



Laboratory Report Number: L13110337

Mark Lyon
Environmental Waste Solutions
2440 Louisiana Blvd
Albuquerque, NM 87110

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on November 20 2013

David Vandenberg – Managing Director

State of Origin: NM
Accrediting Authority: N/A ID:N/A
QAPP: DOD Ver 4.1 without flagging



Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
The sample(s) were out of the acceptable pH range: CLS MPL 30-1113-1: the PH is out on both metals bottles. MPL 16-1113-1: the PH is out on both metals bottles. MPL 26-1113-1: the PH is out on both metals bottles. Added 5ml HNO3 Lot#: RGT 28449 11/06/13 @ 1650. PH did adjust. CLS	Please adjust and proceed.

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018540	I	4.0		1001845320760004575000803738596997	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	No
12	Were VOA samples free of headspace (less than 6mm)?	NA

Lab Report #: L13110337

Lab Project #: 3005.011

Project Name: White Sands MR

Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
MPL 30-1113-1	L13110337-01	11/05/2013 10:05	11/06/2013 10:54
MPL 16-1113-1	L13110337-02	11/05/2013 12:15	11/06/2013 10:54
MPL 26-1113-1	L13110337-03	11/05/2013 14:14	11/06/2013 10:54



Login Number: L13110337
Department: Conventionals
Analyst:

METHOD

Analysis SW846 9040C,9045D/EPA 150.1/SM4500-H B (pH)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74615
Approved By: Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



Login Number: L13110337
Department: Metals
Analyst: Kim Rhodes

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6010

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: WG452043 - The initial calibration blank analyzed on 08-NOV-2013 at 09:38 and continuing calibration blanks analyzed at 13:20 and 14:27 yielded results for vanadium that exceeded the limit of detection. With the permission of the project chemist, the vanadium results were reported with 'B' qualifiers to indicate the association with noncompliant calibration blanks. The CCB analyzed on 08-NOV-2013 at 13:56 yielded a result for sodium that exceeded the limit of quantitation. However, the reported sample results exceeded that of the CCB by greater than a factor of ten. The sodium results were reported with 'B' qualifiers to indicate the association with a noncompliant CCB.

BATCH QA/QC

Method Blank: WG452043 - The method blank analyzed on 08-NOV-2013 at 13:28 yielded a result for vanadium that

exceeded the limit of detection. With the permission of the project chemist, the vanadium results were reported with 'B' qualifiers to indicate the association with a noncompliant method blank.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG452043 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: WG452043 - Client samples 01, 02 and 03 required dilution analyses in order to obtain results for calcium within the calibration range. Client sample 03 required dilution analysis in order to obtain a result for magnesium within the calibration range.

Narrative ID: 74245

Approved By: Maren Beery

Maren Beery



Login Number: L13110337
Department: Metals
Analyst: Ji Hu

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6020

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

Low Level Check: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG452303 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 74639

Approved By: Maren Beery

Maren Beery



Login Number: L13110337
Department: General Chromatography
Analyst: Jeremy Kinney

METHOD

Analysis EPA300.0/SW846 9056

HOLDING TIMES

Sample Analysis: Hold times for NO₂ and NO₃ are 48 hours and the hold times for F, Cl, Br, and SO₄ are 28 days. The hold time forms calculate the hold time based on 48 hours. All samples were analyzed in hold.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: All acceptance criteria were met.

MANUAL INTEGRATION: No manual integration was required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74237
Approved By: Mike Cochran





Login Number: L13110337
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis EPA 310.2 (Alkalinity)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74613
Approved By: Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



Login Number: L13110337
Department: Conventionals
Analyst:

METHOD

Analysis SW846 9014/9010C/SM4500-CN-C,E-20th (Cyanide)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Cyanide-Ammenable is the difference between the total cyanide and the treated cyanide. The LCS is analyzed to show that all of the cyanide is ammenable (the treated portion is ND). The LCS forms cannot calculate cyanide ammenable. The LCS is acceptable.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG452812-02	Cyanide	2013-11-14 15:45:03	1.00	90	110	Recovery

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74619

Approved By: Deanna Hesson

Deanna Hesson



Login Number: L13110337
Department: Conventionals
Analyst: Deanna Hesson

METHOD

Analysis EPA 120.1/SM2510 B (Conductivity)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74614
Approved By: Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



Login Number: L13110337
Department: Conventionals
Analyst: Deanna Hesson

METHOD

Analysis EPA 350.1/SM4500-NH3 B(NH3)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74616
Approved By: Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



Login Number: L13110337
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis EPA 353.2/SM4500-NO3 F (Nitrate)

HOLDING TIMES

Sample Analysis: The instrument used for the analysis of nitrate only analyzes for nitrate-nitrite (NO₃NO₂) which is the amount of total nitrate (NO₃) and nitrite (NO₂) combined. The NO₃ concentration is determined by analyzing for NO₃NO₂ and NO₂ and calculating NO₃ by the difference. An unpreserved bottle only has a 48 hour hold time for NO₃ and NO₂ separately. However if the bottle is preserved with sulfuric acid, the hold time for NO₃NO₂ is 28 days. The NO₂ was analyzed within 48 hours. The NO₃NO₂ was analyzed from a preserved container within 28 days..

