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Laboratory Report Number: L09050029

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 Sales and Service Team. If you have questions, comments or require further assistance regarding this report, please contact your team member noted in the reviewed box below at 800-373-4071. Team member e-mail addresses also appear here for your convenience.

Kathy Albertson	<i>Team Chemist/Data Specialist</i>	kalbertson@microbac.com
Stephanie Mossburg	<i>Team Chemist/Data Specialist</i>	smossburg@microbac.com
Tony Long	<i>Team Chemist/Data Specialist</i>	tlong@microbac.com
Amanda Fickiesen	<i>Client Services Specialist</i>	afickiesen@microbac.com
Annie Brown	<i>Client Services Specialist</i>	abrown@microbac.com

This report was reviewed on May 19, 2009.

A handwritten signature in cursive script that reads "Kathy Albertson".

Kathy Albertson - Team Chemist/Data Specialist

I certify that all test results meet all of the requirements of the accrediting authority listed below. 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.

This report was certified on May 19, 2009.

A handwritten signature in cursive script that reads "David E. Vandenberg".

David Vandenberg - Managing Director

State of origin: New York

Accrediting authority: Department of Health ID:10861

QAPP: Microbac OVD

This report contains a total of 559 pages.

Look closer. Go further. Do more.



Microbac REPORT L09050029
PREPARED FOR CH2MHILL, Inc
WORK ID:

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1.0 Introduction

Microbac Laboratories Inc.
REPORT NARRATIVE

Microbac Login No: L09050029

CHAIN OF CUSTODY: The chain of custody number was 10481.

SHIPMENT CONDITIONS: The chain of custody forms were received sealed in a cooler. The cooler temperature was 0 and 4 degrees C.

SAMPLE MANAGEMENT: All samples received were intact.

L09050029-03	MW-09R-043009-MS
L09050029-01	MW-09R-043009
L09050029-04	MW-09R-043009-MS
L09050029-02	MW-09R-043009
L09050029-05	MW-09R-043009-MSD
L09050029-06	MW-09R-043009-MSD
L09050029-07	MW-13-043009
L09050029-08	MW-13-043009
L09050029-09	MW-19-043009
L09050029-10	MW-19-043009
L09050029-11	PZ-01-043009
L09050029-12	PZ-01-043009
L09050029-13	PZ-03-043009
L09050029-14	PZ-03-043009
L09050029-15	TB-043009

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 hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: KRA

Approved: 05-MAY-09

Kathy Albertson

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data



Loginnum: L09050029

Department: Volatiles -GC/MS

Analyst: Wade DeLong

METHOD

Preparation SW-846 5030B

Analysis SW-846 8260B

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All analytes met the LCS acceptance criteria for % recovery and relative percent difference, except those listed below.

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
WG301419-02	HPMS16	05/04/2009	VINYL CHLORIDE	REG	CCC	61.2	65	140

Matrix Spikes: All analytes met the MS/MSD advisory criteria for % recovery, except those listed below.

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
L09050029-03	HPMS16	05/04/2009	VINYL CHLORIDE	REG	CCC	53.6	65	140

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
L09050029-05	HPMS16	05/04/2009	BROMOMETHANE	REG		20.6		20
L09050029-05	HPMS16	05/04/2009	CHLOROMETHANE	REG	SPCC	39.9	40	125
L09050029-05	HPMS16	05/04/2009	VINYL CHLORIDE	REG	CCC	51.7	65	140

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: All acceptance criteria were met.

Other: None.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak. In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak. This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline. There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous. Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be 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.

LABORATORY REPORT

L09050029

05/19/09 14:14

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-01	8260B	1	01-MAY-09
MW-09R-043009-MS	L09050029-03	8260B	1	01-MAY-09
MW-09R-043009-MSD	L09050029-05	8260B	1	01-MAY-09
MW-13-043009	L09050029-07	8260B	1	01-MAY-09
MW-19-043009	L09050029-09	8260B	1	01-MAY-09
PZ-01-043009	L09050029-11	8260B	1	01-MAY-09
PZ-03-043009	L09050029-13	8260B	1	01-MAY-09
TB-043009	L09050029-15	8260B	1	01-MAY-09



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-01**
 Client ID: **MW-09R-043009**
 Matrix: **Water**
 Workgroup Number: **WG301419**
 Collect Date: **04/30/2009 09:40**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **5030B**
 Analytical Method: **8260B**
 Analyst: **WTD**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS16**
 Prep Date: **05/04/2009 13:18**
 Cal Date: **04/08/2009 15:34**
 Run Date: **05/04/2009 13:18**
 File ID: **16M00852**

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1		U	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2	0.426	J	1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0		U	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7	0.194	J	1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3	0.134	J	1.00	0.125
Chloromethane	74-87-3		U	1.00	0.250
1,1-Dichloroethane	75-34-3	0.226	J	1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.464	J	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4		U	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1		U	5.00	2.50
Methylene chloride	75-09-2		U	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
Trichloroethene	79-01-6		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250
Xylene (Total)	1330-20-7		U	2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	94.0	86	118		
1,2-Dichloroethane-d4	86.8	80	120		
Toluene-d8	97.6	88	110		
4-Bromofluorobenzene	107	86	115		

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

NF Not found by library search

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-03
 Client ID: MW-09R-043009-MS
 Matrix: Water
 Workgroup Number: WG301419
 Collect Date: 04/30/2009 09:40
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 5030B
 Analytical Method: 8260B
 Analyst: WTD
 Dilution: 1
 Units: ug/L

Instrument: HPMS16
 Prep Date: 05/04/2009 11:10
 Cal Date: 04/08/2009 15:34
 Run Date: 05/04/2009 11:10
 File ID: 16M00848

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1	16.4		10.0	2.50
Acrylonitrile	107-13-1	19.2		5.00	2.50
Benzene	71-43-2	19.3		1.00	0.125
Bromodichloromethane	75-27-4	19.7		1.00	0.250
Bromoform	75-25-2	17.7		1.00	0.500
Bromomethane	74-83-9	14.5		1.00	0.500
2-Butanone	78-93-3	18.7		10.0	2.50
Carbon disulfide	75-15-0	19.1		1.00	0.500
Carbon tetrachloride	56-23-5	18.7		1.00	0.250
Chlorobenzene	108-90-7	19.9		1.00	0.125
Chlorodibromomethane	124-48-1	19.8		1.00	0.250
Chloroethane	75-00-3	16.3		1.00	0.500
Chloroform	67-66-3	19.2		1.00	0.125
Chloromethane	74-87-3	8.67		1.00	0.250
1,1-Dichloroethane	75-34-3	19.2		1.00	0.125
1,2-Dichloroethane	107-06-2	18.8		1.00	0.250
1,1-Dichloroethene	75-35-4	17.4		1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.7		1.00	0.250
trans-1,2-Dichloroethene	156-60-5	20.8		1.00	0.250
1,2-Dichloropropane	78-87-5	19.9		1.00	0.200
cis-1,3-Dichloropropene	10061-01-5	20.1		1.00	0.250
trans-1,3-Dichloropropene	10061-02-6	18.0		1.00	0.500
Ethylbenzene	100-41-4	20.3		1.00	0.250
2-Hexanone	591-78-6	20.5		5.00	2.50
4-Methyl-2-pentanone	108-10-1	18.2		5.00	2.50
Methylene chloride	75-09-2	17.9		2.00	0.250
Styrene	100-42-5	21.6		1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5	21.4		1.00	0.125
Tetrachloroethene	127-18-4	18.7		1.00	0.250
Toluene	108-88-3	20.7		1.00	0.250
1,1,1-Trichloroethane	71-55-6	18.2		1.00	0.250
1,1,2-Trichloroethane	79-00-5	20.7		1.00	0.250
Trichloroethene	79-01-6	18.0		1.00	0.250
Vinyl chloride	75-01-4	10.7		1.00	0.250
Xylene (Total)	1330-20-7	61.4		2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	90.7	86	118		
1,2-Dichloroethane-d4	86.5	80	120		
Toluene-d8	97.4	88	110		
4-Bromofluorobenzene	104	86	115		

NF Not found by library search

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-05
 Client ID: MW-09R-043009-MSD
 Matrix: Water
 Workgroup Number: WG301419
 Collect Date: 04/30/2009 09:40
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 5030B
 Analytical Method: 8260B
 Analyst: WTD
 Dilution: 1
 Units: ug/L

Instrument: HPMS16
 Prep Date: 05/04/2009 11:42
 Cal Date: 04/08/2009 15:34
 Run Date: 05/04/2009 11:42
 File ID: 16M00849

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1	18.0		10.0	2.50
Acrylonitrile	107-13-1	19.2		5.00	2.50
Benzene	71-43-2	18.9		1.00	0.125
Bromodichloromethane	75-27-4	19.8		1.00	0.250
Bromoform	75-25-2	18.0		1.00	0.500
Bromomethane	74-83-9	11.8		1.00	0.500
2-Butanone	78-93-3	20.1		10.0	2.50
Carbon disulfide	75-15-0	18.4		1.00	0.500
Carbon tetrachloride	56-23-5	18.2		1.00	0.250
Chlorobenzene	108-90-7	19.8		1.00	0.125
Chlorodibromomethane	124-48-1	20.0		1.00	0.250
Chloroethane	75-00-3	15.6		1.00	0.500
Chloroform	67-66-3	18.8		1.00	0.125
Chloromethane	74-87-3	7.97		1.00	0.250
1,1-Dichloroethane	75-34-3	19.0		1.00	0.125
1,2-Dichloroethane	107-06-2	18.9		1.00	0.250
1,1-Dichloroethene	75-35-4	17.0		1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.6		1.00	0.250
trans-1,2-Dichloroethene	156-60-5	20.7		1.00	0.250
1,2-Dichloropropane	78-87-5	19.6		1.00	0.200
cis-1,3-Dichloropropene	10061-01-5	20.1		1.00	0.250
trans-1,3-Dichloropropene	10061-02-6	18.3		1.00	0.500
Ethylbenzene	100-41-4	20.1		1.00	0.250
2-Hexanone	591-78-6	21.9		5.00	2.50
4-Methyl-2-pentanone	108-10-1	19.3		5.00	2.50
Methylene chloride	75-09-2	17.7		2.00	0.250
Styrene	100-42-5	21.3		1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5	22.3		1.00	0.125
Tetrachloroethene	127-18-4	18.3		1.00	0.250
Toluene	108-88-3	20.3		1.00	0.250
1,1,1-Trichloroethane	71-55-6	17.9		1.00	0.250
1,1,2-Trichloroethane	79-00-5	21.1		1.00	0.250
Trichloroethene	79-01-6	17.4		1.00	0.250
Vinyl chloride	75-01-4	10.3		1.00	0.250
Xylene (Total)	1330-20-7	59.9		2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	91.1	86	118		
1,2-Dichloroethane-d4	87.3	80	120		
Toluene-d8	97.4	88	110		
4-Bromofluorobenzene	104	86	115		

NF Not found by library search

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-07
 Client ID: MW-13-043009
 Matrix: Water
 Workgroup Number: WG301419
 Collect Date: 04/30/2009 11:35
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 5030B
 Analytical Method: 8260B
 Analyst: WTD
 Dilution: 1
 Units: ug/L

Instrument: HPMS16
 Prep Date: 05/04/2009 13:50
 Cal Date: 04/08/2009 15:34
 Run Date: 05/04/2009 13:50
 File ID: 16M00853

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1	2.66	J	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2		U	1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0		U	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7		U	1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	1.00	0.125
Chloromethane	74-87-3	0.282	J	1.00	0.250
1,1-Dichloroethane	75-34-3		U	1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4		U	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1		U	5.00	2.50
Methylene chloride	75-09-2		U	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
Trichloroethene	79-01-6		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250
Xylene (Total)	1330-20-7		U	2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	94.2	86	118		
1,2-Dichloroethane-d4	86.8	80	120		
Toluene-d8	97.4	88	110		
4-Bromofluorobenzene	105	86	115		

J The analyte was positively identified, but the quantitation was below the RL
 U Not detected at or above the reporting limit (RL).
 NF Not found by library search

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-09
 Client ID: MW-19-043009
 Matrix: Water
 Workgroup Number: WG301419
 Collect Date: 04/30/2009 13:00
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 5030B
 Analytical Method: 8260B
 Analyst: WTD
 Dilution: 1
 Units: ug/L

Instrument: HPMS16
 Prep Date: 05/04/2009 14:22
 Cal Date: 04/08/2009 15:34
 Run Date: 05/04/2009 14:22
 File ID: 16M00854

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1		U	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2		U	1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0		U	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7		U	1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	1.00	0.125
Chloromethane	74-87-3		U	1.00	0.250
1,1-Dichloroethane	75-34-3		U	1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	7.96		1.00	0.250
trans-1,2-Dichloroethene	156-60-5	10.8		1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4		U	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1		U	5.00	2.50
Methylene chloride	75-09-2		U	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
Trichloroethene	79-01-6	0.466	J	1.00	0.250
Vinyl chloride	75-01-4	0.378	J	1.00	0.250
Xylene (Total)	1330-20-7		U	2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	94.3	86	118		
1,2-Dichloroethane-d4	87.4	80	120		
Toluene-d8	98.9	88	110		
4-Bromofluorobenzene	106	86	115		

J The analyte was positively identified, but the quantitation was below the RL
 U Not detected at or above the reporting limit (RL).
 NF Not found by library search

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-11**
 Client ID: **PZ-01-043009**
 Matrix: **Water**
 Workgroup Number: **WG301419**
 Collect Date: **04/30/2009 09:57**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **5030B**
 Analytical Method: **8260B**
 Analyst: **WTD**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS16**
 Prep Date: **05/04/2009 14:54**
 Cal Date: **04/08/2009 15:34**
 Run Date: **05/04/2009 14:54**
 File ID: **16M00855**

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1	8.58	J	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2		U	1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0		U	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7		U	1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	1.00	0.125
Chloromethane	74-87-3		U	1.00	0.250
1,1-Dichloroethane	75-34-3	0.217	J	1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	38.3		1.00	0.250
trans-1,2-Dichloroethene	156-60-5	0.678	J	1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4		U	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1		U	5.00	2.50
Methylene chloride	75-09-2		U	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
Trichloroethene	79-01-6		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250
Xylene (Total)	1330-20-7		U	2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	94.2	86	118		
1,2-Dichloroethane-d4	88.7	80	120		
Toluene-d8	99.2	88	110		
4-Bromofluorobenzene	105	86	115		

J The analyte was positively identified, but the quantitation was below the RL
 U Not detected at or above the reporting limit (RL).
 NF Not found by library search

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-13
 Client ID: PZ-03-043009
 Matrix: Water
 Workgroup Number: WG301419
 Collect Date: 04/30/2009 12:37
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 5030B
 Analytical Method: 8260B
 Analyst: WTD
 Dilution: 1
 Units: ug/L

Instrument: HPMS16
 Prep Date: 05/04/2009 15:27
 Cal Date: 04/08/2009 15:34
 Run Date: 05/04/2009 15:27
 File ID: 16M00856

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1	3.15	J	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2		U	1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0	1.80		1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7		U	1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	1.00	0.125
Chloromethane	74-87-3		U	1.00	0.250
1,1-Dichloroethane	75-34-3		U	1.00	0.125
1,2-Dichloroethane	107-06-2	0.675	J	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
1,2-Dichloropropane	78-87-5	0.771	J	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4		U	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1		U	5.00	2.50
Methylene chloride	75-09-2		U	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
Trichloroethene	79-01-6		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250
Xylene (Total)	1330-20-7		U	2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	93.4	86	118		
1,2-Dichloroethane-d4	88.8	80	120		
Toluene-d8	99.0	88	110		
4-Bromofluorobenzene	106	86	115		

J The analyte was positively identified, but the quantitation was below the RL
 U Not detected at or above the reporting limit (RL).
 NF Not found by library search

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-15**
 Client ID: **TB-043009**
 Matrix: **Water**
 Workgroup Number: **WG301419**
 Collect Date: **04/30/2009 00:01**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **5030B**
 Analytical Method: **8260B**
 Analyst: **WTD**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS16**
 Prep Date: **05/04/2009 12:46**
 Cal Date: **04/08/2009 15:34**
 Run Date: **05/04/2009 12:46**
 File ID: **16M00851**

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1		U	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2		U	1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0		U	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7		U	1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	1.00	0.125
Chloromethane	74-87-3		U	1.00	0.250
1,1-Dichloroethane	75-34-3		U	1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4		U	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1		U	5.00	2.50
Methylene chloride	75-09-2		U	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
Trichloroethene	79-01-6		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250
Xylene (Total)	1330-20-7		U	2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	92.9	86	118		
1,2-Dichloroethane-d4	85.6	80	120		
Toluene-d8	97.8	88	110		
4-Bromofluorobenzene	106	86	115		

U Not detected at or above the reporting limit (RL).

NF Not found by library search

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

$$RF = [(Ax) (Cis)] / [(Ais) (Cx)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100

RF = Calculated Response Factor	1.0039
---------------------------------	---------------

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

$$Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured	3122498
Cis = Concentration of the specific internal standard (ug/L)	25
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	611048
RF = Average RF from the ICAL	1.004
Vs = Purge volume of sample (mL)	10
Vn = Nominal purge volume of sample (mL) (10.0 mL)	10
Cx = Concentration of the compound in the sample being measured (ug/L)	127.2428

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

$$Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured	3122498
Cis = Concentration of the specific internal standard (ug/L)	25
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	611048
RF = Average RF from the ICAL	1.004
Ws = Weight of sample purged (g)	5
Wn = Nominal purge weight (g) (5.0 g)	5
Cx = Concentration of the compound in the sample being measured (ug/L)	127.2428

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	254.4856

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, $y = mx + b$

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

$$y = 86550/593147 = 0.1459$$

Step 3: Solve for x

$$x = (y - b)/m = [(0.1459 - (-0.00642))/0.213] = 0.7152$$

Step 4: Solve for analyte concentration Cx

$$Cx = Cis (x) = (25.0)(0.7152) = 17.88$$

Example Spreadsheet Calculation:

Slope from curve, m:	0.213
Intercept from curve, b:	-0.00642
Area of analyte, Ax:	86550
Area of Internal Standard, Ais:	593147
Concentration of IS, Cis	25.00
Response Ratio:	0.145917
Amount Ratio:	0.715195
Concentration:	17.87988
Units of Internal Standard:	ug/L

5.0 Concentration from Quadratic Regression**Step 1 - Retrieve Curve Data from Plot, $y = Ax^2 + Bx + C$**

Where:

$$Ax^2 + Bx + (C - y) = 0$$

A, B, C = constants from the ICAL quadratic regression

y = Response ratio = Area of analyte/Area of internal standard (IS)

x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

$$y = Ax/Ais$$

Step 3: Solve for x using the quadratic formula

$$Ax^2 + Bx + C - y = 0$$

$$x = \frac{b \pm \sqrt{(b^2 - 4a(c - y))}}{2a} \quad (\text{Two possible solutions})$$

Step 4: Solve for analyte concentration Cx

$$Cx = (Cis)(\text{Amount ratio})$$

Example Spreadsheet Calculation:

Value of A from plot:	-0.00629
Value of B from plot:	0.511
Value of C from plot:	-0.0276
Area of unknown from quantitation report:	293821
Area of IS from quantitation report:	784848
Response ratio, y:	0.374367
C - y:	-0.40197
Root 1 - Computed amount ratio, X1:	80.44567
Root 2 - Computed amount ratio, X2:	0.794396 use this solution
Concentration of IS, Cis:	25.00
Concentration of analyte, Cx:	19.86 ug/L

Microbac Laboratories Inc.
Instrument Run Log

Instrument: HPMS16 Dataset: 040809
 Analyst1: WTD Analyst2: NA
 Method: 8260B SOP: MSV01 Rev: 12
 Method: 5030B/5035 SOP: PAT01 Rev: 11
 Method: 624 SOP: MSV10 Rev: 7
 Maintenance Log ID: 28291

Internal Standard: STD32082 Surrogate Standard: STD32081
 CCV: STD32157 LCS: STD32158 MS/MSD: NA
 Column 1 ID: RTX502.2 Column 2 ID: NA
 Workgroups: 299294

Comments:

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16M00410	WG299294-01 50ng BFB	NA	1	1	STD31709	04/08/09 09:39
2	16M00411	SYSTEM BLANK	NA	1	1	STD32157	04/08/09 10:04
3	16M00412	WG299294-02 0.3 ug/L STD	NA	1	1	STD32157	04/08/09 10:39
4	16M00413	WG299294-03 0.4 ug/L STD	NA	1	1	STD32157	04/08/09 11:12
5	16M00414	WG299294-04 1.0 ug/L STD	NA	1	1	STD32157	04/08/09 11:45
6	16M00415	WG299294-05 2.0 ug/L STD	NA	1	1	STD32157	04/08/09 12:18
7	16M00416	WG299294-06 5.0 ug/L STD	NA	1	1	STD32157	04/08/09 12:50
8	16M00417	WG299294-07 20 ug/L STD	NA	1	1	STD32157	04/08/09 13:23
9	16M00418	WG299294-08 50 ug/L STD	NA	1	1	STD32157	04/08/09 13:56
10	16M00419	WG299294-09 100 ug/L STD	NA	1	1	STD32157	04/08/09 14:29
11	16M00420	WG299294-10 200 ug/L STD	NA	1	1	STD32157	04/08/09 15:02
12	16M00421	WG299294-11 300 ug/L STD	NA	1	1	STD32157	04/08/09 15:34
13	16M00422	SYSTEM BLANK	NA	1	1		04/08/09 16:06
14	16M00423	SYSTEM BLANK	NA	1	1		04/08/09 16:40
15	16M00424	SYSTEM BLANK	NA	1	1		04/08/09 17:12
16	16M00425	WG299294-12 20 ug/L ALT SRC	NA	1	1	STD32158	04/08/09 17:46
17	16M00426	WG299294-13 OXY ALT SRC	NA	1	1	STD32158	04/08/09 18:19
18	16M00427	SYSTEM BLANK	NA	1	1		04/08/09 18:53
19	16M00428	SYSTEM BLANK	NA	1	1		04/08/09 19:27

Approved: April 09, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HPMS16 Dataset: 050409
 Analyst1: WTD Analyst2: NA
 Method: 8260B SOP: MSV01 Rev: 12
 Method: 5030B/5035 SOP: PAT01 Rev: 11

Maintenance Log ID: 28590

Internal Standard: STD32582 Surrogate Standard: STD32583
 CCV: STD32569 LCS: STD32589 MS/MSD: STD32589
 Column 1 ID: RTX502.2 Column 2 ID: NA
 Workgroups: 301419

Comments:

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16M00843	WG301418-01 BFB 50ng STD 8260	NA	1	1	STD32213	05/04/09 08:36
2	16M00844	WG301418-02 50ug/L STD 8260	NA	1	1	STD32569	05/04/09 09:01
3	16M00845	WG301419-01 BLANK 8260	NA	1	1		05/04/09 09:33
4	16M00846	WG301419-01 BLANK 8260	NA	1	1		05/04/09 10:05
5	16M00847	WG301419-02 LCS 20ug/L 8260	NA	1	1	STD32589	05/04/09 10:38
6	16M00848	L09050029-03 A MS 826-SPE	<2	1	1	STD32589	05/04/09 11:10
7	16M00849	L09050029-05 A MS 826-SPE	<2	1	1	STD32589	05/04/09 11:42
8	16M00850	SYSTEM BLANK	NA	1	1		05/04/09 12:14
9	16M00851	L09050029-15 A 826-SPE	<2	1	1		05/04/09 12:46
10	16M00852	L09050029-01 A 826-SPE	<2	1	1		05/04/09 13:18
11	16M00853	L09050029-07 A 826-SPE	<2	1	1		05/04/09 13:50
12	16M00854	L09050029-09 A 826-SPE	<2	1	1		05/04/09 14:22
13	16M00855	L09050029-11 A 826-SPE	<2	1	1		05/04/09 14:54
14	16M00856	L09050029-13 A 826-SPE	<2	1	1		05/04/09 15:27
15	16M00857	L09040712-04 B 20X 826-SPE	<2	1	20		05/04/09 15:59
16	16M00858	L09040712-05 B 20X 826-SPE	<2	1	20		05/04/09 16:31
17	16M00859	L09050014-05 B 2X 826-SPE1	<2	1	2		05/04/09 17:03
18	16M00860	SYSTEM BLANK	NA	1	1		05/04/09 17:36
19	16M00861	SYSTEM BLANK	NA	1	1		05/04/09 18:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X		Carry-over contamination	
File ID: 16M00845				
DNR				

Approved: May 05, 2009

Page: 1

my *Shilling*



Microbac Laboratories Inc.

