 12:39	7440-38-2	
Beryllium	ND ug/L		5.0	5	09/04/13 16:45	09/05/13 13:19	7440-41-7	D3
Cadmium	14.4 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:39	7440-43-9	
Chromium	260 ug/L		25.0	5	09/04/13 16:45	09/05/13 13:19	7440-47-3	
Cobalt	56.0 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:39	7440-48-4	
Copper	39.4 ug/L		20.0	2	09/04/13 16:45	09/05/13 12:39	7440-50-8	
Iron	691000 ug/L		100	2	09/04/13 16:45	09/05/13 12:39	7439-89-6	
Lead	203 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:39	7439-92-1	
Nickel	143 ug/L		10.0	2	09/04/13 16:45	09/05/13 12:39	7440-02-0	
Selenium	ND ug/L		75.0	5	09/04/13 16:45	09/05/13 13:19	7782-49-2	D3
Silver	ND ug/L		14.0	2	09/04/13 16:45	09/05/13 12:39	7440-22-4	D3
Thallium	ND ug/L		100	5	09/04/13 16:45	09/05/13 13:19	7440-28-0	D3
Zinc	13600 ug/L		1000	20	09/04/13 16:45	09/05/13 14:05	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	2960 ug/L		150	2	09/04/13 16:45	09/05/13 15:59	7429-90-5	
Antimony, Dissolved	45.1 ug/L		20.0	2	09/04/13 16:45	09/05/13 15:59	7440-36-0	
Arsenic, Dissolved	669 ug/L		20.0	2	09/04/13 16:45	09/05/13 15:59	7440-38-2	
Beryllium, Dissolved	ND ug/L		5.0	5	09/04/13 16:45	09/05/13 17:05	7440-41-7	D3
Cadmium, Dissolved	ND ug/L		10.0	2	09/04/13 16:45	09/05/13 15:59	7440-43-9	D3
Chromium, Dissolved	220 ug/L		25.0	5	09/04/13 16:45	09/05/13 17:05	7440-47-3	
Cobalt, Dissolved	44.7 ug/L		10.0	2	09/04/13 16:45	09/05/13 15:59	7440-48-4	
Copper, Dissolved	ND ug/L		20.0	2	09/04/13 16:45	09/05/13 15:59	7440-50-8	D3
Iron, Dissolved	418000 ug/L		100	2	09/04/13 16:45	09/05/13 15:59	7439-89-6	
Lead, Dissolved	97.1 ug/L		10.0	2	09/04/13 16:45	09/05/13 15:59	7439-92-1	
Nickel, Dissolved	128 ug/L		10.0	2	09/04/13 16:45	09/05/13 15:59	7440-02-0	
Selenium, Dissolved	ND ug/L		75.0	5	09/04/13 16:45	09/05/13 17:05	7782-49-2	D3
Silver, Dissolved	ND ug/L		14.0	2	09/04/13 16:45	09/05/13 15:59	7440-22-4	D3
Thallium, Dissolved	ND ug/L		100	5	09/04/13 16:45	09/05/13 17:05	7440-28-0	D3
Zinc, Dissolved	11500 ug/L		1000	20	09/04/13 16:45	09/05/13 17:47	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	1.0 ug/L		0.20	1	09/05/13 08:37	09/05/13 13:20	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND ug/L		0.20	1	09/05/13 15:30	09/06/13 09:10	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND ug/L		5000	20	09/05/13 00:00	09/09/13 22:16	534-52-1	
Hexachloro-1,3-butadiene	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:16	87-68-3	
Hexachlorocyclopentadiene	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:16	77-47-4	
Hexachloroethane	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:16	67-72-1	
Naphthalene	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:16	91-20-3	
Nitrobenzene	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:16	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

Sample: 316-058		Lab ID: 60152198001	Collected: 08/30/13 07:15	Received: 08/31/13 00:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:16	87-86-5	
Phenol	7760 ug/L		1000	20	09/05/13 00:00	09/09/13 22:16	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:16	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:16	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	09/05/13 00:00	09/09/13 22:16	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	09/05/13 00:00	09/09/13 22:16	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	09/05/13 00:00	09/09/13 22:16	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	09/05/13 00:00	09/09/13 22:16	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	09/05/13 00:00	09/09/13 22:16	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	09/05/13 00:00	09/09/13 22:16	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		09/05/13 22:20	71-43-2	
Bromodichloromethane	ND ug/L		200	200		09/05/13 22:20	75-27-4	
Bromoform	ND ug/L		200	200		09/05/13 22:20	75-25-2	
Bromomethane	ND ug/L		1000	200		09/05/13 22:20	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		09/05/13 22:20	56-23-5	
Chloroethane	ND ug/L		200	200		09/05/13 22:20	75-00-3	
Chloroform	303 ug/L		200	200		09/05/13 22:20	67-66-3	B
1,4-Dichlorobenzene	ND ug/L		200	200		09/05/13 22:20	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		09/05/13 22:20	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		09/05/13 22:20	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		09/05/13 22:20	156-60-5	
Ethylbenzene	ND ug/L		200	200		09/05/13 22:20	100-41-4	
Methylene chloride	ND ug/L		200	200		09/05/13 22:20	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		09/05/13 22:20	79-34-5	
Tetrachloroethene	ND ug/L		200	200		09/05/13 22:20	127-18-4	
Toluene	ND ug/L		200	200		09/05/13 22:20	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		09/05/13 22:20	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		09/05/13 22:20	79-00-5	
Trichloroethene	ND ug/L		200	200		09/05/13 22:20	79-01-6	
Vinyl chloride	ND ug/L		200	200		09/05/13 22:20	75-01-4	
Xylene (Total)	ND ug/L		600	200		09/05/13 22:20	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		09/05/13 22:20	460-00-4	D3
Toluene-d8 (S)	99 %		80-120	200		09/05/13 22:20	2037-26-5	
1,2-Dichloroethane-d4 (S)	100 %		80-120	200		09/05/13 22:20	17060-07-0	
Preservation pH	6.0		1.0	200		09/05/13 22:20		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	691 mg/L		5.0	1		09/05/13 07:26		M1
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	12.6 mg/L		5.0	1		09/09/13 13:18		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

Sample: 316-058		Lab ID: 60152198001	Collected: 08/30/13 07:15	Received: 08/31/13 00:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	5680	mg/L	5.0	1		09/06/13 14:54		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.7	Std. Units	0.10	1		09/03/13 14:45		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	38000	mg/L	2.0	1	08/31/13 10:22	09/05/13 08:58		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	695	mg/L	20.0	200		09/06/13 09:54	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	53800	mg/L	10000	1000		09/05/13 14:18		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

Sample: TRIP BLANK		Lab ID: 60152198002	Collected: 08/30/13 07:15	Received: 08/31/13 00:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		09/05/13 17:00	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		09/05/13 17:00	75-27-4	
Bromoform	ND ug/L		1.0	1		09/05/13 17:00	75-25-2	
Bromomethane	ND ug/L		5.0	1		09/05/13 17:00	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		09/05/13 17:00	56-23-5	
Chloroethane	ND ug/L		1.0	1		09/05/13 17:00	75-00-3	
Chloroform	2.1 ug/L		1.0	1		09/05/13 17:00	67-66-3	B
1,4-Dichlorobenzene	ND ug/L		1.0	1		09/05/13 17:00	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		09/05/13 17:00	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		09/05/13 17:00	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		09/05/13 17:00	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		09/05/13 17:00	100-41-4	
Methylene chloride	ND ug/L		1.0	1		09/05/13 17:00	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		09/05/13 17:00	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		09/05/13 17:00	127-18-4	
Toluene	ND ug/L		1.0	1		09/05/13 17:00	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		09/05/13 17:00	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		09/05/13 17:00	79-00-5	
Trichloroethene	ND ug/L		1.0	1		09/05/13 17:00	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		09/05/13 17:00	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		09/05/13 17:00	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	1		09/05/13 17:00	460-00-4	
Toluene-d8 (S)	99 %		80-120	1		09/05/13 17:00	2037-26-5	
1,2-Dichloroethane-d4 (S)	99 %		80-120	1		09/05/13 17:00	17060-07-0	
Preservation pH	6.0		1.0	1		09/05/13 17:00		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch: MERP/7664