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74617
Approved By: Deanna Hesson

Danna Hesson



Login Number: L13110337
Department: Conventionals
Analyst: Dorothy Payne

METHOD

Analysis EPA 365.2/SM4500-P E (Orthophosphate)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74618
Approved By: Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



Login Number: L13110337
Department: Conventionals
Analyst: April Greene

METHOD

Analysis EPA 160.1/SM2540 C(Total Dissolved Solids)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: The LCS recovery was below the advisory limit due to a lab accident. The LCS duplicate was acceptable.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG451940-02	Total Dissolved Solids	2013-11-08 11:05:02	28.0	80	120	Recovery
WG451940-03	Total Dissolved Solids	2013-11-08 11:05:03	110		10	RPD

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74297

Approved By: Deanna Hesson





Login Number: L13110337
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis Water: EPA 415.1/SM5310C/SW846 9060 (Total Organic Carbon)
Soil: Lloyd-Khan Methodology

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74620
Approved By: Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".



Login Number: L13110337
Department: Conventionals
Analyst: April Greene

METHOD

Analysis EPA 160.2/SM2540 D (Total Suspended Solids)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74621
Approved By: Deanna Hesson

A handwritten signature in cursive script that reads "Deanna Hesson".

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: PE-ICP2
Client ID: MPL 30-1113-1	Prep Method: 3015	Prep Date: 11/08/2013 08:44
Matrix: Water	Analytical Method: 6010B	Cal Date: 11/08/2013 09:34
Workgroup #: WG452043	Analyst: KHR	Run Date: 11/08/2013 14:16
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: P2.110813.141611
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Magnesium, Total	7439-95-4	13.6		0.500	0.250
Potassium, Total	7440-09-7	3.51		1.00	0.500
Sodium, Total	7440-23-5	31.9	B	0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2	0.0125	B	0.0100	0.00500
Zinc, Total	7440-66-6		U	0.0200	0.0100
B	The reported result is associated with a contaminated method blank.				
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: PE-ICP2
Client ID: MPL 30-1113-1	Prep Method: 3015	Prep Date: 11/08/2013 08:44
Matrix: Water	Analytical Method: 6010B	Cal Date: 11/08/2013 09:34
Workgroup #: WG452043	Analyst: KHR	Run Date: 11/08/2013 15:30
Collect Date: 11/05/2013 10:05	Dilution: 10	File ID: P2.110813.153050
Sample Tag: DL01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Calcium, Total	7440-70-2	77.9		5.00	2.50
J	Estimated value ; the analyte concentration was less than the LOQ.				
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: ICP-MS2
Client ID: MPL 30-1113-1	Prep Method: 3015	Prep Date: 11/11/2013 12:33
Matrix: Water	Analytical Method: 6020	Cal Date: 11/18/2013 09:55
Workgroup #: WG452303	Analyst: JYH	Run Date: 11/18/2013 11:35
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: NI.111813.113504
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00745		0.00100	0.000500
Barium, Total	7440-39-3	0.0974		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00361		0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8	0.00211		0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00284		0.00200	0.00100
Nickel, Total	7440-02-0	0.00470		0.00400	0.00200
Selenium, Total	7782-49-2	0.0268		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: CVAA1
Client ID: MPL 30-1113-1	Prep Method: 7470A	Prep Date: 11/08/2013 10:30
Matrix: Water	Analytical Method: 7470A	Cal Date: 11/11/2013 11:00
Workgroup #: WG452152	Analyst: PDM	Run Date: 11/11/2013 11:47
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: M7.111113.114727
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: IC1
Client ID: MPL 30-1113-1	Prep Method: 300.0	Prep Date: 11/08/2013 09:47
Matrix: Water	Analytical Method: 300.0	Cal Date: 11/06/2013 10:26
Workgroup #: WG452040	Analyst: JBK	Run Date: 11/08/2013 12:03
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: I1_110813-11
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	77.4	J	0.200	0.100
Fluoride	16984-48-8	0.204		0.200	0.100
Sulfate	14808-79-8	131	J	1.00	0.500
J	Estimated value ; the analyte concentration was greater than the highest standard				

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: IC1
Client ID: MPL 30-1113-1	Prep Method: 300.0	Prep Date: 11/08/2013 09:47
Matrix: Water	Analytical Method: 300.0	Cal Date: 11/06/2013 10:26
Workgroup #: WG452040	Analyst: JBK	Run Date: 11/08/2013 17:34
Collect Date: 11/05/2013 10:05	Dilution: 5	File ID: I1_110813-30
Sample Tag: DL01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	63.8		1.00	0.500
Fluoride	16984-48-8		U	1.00	0.500
Sulfate	14808-79-8	109		5.00	2.50
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: ORION-4STAR
Client ID: MPL 30-1113-1	Prep Method: 9040C	Prep Date: N/A
Matrix: Water	Analytical Method: 9040C	Cal Date:
Workgroup #: WG451764	Analyst: DCM	Run Date: 11/06/2013 17:22
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: OS13111513392801
Sample Tag:	Units: UNITS	

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.48		0.000	0.000
Temperature At Determination (C)		18.5		0.000	0.000