Data Checklist

Date: 08-APR-2009

Analyst: WTD

Analyst: NA

Method: 8260

Instrument: HPMS16

Curve Workgroup: NA

Runlog ID: 27481

Analytical Workgroups: 299294

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	
Reruns	
Manual Integrations	
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	WTD
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-APR-2009

Secondary Reviewer:
09-APR-2009

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2009

Analyst: WTD

Analyst: NA

Method: 8260

Instrument: HPMS16

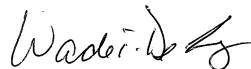
Curve Workgroup: NA

Runlog ID: 27893

Analytical Workgroups: 301419

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	WTD
Secondary Reviewer	MES
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-MAY-2009



Secondary Reviewer:
05-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG301419

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-09R-043009-MS	04/30/09	05/01/09	05/04/09	14	4.06	05/04/09	14	4.06	
MW-19-043009	04/30/09	05/01/09	05/04/09	14	4.06	05/04/09	14	4.06	
TB-043009	04/30/09	05/01/09	05/04/09	14	4.53	05/04/09	14	4.53	
MW-13-043009	04/30/09	05/01/09	05/04/09	14	4.09	05/04/09	14	4.09	
PZ-03-043009	04/30/09	05/01/09	05/04/09	14	4.12	05/04/09	14	4.12	
MW-09R-043009-MSD	04/30/09	05/01/09	05/04/09	14	4.08	05/04/09	14	4.08	
PZ-01-043009	04/30/09	05/01/09	05/04/09	14	4.21	05/04/09	14	4.21	
MW-09R-043009	04/30/09	05/01/09	05/04/09	14	4.15	05/04/09	14	4.15	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
 PDF File ID: 1384481
 Report generated 05/06/2009 10:55



Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L09050029
Instrument Id: HPMS16
Workgroup (AAB#): WG301419

Method: 8260
CAL ID: HPMS16 - 08-APR-09
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L09050029-01	1.00	01	86.8	94.0	107	97.6
L09050029-03	1.00	01	86.5	90.7	104	97.4
L09050029-05	1.00	01	87.3	91.1	104	97.4
L09050029-07	1.00	01	86.8	94.2	105	97.4
L09050029-09	1.00	01	87.4	94.3	106	98.9
L09050029-11	1.00	01	88.7	94.2	105	99.2
L09050029-13	1.00	01	88.8	93.4	106	99.0
L09050029-15	1.00	01	85.6	92.9	106	97.8
WG301419-01	1.00	01	91.2	93.3	107	98.3
WG301419-02	1.00	01	87.4	90.1	103	97.9

Surrogates	Surrogate Limits
1 - 1,2-Dichloroethane-d4	80 - 120
2 - Dibromofluoromethane	86 - 118
3 - 4-Bromofluorobenzene	86 - 115
4 - Toluene-d8	88 - 110

Underline = Result out of surrogate limits

DL = surrogate diluted out

ND = surrogate not detected

METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: 16M00846
 Prep Date: 05/04/09 10:05
 Analyzed Date: 05/04/09 10:05
 Analyst: WTD

Work Group: WG301419
 Blank Sample ID: WG301419-01
 Instrument ID: HPMS16
 Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301419-02	16M00847	05/04/09 10:38	01
MW-09R-043009-MS	L09050029-03	16M00848	05/04/09 11:10	01
MW-09R-043009-MSD	L09050029-05	16M00849	05/04/09 11:42	01
TB-043009	L09050029-15	16M00851	05/04/09 12:46	01
MW-09R-043009	L09050029-01	16M00852	05/04/09 13:18	01
MW-13-043009	L09050029-07	16M00853	05/04/09 13:50	01
MW-19-043009	L09050029-09	16M00854	05/04/09 14:22	01
PZ-01-043009	L09050029-11	16M00855	05/04/09 14:54	01
PZ-03-043009	L09050029-13	16M00856	05/04/09 15:27	01

METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/04/09 10:05 Sample ID: WG301419-01
 Instrument ID: HPMS16 Run Date: 05/04/09 10:05 Prep Method: 5030B
 File ID: 16M00846 Analyst: WTD Method: 8260B
 Workgroup (AAB#): WG301419 Matrix: Water Units: ug/L
 Contract #: _____ Cal ID: HPMS16 - 08-APR-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Acrylonitrile	2.50	5.00	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	1.00	0.500	1	U
Bromomethane	0.500	1.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
Carbon disulfide	0.500	1.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	1.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	1.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	5.00	2.50	1	U
4-Methyl-2-pentanone	2.50	5.00	2.50	1	U
Methylene chloride	0.250	2.00	0.250	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,2,2-Tetrachloroethane	0.125	1.00	0.125	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
Xylene (Total)	0.250	2.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.3	86 - 118	PASS
1,2-Dichloroethane-d4	91.2	80 - 120	PASS
Toluene-d8	98.3	88 - 110	PASS
4-Bromofluorobenzene	107	86 - 115	PASS

MDL Method Detection Limit

Report Name: BLANK

PDF ID: 1384483

06-MAY-2009 10:55



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number:	L09050029	Prep Date:	05/04/09 10:05	Sample ID:	WG301419-01
Instrument ID:	HPMS16	Run Date:	05/04/09 10:05	Prep Method:	5030B
File ID:	16M00846	Analyst:	WTD	Method:	8260B
Workgroup (AAB#):	WG301419	Matrix:	Water	Units:	ug/L
Contract #:			Cal ID:	HPMS16 - 08-APR-09	

RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name:BLANK
PDF ID: 1384483
06-MAY-2009 10:55



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029	Run Date: 05/04/2009	Sample ID: WG301419-02
Instrument ID: HPMS16	Run Time: 10:38	Prep Method: 5030B
File ID: 16M00847	Analyst: WTD	Method: 8260B
Workgroup (AAB#): WG301419	Matrix: Water	Units: ug/L
QC Key: STD	Lot#: STD32485	Cal ID: HPMS16 - 08-APR-09

Analytes	Expected	Found	% Rec	LCS Limits			Q
Acetone	20.0	17.2	85.8	40	-	142	
Acrylonitrile	20.0	18.6	93.1	50	-	150	
Benzene	20.0	19.9	99.7	80	-	121	
Bromodichloromethane	20.0	20.6	103	80	-	131	
Bromoform	20.0	18.1	90.5	70	-	130	
Bromomethane	20.0	14.8	74.1	30	-	145	
2-Butanone	20.0	18.3	91.5	30	-	150	
Carbon disulfide	20.0	17.8	89.0	58	-	138	
Carbon tetrachloride	20.0	20.1	100	65	-	140	
Chlorobenzene	20.0	20.6	103	80	-	120	
Chlorodibromomethane	20.0	20.8	104	60	-	135	
Chloroethane	20.0	16.1	80.7	60	-	135	
Chloroform	20.0	19.7	98.7	80	-	125	
Chloromethane	20.0	9.73	48.6	40	-	125	
1,1-Dichloroethane	20.0	20.0	100	80	-	125	
1,2-Dichloroethane	20.0	19.5	97.6	80	-	129	
1,1-Dichloroethene	20.0	19.1	95.3	80	-	132	
cis-1,2-Dichloroethene	20.0	19.9	99.4	70	-	125	
trans-1,2-Dichloroethene	20.0	22.0	110	80	-	127	
1,2-Dichloropropane	20.0	20.4	102	80	-	120	
cis-1,3-Dichloropropene	20.0	21.1	106	70	-	130	
trans-1,3-Dichloropropene	20.0	18.8	93.9	80	-	130	
Ethylbenzene	20.0	21.4	107	80	-	122	
2-Hexanone	20.0	19.7	98.5	55	-	130	
4-Methyl-2-pentanone	20.0	17.8	88.8	64	-	140	
Methylene chloride	20.0	18.5	92.7	80	-	123	
Styrene	20.0	22.4	112	80	-	123	
1,1,2,2-Tetrachloroethane	20.0	21.7	109	79	-	125	
Tetrachloroethene	20.0	20.1	101	80	-	124	
Toluene	20.0	21.9	109	80	-	124	
1,1,1-Trichloroethane	20.0	19.5	97.7	80	-	134	
1,1,2-Trichloroethane	20.0	21.6	108	80	-	125	
Trichloroethene	20.0	19.0	95.1	80	-	122	
Vinyl chloride	20.0	12.2	61.2	65	-	140	*
Xylene (Total)	60.0	64.2	107	80	-	121	

Surrogates	% Recovery	Surrogate Limits			Qualifier
Dibromofluoromethane	90.1	86	-	118	PASS
1,2-Dichloroethane-d4	87.4	80	-	120	PASS
Toluene-d8	97.9	88	-	110	PASS
4-Bromofluorobenzene	103	86	-	115	PASS

* FAILS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 1382892
Report generated: 05/06/2009 10:55



MS/MSD REPORT

Loginnum: L09050029Cal ID: HPMS16- 08-APR-09Worknum: WG301419Instrument ID: HPMS16

Contract #:

Prep Method: 5030BParent ID: L09050029-01File ID: 16M00852Dil: 1Method: 8260BSample ID: L09050029-03 MSFile ID: 16M00848Dil: 1Matrix: WaterSample ID: L09050029-05 MSDFile ID: 16M00849Dil: 1Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Acetone	U	20.0	16.4	82	20.0	18.0	89.9	9.22	40 - 142	20	
Acrylonitrile	U	20.0	19.2	96	20.0	19.2	96.2	0.194	50 - 150	20	
Benzene	0.426	20.0	19.3	94.3	20.0	18.9	92.5	1.92	80 - 121	20	
Bromodichloromethane	U	20.0	19.7	98.3	20.0	19.8	98.9	0.538	80 - 131	20	
Bromoform	U	20.0	17.7	88.6	20.0	18.0	90.2	1.79	70 - 130	20	
Bromomethane	U	20.0	14.5	72.4	20.0	11.8	58.9	20.6	30 - 145	20	#
2-Butanone	U	20.0	18.7	93.5	20.0	20.1	100	6.95	30 - 150	20	
Carbon disulfide	U	20.0	19.1	95.3	20.0	18.4	91.9	3.68	58 - 138	20	
Carbon tetrachloride	U	20.0	18.7	93.7	20.0	18.2	91.1	2.87	65 - 140	20	
Chlorobenzene	0.194	20.0	19.9	98.4	20.0	19.8	98.2	0.142	80 - 120	20	
Chlorodibromomethane	U	20.0	19.8	99.1	20.0	20.0	100	1.02	60 - 135	20	
Chloroethane	U	20.0	16.3	81.3	20.0	15.6	77.8	4.48	60 - 135	20	
Chloroform	0.134	20.0	19.2	95.2	20.0	18.8	93.1	2.19	80 - 125	20	
Chloromethane	U	20.0	8.67	43.3	20.0	7.97	39.9	8.37	40 - 125	20	*
1,1-Dichloroethane	0.226	20.0	19.2	95.1	20.0	19.0	94.1	1.02	80 - 125	20	
1,2-Dichloroethane	U	20.0	18.8	93.9	20.0	18.9	94.7	0.791	80 - 129	20	
1,1-Dichloroethene	U	20.0	17.4	86.8	20.0	17.0	84.9	2.29	80 - 132	20	
cis-1,2-Dichloroethene	0.464	20.0	19.7	96.1	20.0	19.6	95.4	0.720	70 - 125	20	
trans-1,2-Dichloroethene	U	20.0	20.8	104	20.0	20.7	103	0.555	80 - 127	20	
1,2-Dichloropropane	U	20.0	19.9	99.6	20.0	19.6	98.1	1.51	80 - 120	20	
cis-1,3-Dichloropropene	U	20.0	20.1	101	20.0	20.1	100	0.0879	70 - 130	20	
trans-1,3-Dichloropropene	U	20.0	18.0	89.8	20.0	18.3	91.6	1.95	80 - 130	20	
Ethylbenzene	U	20.0	20.3	102	20.0	20.1	100	1.29	80 - 122	20	
2-Hexanone	U	20.0	20.5	103	20.0	21.9	109	6.33	55 - 130	20	
4-Methyl-2-pentanone	U	20.0	18.2	91	20.0	19.3	96.4	5.75	64 - 140	20	
Methylene chloride	U	20.0	17.9	89.4	20.0	17.7	88.5	1.02	80 - 123	20	
Styrene	U	20.0	21.6	108	20.0	21.3	106	1.75	80 - 123	20	
1,1,2,2-Tetrachloroethane	U	20.0	21.4	107	20.0	22.3	111	3.90	79 - 125	20	
Tetrachloroethene	U	20.0	18.7	93.4	20.0	18.3	91.6	1.98	80 - 124	20	
Toluene	U	20.0	20.7	103	20.0	20.3	102	1.71	80 - 124	20	
1,1,1-Trichloroethane	U	20.0	18.2	91	20.0	17.9	89.6	1.59	80 - 134	20	
1,1,2-Trichloroethane	U	20.0	20.7	104	20.0	21.1	106	2.00	80 - 125	20	
Trichloroethene	U	20.0	18.0	90.2	20.0	17.4	87.1	3.54	80 - 122	20	
Vinyl chloride	U	20.0	10.7	53.6	20.0	10.3	51.7	3.63	65 - 140	20	*
Xylene (Total)	U	60.0	61.4	102	60.0	59.9	99.8	2.47	80 - 121	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 1382891

Report generated 05/06/2009 10:55



Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L09050029

Instrument: HPMS16

Analyst: WTD

Workgroup: WG299294

Tune ID: WG299294-01

Run Date: 04/08/2009

Run Time: 09:39

File ID: 16M00410

Cal ID: HPMS16 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.2	3997	PASS
75.0	95.0	30.0	60.0	47.5	8170	PASS
95.0	95.0	100	100	100	17203	PASS
96.0	95.0	5.00	9.00	6.93	1193	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	95.4	16418	PASS
175	174	5.00	9.00	7.65	1256	PASS
176	174	95.0	101	100	16472	PASS
177	176	5.00	9.00	6.51	1073	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG299294-02	STD	01	04/08/2009 10:39	
WG299294-03	STD	01	04/08/2009 11:12	
WG299294-04	STD	01	04/08/2009 11:45	
WG299294-05	STD	01	04/08/2009 12:18	
WG299294-06	STD	01	04/08/2009 12:50	
WG299294-07	STD	01	04/08/2009 13:23	
WG299294-08	STD-CCV	01	04/08/2009 13:56	
WG299294-09	STD	01	04/08/2009 14:29	
WG299294-10	STD	01	04/08/2009 15:02	
WG299294-11	STD	01	04/08/2009 15:34	
WG299294-12	SSCV	01	04/08/2009 17:46	
WG299294-13	SSCV	01	04/08/2009 18:19	

* Sample past 12 hour tune limit

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L09050029
Instrument: HPMS16
Analyst: WTD
Workgroup: WG301418

Tune ID: WG301418-01
Run Date: 05/04/2009
Run Time: 08:36
File ID: 16M00843

Cal ID: HPMS16-08-APR-09

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.3	3520	PASS
75.0	95.0	30.0	60.0	49.7	6907	PASS
95.0	95.0	100	100	100	13901	PASS
96.0	95.0	5.00	9.00	7.11	988	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	90.3	12553	PASS
175	174	5.00	9.00	6.85	860	PASS
176	174	95.0	101	97.4	12230	PASS
177	176	5.00	9.00	6.48	792	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG301418-02	CCV	01	05/04/2009 09:01	
WG301419-01	BLANK	01	05/04/2009 10:05	
WG301419-02	LCS	01	05/04/2009 10:38	
L09050029-03	MW-09R-043009-MS	01	05/04/2009 11:10	
WG301419-04	MS	01	05/04/2009 11:10	
L09050029-05	MW-09R-043009-MSD	01	05/04/2009 11:42	
WG301419-05	MSD	01	05/04/2009 11:42	
L09050029-15	TB-043009	01	05/04/2009 12:46	
L09050029-01	MW-09R-043009	01	05/04/2009 13:18	
WG301419-03	REF	01	05/04/2009 13:18	
L09050029-07	MW-13-043009	01	05/04/2009 13:50	
L09050029-09	MW-19-043009	01	05/04/2009 14:22	
L09050029-11	PZ-01-043009	01	05/04/2009 14:54	
L09050029-13	PZ-03-043009	01	05/04/2009 15:27	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 1384486
Report generated 05/06/2009 10:55



Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L09050029
Analytical Method: 8260B
ICAL Workgroup: WG299294

Instrument ID: HPMS16
Initial Calibration Date: 08-APR-09 15:34
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R ²)	QUAD(R ²)
1,1-Dichloroethene	CCC	0.3812	5.64		
1,2-Dichloropropane	CCC	0.2597	6.07		
Chloroform	CCC	0.4341	4.65		
Ethylbenzene	CCC	0.4670	11.4		
Toluene	CCC	1.232	7.10		
Vinyl Chloride	CCC	0.3290	42.8		
1,1,2,2-Tetrachloroethane	SPCC	0.3653	8.39		
1,1-Dichloroethane	SPCC	0.4717	2.86		
Bromoform	SPCC	0.2064	9.64		
Chlorobenzene	SPCC	0.8773	3.93		
Chloromethane	SPCC	0.5708	14.9		
1,1,1-Trichloroethane		0.3945	4.59		
1,1,2-Trichloroethane		0.2062	13.4		
1,2-Dichloroethane		0.3076	6.81		
2-Butanone		0.06547	16.5		0.99500
2-Hexanone		0.1379	8.63		
4-Methyl-2-Pentanone		0.05780	13.2		
Acetone		0.04820	11.7		
Acrylonitrile		0.05421	32.0		0.99100
Benzene		0.9248	3.07		
Bromodichloromethane		0.3153	7.23		
Bromomethane		0.1168	22.5		1.00000
Carbon Disulfide		0.7576	5.40		
Carbon Tetrachloride		0.3554	6.26		
Chloroethane		0.1620	6.34		
Dibromochloromethane		0.2927	13.1		
Methylene Chloride		0.3144	36.2		1.00000
Styrene		0.8564	14.7		
Tetrachloroethene		0.3008	10.3		
Trichloroethene		0.2670	8.01		
cis-1,2-Dichloroethene		0.2543	7.46		
cis-1,3-Dichloropropene		0.3329	14.5		
m-,p-Xylene		0.5734	5.73		
o-Xylene		0.5545	7.80		
trans-1,2-Dichloroethene		0.2306	10.1		
trans-1,3-Dichloropropene		0.4000	9.97		

R = Correlation coefficient; 0.995 minimum
R² = Coefficient of determination; 0.99 minimum

If the %RSD is greater than the limit specified by the method or project QAP, then linear or quadratic equations will be used.

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Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050029
Analytical Method: 8260B

Instrument ID: HPMS16
Initial Calibration Date: 08-APR-09 15:34
Column ID: F

Analyte	WG299294-02			WG299294-03			WG299294-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,1-Dichloroethene	0.300	5007.00000	0.3753	0.400	5915.00000	0.3425	1.00	16319.00000	0.3820
1,2-Dichloropropane	0.300	3148.00000	0.2360	0.400	4137.00000	0.2396	1.00	11311.00000	0.2647
Chloroform	0.300	5501.00000	0.4123	0.400	7057.00000	0.4086	1.00	19534.00000	0.4572
Ethylbenzene	0.300	3760.00000	0.3848	0.400	5541.00000	0.4350	1.00	14170.00000	0.4487
Toluene	0.300	11031.00000	1.129	0.400	14908.00000	1.171	1.00	40753.00000	1.290
Vinyl Chloride	NA	NA	NA	0.400	7813.00000	0.4524	1.00	17124.00000	0.4008
1,1,2,2-Tetrachloroethane	0.300	1995.00000	0.3352	0.400	2423.00000	0.3136	1.00	7218.00000	0.3802
1,1-Dichloroethane	0.300	6130.00000	0.4595	0.400	7927.00000	0.4590	1.00	20765.00000	0.4860
Bromoform	NA	NA	NA	NA	NA	NA	1.00	5633.00000	0.1784
Chlorobenzene	0.300	8355.00000	0.8550	0.400	11229.00000	0.8816	1.00	27388.00000	0.8672
Chloromethane	NA	NA	NA	0.400	13249.00000	0.7672	1.00	25489.00000	0.5966
1,1,1-Trichloroethane	0.300	4830.00000	0.3620	0.400	6410.00000	0.3712	1.00	17363.00000	0.4064
1,1,2-Trichloroethane	0.300	1514.00000	0.1549	0.400	2184.00000	0.1715	1.00	6170.00000	0.1954
1,2-Dichloroethane	0.300	3598.00000	0.2697	0.400	4790.00000	0.2774	1.00	13862.00000	0.3244
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.300	12359.00000	0.9264	0.400	16789.00000	0.9722	1.00	39455.00000	0.9235
Bromodichloromethane	0.300	3762.00000	0.2820	0.400	4907.00000	0.2841	1.00	13237.00000	0.3098
Bromomethane	NA	NA	NA	0.400	1477.00000	0.08550	1.00	4023.00000	0.09420
Carbon Disulfide	NA	NA	NA	0.400	13743.00000	0.7958	1.00	30050.00000	0.7033
Carbon Tetrachloride	0.300	4259.00000	0.3192	0.400	5765.00000	0.3338	1.00	15565.00000	0.3643
Chloroethane	NA	NA	NA	0.400	2401.00000	0.1390	1.00	7051.00000	0.1650
Dibromochloromethane	0.300	2024.00000	0.2071	0.400	3339.00000	0.2622	1.00	9349.00000	0.2960
Methylene Chloride	NA	NA	NA	0.400	9669.00000	0.5599	1.00	17331.00000	0.4056
Styrene	0.300	6478.00000	0.6630	0.400	8493.00000	0.6668	1.00	26190.00000	0.8293
Tetrachloroethene	NA	NA	NA	0.400	2930.00000	0.2300	1.00	9470.00000	0.2999
Trichloroethene	0.300	3373.00000	0.2528	0.400	3876.00000	0.2244	1.00	11221.00000	0.2626
cis-1,2-Dichloroethene	0.300	3147.00000	0.2359	0.400	4084.00000	0.2365	1.00	10291.00000	0.2409
cis-1,3-Dichloropropene	0.300	3353.00000	0.2513	0.400	4678.00000	0.2709	1.00	13639.00000	0.3192
m-,p-Xylene	0.600	10966.00000	0.5611	0.800	13904.00000	0.5458	2.00	36206.00000	0.5732
o-Xylene	0.300	4765.00000	0.4876	0.400	6608.00000	0.5188	1.00	17244.00000	0.5460
trans-1,2-Dichloroethene	0.300	2723.00000	0.2041	0.400	3453.00000	0.1999	1.00	9526.00000	0.2230
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	1.00	10634.00000	0.3367