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60152198001

METHOD BLANK: 1247196

Matrix: Water

Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	09/05/13 12:34	

LABORATORY CONTROL SAMPLE: 1247197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247205 1247206

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	2.0	2.3	36	42	70-130	14	20	M1

MATRIX SPIKE SAMPLE: 1247207

Parameter	Units	60152283001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1.1	5	9.9	177	70-130	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch:	MERP/7672	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60152198001		

METHOD BLANK:	1248210	Matrix:	Water
Associated Lab Samples:	60152198001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	09/06/13 08:48	

LABORATORY CONTROL SAMPLE: 1248211

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1248212 1248213

Parameter	Units	60152326001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	3.0	4.6	61	91	70-130	39	20	M1, R1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058
Pace Project No.: 60152198

QC Batch: MPRP/24109 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60152198001

METHOD BLANK: 1247468 Matrix: Water
Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	09/05/13 12:19	
Antimony	ug/L	ND	10.0	09/05/13 12:19	
Arsenic	ug/L	ND	10.0	09/05/13 12:19	
Beryllium	ug/L	ND	1.0	09/05/13 12:19	
Cadmium	ug/L	ND	5.0	09/05/13 12:19	
Chromium	ug/L	ND	5.0	09/05/13 12:19	
Cobalt	ug/L	ND	5.0	09/05/13 12:19	
Copper	ug/L	ND	10.0	09/05/13 12:19	
Iron	ug/L	1370	50.0	09/05/13 12:19	
Lead	ug/L	ND	5.0	09/05/13 12:19	
Nickel	ug/L	ND	5.0	09/05/13 12:19	
Selenium	ug/L	ND	15.0	09/05/13 12:19	
Silver	ug/L	ND	7.0	09/05/13 12:19	
Thallium	ug/L	ND	20.0	09/05/13 12:19	
Zinc	ug/L	ND	50.0	09/05/13 12:19	

LABORATORY CONTROL SAMPLE: 1247469

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10300	103	85-115	
Antimony	ug/L	1000	989	99	85-115	
Arsenic	ug/L	1000	971	97	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	983	98	85-115	
Iron	ug/L	10000	10800	108	85-115	
Lead	ug/L	1000	1020	102	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	972	97	85-115	
Silver	ug/L	500	495	99	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247470 1247471

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	9140	10000	10000	22400	22000	132	128	70-130	2	8 M1	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247470 1247471											
Parameter	Units	60152102001		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	54.3	1000	1000	1000	785	785	73	73	70-130	0
Arsenic	ug/L	729	1000	1000	1000	1840	1840	111	111	70-130	0
Beryllium	ug/L	ND	1000	1000	1000	919	910	92	91	70-130	1
Cadmium	ug/L	17.2	1000	1000	1000	1080	1070	106	106	70-130	1
Chromium	ug/L	274	1000	1000	1000	1200	1210	93	93	70-130	0
Cobalt	ug/L	59.3	1000	1000	1000	948	941	89	88	70-130	1
Copper	ug/L	24.4	1000	1000	1000	1020	1020	100	99	70-130	0
Iron	ug/L	868000	10000	10000	10000	860000	860000	-84	-80	70-130	0
Lead	ug/L	217	1000	1000	1000	1030	1030	82	81	70-130	0
Nickel	ug/L	143	1000	1000	1000	1030	1030	89	88	70-130	1
Selenium	ug/L	ND	1000	1000	1000	997	1000	100	100	70-130	0
Silver	ug/L	ND	500	500	500	30.1	31.1	5	6	70-130	3
Thallium	ug/L	ND	1000	1000	1000	809	792	81	79	70-130	2
Zinc	ug/L	13700	1000	1000	1000	14400	14600	77	97	70-130	1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058
Pace Project No.: 60152198

QC Batch: MPRP/24108 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60152198001

METHOD BLANK: 1247462 Matrix: Water
Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	09/05/13 15:39	
Antimony, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Arsenic, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Beryllium, Dissolved	ug/L	ND	1.0	09/05/13 15:39	
Cadmium, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Chromium, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Cobalt, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Copper, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Iron, Dissolved	ug/L	ND	50.0	09/05/13 15:39	
Lead, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Nickel, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Selenium, Dissolved	ug/L	ND	15.0	09/05/13 15:39	
Silver, Dissolved	ug/L	ND	7.0	09/05/13 15:39	
Thallium, Dissolved	ug/L	ND	20.0	09/05/13 15:39	
Zinc, Dissolved	ug/L	ND	50.0	09/05/13 15:39	

LABORATORY CONTROL SAMPLE: 1247463

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10100	101	85-115	
Antimony, Dissolved	ug/L	1000	980	98	85-115	
Arsenic, Dissolved	ug/L	1000	961	96	85-115	
Beryllium, Dissolved	ug/L	1000	1020	102	85-115	
Cadmium, Dissolved	ug/L	1000	971	97	85-115	
Chromium, Dissolved	ug/L	1000	984	98	85-115	
Cobalt, Dissolved	ug/L	1000	990	99	85-115	
Copper, Dissolved	ug/L	1000	950	95	85-115	
Iron, Dissolved	ug/L	10000	9690	97	85-115	
Lead, Dissolved	ug/L	1000	990	99	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	983	98	85-115	
Silver, Dissolved	ug/L	500	476	95	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247464 1247465

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2750	20000	20000	13100	12800	52	50	70-130	2	8 M1	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247464 1247465												
Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony, Dissolved	ug/L	41.8	2000	2000	976	997	47	48	70-130	2	7	M1
Arsenic, Dissolved	ug/L	594	2000	2000	1740	1700	57	55	70-130	2	10	M1
Beryllium, Dissolved	ug/L	ND	2000	2000	906	892	45	45	70-130	1	7	M1
Cadmium, Dissolved	ug/L	ND	2000	2000	1090	1080	54	53	70-130	2	10	M1
Chromium, Dissolved	ug/L	216	2000	2000	1150	1130	47	46	70-130	2	10	M1
Cobalt, Dissolved	ug/L	42.6	2000	2000	952	939	45	45	70-130	1	6	M1
Copper, Dissolved	ug/L	ND	2000	2000	1010	1000	50	50	70-130	1	11	M1
Iron, Dissolved	ug/L	418000	20000	20000	434000	409000	81	-43	70-130	6	10	M1
Lead, Dissolved	ug/L	78.3	2000	2000	914	899	42	41	70-130	2	10	M1
Nickel, Dissolved	ug/L	123	2000	2000	1040	1020	46	45	70-130	2	10	M1
Selenium, Dissolved	ug/L	ND	2000	2000	1110	1110	56	55	70-130	0	10	M1
Silver, Dissolved	ug/L	ND	1000	1000	34.1	90.3	3	9	70-130	90	10	M1, R1
Thallium, Dissolved	ug/L	ND	2000	2000	836	807	42	40	70-130	4	6	M1
Zinc, Dissolved	ug/L	11300	2000	2000	12400	11700	55	20	70-130	6	11	M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch: MSV/56059 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60152198001, 60152198002

METHOD BLANK: 1247912 Matrix: Water

Associated Lab Samples: 60152198001, 60152198002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	09/05/13 15:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/05/13 15:55	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/05/13 15:55	
1,2-Dichloroethane	ug/L	ND	1.0	09/05/13 15:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/05/13 15:55	
Benzene	ug/L	ND	1.0	09/05/13 15:55	
Bromodichloromethane	ug/L	ND	1.0	09/05/13 15:55	
Bromoform	ug/L	ND	1.0	09/05/13 15:55	
Bromomethane	ug/L	ND	5.0	09/05/13 15:55	
Carbon tetrachloride	ug/L	ND	1.0	09/05/13 15:55	
Chloroethane	ug/L	ND	1.0	09/05/13 15:55	
Chloroform	ug/L	2.0	1.0	09/05/13 15:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/05/13 15:55	
Ethylbenzene	ug/L	ND	1.0	09/05/13 15:55	
Methylene chloride	ug/L	ND	1.0	09/05/13 15:55	
Tetrachloroethene	ug/L	ND	1.0	09/05/13 15:55	
Toluene	ug/L	ND	1.0	09/05/13 15:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/05/13 15:55	
Trichloroethene	ug/L	ND	1.0	09/05/13 15:55	
Vinyl chloride	ug/L	ND	1.0	09/05/13 15:55	
Xylene (Total)	ug/L	ND	3.0	09/05/13 15:55	
1,2-Dichloroethane-d4 (S)	%	98	80-120	09/05/13 15:55	
4-Bromofluorobenzene (S)	%	100	80-120	09/05/13 15:55	
Toluene-d8 (S)	%	99	80-120	09/05/13 15:55	