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: SMARTCHEM2
Client ID: MPL 30-1113-1	Prep Method: 310.2	Prep Date: N/A
Matrix: Water	Analytical Method: 310.2	Cal Date: 11/08/2013 12:12
Workgroup #: WG452001	Analyst: BAF	Run Date: 11/08/2013 12:17
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: S2131108002.017
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)	13-01-4		U	20.0	10.0
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: SMARTCHEM2
Client ID: MPL 30-1113-1	Prep Method: 310.2	Prep Date: N/A
Matrix: Water	Analytical Method: 310.2	Cal Date: 11/08/2013 12:12
Workgroup #: WG452001	Analyst: BAF	Run Date: 11/08/2013 12:17
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: S2131108002.017
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)	11-43-8	99.6		20.0	10.0

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: SMARTCHEM2
Client ID: MPL 30-1113-1	Prep Method: 310.2	Prep Date: N/A
Matrix: Water	Analytical Method: 310.2	Cal Date: 11/08/2013 12:12
Workgroup #: WG452001	Analyst: BAF	Run Date: 11/08/2013 12:17
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: S2131108002.017
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)	13-00-3	99.6		20.0	10.0

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 30-1113-1	Prep Method: SM4500-CN-I	Prep Date: N/A
Matrix: Water	Analytical Method: SM4500-CN-I	Cal Date: 11/14/2013 11:30
Workgroup #: WG452581	Analyst: DCM	Run Date: 11/14/2013 15:50
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: 1V.1311141550-04
Sample Tag: DL01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.0220		0.0100	0.00500

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 30-1113-1	Prep Method: 9014-9010C	Prep Date: N/A
Matrix: Water	Analytical Method: 9014-9010C	Cal Date: 11/14/2013 11:20
Workgroup #: WG452580	Analyst: DCM	Run Date: 11/14/2013 15:30
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: 1V.1311141530-07
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.298		0.0100	0.00500

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 30-1113-1	Prep Method: SM4500-CN-C,G-1999	Prep Date: N/A
Matrix: Water	Analytical Method: SM4500-CN-C,G-1999	Cal Date: 11/14/2013 11:30
Workgroup #: WG452812	Analyst: DCM	Run Date: 11/14/2013 15:45
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: 1V.1311141545-04
Sample Tag: DL02	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.298	U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: TIAMO1
Client ID: MPL 30-1113-1	Prep Method: 120.1	Prep Date: N/A
Matrix: Water	Analytical Method: 120.1	Cal Date:
Workgroup #: WG451875	Analyst: DIH	Run Date: 11/07/2013 20:02
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: TI.110713.2002CO
Sample Tag: 01	Units: umhos/cm	

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		547		50.0	10.0

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: SMARTCHEM
Client ID: MPL 30-1113-1	Prep Method: 350.1	Prep Date: N/A
Matrix: Water	Analytical Method: 350.1	Cal Date: 11/12/2013 10:15
Workgroup #: WG452355	Analyst: DIH	Run Date: 11/12/2013 10:47
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: SC131112001.042
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.172		0.100	0.0500

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: SMARTCHEM
Client ID: MPL 30-1113-1	Prep Method: 353.2	Prep Date: N/A
Matrix: Water	Analytical Method: 353.2	Cal Date: 11/07/2013 15:03
Workgroup #: WG451996	Analyst: BAF	Run Date: 11/08/2013 12:10
Collect Date: 11/05/2013 10:05	Dilution: 4	File ID: SC13111213490601
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		7.95		0.200	0.100

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 30-1113-1	Prep Method: SM4500-P-E-1999	Prep Date: N/A
Matrix: Water	Analytical Method: SM4500-P-E-1999	Cal Date: 10/30/2013 09:00
Workgroup #: WG451829	Analyst: DLP	Run Date: 11/07/2013 09:30
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: 1V.1311070930-10
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2		U	0.0500	0.0250
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: OVEN
Client ID: MPL 30-1113-1	Prep Method: 160.1/SM2540C	Prep Date: N/A
Matrix: Water	Analytical Method: SM2540-C-1997	Cal Date:
Workgroup #: WG451940	Analyst: ADG	Run Date: 11/08/2013 11:05
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: EN.1311081105-23
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		400		20.0	10.0

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: TOC-VWP
Client ID: MPL 30-1113-1	Prep Method: 415.1	Prep Date: N/A
Matrix: Water	Analytical Method: 415.1	Cal Date: 07/09/2013 14:51
Workgroup #: WG452053	Analyst: BAF	Run Date: 11/08/2013 19:49
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: TC11082013.024
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon	TOC	1.62		1.00	0.500