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INITIAL CALIBRATION DATA

Login Number: L09050029
Analytical Method: 8260B

Instrument ID: HPMS16
Initial Calibration Date: 08-APR-09 15:34
Column ID: F

Analyte	WG299294-05			WG299294-06			WG299294-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,1-Dichloroethene	2.00	30346.0000	0.3570	5.00	81162.0000	0.3780	20.0	331970.000	0.3907
1,2-Dichloropropane	2.00	20848.0000	0.2453	5.00	55971.0000	0.2607	20.0	230333.000	0.2711
Chloroform	2.00	34784.0000	0.4092	5.00	93056.0000	0.4334	20.0	373607.000	0.4397
Ethylbenzene	2.00	26268.0000	0.4143	5.00	71830.0000	0.4594	20.0	303119.000	0.4782
Toluene	2.00	75648.0000	1.193	5.00	203845.000	1.304	20.0	832468.000	1.313
Vinyl Chloride	2.00	35141.0000	0.4134	5.00	79708.0000	0.3713	20.0	302166.000	0.3556
1,1,2,2-Tetrachloroethane	2.00	13487.0000	0.3512	5.00	36667.0000	0.3776	20.0	150684.000	0.3773
1,1-Dichloroethane	2.00	38321.0000	0.4508	5.00	99866.0000	0.4652	20.0	402928.000	0.4742
Bromoform	2.00	11730.0000	0.1850	5.00	30989.0000	0.1982	20.0	138828.000	0.2190
Chlorobenzene	2.00	51438.0000	0.8113	5.00	135983.000	0.8697	20.0	561229.000	0.8854
Chloromethane	2.00	48775.0000	0.5738	5.00	116017.000	0.5404	20.0	445899.000	0.5248
1,1,1-Trichloroethane	2.00	33089.0000	0.3893	5.00	84073.0000	0.3916	20.0	340568.000	0.4008
1,1,2-Trichloroethane	2.00	13120.0000	0.2069	5.00	35673.0000	0.2282	20.0	145700.000	0.2299
1,2-Dichloroethane	2.00	25861.0000	0.3042	5.00	69075.0000	0.3217	20.0	274518.000	0.3231
2-Butanone	NA	NA	NA	5.00	9659.00000	0.04500	20.0	58463.0000	0.06880
2-Hexanone	NA	NA	NA	5.00	21037.0000	0.1345	20.0	94278.0000	0.1487
4-Methyl-2-Pentanone	2.00	3772.00000	0.04440	5.00	11856.0000	0.05520	20.0	54082.0000	0.06360
Acetone	NA	NA	NA	5.00	12045.0000	0.05610	20.0	43153.0000	0.05080
Acrylonitrile	2.00	1863.00000	0.02190	5.00	8601.00000	0.04010	20.0	49947.0000	0.05880
Benzene	2.00	74947.0000	0.8817	5.00	198743.000	0.9257	20.0	798862.000	0.9401
Bromodichloromethane	2.00	25485.0000	0.2998	5.00	68912.0000	0.3210	20.0	281673.000	0.3315
Bromomethane	2.00	8842.00000	0.1040	5.00	21214.0000	0.09880	20.0	97393.0000	0.1146
Carbon Disulfide	2.00	60691.0000	0.7140	5.00	153668.000	0.7158	20.0	653641.000	0.7692
Carbon Tetrachloride	2.00	28438.0000	0.3346	5.00	76030.0000	0.3541	20.0	307698.000	0.3621
Chloroethane	2.00	14189.0000	0.1669	5.00	33730.0000	0.1571	20.0	140831.000	0.1657
Dibromochloromethane	2.00	17928.0000	0.2828	5.00	49345.0000	0.3156	20.0	202042.000	0.3187
Methylene Chloride	2.00	26107.0000	0.3071	5.00	56351.0000	0.2625	20.0	206826.000	0.2434
Styrene	2.00	51078.0000	0.8056	5.00	139135.000	0.8899	20.0	599883.000	0.9464
Tetrachloroethene	2.00	18113.0000	0.2857	5.00	49225.0000	0.3148	20.0	200825.000	0.3168
Trichloroethene	2.00	21456.0000	0.2524	5.00	58464.0000	0.2723	20.0	236327.000	0.2781
cis-1,2-Dichloroethene	2.00	20128.0000	0.2368	5.00	53755.0000	0.2504	20.0	223505.000	0.2630
cis-1,3-Dichloropropene	2.00	26354.0000	0.3100	5.00	73886.0000	0.3442	20.0	311013.000	0.3660
m-,p-Xylene	4.00	66618.0000	0.5254	10.0	184331.000	0.5895	40.0	749284.000	0.5910
o-Xylene	2.00	32081.0000	0.5060	5.00	87474.0000	0.5595	20.0	361268.000	0.5699
trans-1,2-Dichloroethene	2.00	18044.0000	0.2123	5.00	48799.0000	0.2273	20.0	205258.000	0.2416
trans-1,3-Dichloropropene	2.00	22465.0000	0.3543	5.00	63926.0000	0.4088	20.0	272735.000	0.4303

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INITIAL CALIBRATION DATA

Login Number: L09050029
Analytical Method: 8260B

Instrument ID: HPMS16
Initial Calibration Date: 08-APR-09 15:34
Column ID: F

Analyte	WG299294-08			WG299294-09			WG299294-10		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,1-Dichloroethene	50.0	865123.000	0.3980	100	1725966.00	0.3938	200	3560719.00	0.4133
1,2-Dichloropropane	50.0	592103.000	0.2724	100	1169767.00	0.2669	200	2417544.00	0.2806
Chloroform	50.0	971295.000	0.4469	100	1917030.00	0.4374	200	3980622.00	0.4621
Ethylbenzene	50.0	828512.000	0.5092	100	1780131.00	0.5258	200	3930006.00	0.5477
Toluene	50.0	2169882.00	1.334	100	4270795.00	1.261	200	7853008.00	1.095
Vinyl Chloride	50.0	729265.000	0.3355	100	1328767.00	0.3032	200	0	0
1,1,2,2-Tetrachloroethane	50.0	429281.000	0.4080	100	738660.000	0.3470	200	1750173.00	0.3980
1,1-Dichloroethane	50.0	1053677.00	0.4848	100	2101471.00	0.4795	200	4192957.00	0.4867
Bromoform	50.0	377048.000	0.2317	100	710931.000	0.2100	200	1594818.00	0.2223
Chlorobenzene	50.0	1511772.00	0.9291	100	3111966.00	0.9191	200	6296760.00	0.8776
Chloromethane	50.0	1088122.00	0.5007	100	2282566.00	0.5208	200	4671804.00	0.5423
1,1,1-Trichloroethane	50.0	889588.000	0.4093	100	1764938.00	0.4027	200	3596194.00	0.4174
1,1,2-Trichloroethane	50.0	384382.000	0.2362	100	720732.000	0.2129	200	1576821.00	0.2198
1,2-Dichloroethane	50.0	705819.000	0.3248	100	1334370.00	0.3045	200	2742664.00	0.3184
2-Butanone	50.0	159042.000	0.07320	100	283212.000	0.06460	200	645805.000	0.07500
2-Hexanone	50.0	252733.000	0.1553	100	433452.000	0.1280	200	978228.000	0.1363
4-Methyl-2-Pentanone	50.0	142862.000	0.06570	100	246270.000	0.05620	200	559979.000	0.06500
Acetone	50.0	108253.000	0.04980	100	190914.000	0.04360	200	420466.000	0.04880
Acrylonitrile	50.0	141871.000	0.06530	100	270535.000	0.06170	200	626267.000	0.07270
Benzene	50.0	2055798.00	0.9459	100	4046953.00	0.9234	200	7616156.00	0.8841
Bromodichloromethane	50.0	736228.000	0.3387	100	1433152.00	0.3270	200	2964849.00	0.3442
Bromomethane	50.0	288395.000	0.1327	100	647649.000	0.1478	200	1353520.00	0.1571
Carbon Disulfide	50.0	1680584.00	0.7732	100	3410163.00	0.7781	200	6987415.00	0.8111
Carbon Tetrachloride	50.0	799233.000	0.3677	100	1640692.00	0.3744	200	3349262.00	0.3888
Chloroethane	50.0	352219.000	0.1621	100	732344.000	0.1671	200	1487392.00	0.1727
Dibromochloromethane	50.0	540103.000	0.3319	100	1031633.00	0.3047	200	2264030.00	0.3155
Methylene Chloride	50.0	531054.000	0.2443	100	1050699.00	0.2397	200	2174973.00	0.2525
Styrene	50.0	1624517.00	0.9984	100	3329819.00	0.9835	200	6637292.00	0.9251
Tetrachloroethene	50.0	523166.000	0.3215	100	1075442.00	0.3176	200	2293503.00	0.3197
Trichloroethene	50.0	606373.000	0.2790	100	1268835.00	0.2895	200	2514080.00	0.2918
cis-1,2-Dichloroethene	50.0	583354.000	0.2684	100	1171191.00	0.2672	200	2498695.00	0.2900
cis-1,3-Dichloropropene	50.0	821310.000	0.3779	100	1616329.00	0.3688	200	3337398.00	0.3874
m-,p-Xylene	100	2015924.00	0.6194	200	4158806.00	0.6142	400	7763005.00	0.5410
o-Xylene	50.0	969824.000	0.5960	100	2026483.00	0.5985	200	4362746.00	0.6081
trans-1,2-Dichloroethene	50.0	539685.000	0.2483	100	1093033.00	0.2494	200	2324311.00	0.2698
trans-1,3-Dichloropropene	50.0	727062.000	0.4468	100	1391867.00	0.4111	200	2955033.00	0.4119

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Login Number: L09050029
Analytical Method: 8260B

Instrument ID: HPMS16
Initial Calibration Date: 08-APR-09 15:34
Column ID: F

Analyte	WG299294-11		
	CONC	RESP	RF
1,1-Dichloroethene	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA
Chloroform	NA	NA	NA
Ethylbenzene	NA	NA	NA
Toluene	NA	NA	NA
Vinyl Chloride	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA
Bromoform	NA	NA	NA
Chlorobenzene	NA	NA	NA
Chloromethane	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA
2-Butanone	300	896671.000	0.06620
2-Hexanone	300	1274238.00	0.1246
4-Methyl-2-Pentanone	300	737998.000	0.05450
Acetone	300	543915.000	0.04010
Acrylonitrile	300	799140.000	0.05900
Benzene	NA	NA	NA
Bromodichloromethane	NA	NA	NA
Bromomethane	NA	NA	NA
Carbon Disulfide	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA
Chloroethane	NA	NA	NA
Dibromochloromethane	NA	NA	NA
Methylene Chloride	NA	NA	NA
Styrene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Trichloroethene	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA
m-,p-Xylene	NA	NA	NA
o-Xylene	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: <u>L09050029</u>	Run Date: <u>04/08/2009</u>	Sample ID: <u>WG299294-12</u>
Instrument ID: <u>HPMS16</u>	Run Time: <u>17:46</u>	Method: <u>8260B</u>
File ID: <u>16M00425</u>	Analyst: <u>WTD</u>	QC Key: <u>STD</u>
Ical Workgroup: <u>WG299294</u>	Cal ID: <u>HPMS16 - 08-APR-09</u>	

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	20.0	20.4	ug/L	0.444	2.20	30	
1,1-Dichloroethene	CCC	20.0	20.8	ug/L	0.396	3.80	30	
1,2-Dichloropropane	CCC	20.0	20.6	ug/L	0.268	3.10	30	
Ethylbenzene	CCC	20.0	20.2	ug/L	0.471	0.800	30	
Toluene	CCC	20.0	20.9	ug/L	1.29	4.50	30	
Vinyl Chloride	CCC	20.0	16.6	ug/L	0.312	16.9	30	
Bromoform	SPCC	20.0	19.5	ug/L	0.201	2.40	30	
Chlorobenzene	SPCC	20.0	19.7	ug/L	0.863	1.70	30	
Chloromethane	SPCC	20.0	17.2	ug/L	0.492	13.8	30	
1,1-Dichloroethane	SPCC	20.0	20.6	ug/L	0.485	2.80	30	
1,1,2,2-Tetrachloroethane	SPCC	20.0	20.4	ug/L	0.373	2.10	30	
Acetone		20.0	20.8	ug/L	0.0502	4.20	30	
Acrylonitrile		20.0	19.7	ug/L	0.0586	1.60	30	
Benzene		20.0	20.4	ug/L	0.944	2.10	30	
Bromodichloromethane		20.0	21.5	ug/L	0.339	7.40	30	
Bromomethane		20.0	15.5	ug/L	0.0980	22.6	30	
2-Butanone		20.0	19.1	ug/L	0.0594	4.30	30	
Carbon Disulfide		20.0	19.2	ug/L	0.727	4.00	30	
Carbon Tetrachloride		20.0	20.7	ug/L	0.369	3.70	30	
Dibromochloromethane		20.0	20.8	ug/L	0.304	3.80	30	
Chloroethane		20.0	20.0	ug/L	0.162	0	30	
1,2-Dichloroethane		20.0	20.5	ug/L	0.315	2.30	30	
cis-1,2-Dichloroethene		20.0	21.6	ug/L	0.275	8.20	30	
trans-1,2-Dichloroethene		20.0	21.1	ug/L	0.243	5.50	30	
cis-1,3-Dichloropropene		20.0	21.2	ug/L	0.354	6.20	30	
trans-1,3-Dichloropropene		20.0	17.7	ug/L	0.354	11.5	30	
2-Hexanone		20.0	20.3	ug/L	0.140	1.30	30	
4-Methyl-2-Pentanone		20.0	20.2	ug/L	0.0584	1.10	30	
Methylene Chloride		20.0	21.1	ug/L	0.254	5.60	30	
Styrene		20.0	21.6	ug/L	0.924	7.90	30	
Tetrachloroethene		20.0	19.9	ug/L	0.299	0.700	30	
1,1,1-Trichloroethane		20.0	20.6	ug/L	0.406	2.90	30	
1,1,2-Trichloroethane		20.0	21.7	ug/L	0.224	8.60	30	
Trichloroethene		20.0	20.1	ug/L	0.269	0.700	30	
Xylenes		60.0	61.0	ug/L	0.573	1.70	30	
1,2-Dichloroethene		40.0	42.7	ug/L	0.259	6.90	30	
o-Xylene		20.0	20.2	ug/L	0.560	1.00	30	
m-,p-Xylene		40.0	40.8	ug/L	0.585	2.00	30	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 1384485
Report generated 05/06/2009 10:55



CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029	Run Date: 05/04/2009	Sample ID: WG301418-02
Instrument ID: HPMS16	Run Time: 09:01	Method: 8260B
File ID: 16M00844	Analyst: WTD	QC Key: STD
Workgroup (AAB#): WG301419	Cal ID: HPMS16 - 08-APR-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/L	0.417	4.06	20	
1,1-Dichloroethene	CCC	50.0	49.6	ug/L	0.378	0.835	20	
1,2-Dichloropropane	CCC	50.0	50.5	ug/L	0.262	1.02	20	
Ethylbenzene	CCC	50.0	53.1	ug/L	0.496	6.21	20	
Toluene	CCC	50.0	52.9	ug/L	1.30	5.85	20	
Vinyl Chloride	CCC	50.0	42.8	ug/L	0.322	14.4	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.199	3.55	40	
Chlorobenzene	SPCC	50.0	51.5	ug/L	0.904	3.02	40	
Chloromethane	SPCC	50.0	40.0	ug/L	0.456	20.1	40	
1,1-Dichloroethane	SPCC	50.0	49.0	ug/L	0.463	1.95	40	
1,1,2,2-Tetrachloroethane	SPCC	50.0	56.0	ug/L	0.409	12.0	40	
Acetone		50.0	47.6	ug/L	0.0459	4.77	40	
Acrylonitrile		50.0	39.7	ug/L	0.0551	20.6	40	
Benzene		50.0	48.5	ug/L	0.896	3.10	40	
Bromodichloromethane		50.0	50.1	ug/L	0.316	0.223	40	
Bromomethane		50.0	43.0	ug/L	0.117	14.1	40	
2-Butanone		50.0	45.8	ug/L	0.0657	8.47	40	
Carbon Disulfide		50.0	50.2	ug/L	0.761	0.439	40	
Carbon Tetrachloride		50.0	49.4	ug/L	0.351	1.24	40	
Dibromochloromethane		50.0	52.5	ug/L	0.307	4.93	40	
Chloroethane		50.0	48.9	ug/L	0.158	2.23	40	
1,2-Dichloroethane		50.0	50.1	ug/L	0.308	0.213	40	
cis-1,2-Dichloroethene		50.0	51.5	ug/L	0.262	2.99	40	
trans-1,2-Dichloroethene		50.0	49.2	ug/L	0.227	1.58	40	
cis-1,3-Dichloropropene		50.0	54.7	ug/L	0.364	9.43	40	
trans-1,3-Dichloropropene		50.0	55.4	ug/L	0.443	10.8	40	
2-Hexanone		50.0	53.0	ug/L	0.146	5.90	40	
4-Methyl-2-Pentanone		50.0	50.1	ug/L	0.0579	0.137	40	
Methylene Chloride		50.0	46.2	ug/L	0.220	7.63	40	
Styrene		50.0	56.3	ug/L	0.964	12.5	40	
Tetrachloroethene		50.0	48.5	ug/L	0.292	3.05	40	
1,1,1-Trichloroethane		50.0	48.2	ug/L	0.380	3.62	40	
1,1,2-Trichloroethane		50.0	53.4	ug/L	0.220	6.85	40	
Trichloroethene		50.0	52.6	ug/L	0.281	5.25	40	
Xylenes		150	157	ug/L	0.589	4.57	40	
1,2-Dichloroethene		100	101	ug/L	0.244	0.702	40	
m-, p-Xylene		100	105	ug/L	0.601	4.82	40	
o-Xylene		50.0	52.0	ug/L	0.577	4.07	40	

* Exceeds %D Criteria

CCC Calibration Check Compounds
 SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
 PDF File ID: 1384487
 Report generated 05/06/2009 10:55



Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L09050029
Instrument ID: HPMS16
Workgroup (AAB#): WG301419

CCV Number: WG301418-02
CAL ID: HPMS16 - 08-APR-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG301418-02	NA	NA	538519	876784	1213219
Upper Limit	NA	NA	1077038	1753568	2426438
Lower Limit	NA	NA	269260	438392	606610
L09050029-01	1.00	01	411008	753606	996061
L09050029-03	1.00	01	479767	822051	1137980
L09050029-05	1.00	01	488062	836052	1160932
L09050029-07	1.00	01	398617	719246	958455
L09050029-09	1.00	01	379624	690846	940585
L09050029-11	1.00	01	375298	680029	921247
L09050029-13	1.00	01	366825	666072	908800
L09050029-15	1.00	01	422631	772369	1036332
WG301419-01	1.00	01	437946	797755	1092942
WG301419-02	1.00	01	472135	798527	1113959
WG301419-03	1.00	01	411008	753606	996061
WG301419-04	1.00	01	479767	822051	1137980
WG301419-05	1.00	01	488062	836052	1160932

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L09050029
Instrument ID: HPMS16
Workgroup (AAB#): WG301419

CCV Number: WG301418-02
CAL ID: HPMS16 - 08-APR-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG301418-02	NA	NA	17.29	14.49	10.86
Upper Limit	NA	NA	17.79	14.99	11.36
Lower Limit	NA	NA	16.79	13.99	10.36
L09050029-01	1.00	01	17.29	14.49	10.86
L09050029-03	1.00	01	17.29	14.49	10.85
L09050029-05	1.00	01	17.29	14.49	10.86
L09050029-07	1.00	01	17.29	14.49	10.86
L09050029-09	1.00	01	17.29	14.49	10.86
L09050029-11	1.00	01	17.29	14.49	10.86
L09050029-13	1.00	01	17.29	14.49	10.86
L09050029-15	1.00	01	17.29	14.49	10.86
WG301419-01	1.00	01	17.29	14.49	10.86
WG301419-02	1.00	01	17.29	14.49	10.86
WG301419-03	1.00	01	17.29	14.49	10.86
WG301419-04	1.00	01	17.29	14.49	10.85
WG301419-05	1.00	01	17.29	14.49	10.86

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac Laboratories Inc.
GC VOLATILE ORGANICS - RSK-175

Microbac Login No: L09050029

METHOD

Analysis: RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. 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/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: Samples 01, 09, and 11 required dilution analyses to obtain results within the calibrated range of the instrument.

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 hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: ADC

Approved: 07-MAY-09



LABORATORY REPORT

L09050029

05/19/09 14:14

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-01	RSK175	1	01-MAY-09
MW-09R-043009	L09050029-01	RSK175	2	01-MAY-09
MW-13-043009	L09050029-07	RSK175	1	01-MAY-09
MW-19-043009	L09050029-09	RSK175	1	01-MAY-09
MW-19-043009	L09050029-09	RSK175	5	01-MAY-09
PZ-01-043009	L09050029-11	RSK175	25	01-MAY-09
PZ-01-043009	L09050029-11	RSK175	1	01-MAY-09
PZ-03-043009	L09050029-13	RSK175	1	01-MAY-09



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-01**
Client ID: **MW-09R-043009**
Matrix: **Water**
Workgroup Number: **WG301472**
Collect Date: **04/30/2009 09:40**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **1**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/04/2009 17:46**
Cal Date: **04/17/2009 16:29**
Run Date: **05/04/2009 17:46**
File ID: **16619023**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	140		5.0	1.0
Carbon Dioxide	124-38-9	110000	E	10000	2500

E Semiquantitative result (out of instrument calibration range)

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-01**
Client ID: **MW-09R-043009**
Matrix: **Water**
Workgroup Number: **WG301593**
Collect Date: **04/30/2009 09:40**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **2**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/05/2009 15:18**
Cal Date: **04/17/2009 16:29**
Run Date: **05/05/2009 15:18**
File ID: **16619044**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	110		10	2.0
Carbon Dioxide	124-38-9	90000		20000	5000

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-07**
Client ID: **MW-13-043009**
Matrix: **Water**
Workgroup Number: **WG301472**
Collect Date: **04/30/2009 11:35**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **1**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/04/2009 18:11**
Cal Date: **04/17/2009 16:29**
Run Date: **05/04/2009 18:11**
File ID: **16619025**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	310		5.0	1.0
Carbon Dioxide	124-38-9	74000		10000	2500

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-09**
Client ID: **MW-19-043009**
Matrix: **Water**
Workgroup Number: **WG301472**
Collect Date: **04/30/2009 13:00**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **1**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/04/2009 18:23**
Cal Date: **04/17/2009 16:29**
Run Date: **05/04/2009 18:23**
File ID: **16619026**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	1300	E	5.0	1.0
Carbon Dioxide	124-38-9	87000		10000	2500

E Semiquantitative result (out of instrument calibration range)

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-09**
Client ID: **MW-19-043009**
Matrix: **Water**
Workgroup Number: **WG301593**
Collect Date: **04/30/2009 13:00**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **5**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/05/2009 15:31**
Cal Date: **04/17/2009 16:29**
Run Date: **05/05/2009 15:31**
File ID: **16619045**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	1300		25	5.0
Carbon Dioxide	124-38-9	73000		50000	13000

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-11**
Client ID: **PZ-01-043009**
Matrix: **Water**
Workgroup Number: **WG301593**
Collect Date: **04/30/2009 09:57**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **25**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/05/2009 15:43**
Cal Date: **04/17/2009 16:29**
Run Date: **05/05/2009 15:43**
File ID: **16619046**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	2700		130	25
Carbon Dioxide	124-38-9		U	250000	63000

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-11**
Client ID: **PZ-01-043009**
Matrix: **Water**
Workgroup Number: **WG301472**
Collect Date: **04/30/2009 09:57**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **1**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/04/2009 18:35**
Cal Date: **04/17/2009 16:29**
Run Date: **05/04/2009 18:35**
File ID: **16619027**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	6500	E	5.0	1.0
Carbon Dioxide	124-38-9	85000		10000	2500

E Semiquantitative result (out of instrument calibration range)

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-13**
Client ID: **PZ-03-043009**
Matrix: **Water**
Workgroup Number: **WG301472**
Collect Date: **04/30/2009 12:37**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **1**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/04/2009 18:48**
Cal Date: **04/17/2009 16:29**
Run Date: **05/04/2009 18:48**
File ID: **16619028**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	79		5.0	1.0
Carbon Dioxide	124-38-9	42000		10000	2500

2.1.2.2 QC Summary Data

Microbac Laboratories Inc.
GC VOLATILE ORGANICS - RSK-175

Microbac Login No: L09050029

METHOD

Analysis: RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. 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/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: Samples 01, 09, and 11 required dilution analyses to obtain results within the calibrated range of the instrument.