LABORATORY CONTROL SAMPLE: 1247913

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.5	102	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	22.5	113	59-138	
1,1,2-Trichloroethane	ug/L	20	22.9	114	69-127	
1,2-Dichloroethane	ug/L	20	21.9	110	71-129	
1,4-Dichlorobenzene	ug/L	20	21.6	108	68-124	
Benzene	ug/L	20	20.7	103	73-129	
Bromodichloromethane	ug/L	20	22.0	110	63-129	
Bromoform	ug/L	20	22.6	113	52-123	
Bromomethane	ug/L	20	20.6	103	10-160	
Carbon tetrachloride	ug/L	20	20.5	102	70-140	
Chloroethane	ug/L	20	17.6	88	42-160	
Chloroform	ug/L	20	21.6	108	60-120	
cis-1,2-Dichloroethene	ug/L	20	21.0	105	70-125	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

LABORATORY CONTROL SAMPLE: 1247913

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	22.3	111	66-133	
Methylene chloride	ug/L	20	18.5	93	56-135	
Tetrachloroethene	ug/L	20	21.6	108	64-143	
Toluene	ug/L	20	21.1	106	70-130	
trans-1,2-Dichloroethene	ug/L	20	21.4	107	67-149	
Trichloroethene	ug/L	20	22.0	110	71-130	
Vinyl chloride	ug/L	20	20.1	101	41-160	
Xylene (Total)	ug/L	60	65.7	110	67-130	
1,2-Dichloroethane-d4 (S)	%			105	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			100	80-120	

MATRIX SPIKE SAMPLE: 1247914

Parameter	Units	60152283001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3870	97	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4030	101	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3830	96	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3930	98	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3650	91	18-147	
Benzene	ug/L	ND	4000	3850	96	37-151	
Bromodichloromethane	ug/L	ND	4000	3940	98	35-155	
Bromoform	ug/L	ND	4000	3750	94	45-133	
Bromomethane	ug/L	ND	4000	3100	77	10-160	
Carbon tetrachloride	ug/L	ND	4000	3980	100	70-140	
Chloroethane	ug/L	ND	4000	3420	85	14-160	
Chloroform	ug/L	273	4000	4080	89	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3850	96	19-160	
Ethylbenzene	ug/L	ND	4000	3920	98	37-154	
Methylene chloride	ug/L	ND	4000	3550	88	15-156	
Tetrachloroethene	ug/L	ND	4000	3920	98	64-148	
Toluene	ug/L	ND	4000	3790	95	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3950	99	54-156	
Trichloroethene	ug/L	ND	4000	3850	96	71-157	
Vinyl chloride	ug/L	ND	4000	3940	98	10-160	
Xylene (Total)	ug/L	ND	12000	11600	97	12-153	
1,2-Dichloroethane-d4 (S)	%				103	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058
Pace Project No.: 60152198

QC Batch:	OEXT/40248	Analysis Method:	EPA 625
QC Batch Method:	EPA 625	Analysis Description:	625 MSS
Associated Lab Samples:	60152198001		

METHOD BLANK: 1247598 Matrix: Water
Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	09/09/13 20:31	
2,4,6-Trichlorophenol	ug/L	ND	5.0	09/09/13 20:31	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	09/09/13 20:31	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	09/09/13 20:31	
Hexachlorocyclopentadiene	ug/L	ND	5.0	09/09/13 20:31	
Hexachloroethane	ug/L	ND	5.0	09/09/13 20:31	
Naphthalene	ug/L	ND	5.0	09/09/13 20:31	
Nitrobenzene	ug/L	ND	5.0	09/09/13 20:31	
Pentachlorophenol	ug/L	ND	5.0	09/09/13 20:31	
Phenol	ug/L	ND	5.0	09/09/13 20:31	
2,4,6-Tribromophenol (S)	%	85	39-119	09/09/13 20:31	
2-Fluorobiphenyl (S)	%	90	36-120	09/09/13 20:31	
2-Fluorophenol (S)	%	42	18-120	09/09/13 20:31	
Nitrobenzene-d5 (S)	%	79	32-120	09/09/13 20:31	
Phenol-d6 (S)	%	27	12-120	09/09/13 20:31	
Terphenyl-d14 (S)	%	103	44-120	09/09/13 20:31	

LABORATORY CONTROL SAMPLE: 1247599

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	41.2	82	44-120	
2,4,6-Trichlorophenol	ug/L	50	43.9	88	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	39.5	79	31-147	
Hexachloro-1,3-butadiene	ug/L	50	40.5	81	41-116	
Hexachlorocyclopentadiene	ug/L	100	74.2	74	31-120	
Hexachloroethane	ug/L	50	38.3	77	40-113	
Naphthalene	ug/L	50	41.5	83	48-120	
Nitrobenzene	ug/L	50	42.4	85	47-120	
Pentachlorophenol	ug/L	50	48.0	96	43-127	
Phenol	ug/L	50	12.9	26	15-112	
2,4,6-Tribromophenol (S)	%			99	39-119	
2-Fluorobiphenyl (S)	%			88	36-120	
2-Fluorophenol (S)	%			40	18-120	
Nitrobenzene-d5 (S)	%			79	32-120	M4
Phenol-d6 (S)	%			25	12-120	
Terphenyl-d14 (S)	%			92	44-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch: WET/43223

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60152198001

METHOD BLANK: 1247394

Matrix: Water

Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	09/05/13 07:22	

LABORATORY CONTROL SAMPLE: 1247395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	36.1	90	78-114	

MATRIX SPIKE SAMPLE: 1247398

Parameter	Units	60152198001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	691	41.7	694	8	78-114	M1

SAMPLE DUPLICATE: 1247399

Parameter	Units	60152236001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	711	739	4	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch: WET/43296

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60152198001

METHOD BLANK: 1250005

Matrix: Water

Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	09/09/13 13:17	

LABORATORY CONTROL SAMPLE: 1250006

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.8	104	64-132	

MATRIX SPIKE SAMPLE: 1250012

Parameter	Units	60152198001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	12.6	20.8	26.4	66	64-132	

SAMPLE DUPLICATE: 1250013

Parameter	Units	60152236001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	11.6	11.1	4	34	

SAMPLE DUPLICATE: 1250110

Parameter	Units	60152237001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	21.4	22.0	3	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch: WET/43266

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60152198001

METHOD BLANK: 1249025

Matrix: Water

Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	09/06/13 14:54	

SAMPLE DUPLICATE: 1249026

Parameter	Units	60152198001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	5680	5460	4	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch: WET/43203 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60152198001

SAMPLE DUPLICATE: 1246731

Parameter	Units	60152198001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.8	1	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch: WET/43176

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60152198001

METHOD BLANK: 1245982

Matrix: Water

Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	09/05/13 08:55	

LABORATORY CONTROL SAMPLE: 1245983

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	183	93	85-115	

SAMPLE DUPLICATE: 1245984

Parameter	Units	60152198001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	38000	39000	3	17	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch: WETA/26091

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60152198001

METHOD BLANK: 1247680

Matrix: Water

Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	09/06/13 09:52	

LABORATORY CONTROL SAMPLE: 1247681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1247683

Parameter	Units	60152283001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	706	400	1070	91	90-110	

SAMPLE DUPLICATE: 1247682

Parameter	Units	60152198001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	695	687	1	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

QC Batch:	WETA/26075	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60152198001		

METHOD BLANK: 1247049 Matrix: Water

Associated Lab Samples: 60152198001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	09/05/13 14:12	