Sample #: L13110337-01	PrePrep Method: N/A	Instrument: OVEN
Client ID: MPL 30-1113-1	Prep Method: 160.2/SM2540D	Prep Date: N/A
Matrix: Water	Analytical Method: SM2540-D-1997	Cal Date:
Workgroup #: WG451988	Analyst: ADG	Run Date: 11/08/2013 08:32
Collect Date: 11/05/2013 10:05	Dilution: 1	File ID: EN.1311080832-13
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: PE-ICP2
Client ID: MPL 16-1113-1	Prep Method: 3015	Prep Date: 11/08/2013 08:44
Matrix: Water	Analytical Method: 6010B	Cal Date: 11/08/2013 09:34
Workgroup #: WG452043	Analyst: KHR	Run Date: 11/08/2013 14:19
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: P2.110813.141912
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Magnesium, Total	7439-95-4	8.69		0.500	0.250
Potassium, Total	7440-09-7	3.13		1.00	0.500
Sodium, Total	7440-23-5	24.7	B	0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2	0.0126	B	0.0100	0.00500
Zinc, Total	7440-66-6		U	0.0200	0.0100
B	The reported result is associated with a contaminated method blank.				
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: PE-ICP2
Client ID: MPL 16-1113-1	Prep Method: 3015	Prep Date: 11/08/2013 08:44
Matrix: Water	Analytical Method: 6010B	Cal Date: 11/08/2013 09:34
Workgroup #: WG452043	Analyst: KHR	Run Date: 11/08/2013 15:33
Collect Date: 11/05/2013 12:15	Dilution: 10	File ID: P2.110813.153352
Sample Tag: DL01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Calcium, Total	7440-70-2	53.0		5.00	2.50
J	Estimated value ; the analyte concentration was less than the LOQ.				
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: ICP-MS2
Client ID: MPL 16-1113-1	Prep Method: 3015	Prep Date: 11/11/2013 12:33
Matrix: Water	Analytical Method: 6020	Cal Date: 11/18/2013 09:55
Workgroup #: WG452303	Analyst: JYH	Run Date: 11/18/2013 12:38
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: NI.111813.123804
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00291		0.00100	0.000500
Barium, Total	7440-39-3	0.0638		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00155	J	0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8	0.00117	J	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00824		0.00200	0.00100
Nickel, Total	7440-02-0	0.00266	J	0.00400	0.00200
Selenium, Total	7782-49-2	0.0105		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100
J	Estimated value ; the analyte concentration was less than the LOQ.				
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: CVAA1
Client ID: MPL 16-1113-1	Prep Method: 7470A	Prep Date: 11/08/2013 10:30
Matrix: Water	Analytical Method: 7470A	Cal Date: 11/11/2013 11:00
Workgroup #: WG452152	Analyst: PDM	Run Date: 11/11/2013 11:49
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: M7.111113.114957
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: IC1
Client ID: MPL 16-1113-1	Prep Method: 300.0	Prep Date: 11/08/2013 09:47
Matrix: Water	Analytical Method: 300.0	Cal Date: 11/06/2013 10:26
Workgroup #: WG452040	Analyst: JBK	Run Date: 11/08/2013 12:21
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: I1_110813-12
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	52.2	J	0.200	0.100
Fluoride	16984-48-8	0.233		0.200	0.100
Sulfate	14808-79-8	80.4		1.00	0.500
J	Estimated value ; the analyte concentration was greater than the highest standard				

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: IC1
Client ID: MPL 16-1113-1	Prep Method: 300.0	Prep Date: 11/08/2013 09:47
Matrix: Water	Analytical Method: 300.0	Cal Date: 11/06/2013 10:26
Workgroup #: WG452040	Analyst: JBK	Run Date: 11/08/2013 17:52
Collect Date: 11/05/2013 12:15	Dilution: 5	File ID: I1_110813-31
Sample Tag: DL01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	42.7		1.00	0.500
Fluoride	16984-48-8		U	1.00	0.500
Sulfate	14808-79-8	69.8		5.00	2.50
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: ORION-4STAR
Client ID: MPL 16-1113-1	Prep Method: 9040C	Prep Date: N/A
Matrix: Water	Analytical Method: 9040C	Cal Date:
Workgroup #: WG451764	Analyst: DCM	Run Date: 11/06/2013 17:26
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: OS13111513402601
Sample Tag:	Units: UNITS	

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	8.24		0.000	0.000
Temperature At Determination (C)		17.5		0.000	0.000

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: SMARTCHEM2
Client ID: MPL 16-1113-1	Prep Method: 310.2	Prep Date: N/A
Matrix: Water	Analytical Method: 310.2	Cal Date: 11/08/2013 12:12
Workgroup #: WG452001	Analyst: BAF	Run Date: 11/08/2013 12:18
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: S2131108002.018
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)	11-43-8	85.6		20.0	10.0

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: SMARTCHEM2
Client ID: MPL 16-1113-1	Prep Method: 310.2	Prep Date: N/A
Matrix: Water	Analytical Method: 310.2	Cal Date: 11/08/2013 12:12
Workgroup #: WG452001	Analyst: BAF	Run Date: 11/08/2013 12:18
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: S2131108002.018
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)	13-00-3	85.6		20.0	10.0

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: SMARTCHEM2
Client ID: MPL 16-1113-1	Prep Method: 310.2	Prep Date: N/A
Matrix: Water	Analytical Method: 310.2	Cal Date: 11/08/2013 12:12
Workgroup #: WG452001	Analyst: BAF	Run Date: 11/08/2013 12:18
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: S2131108002.018
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)	13-01-4		U	20.0	10.0

Certificate of Analysis

U	Analyte was not detected. The concentration is below the reported LOD.
---	--

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 16-1113-1	Prep Method: SM4500-CN-I	Prep Date: N/A
Matrix: Water	Analytical Method: SM4500-CN-I	Cal Date: 11/14/2013 11:30
Workgroup #: WG452581	Analyst: DCM	Run Date: 11/14/2013 15:50
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: 1V.1311141550-05
Sample Tag: DL01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5	0.0154		0.0100	0.00500

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 16-1113-1	Prep Method: 9014-9010C	Prep Date: N/A
Matrix: Water	Analytical Method: 9014-9010C	Cal Date: 11/14/2013 11:20
Workgroup #: WG452580	Analyst: DCM	Run Date: 11/14/2013 15:30
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: 1V.1311141530-08
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5	0.134		0.0100	0.00500