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 hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: ADC

Approved: 07-MAY-09



Microbac Laboratories Inc.

Data Checklist

Date: 17-APR-2009

Analyst: ADC

Analyst: NA

Method: RSK175

Instrument: HP16

Curve Workgroup: NA

Runlog ID: 27652

Analytical Workgroups: WG300127, WG299991

System Performance Check	NA
BFB	NA
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Excel Spreadsheets	X
Case Narrative	X
Narrative Summary	NA
Results Reporting/Data Qualifiers	X
Client Data Package Assembly	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-APR-2009



Secondary Reviewer:
20-APR-2009



Microbac Laboratories Inc.

Data Checklist

Date: 20-APR-2009

Analyst: ADC

Analyst: NA

Method: RSK175

Instrument: HP16

Curve Workgroup: NA

Runlog ID: 27668

Analytical Workgroups: WG299991

System Performance Check	NA
BFB	NA
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	X
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Excel Spreadsheets	X
Case Narrative	X
Narrative Summary	NA
Results Reporting/Data Qualifiers	X
Client Data Package Assembly	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
21-APR-2009



Secondary Reviewer:
21-APR-2009



Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2009

Analyst: ADC

Analyst: NA

Method: RSK175

Instrument: HP16

Curve Workgroup: NA

Runlog ID: 27926

Analytical Workgroups: WG301472

System Performance Check	NA
BFB	NA
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Excel Spreadsheets	X
Case Narrative	X
Narrative Summary	NA
Results Reporting/Data Qualifiers	X
Client Data Package Assembly	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-MAY-2009



Secondary Reviewer:
06-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2009

Analyst: ADC

Analyst: NA

Method: RSK175

Instrument: HP16

Curve Workgroup: NA

Runlog ID: 27963

Analytical Workgroups: WG301593

System Performance Check	NA
BFB	NA
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Excel Spreadsheets	X
Case Narrative	X
Narrative Summary	NA
Results Reporting/Data Qualifiers	X
Client Data Package Assembly	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-MAY-2009



Secondary Reviewer:
07-MAY-2009



RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r	RF
1.67	19901	11917
6.67	69174	10371
16.7	176923	10594
66.7	685135	10272
133	1324853	9961
300	2845104	9484
Average RF:		10433

Where:

ICAL_x = the ICAL concentration

ICAL_r = the ICAL response (area)

RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r]^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		1.03557E+13	1078884393

Agilent Linear Regression Constant : 9598.567853
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report

a = average RF (or Agilent regression constant)

Cx = y/a

1157414
10433.00
110.9377935

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract

MW = molecular weight of analyte

TF = temperature factor = (22.4)(313/273)

HS = headspace volume

S = sample volume remaining after headspace removal

DF = dilution factor

Cs = calculated sample concentration

110.9377935 umol/mol
16.04 ug/umol
25.68 L/mol
0.015 L
0.00547 L
2
380.034301 ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression ($y = Ax^2 + Bx + C$)

$$Ax^2 + Bx + (C - y) = 0$$

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:

Value of A from plot:	0.916
Value of B from plot:	1540
Value of C from plot:	0
Response for methane from quantitation report (y):	8763828
Value of C - y	-8763828

Solving for Cx using the quadratic formula:

Root 1 - Computed Cx1:	2364.716284 umol/mol
Root 2 - Computed Cx2:	-4045.938991

Step 2 - Calculate the concentration in sample

$$Cs = Cx (MW/Tf) (HS/S) (DF)$$

Where:

Cx = Concentration in extract :	2364.716284 umol/mol
MW = molecular weight of analyte:	44.0 ug/umol
TF = temperature factor = $(22.4)(313/273)$:	25.68 L/mol
HS = initial headspace volume (extraction log):	0.015 L
S = final volume (extraction log):	0.00547 L
DF = dilution factor:	10
Cs = calculated sample concentration:	111106.798 ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	MW (g/mol)
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 041709
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28412

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG300127, CURVE - WG299991

Comments: Secondary Source Calibration Verification analyzed on 20-Apr-2009.

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16G18930	WG300126-01 133 ug/L CCV STD	NA	1	1	STD29606	04/17/09 13:01
2	16G18931	WG300127-01 BLANK	NA	1	1		04/17/09 13:13
3	16G18932	WG300127-02 67 ug/L LCS	NA	1	1	STD29606	04/17/09 13:25
4	16G18933	WG300127-03 67 ug/L LCSDUP	NA	1	1	STD29606	04/17/09 13:37
5	16G18934	L09040395-05 A	7	1	1		04/17/09 13:50
6	16G18935	L09040395-06 A	7	1	1		04/17/09 14:02
7	16G18936	L09040395-07 A	7	1	1		04/17/09 14:14
8	16G18937	L09040395-08 A	7	1	1		04/17/09 14:26
9	16G18938	L09040363-08 B 50X	7	1	50		04/17/09 14:39
10	16G18939	L09040363-10 B 25X	7	1	25		04/17/09 14:51
11	16G18940	WG300126-02 133 ug/L CCV STD	NA	1	1	STD29606	04/17/09 15:03
12	16G18941	BLANK	NA	1	1		04/17/09 15:16
13	16G18942	WG299991-01 1.67 ug/L STD	NA	1	1	STD29606	04/17/09 15:28
14	16G18943	WG299991-02 6.67 ug/L STD	NA	1	1	STD29606	04/17/09 15:40
15	16G18944	WG299991-03 16.67 ug/L STD	NA	1	1	STD29606	04/17/09 15:52
16	16G18945	WG299991-04 67.7 ug/L STD	NA	1	1	STD29606	04/17/09 16:05
17	16G18946	WG299991-05 133 ug/L STD	NA	1	1	STD29606	04/17/09 16:17
18	16G18947	WG299991-06 300 ug/L STD	NA	1	1	STD29606	04/17/09 16:29
19	16G18948	BLANK	NA	1	1		04/17/09 16:41

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6				
File ID: 16G18935				
Client cancelled sample.				
8				
File ID: 16G18937				
Client cancelled sample.				

Approved: April 20, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 042009
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28425

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG299991

Comments:

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16G18949	BLANK	NA	1	1		04/20/09 08:22
2	16G18950	WG299991-07 133 ug/L SSCV	NA	1	1	STD29606	04/20/09 08:34
3	16G18951	WG300271-01 133 ug/L CCV	NA	1	1	STD29606	04/20/09 14:59
4	16G18952	WG299991-07 133 ug/L SSCV	NA	1	1	STD29606	04/20/09 15:11
5	16G18953	WG300271-02 133 ug/L CCV	NA	1	1	STD29606	04/20/09 15:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 16G18950				
Not reported. Not bracketed by CCVs				

Approved: April 21, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 050409
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28610

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG301472

Comments:

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16G19013	WG301471-01 133 umol/mol CCV STD	NA	1	1	STD29606	05/04/09 15:44
2	16G19014	WG301472-01 BLANK	NA	1	1		05/04/09 15:56
3	16G19015	WG301472-02 67 umol/mol LCS	NA	1	1	STD29606	05/04/09 16:08
4	16G19016	WG301472-03 67 umol/mol LCSDUP	NA	1	1	STD29606	05/04/09 16:21
5	16G19017	L09040698-02 B 25X	7	1	25		05/04/09 16:33
6	16G19018	L09040698-05 B 50X	7	1	50		05/04/09 16:45
7	16G19019	L09040698-06 B 10X	7	1	10		05/04/09 16:57
8	16G19020	L09040690-07 B 2X	7	1	2		05/04/09 17:10
9	16G19021	L09040736-03 B 10X	7	1	10		05/04/09 17:22
10	16G19022	L09040736-05 B 25X	7	1	25		05/04/09 17:34
11	16G19023	L09050029-01 A	7	1	1		05/04/09 17:46
12	16G19024	WG301471-02 133 umol/mol CCV STD	NA	1	1	STD29606	05/04/09 17:59
13	16G19025	L09050029-07 A	7	1	1		05/04/09 18:11
14	16G19026	L09050029-09 A	7	1	1		05/04/09 18:23
15	16G19027	L09050029-11 A	7	1	1		05/04/09 18:35
16	16G19028	L09050029-13 A	7	1	1		05/04/09 18:48
17	16G19029	L09050031-02 A	7	1	1		05/04/09 19:00
18	16G19030	L09050031-07 A	2	1	1		05/04/09 19:12
19	16G19031	L09050031-10 A	7	1	1		05/04/09 19:25
20	16G19032	L09050033-02 A	7	1	1		05/04/09 19:37
21	16G19033	L09050033-03 A	7	1	1		05/04/09 19:49
22	16G19034	L09050033-04 A	7	1	1		05/04/09 20:01
23	16G19035	WG301471-03 133 umol/mol CCV STD	NA	1	1		05/04/09 20:14
24	16G19036	L09050033-05 A	7	1	1		05/04/09 20:26
25	16G19037	L09050033-06 A	7	1	1		05/04/09 20:38
26	16G19038	L09050033-07 A	7	1	1		05/04/09 20:50
27	16G19039	WG301471-04 133 umol/mol CCV STD	NA	1	1	STD29606	05/04/09 21:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11	X	2	Over Calibration Range	
File ID: 16G19023				

Approved: May 06, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 050409
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28610

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG301472

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X	5	Over Calibration Range	
File ID: 16G19026				
15	X	25	Over Calibration Range	
File ID: 16G19027				
There is only a fraction A for this sample. Dilution analysis will be done on fraction A with headspace.				
17	X	5	Over Calibration Range	
File ID: 16G19029				
18	X	2	Over Calibration Range	
File ID: 16G19030				
out of pH				
19	X	10	Over Calibration Range	
File ID: 16G19031				
25	X	50	Over Calibration Range	
File ID: 16G19037				

Approved: May 06, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 050509
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28642

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG301593

Comments:

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16G19040	WG301592-01 133 umol/mol CCV STD	NA	1	1	STD29606	05/05/09 14:29
2	16G19041	WG301593-01 BLANK	NA	1	1		05/05/09 14:42
3	16G19042	WG301593-02 67 umol/mol LCS	NA	1	1	STD29606	05/05/09 14:54
4	16G19043	WG301593-03 67 umol/mol LCSDUP	NA	1	1	STD29606	05/05/09 15:06
5	16G19044	L09050029-01 B 2X	7	1	2		05/05/09 15:18
6	16G19045	L09050029-09 B 5X	7	1	5		05/05/09 15:31
7	16G19046	L09050029-11 A 25X	7	1	25		05/05/09 15:43
8	16G19047	L09050031-02 B 5X	7	1	5		05/05/09 15:55
9	16G19048	L09050031-07 B 2X	7	1	2		05/05/09 16:07
10	16G19049	L09050031-10 B 10X	7	1	10		05/05/09 16:20
11	16G19050	L09050033-06 B 50X	7	1	50		05/05/09 16:32
12	16G19051	WG301592-02 133 umol/mol CCV STD	NA	1	1	STD29606	05/05/09 16:44
13	16G19052	L09050047-02 A	7	1	1		05/05/09 16:56
14	16G19053	L09050047-03 A	7	1	1		05/05/09 17:09
15	16G19054	L09050047-04 A	7	1	1		05/05/09 17:21
16	16G19055	L09050047-05 A	7	1	1		05/05/09 17:33
17	16G19056	L09050047-07 A	7	1	1		05/05/09 17:46
18	16G19057	L09050044-01 A	7	1	1		05/05/09 17:58
19	16G19058	L09050044-03 A	7	1	1		05/05/09 18:10
20	16G19059	L09050044-05 A	7	1	1		05/05/09 18:22
21	16G19060	L09050057-02 A	7	1	1		05/05/09 18:35
22	16G19061	L09050057-05 A	7	1	1		05/05/09 18:47
23	16G19062	WG301592-03 133 umol/mol CCV STD	NA	1	1	STD29606	05/05/09 18:59
24	16G19063	L09050057-08 A	7	1	1		05/05/09 19:11
25	16G19064	L09050057-09 A	7	1	1		05/05/09 19:24
26	16G19065	WG301592-04 133 umol/mol CCV STD	NA	1	1	STD29606	05/05/09 19:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7				
File ID: 16G19046				
Sample came with only fraction A. Dilution analysis performed on sample with headspace in vial.				
14	X	25	Over Calibration Range	CH4

Approved: May 07, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 050509
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28642

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG301593

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G19053				
18	X	20	Over Calibration Range	CH4
File ID: 16G19057				
20	X	5	Over Calibration Range	CH4, CO2
File ID: 16G19059				
21	X	10	Over Calibration Range	CH4
File ID: 16G19060				
22	X	50	Over Calibration Range	CH4
File ID: 16G19061				
24	X	50	Over Calibration Range	CH4
File ID: 16G19063				

Approved: May 07, 2009

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Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175

AAB#: WG301472

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-09R-043009	04/30/09	05/01/09	05/04/09	14	4.34	05/04/09	14	4.34	
PZ-03-043009	04/30/09	05/01/09	05/04/09	14	4.26	05/04/09	14	4.26	
PZ-01-043009	04/30/09	05/01/09	05/04/09	14	4.36	05/04/09	14	4.36	
MW-19-043009	04/30/09	05/01/09	05/04/09	14	4.22	05/04/09	14	4.22	
MW-13-043009	04/30/09	05/01/09	05/04/09	14	4.28	05/04/09	14	4.28	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175

AAB#: WG301593

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
PZ-01-043009	04/30/09	05/01/09	05/05/09	14	5.24	05/05/09	14	5.24	
MW-09R-043009	04/30/09	05/01/09	05/05/09	14	5.23	05/05/09	14	5.23	
MW-19-043009	04/30/09	05/01/09	05/05/09	14	5.10	05/05/09	14	5.10	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: 16G19014
 Prep Date: 05/04/09 15:56
 Analyzed Date: 05/04/09 15:56
 Analyst: ADC

Work Group: WG301472
 Blank Sample ID: WG301472-01
 Instrument ID: HP16
 Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301472-02	16G19015	05/04/09 16:08	01
LCS2	WG301472-03	16G19016	05/04/09 16:21	01
MW-09R-043009	L09050029-01	16G19023	05/04/09 17:46	01
MW-13-043009	L09050029-07	16G19025	05/04/09 18:11	01
MW-19-043009	L09050029-09	16G19026	05/04/09 18:23	01
PZ-01-043009	L09050029-11	16G19027	05/04/09 18:35	01
PZ-03-043009	L09050029-13	16G19028	05/04/09 18:48	01



METHOD BLANK SUMMARY

Login Number: <u>L09050029</u>	Work Group: <u>WG301593</u>
Blank File ID: <u>16G19041</u>	Blank Sample ID: <u>WG301593-01</u>
Prep Date: <u>05/05/09 14:42</u>	Instrument ID: <u>HP16</u>
Analyzed Date: <u>05/05/09 14:42</u>	Method: <u>RSK175</u>
Analyst: <u>ADC</u>	

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301593-02	16G19042	05/05/09 14:54	01
LCS2	WG301593-03	16G19043	05/05/09 15:06	01
MW-09R-043009	L09050029-01	16G19044	05/05/09 15:18	DL01
MW-19-043009	L09050029-09	16G19045	05/05/09 15:31	DL01
PZ-01-043009	L09050029-11	16G19046	05/05/09 15:43	DL01

Report Name: BLANK_SUMMARY
 PDF File ID: 1386231
 Report generated 05/07/2009 14:34



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/04/09 15:56 Sample ID: WG301472-01
Instrument ID: HP16 Run Date: 05/04/09 15:56 Prep Method: 5021
File ID: 16G19014 Analyst: ADC Method: RSK175
Workgroup (AAB#): WG301472 Matrix: Water Units: ug/L
Contract #: _____ Cal ID: HP16 - 17-APR-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Methane	1.00	5.0	1.00	1	U
Carbon Dioxide	2500	10000	2500	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384288

15-MAY-2009 09:14



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/05/09 14:42 Sample ID: WG301593-01
Instrument ID: HP16 Run Date: 05/05/09 14:42 Prep Method: 5021
File ID: 16G19041 Analyst: ADC Method: RSK175
Workgroup (AAB#): WG301593 Matrix: Water Units: ug/L
Contract #: _____ Cal ID: HP16 - 17-APR-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Methane	1.00	5.0	1.00	1	U
Carbon Dioxide	2500	10000	2500	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384288

15-MAY-2009 09:14



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: ADC Prep Method: 5021
 Instrument ID: HP16 Matrix: Water Method: RSK175
 Workgroup (AAB#): WG301472 Units: ug/L
 QC Key: STD Lot #: STD29606
 Sample ID: WG301472-02 LCS File ID: 16G19015 Run Date: 05/04/2009 16:08
 Sample ID: WG301472-03 LCS2 File ID: 16G19016 Run Date: 05/04/2009 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	110	96.0	114	109	95.8	0.183	56 - 140	40	
Carbon Dioxide	31300	32000	102	31300	30300	96.6	5.57	10 - 200	40	



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: ADC Prep Method: 5021
 Instrument ID: HP16 Matrix: Water Method: RSK175
 Workgroup (AAB#): WG301593 Units: ug/L
 QC Key: STD Lot #: STD29606
 Sample ID: WG301593-02 LCS File ID: 16G19042 Run Date: 05/05/2009 14:54
 Sample ID: WG301593-03 LCS2 File ID: 16G19043 Run Date: 05/05/2009 15:06

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	104	91.0	114	108	94.6	3.87	56 - 140	40	
Carbon Dioxide	31300	29700	94.8	31300	30400	97.2	2.54	10 - 200	40	



Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L09050029
Analytical Method: RSK175
ICAL Workgroup: WG299991

Instrument ID: HP16
Initial Calibration Date: 17-APR-09 16:29
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R ²)	QUAD(R ²)
carbon dioxide		264.1	8.53		
methane		8383	9.60		

R = Correlation coefficient; 0.995 minimum

R² = Coefficient of determination; 0.99 minimum

If the %RSD is greater than the limit specified by the method or project QAP, then linear or quadratic equations will be used.

INT_CAL - Modified 03/06/2008
PDF File ID: 1386232
Report generated 05/07/2009 14:34



Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050029
Analytical Method: RSK175

Instrument ID: HP16
Initial Calibration Date: 17-APR-09 16:29
Column ID: F

Analyte	WG299991-01			WG299991-02			WG299991-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
carbon dioxide	2000	610703.000	305.4	3330	899851.000	270.0	6670	1741865.00	261.3
methane	1.67	15957.0000	9555	6.67	61441.0000	9212	16.7	133460.000	8006

INT_CAL - Modified 03/06/2008
PDF File ID: 1386232
Report generated 05/07/2009 14:34



Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050029
Analytical Method: RSK175

Instrument ID: HP16
Initial Calibration Date: 17-APR-09 16:29
Column ID: F

Analyte	WG299991-04			WG299991-05			WG299991-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
carbon dioxide	10000	2534886.00	253.5	13300	3395733.00	254.7	20000	4795756.00	239.8
methane	66.7	523403.000	7851	133	1082502.00	8119	300	2267482.00	7558

INT_CAL - Modified 03/06/2008
PDF File ID: 1386232
Report generated 05/07/2009 14:34



Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L09050029 Run Date: 04/20/2009 Sample ID: WG299991-07
Instrument ID: HP16 Run Time: 15:11 Method: RSK175
File ID: 16G18952 Analyst: ADC QC Key: STD
ICal Workgroup: WG299991 Cal ID: HP16 - 17-APR-09

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	232	ug/L	8510	1.50	30	
carbon dioxide		62700	49700	ug/L	210	20.6	60	

* Exceeds %D Limit

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/04/2009 Sample ID: WG301471-01
Instrument ID: HP16 Run Time: 15:44 Method: RSK175
File ID: 16G19013 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301472 Cal ID: HP16 - 17-APR-09
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	222	ug/L	8140	2.86	25	
carbon dioxide		62700	42300	ug/L	178	32.4	60	

* Exceeds %D Criteria

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/04/2009 Sample ID: WG301471-02
Instrument ID: HP16 Run Time: 17:59 Method: RSK175
File ID: 16G19024 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301472 Cal ID: HP16 - 17-APR-09
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	216	ug/L	7930	5.47	25	
carbon dioxide		62700	44900	ug/L	189	28.3	60	

* Exceeds %D Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/04/2009 Sample ID: WG301471-03
Instrument ID: HP16 Run Time: 20:14 Method: RSK175
File ID: 16G19035 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301472 Cal ID: HP16 - 17-APR-09
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	236	ug/L	8670	3.41	25	
carbon dioxide		62700	42700	ug/L	180	31.8	60	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 1384290
Report generated 05/07/2009 14:35



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301592-01
Instrument ID: HP16 Run Time: 14:29 Method: RSK175
File ID: 16G19040 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301593 Cal ID: HP16 - 17-APR-09
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	217	ug/L	7980	4.85	25	
carbon dioxide		62700	43200	ug/L	182	31.1	60	

* Exceeds %D Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301592-02
Instrument ID: HP16 Run Time: 16:44 Method: RSK175
File ID: 16G19051 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301593 Cal ID: HP16 - 17-APR-09
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	216	ug/L	7940	5.24	25	
carbon dioxide		62700	43700	ug/L	184	30.3	60	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 1384290
Report generated 05/07/2009 14:35



2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (8270)

2.2.1.1 Summary Data



Loginum: L09050029

Department: Semivolatiles - GC/MS

Analyst: Eric Lawson

METHOD

Preparation 3510C

Analysis SW-846 8270C/40 CFR 264 App. IX

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All analytes met the LCS acceptance criteria for % recovery and relative percent difference, except those listed below.