LABORATORY CONTROL SAMPLE: 1247050

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	49.7	99	90-110	

MATRIX SPIKE SAMPLE: 1247051

Parameter	Units	60151872001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	65700	50000	100000	69	90-110	M1

SAMPLE DUPLICATE: 1247053

Parameter	Units	60152283001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	54200	53000	2	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

- | | |
|----|---|
| B | Analyte was detected in the associated method blank. |
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| M4 | A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution. |
| R1 | RPD value was outside control limits. |
| S4 | Surrogate recovery not evaluated against control limits due to sample dilution. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-058

Pace Project No.: 60152198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60152198001	316-058	EPA 200.7	MPRP/24109	EPA 200.7	ICP/18843
60152198001	316-058	EPA 200.7	MPRP/24108	EPA 200.7	ICP/18842
60152198001	316-058	EPA 245.1	MERP/7664	EPA 245.1	MERC/7622
60152198001	316-058	EPA 245.1	MERP/7672	EPA 245.1	MERC/7628
60152198001	316-058	EPA 625	OEXT/40248	EPA 625	MSSV/12755
60152198001	316-058	EPA 624 Low	MSV/56059		
60152198002	TRIP BLANK	EPA 624 Low	MSV/56059		
60152198001	316-058	EPA 1664A	WET/43223		
60152198001	316-058	EPA 1664A	WET/43296		
60152198001	316-058	SM 2540D	WET/43266		
60152198001	316-058	SM 4500-H+B	WET/43203		
60152198001	316-058	SM 5210B	WET/43176	SM 5210B	WET/43297
60152198001	316-058	EPA 350.1	WETA/26091		
60152198001	316-058	EPA 410.4	WETA/26075		

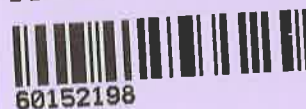
REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60152198



60152198

Client Name: Barr Eng.

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☒ Y-Box-23

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☐ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ 2plc

Thermometer Used: T-112 / T-194

Type of Ice: Wet ☒ Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.1

Date and initials of person examining contents: 8/31/13 [Signature]

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>BOD</u>
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	10.
Containers intact:	☒ Yes ☐ No ☐ N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	12.
Filtered volume received for dissolved tests?	☐ Yes ☐ No ☒ N/A	13.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	14.
Includes date/time/ID/analyses	Matrix: <u>W</u>	15.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	16. Initial pH for BP3W 4.5, added <u>1.5mL</u> Final pH BP3W 4.0, Final pH BP35 3.0
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	17. Initial when completed <u>[Signature]</u> Lot # of added preservative <u>12510-1-3</u>
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	18. 5 of 5 <u>Dhan</u> Apply FOOTNOTES <u>Boxed at HISTORICAL</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	19. List State: <u>TX</u>
Pace Trip Blank lot # (if purchased): <u>071513-3</u>		
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 8/31/13

Page : 1 Of 1

Section A

Required Client Information:

Company: BARR ENGINEERING

Address:

Email To:

Phone:	(816) 285-8410	Fax
--------	----------------	-----

Requested Due Date/TAT: 10 Day (Default)

Section B

Required Project Information:

Report To: ED GALBRAITH/BARR

Copy To: SCOTT FEDAK/FEEZOR

	DANA BAKER/MARGARET TREANOR -BARR
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Purchase Order No.	PO 3727110
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Client Project ID: BRIDGETON LE

Container Order Number:

Section C

Invoice Information:

Attention: TABITHA PROVINCE

Company Name:	REPUBLIC SERVICES
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Address: BRIDGETON, MO 63044

Pace Quote Reference:	130426 7588
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Pace Project Manager:	Brown, Angie
-----------------------	--------------

Face Profile #: 6787 LINE 2

Regulatory Agency

State / Location

Missouri

ITEM#	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	CODE Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Other OT Tissue TS	COLLECTED				START TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Y/N	Requested Analysis Filtered (Y/N)																Residual Chlorine (Y/N)														
				START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other		Analyses Test	COD EPA 410	pH SM 4500H+B	LF DIS. METALS 200.7/245	TOTAL METALS 200.7/245	AMMONIA EPA 350	O/G EPA 1664	B25 SVOCs	VOCs EPA 624	TSS SM2540D	TPH/HEM-SGT 1664																				
				DATE	TIME	DATE	TIME																																										
1	316-058 SDHW 3AG14, 3AG1H	OT	G	8/30/13	0715	0024	0034	13	9	1	1	2	BPN ⁺	BPS ³⁺	X	X	X	X	X	X	X	X	X	X	X	X	METALS LIST total & LF Dis																						
2	TRIP BLANK 20H2U (TB)							2	2																	Al,Sb,As,Be,Cd,Cr,																							
3																										Co,Cu,Fe,Pb,Ni,Se,Ag,Tl,Zn																							
4																										and Mercury																							
5																																																	
6																																																	
7																																																	
8																																																	
9																																																	
10																																																	
11																																																	
12																																																	
ADDITIONAL COMMENTS				RELINQUISHED BY / AFFILIATION				DATE	TIME	ACCEPTED BY / AFFILIATION						DATE	TIME	SAMPLE CONDITIONS																															
SITE CONTACT: BILL ABERNATHY 314-502-1299				Cecilia McFarland				8/30/13		E Brookhoff / PCMC						8/31/13	1626																																
SITE ADDRESS: BRIDGETON LF																8/31/13	0050	1-1	Y	Y	Y																												
13570 ST. CHARLES ROCK RD																																																	
BRIDGETON MO 63044																																																	
SAMPLER NAME AND SIGNATURE										TEMP IN C										Received on Ice (Y/N)										Custody Sealed Cooler (Y/N)										Samples Intact (Y/N)									
PRINT Name of SAMPLER:										John Powell																																							
SIGNATURE of SAMPLER:										[Signature]										DATE Signed:										8-30-13																			

September 10, 2013

Ed Galbraith
Barr Engineering Company
1001 Diamond Ridge, Ste 1100
Jefferson City, MO 65101

RE: Project: BRIDGETON LF 316-059
Pace Project No.: 60152236

Dear Ed Galbraith:

Enclosed are the analytical results for sample(s) received by the laboratory on September 02, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Angie Brown

Angie.Brown@pacelabs.com
Project Manager

Enclosures

cc: Dana Baker, Barr Engineering Co.
Scott Fedak, Feezor Engineering
Margaret Treanor, Barr Engineering Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60152236001	316-059	Water	08/31/13 16:10	09/02/13 13:00
60152236002	TRIP BLANK	Water	08/31/13 16:10	09/02/13 13:00

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SAMPLE ANALYTE COUNT

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60152236001	316-059	EPA 200.7	JGP	15
		EPA 200.7	JGP	15
		EPA 245.1	TDS	1
		EPA 245.1	TDS	1
		EPA 625	JMT	16
		EPA 624 Low	JKL	25
		EPA 1664A	JMC1	1
		EPA 1664A	JMC1	1
		SM 2540D	JML	1
		SM 4500-H+B	DJR	1
		SM 5210B	JML	1
		EPA 350.1	NDL	1
		EPA 410.4	NDL	1
		EPA 624 Low	JKL	25
60152236002	TRIP BLANK			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