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 16-1113-1	Prep Method: SM4500-CN-C,G-1999	Prep Date: N/A
Matrix: Water	Analytical Method: SM4500-CN-C,G-1999	Cal Date: 11/14/2013 11:30
Workgroup #: WG452812	Analyst: DCM	Run Date: 11/14/2013 15:45
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: 1V.1311141545-05
Sample Tag: DL02	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5	0.133	U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: TIAMO1
Client ID: MPL 16-1113-1	Prep Method: 120.1	Prep Date: N/A
Matrix: Water	Analytical Method: 120.1	Cal Date:
Workgroup #: WG451875	Analyst: DIH	Run Date: 11/07/2013 20:04
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: TI.110713.2004CO
Sample Tag: 01	Units: umhos/cm	

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		437		50.0	10.0

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: SMARTCHEM
Client ID: MPL 16-1113-1	Prep Method: 350.1	Prep Date: N/A
Matrix: Water	Analytical Method: 350.1	Cal Date: 11/12/2013 10:15
Workgroup #: WG452355	Analyst: DIH	Run Date: 11/12/2013 10:47
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: SC131112001.043
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.139		0.100	0.0500

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: SMARTCHEM
Client ID: MPL 16-1113-1	Prep Method: 353.2	Prep Date: N/A
Matrix: Water	Analytical Method: 353.2	Cal Date: 11/07/2013 15:03
Workgroup #: WG451996	Analyst: BAF	Run Date: 11/08/2013 12:10
Collect Date: 11/05/2013 12:15	Dilution: 4	File ID: SC13111213492701
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		48.4		0.200	0.100

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 16-1113-1	Prep Method: SM4500-P-E-1999	Prep Date: N/A
Matrix: Water	Analytical Method: SM4500-P-E-1999	Cal Date: 10/30/2013 09:00
Workgroup #: WG451829	Analyst: DLP	Run Date: 11/07/2013 09:30
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: 1V.1311070930-11
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2		U	0.0500	0.0250
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: OVEN
Client ID: MPL 16-1113-1	Prep Method: 160.1/SM2540C	Prep Date: N/A
Matrix: Water	Analytical Method: SM2540-C-1997	Cal Date:
Workgroup #: WG451975	Analyst: ADG	Run Date: 11/07/2013 08:42
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: EN.1311070842-08
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		22.0		20.0	10.0

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: TOC-VWP
Client ID: MPL 16-1113-1	Prep Method: 415.1	Prep Date: N/A
Matrix: Water	Analytical Method: 415.1	Cal Date: 07/09/2013 14:51
Workgroup #: WG452053	Analyst: BAF	Run Date: 11/08/2013 20:01
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: TC11082013.025
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon	TOC	1.55		1.00	0.500

Sample #: L13110337-02	PrePrep Method: N/A	Instrument: OVEN
Client ID: MPL 16-1113-1	Prep Method: 160.2/SM2540D	Prep Date: N/A
Matrix: Water	Analytical Method: SM2540-D-1997	Cal Date:
Workgroup #: WG451988	Analyst: ADG	Run Date: 11/08/2013 08:32
Collect Date: 11/05/2013 12:15	Dilution: 1	File ID: EN.1311080832-14
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: PE-ICP2
Client ID: MPL 26-1113-1	Prep Method: 3015	Prep Date: 11/08/2013 08:44
Matrix: Water	Analytical Method: 6010B	Cal Date: 11/08/2013 09:34
Workgroup #: WG452043	Analyst: KHR	Run Date: 11/08/2013 14:22
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: P2.110813.142213
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Potassium, Total	7440-09-7	3.94		1.00	0.500
Sodium, Total	7440-23-5	45.9	B	0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2	0.0165	B	0.0100	0.00500
Zinc, Total	7440-66-6		U	0.0200	0.0100
B	The reported result is associated with a contaminated method blank.				
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: PE-ICP2
Client ID: MPL 26-1113-1	Prep Method: 3015	Prep Date: 11/08/2013 08:44
Matrix: Water	Analytical Method: 6010B	Cal Date: 11/08/2013 09:34
Workgroup #: WG452043	Analyst: KHR	Run Date: 11/08/2013 15:36
Collect Date: 11/05/2013 14:14	Dilution: 10	File ID: P2.110813.153654
Sample Tag: DL01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Calcium, Total	7440-70-2	180		5.00	2.50
Magnesium, Total	7439-95-4	48.0		5.00	2.50
J	Estimated value ; the analyte concentration was less than the LOQ.				
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: ICP-MS2
Client ID: MPL 26-1113-1	Prep Method: 3015	Prep Date: 11/11/2013 12:33
Matrix: Water	Analytical Method: 6020	Cal Date: 11/18/2013 09:55
Workgroup #: WG452303	Analyst: JYH	Run Date: 11/18/2013 12:41
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: NI.111813.124109
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00155		0.00100	0.000500
Barium, Total	7440-39-3	0.0627		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00926		0.00200	0.00100
Cobalt, Total	7440-48-4	0.000830	J	0.00100	0.000500
Copper, Total	7440-50-8	0.00352		0.00200	0.00100
Lead, Total	7439-92-1	0.000810	J	0.00100	0.000500
Manganese, Total	7439-96-5	0.0231		0.00200	0.00100
Nickel, Total	7440-02-0	0.0105		0.00400	0.00200
Selenium, Total	7782-49-2	0.0111		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100
J	Estimated value ; the analyte concentration was less than the LOQ.				
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: CVAA1
Client ID: MPL 26-1113-1	Prep Method: 7470A	Prep Date: 11/08/2013 10:30
Matrix: Water	Analytical Method: 7470A	Cal Date: 11/11/2013 11:00
Workgroup #: WG452152	Analyst: PDM	Run Date: 11/11/2013 11:52
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: M7.111113.115228
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: IC1
Client ID: MPL 26-1113-1	Prep Method: 300.0	Prep Date: 11/08/2013 09:47
Matrix: Water	Analytical Method: 300.0	Cal Date: 11/06/2013 10:26
Workgroup #: WG452040	Analyst: JBK	Run Date: 11/08/2013 12:38
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: I1_110813-13
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	210	J	0.200	0.100
Fluoride	16984-48-8	0.216		0.200	0.100
Sulfate	14808-79-8	658	J	1.00	0.500
J	Estimated value ; the analyte concentration was greater than the highest standard				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: IC1
Client ID: MPL 26-1113-1	Prep Method: 300.0	Prep Date: 11/08/2013 09:47
Matrix: Water	Analytical Method: 300.0	Cal Date: 11/06/2013 10:26
Workgroup #: WG452040	Analyst: JBK	Run Date: 11/08/2013 18:09
Collect Date: 11/05/2013 14:14	Dilution: 10	File ID: I1_110813-32
Sample Tag: DL01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	161		2.00	1.00
Fluoride	16984-48-8		U	2.00	1.00
Sulfate	14808-79-8	517		10.0	5.00
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: ORION-4STAR
Client ID: MPL 26-1113-1	Prep Method: 9040C	Prep Date: N/A
Matrix: Water	Analytical Method: 9040C	Cal Date:
Workgroup #: WG451764	Analyst: DCM	Run Date: 11/06/2013 17:28
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: OS13111513403401
Sample Tag:	Units: UNITS	