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
WG301563-03	HPMS12	05/13/2009	DI-N-BUTYLPHthalate	REG		131	55	118

Di-n-butylphthalate was not detected in any associated samples.

Matrix Spikes: All analytes met the MS/MSD advisory criteria for % recovery, except those listed below.

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
L09050029-03	HPMS12	05/13/2009	DI-N-BUTYLPHthalate	REG		125	55	118

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
L09050029-05	HPMS12	05/13/2009	DI-N-BUTYLPHTHALATE	REG		136	55	118
L09050029-05	HPMS12	05/13/2009	PYRENE	REG		135	55	130
L09050029-05	HPMS12	05/13/2009	BUTYL BENZYL PHTHALATE	REG		152	55	150

SAMPLES

Samples: Sample 13 was run at a dilution to be within calibration range.

Internal Standards: All acceptance criteria were met.

Surrogates: All surrogate compounds met the acceptance criteria for % recovery, except for the following samples.

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
L09050029-13	HPMS12	05/15/2009	2,4,6-TRIBROMOPHENOL	SURR		148	10	123

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be 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.

LABORATORY REPORT

L09050029

05/19/09 14:14

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-01	8270C	1	01-MAY-09
MW-09R-043009-MS	L09050029-03	8270C	1	01-MAY-09
MW-09R-043009-MSD	L09050029-05	8270C	1	01-MAY-09
MW-13-043009	L09050029-07	8270C	1	01-MAY-09
MW-19-043009	L09050029-09	8270C	1	01-MAY-09
PZ-01-043009	L09050029-11	8270C	1	01-MAY-09
PZ-03-043009	L09050029-13	8270C	1	01-MAY-09
PZ-03-043009	L09050029-13	8270C	5	01-MAY-09



Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-01
 Client ID: MW-09R-043009
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 04/30/2009 09:40
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: MDC
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/13/2009 22:38
 File ID: 12M25831

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	5.21	2.60
Bis(2-Chloroethyl)ether	111-44-4		U	5.21	2.60
2-Chlorophenol	95-57-8		U	5.21	2.60
1,3-Dichlorobenzene	541-73-1		U	5.21	2.60
1,4-Dichlorobenzene	106-46-7		U	5.21	2.60
1,2-Dichlorobenzene	95-50-1		U	5.21	2.60
2-Methylphenol	95-48-7		U	5.21	2.60
3-,4-Methylphenol	106-44-5		U	5.21	2.60
bis(2-Chloroisopropyl)ether	39638-32-9		U	5.21	2.60
N-Nitroso-di-n-propylamine	621-64-7		U	5.21	2.60
Hexachloroethane	67-72-1		U	5.21	2.60
Nitrobenzene	98-95-3		U	5.21	2.60
Isophorone	78-59-1		U	5.21	2.60
2-Nitrophenol	88-75-5		U	5.21	2.60
2,4-Dimethylphenol	105-67-9		U	5.21	2.60
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.21	2.60
2,4-Dichlorophenol	120-83-2		U	5.21	2.60
1,2,4-Trichlorobenzene	120-82-1		U	5.21	2.60
Naphthalene	91-20-3		U	5.21	2.60
4-Chloroaniline	106-47-8		U	5.21	2.60
Hexachlorobutadiene	87-68-3		U	5.21	2.60
4-Chloro-3-methylphenol	59-50-7		U	5.21	2.60
2-Methylnaphthalene	91-57-6		U	5.21	2.60
Hexachlorocyclopentadiene	77-47-4		U	5.21	2.60
2,4,6-Trichlorophenol	88-06-2		U	5.21	2.60
2,4,5-Trichlorophenol	95-95-4		U	5.21	2.60
2-Chloronaphthalene	91-58-7		U	5.21	2.60
2-Nitroaniline	88-74-4		U	26.0	2.60
Dimethylphthalate	131-11-3		U	5.21	2.60
Acenaphthylene	208-96-8		U	5.21	2.60
2,6-Dinitrotoluene	606-20-2		U	5.21	2.60
3-Nitroaniline	99-09-2		U	26.0	2.60
Acenaphthene	83-32-9		U	5.21	2.60
2,4-Dinitrophenol	51-28-5		U	26.0	13.0
4-Nitrophenol	100-02-7		U	26.0	2.60
Dibenzofuran	132-64-9		U	5.21	2.60
2,4-Dinitrotoluene	121-14-2		U	5.21	2.60
Diethylphthalate	84-66-2		U	5.21	2.60
4-Chlorophenyl-phenyl ether	7005-72-3		U	5.21	2.60
Fluorene	86-73-7		U	5.21	2.60
4-Nitroaniline	100-01-6		U	26.0	2.60
4,6-Dinitro-2-methylphenol	534-52-1		U	26.0	13.0
N-Nitrosodiphenylamine	86-30-6		U	5.21	2.60
4-Bromophenyl-phenylether	101-55-3		U	5.21	2.60
Hexachlorobenzene	118-74-1		U	5.21	2.60
Pentachlorophenol	87-86-5		U	26.0	2.60
Phenanthrene	85-01-8		U	5.21	2.60
Anthracene	120-12-7		U	5.21	2.60
Di-N-Butylphthalate	84-74-2		U	5.21	2.60
Fluoranthene	206-44-0		U	5.21	2.60
Pyrene	129-00-0		U	5.21	2.60
Butylbenzylphthalate	85-68-7		U	5.21	2.60
3,3'-Dichlorobenzidine	91-94-1		U	10.4	2.60
Benzo(a)anthracene	56-55-3		U	5.21	2.60
Chrysene	218-01-9		U	5.21	2.60
bis(2-Ethylhexyl)phthalate	117-81-7		U	5.21	2.60
Di-n-octylphthalate	117-84-0		U	5.21	2.60
Benzo(b)fluoranthene	205-99-2		U	5.21	2.60
Benzo(k)fluoranthene	207-08-9		U	5.21	2.60

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Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-01**
 Client ID: **MW-09R-043009**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **04/30/2009 09:40**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **MDC**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/13/2009 22:38**
 File ID: **12M25831**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	5.21	2.60
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.21	2.60
Dibenzo(a,h)Anthracene	53-70-3		U	5.21	2.60
Benzo(g,h,i)Perylene	191-24-2		U	5.21	2.60
Carbazole	86-74-8		U	5.21	2.60
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	39.2	21	100		
Phenol-d5	27.0	10	94		
Nitrobenzene-d5	64.4	35	114		
2-Fluorobiphenyl	70.1	43	116		
2,4,6-Tribromophenol	88.2	10	123		
p-Terphenyl-d14	75.0	33	141		

U Not detected at or above the reporting limit (RL).

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-03
 Client ID: MW-09R-043009-MS
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 04/30/2009 09:40
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: MDC
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/13/2009 23:11
 File ID: 12M25832

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2	17.9		5.32	2.66
Bis(2-Chloroethyl)ether	111-44-4	47.8		5.32	2.66
2-Chlorophenol	95-57-8	37.9		5.32	2.66
1,3-Dichlorobenzene	541-73-1	35.0		5.32	2.66
1,4-Dichlorobenzene	106-46-7	34.9		5.32	2.66
1,2-Dichlorobenzene	95-50-1	36.4		5.32	2.66
2-Methylphenol	95-48-7	36.5		5.32	2.66
3-,4-Methylphenol	106-44-5	39.0		5.32	2.66
bis(2-Chloroisopropyl)ether	39638-32-9	43.7		5.32	2.66
N-Nitroso-di-n-propylamine	621-64-7	46.2		5.32	2.66
Hexachloroethane	67-72-1	33.1		5.32	2.66
Nitrobenzene	98-95-3	39.8		5.32	2.66
Isophorone	78-59-1	40.8		5.32	2.66
2-Nitrophenol	88-75-5	40.0		5.32	2.66
2,4-Dimethylphenol	105-67-9	42.9		5.32	2.66
Bis(2-Chloroethoxy)Methane	111-91-1	35.9		5.32	2.66
2,4-Dichlorophenol	120-83-2	38.8		5.32	2.66
1,2,4-Trichlorobenzene	120-82-1	24.5		5.32	2.66
Naphthalene	91-20-3	41.2		5.32	2.66
4-Chloroaniline	106-47-8	40.3		5.32	2.66
Hexachlorobutadiene	87-68-3	38.5		5.32	2.66
4-Chloro-3-methylphenol	59-50-7	45.8		5.32	2.66
2-Methylnaphthalene	91-57-6	44.5		5.32	2.66
Hexachlorocyclopentadiene	77-47-4	36.2		5.32	2.66
2,4,6-Trichlorophenol	88-06-2	45.4		5.32	2.66
2,4,5-Trichlorophenol	95-95-4	48.9		5.32	2.66
2-Chloronaphthalene	91-58-7	36.9		5.32	2.66
2-Nitroaniline	88-74-4	51.6		26.6	2.66
Dimethylphthalate	131-11-3	50.7		5.32	2.66
Acenaphthylene	208-96-8	44.5		5.32	2.66
2,6-Dinitrotoluene	606-20-2	48.3		5.32	2.66
3-Nitroaniline	99-09-2	55.7		26.6	2.66
Acenaphthene	83-32-9	46.4		5.32	2.66
2,4-Dinitrophenol	51-28-5	64.7		26.6	13.3
4-Nitrophenol	100-02-7	26.3	J	26.6	2.66
Dibenzofuran	132-64-9	46.5		5.32	2.66
2,4-Dinitrotoluene	121-14-2	54.2		5.32	2.66
Diethylphthalate	84-66-2	53.4		5.32	2.66
4-Chlorophenyl-phenyl ether	7005-72-3	47.8		5.32	2.66
Fluorene	86-73-7	47.2		5.32	2.66
4-Nitroaniline	100-01-6	55.7		26.6	2.66
4,6-Dinitro-2-methylphenol	534-52-1	61.2		26.6	13.3
N-Nitrosodiphenylamine	86-30-6	48.5		5.32	2.66
4-Bromophenyl-phenylether	101-55-3	52.0		5.32	2.66
Hexachlorobenzene	118-74-1	50.0		5.32	2.66
Pentachlorophenol	87-86-5	73.8		26.6	2.66
Phenanthrene	85-01-8	52.9		5.32	2.66
Anthracene	120-12-7	54.3		5.32	2.66
Di-N-Butylphthalate	84-74-2	66.7		5.32	2.66
Fluoranthene	206-44-0	56.9		5.32	2.66
Pyrene	129-00-0	66.1		5.32	2.66
Butylbenzylphthalate	85-68-7	72.6		5.32	2.66
3,3'-Dichlorobenzidine	91-94-1	47.9		10.6	2.66
Benzo(a)anthracene	56-55-3	55.7		5.32	2.66
Chrysene	218-01-9	57.1		5.32	2.66
bis(2-Ethylhexyl)phthalate	117-81-7	60.7		5.32	2.66
Di-n-octylphthalate	117-84-0	62.1		5.32	2.66
Benzo(b)fluoranthene	205-99-2	54.7		5.32	2.66
Benzo(k)fluoranthene	207-08-9	58.5		5.32	2.66

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Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-03**
 Client ID: **MW-09R-043009-MS**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **04/30/2009 09:40**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **MDC**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/13/2009 23:11**
 File ID: **12M25832**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8	56.1		5.32	2.66
Indeno(1,2,3-cd)pyrene	193-39-5	56.1		5.32	2.66
Dibenzo(a,h)Anthracene	53-70-3	57.0		5.32	2.66
Benzo(g,h,i)Perylene	191-24-2	57.5		5.32	2.66
Carbazole	86-74-8	56.1		5.32	2.66
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	47.0	21	100		
Phenol-d5	31.8	10	94		
Nitrobenzene-d5	76.3	35	114		
2-Fluorobiphenyl	77.4	43	116		
2,4,6-Tribromophenol	99.2	10	123		
p-Terphenyl-d14	84.4	33	141		

J The analyte was positively identified, but the quantitation was below the RL

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-05
 Client ID: MW-09R-043009-MSD
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 04/30/2009 09:40
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: MDC
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/13/2009 23:44
 File ID: 12M25833

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2	18.7		5.43	2.72
Bis(2-Chloroethyl)ether	111-44-4	46.1		5.43	2.72
2-Chlorophenol	95-57-8	39.1		5.43	2.72
1,3-Dichlorobenzene	541-73-1	37.0		5.43	2.72
1,4-Dichlorobenzene	106-46-7	37.0		5.43	2.72
1,2-Dichlorobenzene	95-50-1	38.2		5.43	2.72
2-Methylphenol	95-48-7	38.0		5.43	2.72
3-,4-Methylphenol	106-44-5	40.4		5.43	2.72
bis(2-Chloroisopropyl)ether	39638-32-9	45.7		5.43	2.72
N-Nitroso-di-n-propylamine	621-64-7	47.8		5.43	2.72
Hexachloroethane	67-72-1	35.3		5.43	2.72
Nitrobenzene	98-95-3	40.7		5.43	2.72
Isophorone	78-59-1	41.2		5.43	2.72
2-Nitrophenol	88-75-5	40.5		5.43	2.72
2,4-Dimethylphenol	105-67-9	43.4		5.43	2.72
Bis(2-Chloroethoxy)Methane	111-91-1	35.8		5.43	2.72
2,4-Dichlorophenol	120-83-2	42.1		5.43	2.72
1,2,4-Trichlorobenzene	120-82-1	32.3		5.43	2.72
Naphthalene	91-20-3	42.4		5.43	2.72
4-Chloroaniline	106-47-8	41.5		5.43	2.72
Hexachlorobutadiene	87-68-3	39.3		5.43	2.72
4-Chloro-3-methylphenol	59-50-7	50.8		5.43	2.72
2-Methylnaphthalene	91-57-6	45.6		5.43	2.72
Hexachlorocyclopentadiene	77-47-4	35.1		5.43	2.72
2,4,6-Trichlorophenol	88-06-2	49.8		5.43	2.72
2,4,5-Trichlorophenol	95-95-4	55.1		5.43	2.72
2-Chloronaphthalene	91-58-7	38.8		5.43	2.72
2-Nitroaniline	88-74-4	57.6		27.2	2.72
Dimethylphthalate	131-11-3	57.3		5.43	2.72
Acenaphthylene	208-96-8	48.7		5.43	2.72
2,6-Dinitrotoluene	606-20-2	53.2		5.43	2.72
3-Nitroaniline	99-09-2	57.9		27.2	2.72
Acenaphthene	83-32-9	50.0		5.43	2.72
2,4-Dinitrophenol	51-28-5	59.8		27.2	13.6
4-Nitrophenol	100-02-7	29.0		27.2	2.72
Dibenzofuran	132-64-9	52.1		5.43	2.72
2,4-Dinitrotoluene	121-14-2	58.6		5.43	2.72
Diethylphthalate	84-66-2	59.6		5.43	2.72
4-Chlorophenyl-phenyl ether	7005-72-3	53.3		5.43	2.72
Fluorene	86-73-7	53.6		5.43	2.72
4-Nitroaniline	100-01-6	57.9		27.2	2.72
4,6-Dinitro-2-methylphenol	534-52-1	60.2		27.2	13.6
N-Nitrosodiphenylamine	86-30-6	53.5		5.43	2.72
4-Bromophenyl-phenylether	101-55-3	58.2		5.43	2.72
Hexachlorobenzene	118-74-1	55.7		5.43	2.72
Pentachlorophenol	87-86-5	76.0		27.2	2.72
Phenanthrene	85-01-8	58.8		5.43	2.72
Anthracene	120-12-7	60.1		5.43	2.72
Di-N-Butylphthalate	84-74-2	74.1		5.43	2.72
Fluoranthene	206-44-0	62.1		5.43	2.72
Pyrene	129-00-0	73.4		5.43	2.72
Butylbenzylphthalate	85-68-7	82.5		5.43	2.72
3,3'-Dichlorobenzidine	91-94-1	54.9		10.9	2.72
Benzo(a)anthracene	56-55-3	60.0		5.43	2.72
Chrysene	218-01-9	62.1		5.43	2.72
bis(2-Ethylhexyl)phthalate	117-81-7	66.5		5.43	2.72
Di-n-octylphthalate	117-84-0	68.8		5.43	2.72
Benzo(b)fluoranthene	205-99-2	56.1		5.43	2.72
Benzo(k)fluoranthene	207-08-9	67.0		5.43	2.72

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Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-05**
 Client ID: **MW-09R-043009-MSD**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **04/30/2009 09:40**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **MDC**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/13/2009 23:44**
 File ID: **12M25833**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8	59.9		5.43	2.72
Indeno(1,2,3-cd)pyrene	193-39-5	59.2		5.43	2.72
Dibenzo(a,h)Anthracene	53-70-3	59.7		5.43	2.72
Benzo(g,h,i)Perylene	191-24-2	60.4		5.43	2.72
Carbazole	86-74-8	60.4		5.43	2.72
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	49.4	21	100		
Phenol-d5	33.1	10	94		
Nitrobenzene-d5	74.9	35	114		
2-Fluorobiphenyl	79.1	43	116		
2,4,6-Tribromophenol	103	10	123		
p-Terphenyl-d14	96.4	33	141		

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-07
 Client ID: MW-13-043009
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 04/30/2009 11:35
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: MDC
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/14/2009 00:16
 File ID: 12M25834

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	5.81	2.91
Bis(2-Chloroethyl)ether	111-44-4		U	5.81	2.91
2-Chlorophenol	95-57-8		U	5.81	2.91
1,3-Dichlorobenzene	541-73-1		U	5.81	2.91
1,4-Dichlorobenzene	106-46-7		U	5.81	2.91
1,2-Dichlorobenzene	95-50-1		U	5.81	2.91
2-Methylphenol	95-48-7		U	5.81	2.91
3-,4-Methylphenol	106-44-5		U	5.81	2.91
bis(2-Chloroisopropyl)ether	39638-32-9		U	5.81	2.91
N-Nitroso-di-n-propylamine	621-64-7		U	5.81	2.91
Hexachloroethane	67-72-1		U	5.81	2.91
Nitrobenzene	98-95-3		U	5.81	2.91
Isophorone	78-59-1		U	5.81	2.91
2-Nitrophenol	88-75-5		U	5.81	2.91
2,4-Dimethylphenol	105-67-9		U	5.81	2.91
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.81	2.91
2,4-Dichlorophenol	120-83-2		U	5.81	2.91
1,2,4-Trichlorobenzene	120-82-1		U	5.81	2.91
Naphthalene	91-20-3		U	5.81	2.91
4-Chloroaniline	106-47-8		U	5.81	2.91
Hexachlorobutadiene	87-68-3		U	5.81	2.91
4-Chloro-3-methylphenol	59-50-7		U	5.81	2.91
2-Methylnaphthalene	91-57-6		U	5.81	2.91
Hexachlorocyclopentadiene	77-47-4		U	5.81	2.91
2,4,6-Trichlorophenol	88-06-2		U	5.81	2.91
2,4,5-Trichlorophenol	95-95-4		U	5.81	2.91
2-Chloronaphthalene	91-58-7		U	5.81	2.91
2-Nitroaniline	88-74-4		U	29.1	2.91
Dimethylphthalate	131-11-3		U	5.81	2.91
Acenaphthylene	208-96-8		U	5.81	2.91
2,6-Dinitrotoluene	606-20-2		U	5.81	2.91
3-Nitroaniline	99-09-2		U	29.1	2.91
Acenaphthene	83-32-9		U	5.81	2.91
2,4-Dinitrophenol	51-28-5		U	29.1	14.5
4-Nitrophenol	100-02-7		U	29.1	2.91
Dibenzofuran	132-64-9		U	5.81	2.91
2,4-Dinitrotoluene	121-14-2		U	5.81	2.91
Diethylphthalate	84-66-2		U	5.81	2.91
4-Chlorophenyl-phenyl ether	7005-72-3		U	5.81	2.91
Fluorene	86-73-7		U	5.81	2.91
4-Nitroaniline	100-01-6		U	29.1	2.91
4,6-Dinitro-2-methylphenol	534-52-1		U	29.1	14.5
N-Nitrosodiphenylamine	86-30-6		U	5.81	2.91
4-Bromophenyl-phenylether	101-55-3		U	5.81	2.91
Hexachlorobenzene	118-74-1		U	5.81	2.91
Pentachlorophenol	87-86-5		U	29.1	2.91
Phenanthrene	85-01-8		U	5.81	2.91
Anthracene	120-12-7		U	5.81	2.91
Di-N-Butylphthalate	84-74-2		U	5.81	2.91
Fluoranthene	206-44-0		U	5.81	2.91
Pyrene	129-00-0		U	5.81	2.91
Butylbenzylphthalate	85-68-7		U	5.81	2.91
3,3'-Dichlorobenzidine	91-94-1		U	11.6	2.91
Benzo(a)anthracene	56-55-3		U	5.81	2.91
Chrysene	218-01-9		U	5.81	2.91
bis(2-Ethylhexyl)phthalate	117-81-7		U	5.81	2.91
Di-n-octylphthalate	117-84-0		U	5.81	2.91
Benzo(b)fluoranthene	205-99-2		U	5.81	2.91
Benzo(k)fluoranthene	207-08-9		U	5.81	2.91

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Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-07**
 Client ID: **MW-13-043009**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **04/30/2009 11:35**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **MDC**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/14/2009 00:16**
 File ID: **12M25834**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	5.81	2.91
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.81	2.91
Dibenzo(a,h)Anthracene	53-70-3		U	5.81	2.91
Benzo(g,h,i)Perylene	191-24-2		U	5.81	2.91
Carbazole	86-74-8		U	5.81	2.91
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	43.0	21	100		
Phenol-d5	28.7	10	94		
Nitrobenzene-d5	66.3	35	114		
2-Fluorobiphenyl	66.0	43	116		
2,4,6-Tribromophenol	104	10	123		
p-Terphenyl-d14	97.1	33	141		

U Not detected at or above the reporting limit (RL).