Sample: 316-059		Lab ID: 60152236001	Collected: 08/31/13 16:10	Received: 09/02/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum	31600	ug/L	150	2	09/04/13 16:45	09/05/13 12:58	7429-90-5	
Antimony	46.0	ug/L	20.0	2	09/04/13 16:45	09/05/13 12:58	7440-36-0	
Arsenic	767	ug/L	20.0	2	09/04/13 16:45	09/05/13 12:58	7440-38-2	
Beryllium	ND	ug/L	5.0	5	09/04/13 16:45	09/05/13 13:22	7440-41-7	D3
Cadmium	26.4	ug/L	10.0	2	09/04/13 16:45	09/05/13 12:58	7440-43-9	
Chromium	324	ug/L	25.0	5	09/04/13 16:45	09/05/13 13:22	7440-47-3	
Cobalt	71.2	ug/L	10.0	2	09/04/13 16:45	09/05/13 12:58	7440-48-4	
Copper	151	ug/L	20.0	2	09/04/13 16:45	09/05/13 12:58	7440-50-8	
Iron	853000	ug/L	100	2	09/04/13 16:45	09/05/13 15:16	7439-89-6	
Lead	618	ug/L	10.0	2	09/04/13 16:45	09/05/13 12:58	7439-92-1	
Nickel	350	ug/L	10.0	2	09/04/13 16:45	09/05/13 12:58	7440-02-0	
Selenium	ND	ug/L	75.0	5	09/04/13 16:45	09/05/13 13:22	7782-49-2	D3
Silver	ND	ug/L	14.0	2	09/04/13 16:45	09/05/13 12:58	7440-22-4	D3
Thallium	ND	ug/L	100	5	09/04/13 16:45	09/05/13 13:22	7440-28-0	D3
Zinc	17600	ug/L	1000	20	09/04/13 16:45	09/05/13 14:08	7440-66-6	
200.7 Metals, Dissolved (LF)		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Aluminum, Dissolved	3450	ug/L	150	2	09/04/13 16:45	09/05/13 16:19	7429-90-5	
Antimony, Dissolved	50.2	ug/L	20.0	2	09/04/13 16:45	09/05/13 16:19	7440-36-0	D9
Arsenic, Dissolved	668	ug/L	20.0	2	09/04/13 16:45	09/05/13 16:19	7440-38-2	
Beryllium, Dissolved	ND	ug/L	5.0	5	09/04/13 16:45	09/05/13 17:09	7440-41-7	D3
Cadmium, Dissolved	ND	ug/L	10.0	2	09/04/13 16:45	09/05/13 16:19	7440-43-9	D3
Chromium, Dissolved	216	ug/L	25.0	5	09/04/13 16:45	09/05/13 17:09	7440-47-3	
Cobalt, Dissolved	46.5	ug/L	10.0	2	09/04/13 16:45	09/05/13 16:19	7440-48-4	
Copper, Dissolved	36.3	ug/L	20.0	2	09/04/13 16:45	09/05/13 16:19	7440-50-8	
Iron, Dissolved	415000	ug/L	100	2	09/04/13 16:45	09/06/13 09:13	7439-89-6	
Lead, Dissolved	200	ug/L	10.0	2	09/04/13 16:45	09/05/13 16:19	7439-92-1	
Nickel, Dissolved	249	ug/L	10.0	2	09/04/13 16:45	09/05/13 16:19	7440-02-0	
Selenium, Dissolved	ND	ug/L	75.0	5	09/04/13 16:45	09/05/13 17:09	7782-49-2	D3
Silver, Dissolved	ND	ug/L	14.0	2	09/04/13 16:45	09/05/13 16:19	7440-22-4	D3
Thallium, Dissolved	ND	ug/L	100	5	09/04/13 16:45	09/05/13 17:09	7440-28-0	D3
Zinc, Dissolved	13100	ug/L	1000	20	09/04/13 16:45	09/05/13 17:51	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	1.8	ug/L	0.20	1	09/05/13 08:37	09/05/13 13:27	7439-97-6	
245.1 Mercury, Dissolved (LF)		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury, Dissolved	ND	ug/L	0.20	1	09/05/13 15:30	09/06/13 09:12	7439-97-6	
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
4,6-Dinitro-2-methylphenol	ND	ug/L	5000	20	09/05/13 00:00	09/09/13 22:37	534-52-1	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	09/05/13 00:00	09/09/13 22:37	87-68-3	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	09/05/13 00:00	09/09/13 22:37	77-47-4	
Hexachloroethane	ND	ug/L	1000	20	09/05/13 00:00	09/09/13 22:37	67-72-1	
Naphthalene	ND	ug/L	1000	20	09/05/13 00:00	09/09/13 22:37	91-20-3	
Nitrobenzene	ND	ug/L	1000	20	09/05/13 00:00	09/09/13 22:37	98-95-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

Sample: 316-059		Lab ID: 60152236001	Collected: 08/31/13 16:10	Received: 09/02/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV		Analytical Method: EPA 625 Preparation Method: EPA 625						
Pentachlorophenol	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:37	87-86-5	
Phenol	7420 ug/L		1000	20	09/05/13 00:00	09/09/13 22:37	108-95-2	
1,2,4-Trichlorobenzene	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:37	120-82-1	
2,4,6-Trichlorophenol	ND ug/L		1000	20	09/05/13 00:00	09/09/13 22:37	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0 %		32-120	20	09/05/13 00:00	09/09/13 22:37	4165-60-0	S4
2-Fluorobiphenyl (S)	0 %		36-120	20	09/05/13 00:00	09/09/13 22:37	321-60-8	S4
Terphenyl-d14 (S)	0 %		44-120	20	09/05/13 00:00	09/09/13 22:37	1718-51-0	S4
Phenol-d6 (S)	0 %		12-120	20	09/05/13 00:00	09/09/13 22:37	13127-88-3	S4
2-Fluorophenol (S)	0 %		18-120	20	09/05/13 00:00	09/09/13 22:37	367-12-4	S4
2,4,6-Tribromophenol (S)	0 %		39-119	20	09/05/13 00:00	09/09/13 22:37	118-79-6	S4
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		200	200		09/05/13 22:42	71-43-2	
Bromodichloromethane	ND ug/L		200	200		09/05/13 22:42	75-27-4	
Bromoform	ND ug/L		200	200		09/05/13 22:42	75-25-2	
Bromomethane	ND ug/L		1000	200		09/05/13 22:42	74-83-9	
Carbon tetrachloride	ND ug/L		200	200		09/05/13 22:42	56-23-5	
Chloroethane	ND ug/L		200	200		09/05/13 22:42	75-00-3	
Chloroform	270 ug/L		200	200		09/05/13 22:42	67-66-3	B
1,4-Dichlorobenzene	ND ug/L		200	200		09/05/13 22:42	106-46-7	
1,2-Dichloroethane	ND ug/L		200	200		09/05/13 22:42	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		200	200		09/05/13 22:42	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		200	200		09/05/13 22:42	156-60-5	
Ethylbenzene	ND ug/L		200	200		09/05/13 22:42	100-41-4	
Methylene chloride	ND ug/L		200	200		09/05/13 22:42	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		200	200		09/05/13 22:42	79-34-5	
Tetrachloroethene	ND ug/L		200	200		09/05/13 22:42	127-18-4	
Toluene	ND ug/L		200	200		09/05/13 22:42	108-88-3	
1,1,1-Trichloroethane	ND ug/L		200	200		09/05/13 22:42	71-55-6	
1,1,2-Trichloroethane	ND ug/L		200	200		09/05/13 22:42	79-00-5	
Trichloroethene	ND ug/L		200	200		09/05/13 22:42	79-01-6	
Vinyl chloride	ND ug/L		200	200		09/05/13 22:42	75-01-4	
Xylene (Total)	ND ug/L		600	200		09/05/13 22:42	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99 %		80-120	200		09/05/13 22:42	460-00-4	D3
Toluene-d8 (S)	99 %		80-120	200		09/05/13 22:42	2037-26-5	
1,2-Dichloroethane-d4 (S)	104 %		80-120	200		09/05/13 22:42	17060-07-0	
Preservation pH	6.0		1.0	200		09/05/13 22:42		
HEM, Oil and Grease		Analytical Method: EPA 1664A						
Oil and Grease	711 mg/L		5.0	1		09/05/13 07:27		
1664 SGT-HEM, TPH		Analytical Method: EPA 1664A						
Total Petroleum Hydrocarbons	11.6 mg/L		5.0	1		09/09/13 13:18		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

Sample: 316-059		Lab ID: 60152236001	Collected: 08/31/13 16:10	Received: 09/02/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	11500	mg/L	5.0	1		09/06/13 14:54		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	5.7	Std. Units	0.10	1		09/03/13 14:45		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	32500	mg/L	2.0	1	09/02/13 14:23	09/07/13 11:08		
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	738	mg/L	20.0	200		09/06/13 09:59	7664-41-7	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	63700	mg/L	10000	1000		09/05/13 14:18		