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.12		0.000	0.000
Temperature At Determination (C)		17.6		0.000	0.000

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: SMARTCHEM2
Client ID: MPL 26-1113-1	Prep Method: 310.2	Prep Date: N/A
Matrix: Water	Analytical Method: 310.2	Cal Date: 11/08/2013 12:12
Workgroup #: WG452001	Analyst: BAF	Run Date: 11/08/2013 12:18
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: S2131108002.019
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)	11-43-8	70.4		20.0	10.0

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: SMARTCHEM2
Client ID: MPL 26-1113-1	Prep Method: 310.2	Prep Date: N/A
Matrix: Water	Analytical Method: 310.2	Cal Date: 11/08/2013 12:12
Workgroup #: WG452001	Analyst: BAF	Run Date: 11/08/2013 12:18
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: S2131108002.019
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)	13-00-3	70.4		20.0	10.0

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: SMARTCHEM2
Client ID: MPL 26-1113-1	Prep Method: 310.2	Prep Date: N/A
Matrix: Water	Analytical Method: 310.2	Cal Date: 11/08/2013 12:12
Workgroup #: WG452001	Analyst: BAF	Run Date: 11/08/2013 12:18
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: S2131108002.019
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)	13-01-4		U	20.0	10.0

Certificate of Analysis

U	Analyte was not detected. The concentration is below the reported LOD.
---	--

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 26-1113-1	Prep Method: SM4500-CN-I	Prep Date: N/A
Matrix: Water	Analytical Method: SM4500-CN-I	Cal Date: 11/14/2013 11:30
Workgroup #: WG452581	Analyst: DCM	Run Date: 11/14/2013 15:50
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: 1V.1311141550-06
Sample Tag: DL01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 26-1113-1	Prep Method: 9014-9010C	Prep Date: N/A
Matrix: Water	Analytical Method: 9014-9010C	Cal Date: 11/14/2013 11:30
Workgroup #: WG452580	Analyst: DCM	Run Date: 11/14/2013 15:30
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: 1V.1311141530-09
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 26-1113-1	Prep Method: SM4500-CN-C,G-1999	Prep Date: N/A
Matrix: Water	Analytical Method: SM4500-CN-C,G-1999	Cal Date: 11/14/2013 11:30
Workgroup #: WG452812	Analyst: DCM	Run Date: 11/14/2013 15:45
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: 1V.1311141545-06
Sample Tag: DL02	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: TIAMO1
Client ID: MPL 26-1113-1	Prep Method: 120.1	Prep Date: N/A
Matrix: Water	Analytical Method: 120.1	Cal Date:
Workgroup #: WG451875	Analyst: DIH	Run Date: 11/07/2013 20:06
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: TI.110713.2006CO
Sample Tag: 01	Units: umhos/cm	

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		832		50.0	10.0

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: SMARTCHEM
Client ID: MPL 26-1113-1	Prep Method: 350.1	Prep Date: N/A
Matrix: Water	Analytical Method: 350.1	Cal Date: 11/12/2013 10:15
Workgroup #: WG452355	Analyst: DIH	Run Date: 11/12/2013 10:50
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: SC131112001.046
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.185		0.100	0.0500