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-09
 Client ID: MW-19-043009
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 04/30/2009 13:00
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: MDC
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/14/2009 00:49
 File ID: 12M25835

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	5.56	2.78
Bis(2-Chloroethyl)ether	111-44-4		U	5.56	2.78
2-Chlorophenol	95-57-8		U	5.56	2.78
1,3-Dichlorobenzene	541-73-1		U	5.56	2.78
1,4-Dichlorobenzene	106-46-7		U	5.56	2.78
1,2-Dichlorobenzene	95-50-1		U	5.56	2.78
2-Methylphenol	95-48-7		U	5.56	2.78
3-,4-Methylphenol	106-44-5		U	5.56	2.78
bis(2-Chloroisopropyl)ether	39638-32-9		U	5.56	2.78
N-Nitroso-di-n-propylamine	621-64-7		U	5.56	2.78
Hexachloroethane	67-72-1		U	5.56	2.78
Nitrobenzene	98-95-3		U	5.56	2.78
Isophorone	78-59-1		U	5.56	2.78
2-Nitrophenol	88-75-5		U	5.56	2.78
2,4-Dimethylphenol	105-67-9		U	5.56	2.78
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.56	2.78
2,4-Dichlorophenol	120-83-2		U	5.56	2.78
1,2,4-Trichlorobenzene	120-82-1		U	5.56	2.78
Naphthalene	91-20-3		U	5.56	2.78
4-Chloroaniline	106-47-8		U	5.56	2.78
Hexachlorobutadiene	87-68-3		U	5.56	2.78
4-Chloro-3-methylphenol	59-50-7		U	5.56	2.78
2-Methylnaphthalene	91-57-6		U	5.56	2.78
Hexachlorocyclopentadiene	77-47-4		U	5.56	2.78
2,4,6-Trichlorophenol	88-06-2		U	5.56	2.78
2,4,5-Trichlorophenol	95-95-4		U	5.56	2.78
2-Chloronaphthalene	91-58-7		U	5.56	2.78
2-Nitroaniline	88-74-4		U	27.8	2.78
Dimethylphthalate	131-11-3		U	5.56	2.78
Acenaphthylene	208-96-8		U	5.56	2.78
2,6-Dinitrotoluene	606-20-2		U	5.56	2.78
3-Nitroaniline	99-09-2		U	27.8	2.78
Acenaphthene	83-32-9		U	5.56	2.78
2,4-Dinitrophenol	51-28-5		U	27.8	13.9
4-Nitrophenol	100-02-7		U	27.8	2.78
Dibenzofuran	132-64-9		U	5.56	2.78
2,4-Dinitrotoluene	121-14-2		U	5.56	2.78
Diethylphthalate	84-66-2		U	5.56	2.78
4-Chlorophenyl-phenyl ether	7005-72-3		U	5.56	2.78
Fluorene	86-73-7		U	5.56	2.78
4-Nitroaniline	100-01-6		U	27.8	2.78
4,6-Dinitro-2-methylphenol	534-52-1		U	27.8	13.9
N-Nitrosodiphenylamine	86-30-6		U	5.56	2.78
4-Bromophenyl-phenylether	101-55-3		U	5.56	2.78
Hexachlorobenzene	118-74-1		U	5.56	2.78
Pentachlorophenol	87-86-5		U	27.8	2.78
Phenanthrene	85-01-8		U	5.56	2.78
Anthracene	120-12-7		U	5.56	2.78
Di-N-Butylphthalate	84-74-2		U	5.56	2.78
Fluoranthene	206-44-0		U	5.56	2.78
Pyrene	129-00-0		U	5.56	2.78
Butylbenzylphthalate	85-68-7		U	5.56	2.78
3,3'-Dichlorobenzidine	91-94-1		U	11.1	2.78
Benzo(a)anthracene	56-55-3		U	5.56	2.78
Chrysene	218-01-9		U	5.56	2.78
bis(2-Ethylhexyl)phthalate	117-81-7		U	5.56	2.78
Di-n-octylphthalate	117-84-0		U	5.56	2.78
Benzo(b)fluoranthene	205-99-2		U	5.56	2.78
Benzo(k)fluoranthene	207-08-9		U	5.56	2.78

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Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-09**
 Client ID: **MW-19-043009**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **04/30/2009 13:00**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **MDC**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/14/2009 00:49**
 File ID: **12M25835**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	5.56	2.78
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.56	2.78
Dibenzo(a,h)Anthracene	53-70-3		U	5.56	2.78
Benzo(g,h,i)Perylene	191-24-2		U	5.56	2.78
Carbazole	86-74-8		U	5.56	2.78
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	43.3	21	100		
Phenol-d5	29.3	10	94		
Nitrobenzene-d5	67.1	35	114		
2-Fluorobiphenyl	67.8	43	116		
2,4,6-Tribromophenol	96.0	10	123		
p-Terphenyl-d14	104	33	141		

U Not detected at or above the reporting limit (RL).

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-11
 Client ID: PZ-01-043009
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 04/30/2009 09:57
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: MDC
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/14/2009 01:55
 File ID: 12M25837

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	5.10	2.55
Bis(2-Chloroethyl)ether	111-44-4		U	5.10	2.55
2-Chlorophenol	95-57-8		U	5.10	2.55
1,3-Dichlorobenzene	541-73-1		U	5.10	2.55
1,4-Dichlorobenzene	106-46-7		U	5.10	2.55
1,2-Dichlorobenzene	95-50-1		U	5.10	2.55
2-Methylphenol	95-48-7		U	5.10	2.55
3-,4-Methylphenol	106-44-5		U	5.10	2.55
bis(2-Chloroisopropyl)ether	39638-32-9		U	5.10	2.55
N-Nitroso-di-n-propylamine	621-64-7		U	5.10	2.55
Hexachloroethane	67-72-1		U	5.10	2.55
Nitrobenzene	98-95-3		U	5.10	2.55
Isophorone	78-59-1		U	5.10	2.55
2-Nitrophenol	88-75-5		U	5.10	2.55
2,4-Dimethylphenol	105-67-9		U	5.10	2.55
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.10	2.55
2,4-Dichlorophenol	120-83-2		U	5.10	2.55
1,2,4-Trichlorobenzene	120-82-1		U	5.10	2.55
Naphthalene	91-20-3		U	5.10	2.55
4-Chloroaniline	106-47-8		U	5.10	2.55
Hexachlorobutadiene	87-68-3		U	5.10	2.55
4-Chloro-3-methylphenol	59-50-7		U	5.10	2.55
2-Methylnaphthalene	91-57-6		U	5.10	2.55
Hexachlorocyclopentadiene	77-47-4		U	5.10	2.55
2,4,6-Trichlorophenol	88-06-2		U	5.10	2.55
2,4,5-Trichlorophenol	95-95-4		U	5.10	2.55
2-Chloronaphthalene	91-58-7		U	5.10	2.55
2-Nitroaniline	88-74-4		U	25.5	2.55
Dimethylphthalate	131-11-3		U	5.10	2.55
Acenaphthylene	208-96-8		U	5.10	2.55
2,6-Dinitrotoluene	606-20-2		U	5.10	2.55
3-Nitroaniline	99-09-2		U	25.5	2.55
Acenaphthene	83-32-9		U	5.10	2.55
2,4-Dinitrophenol	51-28-5		U	25.5	12.8
4-Nitrophenol	100-02-7		U	25.5	2.55
Dibenzofuran	132-64-9		U	5.10	2.55
2,4-Dinitrotoluene	121-14-2		U	5.10	2.55
Diethylphthalate	84-66-2		U	5.10	2.55
4-Chlorophenyl-phenyl ether	7005-72-3		U	5.10	2.55
Fluorene	86-73-7		U	5.10	2.55
4-Nitroaniline	100-01-6		U	25.5	2.55
4,6-Dinitro-2-methylphenol	534-52-1		U	25.5	12.8
N-Nitrosodiphenylamine	86-30-6		U	5.10	2.55
4-Bromophenyl-phenylether	101-55-3		U	5.10	2.55
Hexachlorobenzene	118-74-1		U	5.10	2.55
Pentachlorophenol	87-86-5		U	25.5	2.55
Phenanthrene	85-01-8		U	5.10	2.55
Anthracene	120-12-7		U	5.10	2.55
Di-N-Butylphthalate	84-74-2		U	5.10	2.55
Fluoranthene	206-44-0		U	5.10	2.55
Pyrene	129-00-0		U	5.10	2.55
Butylbenzylphthalate	85-68-7		U	5.10	2.55
3,3'-Dichlorobenzidine	91-94-1		U	10.2	2.55
Benzo(a)anthracene	56-55-3		U	5.10	2.55
Chrysene	218-01-9		U	5.10	2.55
bis(2-Ethylhexyl)phthalate	117-81-7	41.2		5.10	2.55
Di-n-octylphthalate	117-84-0		U	5.10	2.55
Benzo(b)fluoranthene	205-99-2		U	5.10	2.55
Benzo(k)fluoranthene	207-08-9		U	5.10	2.55

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Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-11**
 Client ID: **PZ-01-043009**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **04/30/2009 09:57**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **MDC**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/14/2009 01:55**
 File ID: **12M25837**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	5.10	2.55
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.10	2.55
Dibenzo(a,h)Anthracene	53-70-3		U	5.10	2.55
Benzo(g,h,i)Perylene	191-24-2		U	5.10	2.55
Carbazole	86-74-8		U	5.10	2.55
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	40.3	21	100		
Phenol-d5	26.6	10	94		
Nitrobenzene-d5	65.3	35	114		
2-Fluorobiphenyl	66.4	43	116		
2,4,6-Tribromophenol	89.0	10	123		
p-Terphenyl-d14	88.1	33	141		

U Not detected at or above the reporting limit (RL).

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-13
 Client ID: PZ-03-043009
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 04/30/2009 12:37
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: ECL
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/15/2009 13:19
 File ID: 12M25865

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	5.32	2.66
Bis(2-Chloroethyl)ether	111-44-4		U	5.32	2.66
2-Chlorophenol	95-57-8		U	5.32	2.66
1,3-Dichlorobenzene	541-73-1		U	5.32	2.66
1,4-Dichlorobenzene	106-46-7		U	5.32	2.66
1,2-Dichlorobenzene	95-50-1		U	5.32	2.66
2-Methylphenol	95-48-7		U	5.32	2.66
3-,4-Methylphenol	106-44-5		U	5.32	2.66
bis(2-Chloroisopropyl)ether	39638-32-9		U	5.32	2.66
N-Nitroso-di-n-propylamine	621-64-7		U	5.32	2.66
Hexachloroethane	67-72-1		U	5.32	2.66
Nitrobenzene	98-95-3		U	5.32	2.66
Isophorone	78-59-1		U	5.32	2.66
2-Nitrophenol	88-75-5		U	5.32	2.66
2,4-Dimethylphenol	105-67-9		U	5.32	2.66
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.32	2.66
2,4-Dichlorophenol	120-83-2		U	5.32	2.66
1,2,4-Trichlorobenzene	120-82-1		U	5.32	2.66
Naphthalene	91-20-3		U	5.32	2.66
4-Chloroaniline	106-47-8		U	5.32	2.66
Hexachlorobutadiene	87-68-3		U	5.32	2.66
4-Chloro-3-methylphenol	59-50-7		U	5.32	2.66
2-Methylnaphthalene	91-57-6		U	5.32	2.66
Hexachlorocyclopentadiene	77-47-4		U	5.32	2.66
2,4,6-Trichlorophenol	88-06-2		U	5.32	2.66
2,4,5-Trichlorophenol	95-95-4		U	5.32	2.66
2-Chloronaphthalene	91-58-7		U	5.32	2.66
2-Nitroaniline	88-74-4		U	26.6	2.66
Dimethylphthalate	131-11-3		U	5.32	2.66
Acenaphthylene	208-96-8		U	5.32	2.66
2,6-Dinitrotoluene	606-20-2		U	5.32	2.66
3-Nitroaniline	99-09-2		U	26.6	2.66
Acenaphthene	83-32-9		U	5.32	2.66
2,4-Dinitrophenol	51-28-5		U	26.6	13.3
4-Nitrophenol	100-02-7		U	26.6	2.66
Dibenzofuran	132-64-9		U	5.32	2.66
2,4-Dinitrotoluene	121-14-2		U	5.32	2.66
Diethylphthalate	84-66-2		U	5.32	2.66
4-Chlorophenyl-phenyl ether	7005-72-3		U	5.32	2.66
Fluorene	86-73-7		U	5.32	2.66
4-Nitroaniline	100-01-6		U	26.6	2.66
4,6-Dinitro-2-methylphenol	534-52-1		U	26.6	13.3
N-Nitrosodiphenylamine	86-30-6		U	5.32	2.66
4-Bromophenyl-phenylether	101-55-3		U	5.32	2.66
Hexachlorobenzene	118-74-1		U	5.32	2.66
Pentachlorophenol	87-86-5		U	26.6	2.66
Phenanthrene	85-01-8		U	5.32	2.66
Anthracene	120-12-7		U	5.32	2.66
Di-N-Butylphthalate	84-74-2		U	5.32	2.66
Fluoranthene	206-44-0		U	5.32	2.66
Pyrene	129-00-0		U	5.32	2.66
Butylbenzylphthalate	85-68-7		U	5.32	2.66
3,3'-Dichlorobenzidine	91-94-1		U	10.6	2.66
Benzo(a)anthracene	56-55-3		U	5.32	2.66
Chrysene	218-01-9		U	5.32	2.66
bis(2-Ethylhexyl)phthalate	117-81-7	161	E	5.32	2.66
Di-n-octylphthalate	117-84-0		U	5.32	2.66
Benzo(b)fluoranthene	205-99-2		U	5.32	2.66
Benzo(k)fluoranthene	207-08-9		U	5.32	2.66

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Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-13**
 Client ID: **PZ-03-043009**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **04/30/2009 12:37**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **ECL**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/15/2009 13:19**
 File ID: **12M25865**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	5.32	2.66
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.32	2.66
Dibenzo(a,h)Anthracene	53-70-3		U	5.32	2.66
Benzo(g,h,i)Perylene	191-24-2		U	5.32	2.66
Carbazole	86-74-8		U	5.32	2.66
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	41.0	21	100		
Phenol-d5	29.1	10	94		
Nitrobenzene-d5	63.8	35	114		
2-Fluorobiphenyl	68.1	43	116		
2,4,6-Tribromophenol	96.9	10	123		
p-Terphenyl-d14	85.1	33	141		

E Semiquantitative result (out of instrument calibration range)

U Not detected at or above the reporting limit (RL).

Report Number: L09050029

Report Date : May 19, 2009

Sample Number: L09050029-13
 Client ID: PZ-03-043009
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 04/30/2009 12:37
 Sample Tag: DL01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: ECL
 Dilution: 5
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/15/2009 21:33
 File ID: 12M25880

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	26.6	13.3
Bis(2-Chloroethyl)ether	111-44-4		U	26.6	13.3
2-Chlorophenol	95-57-8		U	26.6	13.3
1,3-Dichlorobenzene	541-73-1		U	26.6	13.3
1,4-Dichlorobenzene	106-46-7		U	26.6	13.3
1,2-Dichlorobenzene	95-50-1		U	26.6	13.3
2-Methylphenol	95-48-7		U	26.6	13.3
3-,4-Methylphenol	106-44-5		U	26.6	13.3
bis(2-Chloroisopropyl)ether	39638-32-9		U	26.6	13.3
N-Nitroso-di-n-propylamine	621-64-7		U	26.6	13.3
Hexachloroethane	67-72-1		U	26.6	13.3
Nitrobenzene	98-95-3		U	26.6	13.3
Isophorone	78-59-1		U	26.6	13.3
2-Nitrophenol	88-75-5		U	26.6	13.3
2,4-Dimethylphenol	105-67-9		U	26.6	13.3
Bis(2-Chloroethoxy)Methane	111-91-1		U	26.6	13.3
2,4-Dichlorophenol	120-83-2		U	26.6	13.3
1,2,4-Trichlorobenzene	120-82-1		U	26.6	13.3
Naphthalene	91-20-3		U	26.6	13.3
4-Chloroaniline	106-47-8		U	26.6	13.3
Hexachlorobutadiene	87-68-3		U	26.6	13.3
4-Chloro-3-methylphenol	59-50-7		U	26.6	13.3
2-Methylnaphthalene	91-57-6		U	26.6	13.3
Hexachlorocyclopentadiene	77-47-4		U	26.6	13.3
2,4,6-Trichlorophenol	88-06-2		U	26.6	13.3
2,4,5-Trichlorophenol	95-95-4		U	26.6	13.3
2-Chloronaphthalene	91-58-7		U	26.6	13.3
2-Nitroaniline	88-74-4		U	133	13.3
Dimethylphthalate	131-11-3		U	26.6	13.3
Acenaphthylene	208-96-8		U	26.6	13.3
2,6-Dinitrotoluene	606-20-2		U	26.6	13.3
3-Nitroaniline	99-09-2		U	133	13.3
Acenaphthene	83-32-9		U	26.6	13.3
2,4-Dinitrophenol	51-28-5		U	133	66.5
4-Nitrophenol	100-02-7		U	133	13.3
Dibenzofuran	132-64-9		U	26.6	13.3
2,4-Dinitrotoluene	121-14-2		U	26.6	13.3
Diethylphthalate	84-66-2		U	26.6	13.3
4-Chlorophenyl-phenyl ether	7005-72-3		U	26.6	13.3
Fluorene	86-73-7		U	26.6	13.3
4-Nitroaniline	100-01-6		U	133	13.3
4,6-Dinitro-2-methylphenol	534-52-1		U	133	66.5
N-Nitrosodiphenylamine	86-30-6		U	26.6	13.3
4-Bromophenyl-phenylether	101-55-3		U	26.6	13.3
Hexachlorobenzene	118-74-1		U	26.6	13.3
Pentachlorophenol	87-86-5		U	133	13.3
Phenanthrene	85-01-8		U	26.6	13.3
Anthracene	120-12-7		U	26.6	13.3
Di-N-Butylphthalate	84-74-2		U	26.6	13.3
Fluoranthene	206-44-0		U	26.6	13.3
Pyrene	129-00-0		U	26.6	13.3
Butylbenzylphthalate	85-68-7		U	26.6	13.3
3,3'-Dichlorobenzidine	91-94-1		U	53.2	13.3
Benzo(a)anthracene	56-55-3		U	26.6	13.3
Chrysene	218-01-9		U	26.6	13.3
bis(2-Ethylhexyl)phthalate	117-81-7	333		26.6	13.3
Di-n-octylphthalate	117-84-0		U	26.6	13.3
Benzo(b)fluoranthene	205-99-2		U	26.6	13.3
Benzo(k)fluoranthene	207-08-9		U	26.6	13.3

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Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-13**
 Client ID: **PZ-03-043009**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **04/30/2009 12:37**
 Sample Tag: **DL01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **ECL**
 Dilution: **5**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/15/2009 21:33**
 File ID: **12M25880**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	26.6	13.3
Indeno(1,2,3-cd)pyrene	193-39-5		U	26.6	13.3
Dibenzo(a,h)Anthracene	53-70-3		U	26.6	13.3
Benzo(g,h,i)Perylene	191-24-2		U	26.6	13.3
Carbazole	86-74-8		U	26.6	13.3
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	60.3	21	100		
Phenol-d5	42.7	10	94		
Nitrobenzene-d5	96.6	35	114		
2-Fluorobiphenyl	105	43	116		
2,4,6-Tribromophenol	148	10	123	*	
p-Terphenyl-d14	134	33	141		

* Surrogate or spike compound out of range

U Not detected at or above the reporting limit (RL).

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

$$RF = [(Ax) (Cis)] / [(Ais) (Cx)]$$

where:

Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	1.65935

Example

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

$$Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]$$

where:

Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	16.947

Example

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

$$Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]$$

where:

Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	576.7627

Example

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	1153.525 ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, $y = mx + b$

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

$$x = (y - b)/m = [(0.02139 - (-0.0435))/0.0783] = 0.829$$

Step 4: Solve for analyte concentration Cx

$$Cx = Cis (x) = (25.0)(0.829) = 20.72 \text{ ug/L}$$

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783
Intercept from curve, b:	-0.0435
Area of analyte, Ax:	16790
Area of Internal Standard, Ais:	784484
Concentration of IS, Cis	25.00 ug/L
Response Ratio (y) :	0.021403
Amount Ratio:	0.828897
Concentration (Cx):	20.72241 ug/L

5.0 Concentration from Quadratic Regression**Step 1 - Retrieve Curve Data from Plot, $y = Ax^2 + Bx + C$**

Where:

$$Ax^2 + Bx + (C - y) = 0$$

A, B, C = constants from the ICAL quadratic regression

y = Response ratio = Area of analyte/Area of internal standard (IS)

x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

$$y = Ax/Ais$$

Step 3: Solve for x using the quadratic formula

$$Ax^2 + Bx + C - y = 0$$

$$x = \frac{b \pm \sqrt{b^2 - 4a(c - y)}}{2a} \quad (\text{Two possible solutions})$$

Step 4: Solve for analyte concentration Cx

$$Cx = (Cis)(\text{Amount ratio})$$

Example Spreadsheet Calculation:

Value of A from plot:	0.0259
Value of B from plot:	0.0596
Value of C from plot:	-0.0165
Area of analyte from quantitation report:	203233
Area of IS from quantitation report:	1425653
Response ratio, y:	0.142554
C - y:	-0.15905
Root 1 - Computed amount ratio, X1:	-3.88278
Root 2 - Computed amount ratio, X2:	1.581623 use this solution
Concentration of IS, Cis:	40.00
Concentration of analyte, Cx:	63.26 ug/L

Microbac Laboratories Inc.
Sample Extract Log

Workgroup: WG301563
Analyst: CSH
Spike Analyst: CAF
Method: 3510C
Run Date: 05/05/2009 10:30
SOP: EXB08 Revision 11
Spike Witness: CAF
Surr Solution: STD31690
Spike Solution: STD32027

Methylene Chloride Lot #: COA13832
Fortified Solution Lot #: RGT13805
1:1 H2SO4 Lot #: RGT13708
10N NaOH Lot #: RGT13802
Sodium Sulfate, Anhydrous, Granular (Lot #: COA13689

	SAMPLE #	Type	Prod	Initial Amnt	Surr Amount	Spike Amount	Final Volume	Color
1	L09050029-01	RS01	827-SPE	960 mL	.5 mL		1 mL	Transparent
2	L09050029-03	MS01	827-SPE	940 mL	.5 mL	.5 mL	1 mL	Colored
3	L09050029-05	SD01	827-SPE	920 mL	.5 mL	.5 mL	1 mL	Colored
4	L09050029-07	SAMP	827-SPE	860 mL	.5 mL		1 mL	Transparent
5	L09050029-09	SAMP	827-SPE	900 mL	.5 mL		1 mL	Transparent
6	L09050029-11	SAMP	827-SPE	980 mL	.5 mL		1 mL	Transparent
7	L09050029-13	SAMP	827-SPE	940 mL	.5 mL		1 mL	Colored
8	L09050044-01	SAMP	827-SPE	950 mL	.5 mL		1 mL	Colored
9	L09050044-03	SAMP	827-SPE	940 mL	.5 mL		1 mL	Transparent
10	L09050044-05	SAMP	827-SPE	940 mL	.5 mL		1 mL	Colored
11	L09050044-07	SAMP	827-SPE	1000 mL	.5 mL		1 mL	Colored
12	WG301563-01	REF	827-SPE	960 mL	.5 mL		1 mL	Transparent
13	WG301563-02	BLANK	827-SPE	1000 mL	.5 mL		1 mL	Transparent
14	WG301563-03	LCS	827-SPE	1000 mL	.5 mL	.5 mL	1 mL	Colored
15	WG301563-04	MS	827-SPE	940 mL	.5 mL	.5 mL	1 mL	Colored
16	WG301563-05	MSD	827-SPE	920 mL	.5 mL	.5 mL	1 mL	Colored

Analyst: Chris Hill

Reviewer: Cheryl A. Flowers

Microbac Laboratories Inc. Instrument Run Log

Instrument: <u>HPMS12</u>	Dataset: <u>051309</u>	
Analyst1: <u>MDC</u>	Analyst2: <u>NA</u>	
Method: <u>8270C</u>	SOP: <u>MSS01</u>	Rev: <u>14</u>
Method: <u>625</u>	SOP: <u>MSS02</u>	Rev: <u>8</u>

Maintenance Log ID: 28685

Workgroups: Column 1 ID: RXI-5MS Column 2 ID: NA

Internal STD: COA13725 Surrogate STD: STD31690 Calibration STD: _____

Comments: ICAL: #49 only calibrated to 100ppm

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	12M25815	WG302078-01 50ppm DFTPP STD	1	1	STD31842	05/13/09 14:04
2	12M25816	WG302078-02 50ppm Megamix STD	1	1	STD31920	05/13/09 14:22
3	12M25817	WG302078-03 3ppm Megamix STD	1	1	STD31920	05/13/09 14:55
4	12M25818	WG302078-04 10ppm Megamix STD	1	1	STD31920	05/13/09 15:29
5	12M25819	WG302078-05 15ppm Megamix STD	1	1	STD31920	05/13/09 16:03
6	12M25820	WG302078-06 25ppm Megamix STD	1	1	STD31920	05/13/09 16:36
7	12M25821	WG302078-07 80ppm Megamix STD	1	1	STD31920	05/13/09 17:10
8	12M25822	WG302078-08 100ppm Megamix STD	1	1	STD31920	05/13/09 17:43
9	12M25823	WG302078-09 120ppm Megamix STD	1	1	STD31920	05/13/09 18:16
10	12M25824	WG302078-10 50ppm Alt source	1	1	STD31858	05/13/09 18:49
11	12M25825	WG302078-11 50ppm A9 Alt source	1	1	STD30677	05/13/09 19:22
12	12M25826	WG302078-12 50ppm 1,4-dioxane Alt source	1	1	STD30264	05/13/09 19:54
13	12M25827	WG301951-02 BLK 5/11	1	1		05/13/09 20:27
14	12M25828	WG301951-03 LCS 5/11	1	1		05/13/09 21:00
15	12M25829	WG301563-02 BLK 5/5	1	1		05/13/09 21:33
16	12M25830	WG301563-03 LCS 5/5	1	1		05/13/09 22:05
17	12M25831	WG301563-01 L09050029-01	1	1		05/13/09 22:38
18	12M25832	WG301563-04 L09050029-03 MS	1	1		05/13/09 23:11
19	12M25833	WG301563-05 L09050029-05 MSD	1	1		05/13/09 23:44
20	12M25834	L09050029-07	1	1		05/14/09 00:16
21	12M25835	L09050029-09	1	1		05/14/09 00:49
22	12M25836	L09040617-05 RE 2X	1	2		05/14/09 01:22
23	12M25837	L09050029-11	1	1		05/14/09 01:55
24	12M25838	BAKEOUT	1	1		05/14/09 02:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11				
			#78, 110, 122 >30%D.	
22				
			Surr. FBP, TPH < LCL.	