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ANALYTICAL RESULTS

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

Sample: TRIP BLANK		Lab ID: 60152236002	Collected: 08/31/13 16:10	Received: 09/02/13 13:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics		Analytical Method: EPA 624 Low						
Benzene	ND ug/L		1.0	1		09/05/13 17:43	71-43-2	
Bromodichloromethane	ND ug/L		1.0	1		09/05/13 17:43	75-27-4	
Bromoform	ND ug/L		1.0	1		09/05/13 17:43	75-25-2	
Bromomethane	ND ug/L		5.0	1		09/05/13 17:43	74-83-9	
Carbon tetrachloride	ND ug/L		1.0	1		09/05/13 17:43	56-23-5	
Chloroethane	ND ug/L		1.0	1		09/05/13 17:43	75-00-3	
Chloroform	2.1 ug/L		1.0	1		09/05/13 17:43	67-66-3	B
1,4-Dichlorobenzene	ND ug/L		1.0	1		09/05/13 17:43	106-46-7	
1,2-Dichloroethane	ND ug/L		1.0	1		09/05/13 17:43	107-06-2	
cis-1,2-Dichloroethene	ND ug/L		1.0	1		09/05/13 17:43	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		1.0	1		09/05/13 17:43	156-60-5	
Ethylbenzene	ND ug/L		1.0	1		09/05/13 17:43	100-41-4	
Methylene chloride	ND ug/L		1.0	1		09/05/13 17:43	75-09-2	
1,1,2,2-Tetrachloroethane	ND ug/L		1.0	1		09/05/13 17:43	79-34-5	
Tetrachloroethene	ND ug/L		1.0	1		09/05/13 17:43	127-18-4	
Toluene	ND ug/L		1.0	1		09/05/13 17:43	108-88-3	
1,1,1-Trichloroethane	ND ug/L		1.0	1		09/05/13 17:43	71-55-6	
1,1,2-Trichloroethane	ND ug/L		1.0	1		09/05/13 17:43	79-00-5	
Trichloroethene	ND ug/L		1.0	1		09/05/13 17:43	79-01-6	
Vinyl chloride	ND ug/L		1.0	1		09/05/13 17:43	75-01-4	
Xylene (Total)	ND ug/L		3.0	1		09/05/13 17:43	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98 %		80-120	1		09/05/13 17:43	460-00-4	
Toluene-d8 (S)	102 %		80-120	1		09/05/13 17:43	2037-26-5	
1,2-Dichloroethane-d4 (S)	97 %		80-120	1		09/05/13 17:43	17060-07-0	
Preservation pH	6.0		1.0	1		09/05/13 17:43		

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch: MERP/7664

Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1

Analysis Description: 245.1 Mercury

Associated Lab Samples: 60152236001

METHOD BLANK: 1247196

Matrix: Water

Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	09/05/13 12:34	

LABORATORY CONTROL SAMPLE: 1247197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247205 1247206

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	2.0	2.3	36	42	70-130	14	20	M1

MATRIX SPIKE SAMPLE: 1247207

Parameter	Units	60152283001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L		1.1	5	9.9	177	70-130 M1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch:	MERP/7672	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury - Dissolved
Associated Lab Samples:	60152236001		

METHOD BLANK:	1248210	Matrix:	Water
Associated Lab Samples:	60152236001		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	09/06/13 08:48	

LABORATORY CONTROL SAMPLE: 1248211						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1248212													1248213		
Parameter	Units	60152326001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual			
Mercury, Dissolved	ug/L	ND	5	5	3.0	4.6	61	91	70-130	39	20	M1, R1			

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059
Pace Project No.: 60152236

QC Batch: MPRP/24109 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60152236001

METHOD BLANK: 1247468 Matrix: Water
Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	09/05/13 12:19	
Antimony	ug/L	ND	10.0	09/05/13 12:19	
Arsenic	ug/L	ND	10.0	09/05/13 12:19	
Beryllium	ug/L	ND	1.0	09/05/13 12:19	
Cadmium	ug/L	ND	5.0	09/05/13 12:19	
Chromium	ug/L	ND	5.0	09/05/13 12:19	
Cobalt	ug/L	ND	5.0	09/05/13 12:19	
Copper	ug/L	ND	10.0	09/05/13 12:19	
Iron	ug/L	1370	50.0	09/05/13 12:19	
Lead	ug/L	ND	5.0	09/05/13 12:19	
Nickel	ug/L	ND	5.0	09/05/13 12:19	
Selenium	ug/L	ND	15.0	09/05/13 12:19	
Silver	ug/L	ND	7.0	09/05/13 12:19	
Thallium	ug/L	ND	20.0	09/05/13 12:19	
Zinc	ug/L	ND	50.0	09/05/13 12:19	

LABORATORY CONTROL SAMPLE: 1247469

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10300	103	85-115	
Antimony	ug/L	1000	989	99	85-115	
Arsenic	ug/L	1000	971	97	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	982	98	85-115	
Chromium	ug/L	1000	1020	102	85-115	
Cobalt	ug/L	1000	1010	101	85-115	
Copper	ug/L	1000	983	98	85-115	
Iron	ug/L	10000	10800	108	85-115	
Lead	ug/L	1000	1020	102	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	972	97	85-115	
Silver	ug/L	500	495	99	85-115	
Thallium	ug/L	1000	1030	103	85-115	
Zinc	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247470 1247471

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	9140	10000	10000	22400	22000	132	128	70-130	2	8 M1	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247470 1247471											
Parameter	Units	60152102001		MS	MSD	MSD		MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Antimony	ug/L	54.3	1000	1000	1000	785	785	73	73	70-130	0
Arsenic	ug/L	729	1000	1000	1000	1840	1840	111	111	70-130	0
Beryllium	ug/L	ND	1000	1000	1000	919	910	92	91	70-130	1
Cadmium	ug/L	17.2	1000	1000	1000	1080	1070	106	106	70-130	1
Chromium	ug/L	274	1000	1000	1000	1200	1210	93	93	70-130	0
Cobalt	ug/L	59.3	1000	1000	1000	948	941	89	88	70-130	1
Copper	ug/L	24.4	1000	1000	1000	1020	1020	100	99	70-130	0
Iron	ug/L	868000	10000	10000	10000	860000	860000	-84	-80	70-130	0
Lead	ug/L	217	1000	1000	1000	1030	1030	82	81	70-130	0
Nickel	ug/L	143	1000	1000	1000	1030	1030	89	88	70-130	1
Selenium	ug/L	ND	1000	1000	1000	997	1000	100	100	70-130	0
Silver	ug/L	ND	500	500	500	30.1	31.1	5	6	70-130	3
Thallium	ug/L	ND	1000	1000	1000	809	792	81	79	70-130	2
Zinc	ug/L	13700	1000	1000	1000	14400	14600	77	97	70-130	1

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059
Pace Project No.: 60152236

QC Batch:	MPRP/24108	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Dissolved
Associated Lab Samples:	60152236001		

METHOD BLANK: 1247462 Matrix: Water
Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	75.0	09/05/13 15:39	
Antimony, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Arsenic, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Beryllium, Dissolved	ug/L	ND	1.0	09/05/13 15:39	
Cadmium, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Chromium, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Cobalt, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Copper, Dissolved	ug/L	ND	10.0	09/05/13 15:39	
Iron, Dissolved	ug/L	ND	50.0	09/05/13 15:39	
Lead, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Nickel, Dissolved	ug/L	ND	5.0	09/05/13 15:39	
Selenium, Dissolved	ug/L	ND	15.0	09/05/13 15:39	
Silver, Dissolved	ug/L	ND	7.0	09/05/13 15:39	
Thallium, Dissolved	ug/L	ND	20.0	09/05/13 15:39	
Zinc, Dissolved	ug/L	ND	50.0	09/05/13 15:39	

LABORATORY CONTROL SAMPLE: 1247463

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	10000	10100	101	85-115	
Antimony, Dissolved	ug/L	1000	980	98	85-115	
Arsenic, Dissolved	ug/L	1000	961	96	85-115	
Beryllium, Dissolved	ug/L	1000	1020	102	85-115	
Cadmium, Dissolved	ug/L	1000	971	97	85-115	
Chromium, Dissolved	ug/L	1000	984	98	85-115	
Cobalt, Dissolved	ug/L	1000	990	99	85-115	
Copper, Dissolved	ug/L	1000	950	95	85-115	
Iron, Dissolved	ug/L	10000	9690	97	85-115	
Lead, Dissolved	ug/L	1000	990	99	85-115	
Nickel, Dissolved	ug/L	1000	1020	102	85-115	
Selenium, Dissolved	ug/L	1000	983	98	85-115	
Silver, Dissolved	ug/L	500	476	95	85-115	
Thallium, Dissolved	ug/L	1000	1010	101	85-115	
Zinc, Dissolved	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247464 1247465