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: SMARTCHEM
Client ID: MPL 26-1113-1	Prep Method: 353.2	Prep Date: N/A
Matrix: Water	Analytical Method: 353.2	Cal Date: 11/07/2013 15:03
Workgroup #: WG451998	Analyst: BAF	Run Date: 11/08/2013 12:55
Collect Date: 11/05/2013 14:14	Dilution: 4	File ID: SC13111213143101
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		6.77		0.200	0.100

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: UV-120-1V
Client ID: MPL 26-1113-1	Prep Method: SM4500-P-E-1999	Prep Date: N/A
Matrix: Water	Analytical Method: SM4500-P-E-1999	Cal Date: 10/30/2013 09:00
Workgroup #: WG451829	Analyst: DLP	Run Date: 11/07/2013 09:30
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: 1V.1311070930-12
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2		U	0.0500	0.0250
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: OVEN
Client ID: MPL 26-1113-1	Prep Method: 160.1/SM2540C	Prep Date: N/A
Matrix: Water	Analytical Method: SM2540-C-1997	Cal Date:
Workgroup #: WG451975	Analyst: ADG	Run Date: 11/07/2013 08:42
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: EN.1311070842-09
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		1020		20.0	10.0

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: TOC-VWP
Client ID: MPL 26-1113-1	Prep Method: 415.1	Prep Date: N/A
Matrix: Water	Analytical Method: 415.1	Cal Date: 07/09/2013 14:51
Workgroup #: WG452053	Analyst: BAF	Run Date: 11/08/2013 20:34
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: TC11082013.028
Sample Tag: 01	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon	TOC	0.793	J	1.00	0.500
J	Estimated value ; the analyte concentration was less than the LOQ.				

Certificate of Analysis

Sample #: L13110337-03	PrePrep Method: N/A	Instrument: OVEN
Client ID: MPL 26-1113-1	Prep Method: 160.2/SM2540D	Prep Date: N/A
Matrix: Water	Analytical Method: SM2540-D-1997	Cal Date:
Workgroup #: WG451988	Analyst: ADG	Run Date: 11/08/2013 08:32
Collect Date: 11/05/2013 14:14	Dilution: 1	File ID: EN.1311080832-15
Sample Tag:	Units: mg/L	

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids		10.0		5.00	2.50

Certificate of Analysis

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
November 20, 2013

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AJF - AMANDA J. FICKIESEN	AML - TONY M. LONG
AZH - AFTER HOURS	BAF - BRICE A. FENTON
BJO - BRIAN J. OGDEN	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CRW - CHRISTINA R. WILSON	CSH - CHRIS S. HILL
CTB - CHRIS T. BUCINA	DAK - DEAN A. K
DCM - DAVID C. MERCKLE	DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DLR - DIANNA L. RAUCH	DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON	EDL - ERIN D. LONG
ENY - EMILY N. YOAK	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
HCB - HEIDI C. BROWN	HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JKS - JANE K. SCHAAD	JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KSC - KELLY S. CUNNINGHAM	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLW - MATTHEW L. WARREN	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RS - ROSEMARY SCOTT
RWC - RODNEY W. CAMPBELL	SAV - SARAH A. VANDENBERG
SEP - SUZANNE J. PAUGH	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	TPA - TYLER P. AMRINE
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

November 20, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentatively identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below



Internal Chain of Custody Report

Login: L13110337

Account: 3005

Project: 3005.011

Samples: 3

Due Date: 15-NOV-2013

Samplenum **Container ID** **Products**
L13110337-01 **273685** **300**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	SEM	07-NOV-2013 08:20	JBK	CLS	

Samplenum **Container ID** **Products**
L13110337-01 **273686** **ALK-B ALK-C**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	WET	08-NOV-2013 09:27	BAF	CLS	
3	STORE	WET	A1	14-NOV-2013 11:39	CLS	BAF	

Samplenum **Container ID** **Products**
L13110337-01 **273687** **PO4**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	06-NOV-2013 16:57	CLS		
2	STORE	WET	A1	14-NOV-2013 11:39	CLS	BAF	

Samplenum **Container ID** **Products**
L13110337-01 **273688** **TSS**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	WET	07-NOV-2013 07:39	ADG	AZH	
3	STORE	WET	A1	12-NOV-2013 08:36	CLS	ADG	

Samplenum **Container ID** **Products**
L13110337-01 **273689** **TOC**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		<2
2	ANALYZ	W1	WET	08-NOV-2013 07:36	EPT	CLS	
3	ANALYZ	WET	A1	11-NOV-2013 16:46	CLS	PSW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login



Microbac Laboratories Inc.
Internal Chain of Custody Report

Login: L13110337
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 15-NOV-2013

Samplenum **Container ID** **Products**
L13110337-01 273690 AG-MS AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-MS C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	PREP	W1	DIG	07-NOV-2013 06:48	ERP	RS	
3	ANALYZ*	DIG	METALS	08-NOV-2013 11:28	KHR	ERP	
4	STORE	DIG	A1	11-NOV-2013 14:05	RS	ERP	

***Sample extract/digestate/leachate**

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	PREP	W1	DIG	07-NOV-2013 06:48	ERP	RS	
3	ANALYZ*	DIG	METALS	08-NOV-2013 11:28	KHR	ERP	
4	STORE	DIG	A1	08-NOV-2013 13:08	CLS	ERP	