Page: 1

Approved: 14-MAY-09




Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS12 Dataset: 051509
 Analyst1: ECL Analyst2: NA
 Method: 8270C SOP: MSS01 Rev: 14
 Method: 625 SOP: MSS02 Rev: 8

Maintenance Log ID: 28745

Column 1 ID: RXI-5MS Column 2 ID: NA
 Workgroups: WG302269, WG301563, WG301951, WG302159, WG302212
 Internal STD: COA13725 Surrogate STD: STD32481 Calibration STD: _____

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	12M25857	WG302402-01 50ppm DFTPP STD	1	1	STD31842	05/15/09 08:55
2	12M25858	WG302402-02 50ppm Megamix STD	1	1	STD31920	05/15/09 09:14
3	12M25859	WG302402-01 50ppm DFTPP STD	1	1	STD31842	05/15/09 10:17
4	12M25860	WG302402-02 50ppm Megamix STD	1	1	STD31920	05/15/09 10:35
7	12M25861	WG302269-01 BLANK	7	1	SOIL	05/15/09 11:08
5	12M25862	WG302269-02 LCS	7	1	SOIL	05/15/09 11:40
8	12M25863	WG302269-03 LCS DUP	7	1	SOIL	05/15/09 12:13
9	12M25864	L09050196-02 RE	7	1	SOIL	05/15/09 12:47
6	12M25865	L09050029-13	1	1		05/15/09 13:19
10	12M25866	L09050128-01 REF	1	1		05/15/09 13:52
11	12M25867	L09050128-02 MS	1	1		05/15/09 14:25
12	12M25868	L09050128-03 MSD	1	1		05/15/09 14:58
13	12M25869	L09050128-04	1	1		05/15/09 15:31
14	12M25870	L09050128-05	1	1		05/15/09 16:03
15	12M25871	L09050266-08	12	1		05/15/09 16:37
16	12M25872	L09050266-07	10	1	SOIL	05/15/09 17:10
17	12M25873	L09050266-09	10	1	SOIL	05/15/09 17:43
18	12M25874	L09050266-02	10	1	SOIL	05/15/09 18:16
19	12M25875	L09050266-03	10	1	SOIL	05/15/09 18:49
20	12M25876	L09050266-05	10	1	SOIL	05/15/09 19:21
21	12M25877	L09050266-01	10	1	SOIL	05/15/09 19:55
22	12M25878	L09050266-04	10	1	SOIL	05/15/09 20:27
23	12M25879	L09050266-06 2x	10	2	SOIL	05/15/09 21:00
24	12M25880	L09050029-13 5x	1	5		05/15/09 21:33
25	12M25881	ELAB A9 STD 50 PPM	1	1	STD32914	05/15/09 22:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X		Check Standard Failure	
			WG302402-02 50ppm Megamix STD	
6	X	5	Over Calibration Range	#124
			L09050029-13	
11				
			L09050128-02 MS: 2 analytes failed high.	
12				

Page: 1

Approved: 18-MAY-09

Michael Cohen



Microbac Laboratories Inc.
Instrument Run Log

Instrument: <u>HPMS12</u>	Dataset: <u>051509</u>	
Analyst1: <u>ECL</u>	Analyst2: <u>NA</u>	
Method: <u>8270C</u>	SOP: <u>MSS01</u>	Rev: <u>14</u>
Method: <u>625</u>	SOP: <u>MSS02</u>	Rev: <u>8</u>

Maintenance Log ID: 28745

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG302269, WG301563, WG301951, WG302159, WG302212

Internal STD: COA13725 Surrogate STD: STD32481

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			L09050128-03 MSD: 3 analytes failed high.	
13				
			L09050128-04: FBP surrogate failed low.	
16	X	5	Over Calibration Range	#18, #20
			L09050266-07	
18	X	5	Over Calibration Range	#18, #20
			L09050266-02: TBP surrogate failed low.	
20	X	20	Over Calibration Range	#18, #20, (5x for #42, #47)
			L09050266-05	
21	X	20	Over Calibration Range	#18, #20 (2x for #42)
			L09050266-01	
23	X	100	Over Calibration Range	#18, #20, #42
			L09050266-06 2x	



Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2009

Analyst: MDC

Analyst: NA

Method: 8270

Instrument: HPMS12

Curve Workgroup: NA

Runlog ID: 28076

Analytical Workgroups: L09040617 RE, L09050029

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MDC
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
14-MAY-2009



Secondary Reviewer:
14-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 15-MAY-2009

Analyst: ECL

Analyst: NA

Method: 8270

Instrument: HPMS12

Curve Workgroup: NA

Runlog ID: 28110

Analytical Workgroups: L09050196, L09050029, L09050128, L09050266

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	X
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	ECL
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
17-MAY-2009



Secondary Reviewer:
18-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270C

AAB#: WG302017

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-19-043009	04/30/09	05/01/09	05/05/09	7	4.90	05/14/09	40	8.60	
PZ-03-043009	04/30/09	05/01/09	05/05/09	7	4.91	05/15/09	40	10.1	
PZ-01-043009	04/30/09	05/01/09	05/05/09	7	5.02	05/14/09	40	8.64	
MW-09R-043009-MSD	04/30/09	05/01/09	05/05/09	7	5.03	05/13/09	40	8.55	
MW-09R-043009	04/30/09	05/01/09	05/05/09	7	5.03	05/13/09	40	8.51	
PZ-03-043009	04/30/09	05/01/09	05/05/09	7	4.91	05/15/09	40	10.5	
MW-09R-043009-MS	04/30/09	05/01/09	05/05/09	7	5.03	05/13/09	40	8.53	
MW-13-043009	04/30/09	05/01/09	05/05/09	7	4.95	05/14/09	40	8.57	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1389753
Report generated 05/18/2009 09:13



Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L09050029
Instrument Id: HPMS12
Workgroup (AAB#): WG302017

Method: 8270
CAL ID: HPMS12 - 13-MAY-09
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4	5	6
L09050029-01	1.00	01	88.2	70.1	39.2	64.4	75.0	27.0
L09050029-03	1.00	01	99.2	77.4	47.0	76.3	84.4	31.8
L09050029-05	1.00	01	103	79.1	49.4	74.9	96.4	33.1
L09050029-07	1.00	01	104	66.0	43.0	66.3	97.1	28.7
L09050029-09	1.00	01	96.0	67.8	43.3	67.1	104	29.3
L09050029-11	1.00	01	89.0	66.4	40.3	65.3	88.1	26.6
L09050029-13	1.00	01	96.9	68.1	41.0	63.8	85.1	29.1
L09050029-13	5.00	DL01	148	105	60.3	96.6	134	42.7
WG301563-02	1.00	01	82.2	64.9	38.4	64.5	99.6	25.0
WG301563-03	1.00	01	98.5	79.0	45.2	77.7	99.6	30.0

Surrogates	Surrogate Limits		
1 - 2,4,6-Tribromophenol	10	-	123
2 - 2-Fluorobiphenyl	43	-	116
3 - 2-Fluorophenol	21	-	100
4 - Nitrobenzene-d5	35	-	114
5 - p-Terphenyl-d14	33	-	141
6 - Phenol-d5	10	-	94

Underline = Result out of surrogate limits

DL = surrogate diluted out

ND = surrogate not detected

METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: 12M25829
 Prep Date: 05/05/09 10:30
 Analyzed Date: 05/13/09 21:33
 Analyst: MDC

Work Group: WG302017
 Blank Sample ID: WG301563-02
 Instrument ID: HPMS12
 Method: 8270C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301563-03	12M25830	05/13/09 22:05	01
MW-09R-043009	L09050029-01	12M25831	05/13/09 22:38	01
MW-09R-043009-MS	L09050029-03	12M25832	05/13/09 23:11	01
MW-09R-043009-MSD	L09050029-05	12M25833	05/13/09 23:44	01
MW-13-043009	L09050029-07	12M25834	05/14/09 00:16	01
MW-19-043009	L09050029-09	12M25835	05/14/09 00:49	01
PZ-01-043009	L09050029-11	12M25837	05/14/09 01:55	01
PZ-03-043009	L09050029-13	12M25865	05/15/09 13:19	01
PZ-03-043009	L09050029-13	12M25880	05/15/09 21:33	DL01



METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/05/09 10:30 Sample ID: WG301563-02
 Instrument ID: HPMS12 Run Date: 05/13/09 21:33 Prep Method: 3510C
 File ID: 12M25829 Analyst: MDC Method: 8270C
 Workgroup (AAB#): WG302017 Matrix: Water Units: ug/L
 Contract #: _____ Cal ID: HPMS12 - 13-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Phenol	2.50	5.00	2.50	1	U
Bis(2-Chloroethyl)ether	2.50	5.00	2.50	1	U
2-Chlorophenol	2.50	5.00	2.50	1	U
1,3-Dichlorobenzene	2.50	5.00	2.50	1	U
1,4-Dichlorobenzene	2.50	5.00	2.50	1	U
1,2-Dichlorobenzene	2.50	5.00	2.50	1	U
2-Methylphenol	2.50	5.00	2.50	1	U
3-,4-Methylphenol	2.50	5.00	2.50	1	U
bis(2-Chloroisopropyl)ether	2.50	5.00	2.50	1	U
N-Nitroso-di-n-propylamine	2.50	5.00	2.50	1	U
Hexachloroethane	2.50	5.00	2.50	1	U
Nitrobenzene	2.50	5.00	2.50	1	U
Isophorone	2.50	5.00	2.50	1	U
2-Nitrophenol	2.50	5.00	2.50	1	U
2,4-Dimethylphenol	2.50	5.00	2.50	1	U
Bis(2-Chloroethoxy)Methane	2.50	5.00	2.50	1	U
2,4-Dichlorophenol	2.50	5.00	2.50	1	U
1,2,4-Trichlorobenzene	2.50	5.00	2.50	1	U
Naphthalene	2.50	5.00	2.50	1	U
4-Chloroaniline	2.50	5.00	2.50	1	U
Hexachlorobutadiene	2.50	5.00	2.50	1	U
4-Chloro-3-methylphenol	2.50	5.00	2.50	1	U
2-Methylnaphthalene	2.50	5.00	2.50	1	U
Hexachlorocyclopentadiene	2.50	5.00	2.50	1	U
2,4,6-Trichlorophenol	2.50	5.00	2.50	1	U
2,4,5-Trichlorophenol	2.50	5.00	2.50	1	U
2-Chloronaphthalene	2.50	5.00	2.50	1	U
2-Nitroaniline	2.50	25.0	2.50	1	U
Dimethylphthalate	2.50	5.00	2.50	1	U
Acenaphthylene	2.50	5.00	2.50	1	U
2,6-Dinitrotoluene	2.50	5.00	2.50	1	U
3-Nitroaniline	2.50	25.0	2.50	1	U
Acenaphthene	2.50	5.00	2.50	1	U
2,4-Dinitrophenol	12.5	25.0	12.5	1	U
4-Nitrophenol	2.50	25.0	2.50	1	U
Dibenzofuran	2.50	5.00	2.50	1	U
2,4-Dinitrotoluene	2.50	5.00	2.50	1	U
Diethylphthalate	2.50	5.00	2.50	1	U
4-Chlorophenyl-phenyl ether	2.50	5.00	2.50	1	U
Fluorene	2.50	5.00	2.50	1	U
4-Nitroaniline	2.50	25.0	2.50	1	U
4,6-Dinitro-2-methylphenol	12.5	25.0	12.5	1	U

Report Name: BLANK

PDF ID: 1389755

18-MAY-2009 09:13



METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/05/09 10:30 Sample ID: WG301563-02
 Instrument ID: HPMS12 Run Date: 05/13/09 21:33 Prep Method: 3510C
 File ID: 12M25829 Analyst: MDC Method: 8270C
 Workgroup (AAB#): WG302017 Matrix: Water Units: ug/L
 Contract #: _____ Cal ID: HPMS12 - 13-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
N-Nitrosodiphenylamine	2.50	5.00	2.50	1	U
4-Bromophenyl-phenylether	2.50	5.00	2.50	1	U
Hexachlorobenzene	2.50	5.00	2.50	1	U
Pentachlorophenol	2.50	25.0	2.50	1	U
Phenanthrene	2.50	5.00	2.50	1	U
Anthracene	2.50	5.00	2.50	1	U
Di-N-Butylphthalate	2.50	5.00	2.50	1	U
Fluoranthene	2.50	5.00	2.50	1	U
Pyrene	2.50	5.00	2.50	1	U
Butylbenzylphthalate	2.50	5.00	2.50	1	U
3,3'-Dichlorobenzidine	2.50	10.0	2.50	1	U
Benzo(a)anthracene	2.50	5.00	2.50	1	U
Chrysene	2.50	5.00	2.50	1	U
bis(2-Ethylhexyl)phthalate	2.50	5.00	2.50	1	U
Di-n-octylphthalate	2.50	5.00	2.50	1	U
Benzo(b)fluoranthene	2.50	5.00	2.50	1	U
Benzo(k)fluoranthene	2.50	5.00	2.50	1	U
Benzo(a)pyrene	2.50	5.00	2.50	1	U
Indeno(1,2,3-cd)pyrene	2.50	5.00	2.50	1	U
Dibenzo(a,h)Anthracene	2.50	5.00	2.50	1	U
Benzo(g,h,i)Perylene	2.50	5.00	2.50	1	U
Carbazole	2.50	5.00	2.50	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
2-Fluorophenol	38.4	21 - 100	PASS
Phenol-d5	25.0	10 - 94	PASS
Nitrobenzene-d5	64.5	35 - 114	PASS
2-Fluorobiphenyl	64.9	43 - 116	PASS
2,4,6-Tribromophenol	82.2	10 - 123	PASS
p-Terphenyl-d14	99.6	33 - 141	PASS

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1389755

18-MAY-2009 09:13



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: <u>L09050029</u>	Run Date: <u>05/13/2009</u>	Sample ID: <u>WG301563-03</u>
Instrument ID: <u>HPMS12</u>	Run Time: <u>22:05</u>	Prep Method: <u>3510C</u>
File ID: <u>12M25830</u>	Analyst: <u>MDC</u>	Method: <u>8270C</u>
Workgroup (AAB#): <u>WG302017</u>	Matrix: <u>Water</u>	Units: <u>ug/L</u>
QC Key: <u>STD</u>	Lot#: <u>STD32027</u>	Cal ID: <u>HPMS12 - 13-MAY-09</u>

Analytes	Expected	Found	% Rec	LCS Limits		Q
Phenol	50.0	15.9	31.8	10	- 120	
Bis(2-Chloroethyl)ether	50.0	41.2	82.3	25	- 110	
2-Chlorophenol	50.0	33.7	67.4	25	- 110	
1,3-Dichlorobenzene	50.0	34.7	69.3	25	- 110	
1,4-Dichlorobenzene	50.0	34.8	69.5	25	- 110	
1,2-Dichlorobenzene	50.0	35.8	71.6	25	- 110	
2-Methylphenol	50.0	32.3	64.5	20	- 110	
3-,4-Methylphenol	50.0	34.0	68.0	20	- 110	
bis(2-Chloroisopropyl)ether	50.0	41.4	82.7	20	- 110	
N-Nitroso-di-n-propylamine	50.0	44.9	89.8	28	- 120	
Hexachloroethane	50.0	32.8	65.5	25	- 95	
Nitrobenzene	50.0	38.4	76.8	30	- 110	
Isophorone	50.0	39.9	79.7	30	- 110	
2-Nitrophenol	50.0	37.8	75.5	20	- 115	
2,4-Dimethylphenol	50.0	38.7	77.4	20	- 120	
Bis(2-Chloroethoxy)Methane	50.0	34.1	68.2	20	- 105	
2,4-Dichlorophenol	50.0	38.6	77.1	20	- 110	
1,2,4-Trichlorobenzene	50.0	35.8	71.5	25	- 105	
Naphthalene	50.0	37.9	75.9	25	- 110	
4-Chloroaniline	50.0	38.3	76.6	25	- 120	
Hexachlorobutadiene	50.0	37.3	74.5	24	- 105	
4-Chloro-3-methylphenol	50.0	41.3	82.7	25	- 110	
2-Methylnaphthalene	50.0	43.0	85.9	25	- 120	
Hexachlorocyclopentadiene	50.0	33.0	66.1	20	- 143	
2,4,6-Trichlorophenol	50.0	41.9	83.7	30	- 120	
2,4,5-Trichlorophenol	50.0	44.5	89.0	35	- 120	
2-Chloronaphthalene	50.0	35.4	70.7	25	- 120	
2-Nitroaniline	50.0	48.6	97.1	45	- 115	
Dimethylphthalate	50.0	50.3	101	25	- 112	
Acenaphthylene	50.0	42.8	85.5	30	- 120	
2,6-Dinitrotoluene	50.0	46.5	93.1	50	- 120	
3-Nitroaniline	50.0	51.9	104	40	- 120	
Acenaphthene	50.0	43.5	87.0	30	- 120	
2,4-Dinitrophenol	50.0	40.8	81.6	20	- 140	
4-Nitrophenol	50.0	21.7	43.4	10	- 132	
Dibenzofuran	50.0	45.5	90.9	35	- 115	
2,4-Dinitrotoluene	50.0	52.1	104	50	- 139	
Diethylphthalate	50.0	52.4	105	45	- 120	
4-Chlorophenyl-phenyl ether	50.0	46.6	93.2	35	- 120	
Fluorene	50.0	46.4	92.7	40	- 120	
4-Nitroaniline	50.0	51.9	104	53	- 135	

LCS - Modified 03/06/2008
PDF File ID: 1389756
Report generated: 05/18/2009 09:13



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029	Run Date: 05/13/2009	Sample ID: WG301563-03
Instrument ID: HPMS12	Run Time: 22:05	Prep Method: 3510C
File ID: 12M25830	Analyst: MDC	Method: 8270C
Workgroup (AAB#): WG302017	Matrix: Water	Units: ug/L
QC Key: STD	Lot#: STD32027	Cal ID: HPMS12 - 13-MAY-09

Analytes	Expected	Found	% Rec	LCS Limits		Q
4,6-Dinitro-2-methylphenol	50.0	48.6	97.2	40	- 145	
N-Nitrosodiphenylamine	50.0	45.8	91.7	40	- 110	
4-Bromophenyl-phenylether	50.0	50.4	101	40	- 115	
Hexachlorobenzene	50.0	49.1	98.3	50	- 130	
Pentachlorophenol	50.0	63.3	127	40	- 140	
Phenanthrene	50.0	51.8	104	55	- 120	
Anthracene	50.0	53.0	106	55	- 130	
Di-N-Butylphthalate	50.0	65.7	131	55	- 118	*
Fluoranthene	50.0	55.4	111	50	- 137	
Pyrene	50.0	64.9	130	55	- 130	
Butylbenzylphthalate	50.0	73.1	146	55	- 150	
3,3'-Dichlorobenzidine	50.0	50.6	101	30	- 140	
Benzo(a)anthracene	50.0	53.1	106	60	- 130	
Chrysene	50.0	54.8	110	55	- 130	
bis(2-Ethylhexyl)phthalate	50.0	59.3	119	50	- 150	
Di-n-octylphthalate	50.0	61.1	122	40	- 146	
Benzo(b)fluoranthene	50.0	53.3	107	45	- 125	
Benzo(k)fluoranthene	50.0	56.5	113	55	- 140	
Benzo(a)pyrene	50.0	53.2	106	55	- 135	
Indeno(1,2,3-cd)pyrene	50.0	52.6	105	50	- 135	
Dibenzo(a,h)Anthracene	50.0	53.2	106	45	- 125	
Benzo(g,h,i)Perylene	50.0	54.1	108	45	- 140	
Carbazole	50.0	53.0	106	50	- 130	

Surrogates	% Recovery	Surrogate Limits		Qualifier
2-Fluorophenol	45.2	21	- 100	PASS
Phenol-d5	30.0	10	- 94	PASS
Nitrobenzene-d5	77.7	35	- 114	PASS
2-Fluorobiphenyl	79.0	43	- 116	PASS
2,4,6-Tribromophenol	98.5	10	- 123	PASS
p-Terphenyl-d14	99.6	33	- 141	PASS

* FAILS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 1389756
Report generated: 05/18/2009 09:13



MS/MSD REPORT

Loginnum: L09050029Cal ID: HPMS12- 13-MAY-09Worknum: WG302017Instrument ID: HPMS12