Parameter	Units	60152102001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	2750	20000	20000	13100	12800	52	50	70-130	2	8 M1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1247464					1247465								
Parameter	Units	60152102001		MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	Max	
		Result	Conc.	Spike	Spike								Result
Antimony, Dissolved	ug/L	41.8	2000	2000	2000	976	997	47	48	70-130	2	7	M1
Arsenic, Dissolved	ug/L	594	2000	2000	2000	1740	1700	57	55	70-130	2	10	M1
Beryllium, Dissolved	ug/L	ND	2000	2000	2000	906	892	45	45	70-130	1	7	M1
Cadmium, Dissolved	ug/L	ND	2000	2000	2000	1090	1080	54	53	70-130	2	10	M1
Chromium, Dissolved	ug/L	216	2000	2000	2000	1150	1130	47	46	70-130	2	10	M1
Cobalt, Dissolved	ug/L	42.6	2000	2000	2000	952	939	45	45	70-130	1	6	M1
Copper, Dissolved	ug/L	ND	2000	2000	2000	1010	1000	50	50	70-130	1	11	M1
Iron, Dissolved	ug/L	418000	20000	20000	20000	434000	409000	81	-43	70-130	6	10	M1
Lead, Dissolved	ug/L	78.3	2000	2000	2000	914	899	42	41	70-130	2	10	M1
Nickel, Dissolved	ug/L	123	2000	2000	2000	1040	1020	46	45	70-130	2	10	M1
Selenium, Dissolved	ug/L	ND	2000	2000	2000	1110	1110	56	55	70-130	0	10	M1
Silver, Dissolved	ug/L	ND	1000	1000	1000	34.1	90.3	3	9	70-130	90	10	M1, R1
Thallium, Dissolved	ug/L	ND	2000	2000	2000	836	807	42	40	70-130	4	6	M1
Zinc, Dissolved	ug/L	11300	2000	2000	2000	12400	11700	55	20	70-130	6	11	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch: MSV/56059 Analysis Method: EPA 624 Low

QC Batch Method: EPA 624 Low Analysis Description: 624 MSV

Associated Lab Samples: 60152236001, 60152236002

METHOD BLANK: 1247912 Matrix: Water

Associated Lab Samples: 60152236001, 60152236002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	09/05/13 15:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/05/13 15:55	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/05/13 15:55	
1,2-Dichloroethane	ug/L	ND	1.0	09/05/13 15:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/05/13 15:55	
Benzene	ug/L	ND	1.0	09/05/13 15:55	
Bromodichloromethane	ug/L	ND	1.0	09/05/13 15:55	
Bromoform	ug/L	ND	1.0	09/05/13 15:55	
Bromomethane	ug/L	ND	5.0	09/05/13 15:55	
Carbon tetrachloride	ug/L	ND	1.0	09/05/13 15:55	
Chloroethane	ug/L	ND	1.0	09/05/13 15:55	
Chloroform	ug/L	2.0	1.0	09/05/13 15:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/05/13 15:55	
Ethylbenzene	ug/L	ND	1.0	09/05/13 15:55	
Methylene chloride	ug/L	ND	1.0	09/05/13 15:55	
Tetrachloroethene	ug/L	ND	1.0	09/05/13 15:55	
Toluene	ug/L	ND	1.0	09/05/13 15:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/05/13 15:55	
Trichloroethene	ug/L	ND	1.0	09/05/13 15:55	
Vinyl chloride	ug/L	ND	1.0	09/05/13 15:55	
Xylene (Total)	ug/L	ND	3.0	09/05/13 15:55	
1,2-Dichloroethane-d4 (S)	%	98	80-120	09/05/13 15:55	
4-Bromofluorobenzene (S)	%	100	80-120	09/05/13 15:55	
Toluene-d8 (S)	%	99	80-120	09/05/13 15:55	

LABORATORY CONTROL SAMPLE: 1247913

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.5	102	71-139	
1,1,2,2-Tetrachloroethane	ug/L	20	22.5	113	59-138	
1,1,2-Trichloroethane	ug/L	20	22.9	114	69-127	
1,2-Dichloroethane	ug/L	20	21.9	110	71-129	
1,4-Dichlorobenzene	ug/L	20	21.6	108	68-124	
Benzene	ug/L	20	20.7	103	73-129	
Bromodichloromethane	ug/L	20	22.0	110	63-129	
Bromoform	ug/L	20	22.6	113	52-123	
Bromomethane	ug/L	20	20.6	103	10-160	
Carbon tetrachloride	ug/L	20	20.5	102	70-140	
Chloroethane	ug/L	20	17.6	88	42-160	
Chloroform	ug/L	20	21.6	108	60-120	
cis-1,2-Dichloroethene	ug/L	20	21.0	105	70-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

LABORATORY CONTROL SAMPLE: 1247913

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	22.3	111	66-133	
Methylene chloride	ug/L	20	18.5	93	56-135	
Tetrachloroethene	ug/L	20	21.6	108	64-143	
Toluene	ug/L	20	21.1	106	70-130	
trans-1,2-Dichloroethene	ug/L	20	21.4	107	67-149	
Trichloroethene	ug/L	20	22.0	110	71-130	
Vinyl chloride	ug/L	20	20.1	101	41-160	
Xylene (Total)	ug/L	60	65.7	110	67-130	
1,2-Dichloroethane-d4 (S)	%			105	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			100	80-120	

MATRIX SPIKE SAMPLE: 1247914

Parameter	Units	60152283001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	4000	3870	97	52-160	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4030	101	46-157	
1,1,2-Trichloroethane	ug/L	ND	4000	3830	96	52-150	
1,2-Dichloroethane	ug/L	ND	4000	3930	98	49-155	
1,4-Dichlorobenzene	ug/L	ND	4000	3650	91	18-147	
Benzene	ug/L	ND	4000	3850	96	37-151	
Bromodichloromethane	ug/L	ND	4000	3940	98	35-155	
Bromoform	ug/L	ND	4000	3750	94	45-133	
Bromomethane	ug/L	ND	4000	3100	77	10-160	
Carbon tetrachloride	ug/L	ND	4000	3980	100	70-140	
Chloroethane	ug/L	ND	4000	3420	85	14-160	
Chloroform	ug/L	273	4000	4080	89	51-138	
cis-1,2-Dichloroethene	ug/L	ND	4000	3850	96	19-160	
Ethylbenzene	ug/L	ND	4000	3920	98	37-154	
Methylene chloride	ug/L	ND	4000	3550	88	15-156	
Tetrachloroethene	ug/L	ND	4000	3920	98	64-148	
Toluene	ug/L	ND	4000	3790	95	47-150	
trans-1,2-Dichloroethene	ug/L	ND	4000	3950	99	54-156	
Trichloroethene	ug/L	ND	4000	3850	96	71-157	
Vinyl chloride	ug/L	ND	4000	3940	98	10-160	
Xylene (Total)	ug/L	ND	12000	11600	97	12-153	
1,2-Dichloroethane-d4 (S)	%				103	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				99	80-120	
Preservation pH			6.0	6.0			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059
Pace Project No.: 60152236

QC Batch: OEXT/40248 Analysis Method: EPA 625
QC Batch Method: EPA 625 Analysis Description: 625 MSS
Associated Lab Samples: 60152236001