***Sample extract/digestate/leachate**

Samplenum **Container ID** **Products**
L13110337-01 273691 CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	WET	07-NOV-2013 08:08	DCM	RS	
3	ANALYZ	W1	WET	13-NOV-2013 08:35	DCM	CLS	
4	STORE	WET	A1	18-NOV-2013 08:53	RS	DCM	

Samplenum **Container ID** **Products**
L13110337-02 273692 300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	SEM	07-NOV-2013 08:20	JBK	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login



Internal Chain of Custody Report

Login: L13110337

Account: 3005

Project: 3005.011

Samples: 3

Due Date: 15-NOV-2013

Samplenum **Container ID** **Products**
L13110337-02 **273693** **ALK-B ALK-C**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	WET	08-NOV-2013 09:27	BAF	CLS	
3	STORE	WET	A1	14-NOV-2013 11:39	CLS	BAF	

Samplenum **Container ID** **Products**
L13110337-02 **273694** **PO4**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	06-NOV-2013 16:57	CLS		
2	STORE	WET	A1	14-NOV-2013 11:39	CLS	BAF	

Samplenum **Container ID** **Products**
L13110337-02 **273695** **TSS**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	WET	07-NOV-2013 07:39	ADG	AZH	
3	STORE	WET	A1	12-NOV-2013 08:36	CLS	ADG	

Samplenum **Container ID** **Products**
L13110337-02 **273696** **TOC**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		<2
2	ANALYZ	W1	WET	08-NOV-2013 07:36	EPT	CLS	
3	ANALYZ	WET	A1	11-NOV-2013 16:47	CLS	PSW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login



Microbac Laboratories Inc.
Internal Chain of Custody Report

Login: L13110337
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 15-NOV-2013

Samplenum **Container ID** **Products**
L13110337-02 273697 AG-MS AS-MS BE-AX CA CD-MS CO-MS CR-MS CU-MS F

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	PREP	W1	DIG	07-NOV-2013 06:48	ERP	RS	
3	ANALYZ*	DIG	METALS	08-NOV-2013 11:28	KHR	ERP	
4	STORE	DIG	A1	11-NOV-2013 14:05	RS	ERP	

***Sample extract/digestate/leachate**

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	PREP	W1	DIG	07-NOV-2013 06:48	ERP	RS	
3	ANALYZ*	DIG	METALS	08-NOV-2013 11:28	KHR	ERP	
4	STORE	DIG	A1	08-NOV-2013 13:08	CLS	ERP	

***Sample extract/digestate/leachate**

Samplenum **Container ID** **Products**
L13110337-02 273698 CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	WET	07-NOV-2013 08:08	DCM	RS	
3	ANALYZ	W1	WET	13-NOV-2013 08:35	DCM	CLS	
4	STORE	WET	A1	18-NOV-2013 08:53	RS	DCM	

Samplenum **Container ID** **Products**
L13110337-03 273699 300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	SEM	07-NOV-2013 08:20	JBK	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login



Internal Chain of Custody Report

Login: L13110337

Account: 3005

Project: 3005.011

Samples: 3

Due Date: 15-NOV-2013

Samplenum **Container ID** **Products**
L13110337-03 **273700** **ALK-B ALK-C**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	WET	08-NOV-2013 09:27	BAF	CLS	
3	STORE	WET	A1	14-NOV-2013 11:39	CLS	BAF	

Samplenum **Container ID** **Products**
L13110337-03 **273701** **PO4**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	06-NOV-2013 16:57	CLS		
2	STORE	WET	A1	14-NOV-2013 11:40	CLS	BAF	

Samplenum **Container ID** **Products**
L13110337-03 **273702** **TSS**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	WET	07-NOV-2013 07:39	ADG	AZH	
3	STORE	WET	A1	12-NOV-2013 08:36	CLS	ADG	

Samplenum **Container ID** **Products**
L13110337-03 **273703** **TOC**

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		<2
2	ANALYZ	W1	WET	08-NOV-2013 07:36	EPT	CLS	
3	ANALYZ	WET	A1	11-NOV-2013 16:46	CLS	PSW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login



Login: L13110337
Account: 3005
Project: 3005.011
Samples: 3
Due Date: 15-NOV-2013

Samplenum **Container ID** **Products**
L13110337-03 273704 AG-MS AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-MS C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	PREP	W1	DIG	07-NOV-2013 06:48	ERP	RS	
3	ANALYZ*	DIG	METALS	08-NOV-2013 11:28	KHR	ERP	
4	STORE	DIG	A1	11-NOV-2013 14:05	RS	ERP	

***Sample extract/digestate/leachate**

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	PREP	W1	DIG	07-NOV-2013 06:48	ERP	RS	
3	ANALYZ*	DIG	METALS	08-NOV-2013 11:28	KHR	ERP	
4	STORE	DIG	A1	08-NOV-2013 13:08	CLS	ERP	

***Sample extract/digestate/leachate**

Samplenum **Container ID** **Products**
L13110337-03 273705 CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	06-NOV-2013 16:57	CLS		
2	ANALYZ	W1	WET	07-NOV-2013 08:08	DCM	RS	
3	ANALYZ	W1	WET	13-NOV-2013 08:35	DCM	CLS	
4	STORE	WET	A1	18-NOV-2013 08:53	RS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