METHOD BLANK: 1247598 Matrix: Water
Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	09/09/13 20:31	
2,4,6-Trichlorophenol	ug/L	ND	5.0	09/09/13 20:31	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	09/09/13 20:31	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	09/09/13 20:31	
Hexachlorocyclopentadiene	ug/L	ND	5.0	09/09/13 20:31	
Hexachloroethane	ug/L	ND	5.0	09/09/13 20:31	
Naphthalene	ug/L	ND	5.0	09/09/13 20:31	
Nitrobenzene	ug/L	ND	5.0	09/09/13 20:31	
Pentachlorophenol	ug/L	ND	5.0	09/09/13 20:31	
Phenol	ug/L	ND	5.0	09/09/13 20:31	
2,4,6-Tribromophenol (S)	%	85	39-119	09/09/13 20:31	
2-Fluorobiphenyl (S)	%	90	36-120	09/09/13 20:31	
2-Fluorophenol (S)	%	42	18-120	09/09/13 20:31	
Nitrobenzene-d5 (S)	%	79	32-120	09/09/13 20:31	
Phenol-d6 (S)	%	27	12-120	09/09/13 20:31	
Terphenyl-d14 (S)	%	103	44-120	09/09/13 20:31	

LABORATORY CONTROL SAMPLE: 1247599

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	41.2	82	44-120	
2,4,6-Trichlorophenol	ug/L	50	43.9	88	48-120	
4,6-Dinitro-2-methylphenol	ug/L	50	39.5	79	31-147	
Hexachloro-1,3-butadiene	ug/L	50	40.5	81	41-116	
Hexachlorocyclopentadiene	ug/L	100	74.2	74	31-120	
Hexachloroethane	ug/L	50	38.3	77	40-113	
Naphthalene	ug/L	50	41.5	83	48-120	
Nitrobenzene	ug/L	50	42.4	85	47-120	
Pentachlorophenol	ug/L	50	48.0	96	43-127	
Phenol	ug/L	50	12.9	26	15-112	
2,4,6-Tribromophenol (S)	%			99	39-119	
2-Fluorobiphenyl (S)	%			88	36-120	
2-Fluorophenol (S)	%			40	18-120	
Nitrobenzene-d5 (S)	%			79	32-120	M4
Phenol-d6 (S)	%			25	12-120	
Terphenyl-d14 (S)	%			92	44-120	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch: WET/43223

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 60152236001

METHOD BLANK: 1247394

Matrix: Water

Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	09/05/13 07:22	

LABORATORY CONTROL SAMPLE: 1247395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	36.1	90	78-114	

MATRIX SPIKE SAMPLE: 1247398

Parameter	Units	60152198001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	691	41.7	694	8	78-114	M1

SAMPLE DUPLICATE: 1247399

Parameter	Units	60152236001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	711	739	4	18	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch: WET/43296

Analysis Method: EPA 1664A

QC Batch Method: EPA 1664A

Analysis Description: 1664 SGT-HEM, TPH

Associated Lab Samples: 60152236001

METHOD BLANK: 1250005

Matrix: Water

Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	5.0	09/09/13 13:17	

LABORATORY CONTROL SAMPLE: 1250006

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	20.8	104	64-132	

MATRIX SPIKE SAMPLE: 1250012

Parameter	Units	60152198001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	12.6	20.8	26.4	66	64-132	

SAMPLE DUPLICATE: 1250013

Parameter	Units	60152236001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	11.6	11.1	4	34	

SAMPLE DUPLICATE: 1250110

Parameter	Units	60152237001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Petroleum Hydrocarbons	mg/L	21.4	22.0	3	34	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch: WET/43266

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60152236001

METHOD BLANK: 1249025

Matrix: Water

Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	09/06/13 14:54	

SAMPLE DUPLICATE: 1249026

Parameter	Units	60152198001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	5680	5460	4	25	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch: WET/43203 Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH

Associated Lab Samples: 60152236001

SAMPLE DUPLICATE: 1246731

Parameter	Units	60152198001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.8	1	5	H6

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch: WET/43183

Analysis Method: SM 5210B

QC Batch Method: SM 5210B

Analysis Description: 5210B BOD, 5 day

Associated Lab Samples: 60152236001

METHOD BLANK: 1246390

Matrix: Water

Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	09/07/13 11:04	

LABORATORY CONTROL SAMPLE: 1246391

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	172	87	85-115	

SAMPLE DUPLICATE: 1246392

Parameter	Units	60152236001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	32500	30700	6	17	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch: WETA/26091

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 60152236001

METHOD BLANK: 1247680

Matrix: Water

Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	09/06/13 09:52	

LABORATORY CONTROL SAMPLE: 1247681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1247683

Parameter	Units	60152283001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	706	400	1070	91	90-110	

SAMPLE DUPLICATE: 1247682

Parameter	Units	60152198001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	695	687	1	18	

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QUALITY CONTROL DATA

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

QC Batch:	WETA/26075	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	60152236001		

METHOD BLANK: 1247049 Matrix: Water

Associated Lab Samples: 60152236001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	09/05/13 14:12	

LABORATORY CONTROL SAMPLE: 1247050

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	49.7	99	90-110	

MATRIX SPIKE SAMPLE: 1247051

Parameter	Units	60151872001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	65700	50000	100000	69	90-110	M1

SAMPLE DUPLICATE: 1247053

Parameter	Units	60152283001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	54200	53000	2	25	

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QUALIFIERS

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

- | | |
|----|---|
| B | Analyte was detected in the associated method blank. |
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| D9 | Dissolved result is greater than the total. Data is within laboratory control limits. |
| H6 | Analysis initiated outside of the 15 minute EPA recommended holding time. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| M4 | A matrix spike/matrix spike duplicate was not performed for this batch due to sample dilution. |
| R1 | RPD value was outside control limits. |
| S4 | Surrogate recovery not evaluated against control limits due to sample dilution. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRIDGETON LF 316-059

Pace Project No.: 60152236

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60152236001	316-059	EPA 200.7	MPRP/24109	EPA 200.7	ICP/18843
60152236001	316-059	EPA 200.7	MPRP/24108	EPA 200.7	ICP/18842
60152236001	316-059	EPA 245.1	MERP/7664	EPA 245.1	MERC/7622
60152236001	316-059	EPA 245.1	MERP/7672	EPA 245.1	MERC/7628
60152236001	316-059	EPA 625	OEXT/40248	EPA 625	MSSV/12755
60152236001	316-059	EPA 624 Low	MSV/56059		
60152236002	TRIP BLANK	EPA 624 Low	MSV/56059		
60152236001	316-059	EPA 1664A	WET/43223		
60152236001	316-059	EPA 1664A	WET/43296		
60152236001	316-059	SM 2540D	WET/43266		
60152236001	316-059	SM 4500-H+B	WET/43203		
60152236001	316-059	SM 5210B	WET/43183	SM 5210B	WET/43278
60152236001	316-059	EPA 350.1	WETA/26091		
60152236001	316-059	EPA 410.4	WETA/26075		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60152236



60152236

Client Name: Barr

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-112 / T-194

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.9

Date and initials of person examining contents: 9/2/13

Temperature should be above freezing to 6°C

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.
Samples arrived within holding time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☒ Yes ☐ No ☐ N/A	6. <u>Bas pH</u>
Rush Turn Around Time requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient volume:	☒ Yes ☐ No ☐ N/A	8.
Correct containers used:	☒ Yes ☐ No ☐ N/A	
Pace containers used:	☒ Yes ☐ No ☐ N/A	9.
Containers intact:	☒ Yes ☐ No ☐ N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☒ N/A	11.
Filtered volume received for dissolved tests?	☐ Yes ☒ No ☐ N/A	12.
Sample labels match COC:	☒ Yes ☐ No ☐ N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	<u>H2SO4 & HNO3 volume pH ~6.0; added 2mL H2SO4 & 2.5mL HNO3. Final pH ~3.0 & ~4.0, respectively</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☒ No ☐ N/A	14.
Exceptions: VOA, coliform, TOC, P&G, WI-DRO (water), Phenolics	☒ Yes ☐ No	Initial when completed <u>aw</u> Lot # of added preservative <u>12510 / 12518</u>
Trip Blank present:	☒ Yes ☐ No ☐ N/A	
Pace Trip Blank lot # (if purchased): <u>covered</u>		15.
Headspace in VOA vials (>6mm):	☒ Yes ☐ No ☐ N/A	16. <u>5 of 5 sample vials have hrs.</u> <u>Apply FOOTNOTE BASED ON HISTORICAL</u>
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☒ N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y ☒ N ☐ Field Data Required? Y ☒ N ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 9/3/13