Contract #: _____

Prep Method: 3510CParent ID: L09050029-01File ID: 12M25831Dil: 1Method: 8270CSample ID: L09050029-03 MSFile ID: 12M25832Dil: 1Matrix: WaterSample ID: L09050029-05 MSDFile ID: 12M25833Dil: 1Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Phenol	U	53.2	17.9	33.6	54.3	18.7	34.4	4.43	10 - 120	30	
Bis(2-Chloroethyl)ether	U	53.2	47.8	89.9	54.3	46.1	84.7	3.80	25 - 110	30	
2-Chlorophenol	U	53.2	37.9	71.3	54.3	39.1	72	3.08	25 - 110	30	
1,3-Dichlorobenzene	U	53.2	35.0	65.9	54.3	37.0	68	5.41	25 - 110	30	
1,4-Dichlorobenzene	U	53.2	34.9	65.6	54.3	37.0	68.1	5.94	25 - 110	30	
1,2-Dichlorobenzene	U	53.2	36.4	68.4	54.3	38.2	70.4	4.96	25 - 110	30	
2-Methylphenol	U	53.2	36.5	68.7	54.3	38.0	69.9	3.91	20 - 110	30	
3-,4-Methylphenol	U	53.2	39.0	73.2	54.3	40.4	74.3	3.64	20 - 110	30	
bis(2-Chloroisopropyl)ether	U	53.2	43.7	82.1	54.3	45.7	84	4.42	20 - 110	30	
N-Nitroso-di-n-propylamine	U	53.2	46.2	86.8	54.3	47.8	88	3.53	28 - 120	30	
Hexachloroethane	U	53.2	33.1	62.2	54.3	35.3	64.9	6.34	25 - 95	30	
Nitrobenzene	U	53.2	39.8	74.9	54.3	40.7	74.8	2.04	30 - 110	30	
Isophorone	U	53.2	40.8	76.7	54.3	41.2	75.7	0.929	30 - 110	30	
2-Nitrophenol	U	53.2	40.0	75.2	54.3	40.5	74.6	1.30	20 - 115	30	
2,4-Dimethylphenol	U	53.2	42.9	80.7	54.3	43.4	79.9	1.20	20 - 120	30	
Bis(2-Chloroethoxy)Methane	U	53.2	35.9	67.5	54.3	35.8	65.9	0.117	20 - 105	30	
2,4-Dichlorophenol	U	53.2	38.8	72.9	54.3	42.1	77.4	8.14	20 - 110	30	
1,2,4-Trichlorobenzene	U	53.2	24.5	46.1	54.3	32.3	59.5	27.6	25 - 105	30	
Naphthalene	U	53.2	41.2	77.5	54.3	42.4	78	2.90	25 - 110	30	
4-Chloroaniline	U	53.2	40.3	75.7	54.3	41.5	76.3	2.89	25 - 120	30	
Hexachlorobutadiene	U	53.2	38.5	72.4	54.3	39.3	72.3	2.12	24 - 105	30	
4-Chloro-3-methylphenol	U	53.2	45.8	86.1	54.3	50.8	93.5	10.4	25 - 110	30	
2-Methylnaphthalene	U	53.2	44.5	83.7	54.3	45.6	83.9	2.35	25 - 120	30	
Hexachlorocyclopentadiene	U	53.2	36.2	68	54.3	35.1	64.6	3.06	20 - 143	30	
2,4,6-Trichlorophenol	U	53.2	45.4	85.3	54.3	49.8	91.6	9.32	30 - 120	30	
2,4,5-Trichlorophenol	U	53.2	48.9	92	54.3	55.1	101	11.9	35 - 120	30	
2-Chloronaphthalene	U	53.2	36.9	69.4	54.3	38.8	71.4	4.92	25 - 120	30	
2-Nitroaniline	U	53.2	51.6	97.1	54.3	57.6	106	10.9	45 - 115	30	
Dimethylphthalate	U	53.2	50.7	95.4	54.3	57.3	105	12.1	25 - 112	30	
Acenaphthylene	U	53.2	44.5	83.6	54.3	48.7	89.5	8.98	30 - 120	30	
2,6-Dinitrotoluene	U	53.2	48.3	90.7	54.3	53.2	97.8	9.69	50 - 120	30	
3-Nitroaniline	U	53.2	55.7	105	54.3	57.9	107	3.91	40 - 120	30	
Acenaphthene	U	53.2	46.4	87.1	54.3	50.0	91.9	7.49	30 - 120	30	
2,4-Dinitrophenol	U	53.2	64.7	122	54.3	59.8	110	7.80	20 - 140	30	
4-Nitrophenol	U	53.2	26.3	49.4	54.3	29.0	53.4	9.87	10 - 132	30	
Dibenzofuran	U	53.2	46.5	87.5	54.3	52.1	95.8	11.2	35 - 115	30	
2,4-Dinitrotoluene	U	53.2	54.2	102	54.3	58.6	108	7.90	50 - 139	30	
Diethylphthalate	U	53.2	53.4	100	54.3	59.6	110	10.9	45 - 120	30	
4-Chlorophenyl-phenyl ether	U	53.2	47.8	89.9	54.3	53.3	98.1	10.8	35 - 120	30	
Fluorene	U	53.2	47.2	88.8	54.3	53.6	98.7	12.7	40 - 120	30	
4-Nitroaniline	U	53.2	55.7	105	54.3	57.9	107	3.91	53 - 135	30	

MS_MSD - Modified 03/06/2008

PDF File ID: 1389757

Report generated 05/18/2009 09:13

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MS/MSD REPORT

Loginnum: L09050029Cal ID: HPMS12 13-MAY-09Worknum: WG302017Instrument ID: HPMS12

Contract #: _____

Prep Method: 3510CParent ID: L09050029-01File ID: 12M25831Dil: 1Method: 8270CSample ID: L09050029-03 MSFile ID: 12M25832Dil: 1Matrix: WaterSample ID: L09050029-05 MSDFile ID: 12M25833Dil: 1Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
4,6-Dinitro-2-methylphenol	U	53.2	61.2	115	54.3	60.2	111	1.76	40 - 145	30	
N-Nitrosodiphenylamine	U	53.2	48.5	91.3	54.3	53.5	98.4	9.68	40 - 110	30	
4-Bromophenyl-phenylether	U	53.2	52.0	97.7	54.3	58.2	107	11.4	40 - 115	30	
Hexachlorobenzene	U	53.2	50.0	93.9	54.3	55.7	102	10.8	50 - 130	30	
Pentachlorophenol	U	53.2	73.8	139	54.3	76.0	140	2.93	40 - 140	30	
Phenanthrene	U	53.2	52.9	99.5	54.3	58.8	108	10.6	55 - 120	30	
Anthracene	U	53.2	54.3	102	54.3	60.1	111	10.1	55 - 130	30	
Di-N-Butylphthalate	U	53.2	66.7	125	54.3	74.1	136	10.5	55 - 118	30	*
Fluoranthene	U	53.2	56.9	107	54.3	62.1	114	8.72	50 - 137	30	
Pyrene	U	53.2	66.1	124	54.3	73.4	135	10.5	55 - 130	30	*
Butylbenzylphthalate	U	53.2	72.6	137	54.3	82.5	152	12.7	55 - 150	30	*
3,3'-Dichlorobenzidine	U	53.2	47.9	90.1	54.3	54.9	101	13.6	30 - 140	30	
Benzo(a)anthracene	U	53.2	55.7	105	54.3	60.0	110	7.44	60 - 130	30	
Chrysene	U	53.2	57.1	107	54.3	62.1	114	8.29	55 - 130	30	
bis(2-Ethylhexyl)phthalate	U	53.2	60.7	114	54.3	66.5	122	9.17	50 - 150	30	
Di-n-octylphthalate	U	53.2	62.1	117	54.3	68.8	127	10.2	40 - 146	30	
Benzo(b)fluoranthene	U	53.2	54.7	103	54.3	56.1	103	2.47	45 - 125	30	
Benzo(k)fluoranthene	U	53.2	58.5	110	54.3	67.0	123	13.5	55 - 140	30	
Benzo(a)pyrene	U	53.2	56.1	105	54.3	59.9	110	6.48	55 - 135	30	
Indeno(1,2,3-cd)pyrene	U	53.2	56.1	105	54.3	59.2	109	5.52	50 - 135	30	
Dibenzo(a,h)Anthracene	U	53.2	57.0	107	54.3	59.7	110	4.66	45 - 125	30	
Benzo(g,h,i)Perylene	U	53.2	57.5	108	54.3	60.4	111	4.90	45 - 140	30	
Carbazole	U	53.2	56.1	106	54.3	60.4	111	7.29	50 - 130	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 1389757

Report generated 05/18/2009 09:13

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Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L09050029
Instrument: HPMS12
Analyst: MDC
Workgroup: WG302078

Tune ID: WG302078-01
Run Date: 05/13/2009
Run Time: 14:04
File ID: 12M25815

Cal ID: HPMS12 - 13-MAY-09

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.9	107573	PASS
68.0	69.0	0	2.00	0	0	PASS
69.0	198	0	100	31.7	87567	PASS
70.0	69.0	0	2.00	0.287	251	PASS
127	198	40.0	60.0	45.5	125644	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	276202	PASS
199	198	5.00	9.00	6.78	18731	PASS
275	198	10.0	30.0	23.6	65066	PASS
365	198	1.00	100	2.59	7142	PASS
441	443	0.0100	100	73.6	28565	PASS
442	198	40.0	100	70.1	193733	PASS
443	442	17.0	23.0	20.0	38821	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG302078-02	STD-CCV	01	05/13/2009 14:22	
WG302078-03	STD	01	05/13/2009 14:55	
WG302078-04	STD	01	05/13/2009 15:29	
WG302078-05	STD	01	05/13/2009 16:03	
WG302078-06	STD	01	05/13/2009 16:36	
WG302078-07	STD	01	05/13/2009 17:10	
WG302078-08	STD	01	05/13/2009 17:43	
WG302078-09	STD	01	05/13/2009 18:16	
WG302078-10	SSCV	01	05/13/2009 18:49	
WG302078-11	SSCV	01	05/13/2009 19:22	
WG302078-12	SSCV	01	05/13/2009 19:54	
WG301563-02	BLANK	01	05/13/2009 21:33	
WG301563-03	LCS	01	05/13/2009 22:05	
L09050029-01	MW-09R-043009	01	05/13/2009 22:38	
WG301563-01	REF	01	05/13/2009 22:38	
L09050029-03	MW-09R-043009-MS	01	05/13/2009 23:11	
WG301563-04	MS	01	05/13/2009 23:11	
L09050029-05	MW-09R-043009-MSD	01	05/13/2009 23:44	
WG301563-05	MSD	01	05/13/2009 23:44	
L09050029-07	MW-13-043009	01	05/14/2009 00:16	
L09050029-09	MW-19-043009	01	05/14/2009 00:49	
L09050029-11	PZ-01-043009	01	05/14/2009 01:55	

TUNE - Modified 03/06/2008
PDF File ID: 1389760
Report generated 05/18/2009 09:15



Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L09050029

Instrument: HPMS12

Analyst: ECL

Workgroup: WG302402

Tune ID: WG302402-01

Run Date: 05/15/2009

Run Time: 10:17

File ID: 12M25859

Cal ID: HPMS12 - 13-MAY-09

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	42.7	116154	PASS
68.0	69.0	0	2.00	0	0	PASS
69.0	198	0	100	35.5	96522	PASS
70.0	69.0	0	2.00	0.669	646	PASS
127	198	40.0	60.0	46.7	126977	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	271786	PASS
199	198	5.00	9.00	6.90	18766	PASS
275	198	10.0	30.0	24.0	65141	PASS
365	198	1.00	100	2.53	6889	PASS
441	443	0.0100	100	79.5	29146	PASS
442	198	40.0	100	72.3	196402	PASS
443	442	17.0	23.0	18.7	36669	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG302402-02	CCV	01	05/15/2009 10:35	
L09050029-13	PZ-03-043009	01	05/15/2009 13:19	
L09050029-13	PZ-03-043009	DL01	05/15/2009 21:33	

* Sample past 12 hour tune limit

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L09050029
Analytical Method: 8270C
ICAL Workgroup: WG302078

Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R ²)	QUAD(R ²)
1,4-Dichlorobenzene	CCC	1.617	7.05		
2,4,6-Trichlorophenol	CCC	0.4310	5.40		
2,4-Dichlorophenol	CCC	0.3068	5.24		
2-Nitrophenol	CCC	0.2075	5.24		
4-Chloro-3-Methylphenol	CCC	0.3160	6.46		
Acenaphthene	CCC	1.266	10.4		
Benzo[a]pyrene	CCC	1.177	4.50		
Di-n-Octyl Phthalate	CCC	1.508	10.5		
Fluoranthene	CCC	1.295	11.8		
Hexachlorobutadiene	CCC	0.2057	6.92		
Pentachlorophenol	CCC	0.1520	8.50		
Phenol	CCC	1.512	6.28		
2,4-Dinitrophenol	SPCC	0.1414	30.7	0.99600	
4-Nitrophenol	SPCC	0.2452	5.02		
Hexachlorocyclopentadiene	SPCC	0.2859	10.9		
n-Nitrosodipropylamine	SPCC	0.7901	12.5		
1,2,4-Trichlorobenzene		0.3577	6.87		
1,2-Dichlorobenzene		1.472	6.94		
1,3-Dichlorobenzene		1.576	6.34		
2,4,5-Trichlorophenol		0.4526	5.34		
2,4-Dimethylphenol		0.3305	4.93		
2,4-Dinitrotoluene		0.4753	7.27		
2,6-Dinitrotoluene		0.3717	5.25		
2-Chloronaphthalene		1.437	9.03		
2-Chlorophenol		1.356	5.25		
2-Methylnaphthalene		0.6959	8.30		
2-Methylphenol		1.041	4.87		
2-Nitroaniline		0.3520	5.36		
3,3'-Dichlorobenzidine		0.4245	5.53		
3-Nitroaniline		0.3790	3.61		
4,6-Dinitro-2-Methylphenol		0.1373	17.4	0.99700	
4-Bromophenyl Phenyl Ether		0.2540	6.45		
4-Chloroaniline		0.4378	5.73		
4-Chlorophenyl Phenyl Ether		0.7747	10.0		
4-Nitroaniline		0.3790	3.61		
Acenaphthylene		2.055	11.2		
Anthracene		1.258	12.3		
Benzo[a]anthracene		1.242	8.69		
Benzo[b]fluoranthene		1.337	6.92		
Benzo[ghi]perylene		1.023	4.51		
Benzo[k]fluoranthene		1.088	14.7		
Butyl Benzyl Phthalate		0.6038	17.1	0.99200	
Carbazole		1.105	9.32		
Chrysene		1.153	8.97		
Di-n-Butyl Phthalate		1.447	15.1	0.99300	

INT_CAL - Modified 03/06/2008
PDF File ID: 1389758
Report generated 05/18/2009 09:13



**Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY**

Login Number: L09050029
Analytical Method: 8270C
ICAL Workgroup: WG302078

Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R ²)	QUAD(R ²)
Dibenz[ah]anthracene		1.032	3.82		
Dibenzofuran		1.768	12.0		
Diethylphthalate		1.569	10.5		
Dimethylphthalate		1.525	9.16		
Fluorene		1.506	11.8		
Hexachlorobenzene		0.2503	7.30		
Hexachloroethane		0.5730	5.69		
Indeno[1,2,3-cd]pyrene		1.239	3.84		
Isophorone		0.6627	7.52		
Naphthalene		1.043	9.70		
Nitrobenzene		0.3482	7.01		
Phenanthrene		1.246	12.5		
Pyrene		1.272	16.3	0.99300	
bis(2-Chloroethoxy)methane		0.4944	10.4		
bis(2-Chloroethyl)ether		0.8852	10.5		
bis(2-Chloroisopropyl)ether		1.849	6.63		
bis(2-Ethylhexyl)phthalate		0.8860	11.0		

R = Correlation coefficient; 0.995 minimum
R² = Coefficient of determination; 0.99 minimum

If the %RSD is greater than the limit specified by the method or project QAP, then linear or quadratic equations will be used.

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050029
Analytical Method: 8270C

Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte	WG302078-02			WG302078-03			WG302078-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dichlorobenzene	50.0	536540.000	1.536	3.00	39791.0000	1.860	10.0	101817.000	1.596
2,4,6-Trichlorophenol	50.0	315571.000	0.4184	3.00	21076.0000	0.4784	10.0	56306.0000	0.4175
2,4-Dichlorophenol	50.0	402975.000	0.2976	3.00	27330.0000	0.3392	10.0	73409.0000	0.3005
2-Nitrophenol	50.0	275753.000	0.2036	3.00	18349.0000	0.2277	10.0	47368.0000	0.1939
4-Chloro-3-Methylphenol	50.0	414909.000	0.3064	3.00	28519.0000	0.3539	10.0	76541.0000	0.3133
Acenaphthene	50.0	951126.000	1.261	3.00	64232.0000	1.458	10.0	175134.000	1.299
Benzo[a]pyrene	50.0	1792932.00	1.168	3.00	105889.000	1.281	10.0	287085.000	1.142
Di-n-Octyl Phthalate	50.0	2234316.00	1.455	3.00	146500.000	1.772	10.0	395589.000	1.574
Fluoranthene	50.0	1792562.00	1.272	3.00	123125.000	1.533	10.0	331149.000	1.356
Hexachlorobutadiene	50.0	271906.000	0.2008	3.00	18726.0000	0.2324	10.0	51357.0000	0.2102
Pentachlorophenol	50.0	222027.000	0.1575	NA	NA	NA	10.0	31105.0000	0.1274
Phenol	50.0	497726.000	1.425	3.00	36561.0000	1.709	10.0	94137.0000	1.475
2,4-Dinitrophenol	50.0	108602.000	0.1440	NA	NA	NA	NA	NA	NA
4-Nitrophenol	50.0	176277.000	0.2337	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	50.0	231654.000	0.3071	3.00	10886.0000	0.2471	10.0	34858.0000	0.2585
n-Nitrosodipropylamine	50.0	266047.000	0.7614	3.00	19948.0000	0.9325	10.0	53441.0000	0.8375
1,2,4-Trichlorobenzene	50.0	466604.000	0.3445	3.00	32994.0000	0.4095	10.0	87061.0000	0.3563
1,2-Dichlorobenzene	50.0	493416.000	1.412	3.00	36010.0000	1.683	10.0	92589.0000	1.451
1,3-Dichlorobenzene	50.0	524967.000	1.502	3.00	38155.0000	1.784	10.0	98765.0000	1.548
2,4,5-Trichlorophenol	50.0	333838.000	0.4426	3.00	21975.0000	0.4988	10.0	57472.0000	0.4262
2,4-Dimethylphenol	50.0	429727.000	0.3173	3.00	29415.0000	0.3651	10.0	80344.0000	0.3289
2,4-Dinitrotoluene	50.0	361944.000	0.4799	3.00	23053.0000	0.5233	10.0	63039.0000	0.4674
2,6-Dinitrotoluene	50.0	273808.000	0.3630	3.00	17971.0000	0.4079	10.0	48325.0000	0.3583
2-Chloronaphthalene	50.0	1056729.00	1.401	3.00	73500.0000	1.669	10.0	193566.000	1.435
2-Chlorophenol	50.0	448334.000	1.283	3.00	32221.0000	1.506	10.0	83980.0000	1.316
2-Methylnaphthalene	50.0	919749.000	0.6791	3.00	64711.0000	0.8031	10.0	172063.000	0.7043
2-Methylphenol	50.0	345940.000	0.9901	3.00	24271.0000	1.135	10.0	65844.0000	1.032
2-Nitroaniline	50.0	255414.000	0.3386	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	50.0	640187.000	0.4233	3.00	39186.0000	0.4672	10.0	100170.000	0.3945
3-Nitroaniline	50.0	284644.000	0.3774	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-Methylphenol	50.0	192294.000	0.1364	NA	NA	NA	NA	NA	NA
4-Bromophenyl Phenyl Ether	50.0	349148.000	0.2477	3.00	23127.0000	0.2880	10.0	61825.0000	0.2532
4-Chloroaniline	50.0	568334.000	0.4197	3.00	39348.0000	0.4883	10.0	104422.000	0.4274
4-Chlorophenyl Phenyl Ether	50.0	576067.000	0.7638	3.00	39524.0000	0.8972	10.0	106542.000	0.7900
4-Nitroaniline	50.0	284644.000	0.3774	NA	NA	NA	NA	NA	NA
Acenaphthylene	50.0	1521417.00	2.017	3.00	107063.000	2.430	10.0	286159.000	2.122
Anthracene	50.0	1754395.00	1.245	3.00	120140.000	1.496	10.0	324451.000	1.329
Benzo[a]anthracene	50.0	1857649.00	1.228	3.00	121750.000	1.452	10.0	314968.000	1.241
Benzo[b]fluoranthene	50.0	1982048.00	1.291	3.00	127414.000	1.541	10.0	326320.000	1.298
Benzo[ghi]perylene	50.0	1571047.00	1.023	3.00	90518.0000	1.095	10.0	241801.000	0.9619
Benzo[k]fluoranthene	50.0	1624029.00	1.058	3.00	107614.000	1.301	10.0	275920.000	1.098
Butyl Benzyl Phthalate	50.0	886785.000	0.5864	3.00	63355.0000	0.7553	10.0	169881.000	0.6691

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Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number:L09050029
Analytical Method:8270C

Instrument ID:HPMS12
Initial Calibration Date:13-MAY-09 18:16
Column ID:F

Analyte	WG302078-02			WG302078-03			WG302078-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Carbazole	50.0	1549559.00	1.099	3.00	102589.000	1.278	10.0	269561.000	1.104
Chrysene	50.0	1733562.00	1.146	3.00	112121.000	1.337	10.0	297438.000	1.172
Di-n-Butyl Phthalate	50.0	1979165.00	1.404	3.00	143408.000	1.786	10.0	380941.000	1.560
Dibenz[ah]anthracene	50.0	1605016.00	1.045	3.00	88484.0000	1.070	10.0	242445.000	0.9644
Dibenzofuran	50.0	1322444.00	1.753	3.00	91968.0000	2.088	10.0	246567.000	1.828
Diethylphthalate	50.0	1143645.00	1.516	3.00	81824.0000	1.857	10.0	214780.000	1.593
Dimethylphthalate	50.0	1116800.00	1.481	3.00	78072.0000	1.772	10.0	208047.000	1.543
Fluorene	50.0	1118281.00	1.483	3.00	78797.0000	1.789	10.0	211759.000	1.570
Hexachlorobenzene	50.0	346419.000	0.2457	3.00	23022.0000	0.2867	10.0	62186.0000	0.2547
Hexachloroethane	50.0	194423.000	0.5564	3.00	13629.0000	0.6371	10.0	35757.0000	0.5604
Indeno[1,2,3-cd]pyrene	50.0	1922576.00	1.252	3.00	108148.000	1.308	10.0	296524.000	1.180
Isophorone	50.0	850006.000	0.6276	3.00	61044.0000	0.7576	10.0	161395.000	0.6606
Naphthalene	50.0	1364728.00	1.008	3.00	98690.0000	1.225	10.0	261154.000	1.069
Nitrobenzene	50.0	446039.000	0.3294	3.00	31892.0000	0.3958	10.0	85103.0000	0.3483
Phenanthrene	50.0	1715716.00	1.217	3.00	121111.000	1.508	10.0	317787.000	1.302
Pyrene	50.0	1876248.00	1.241	3.00	134129.000	1.599	10.0	348804.000	1.374
bis(2-Chloroethoxy)methane	50.0	651025.000	0.4807	3.00	46618.0000	0.5786	10.0	124464.000	0.5094
bis(2-Chloroethyl)ether	50.0	290851.000	0.8324	3.00	22607.0000	1.057	10.0	57279.0000	0.8976
bis(2-Chloroisopropyl)ether	50.0	592316.000	1.695	3.00	43990.0000	2.056	10.0	118037.000	1.850
bis(2-Ethylhexyl)phthalate	50.0	1303448.00	0.8620	3.00	87774.0000	1.047	10.0	232161.000	0.9144

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Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte	WG302078-05			WG302078-06			WG302078-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dichlorobenzene	15.0	178921.000	1.691	25.0	215814.000	1.614	80.0	967280.000	1.560
2,4,6-Trichlorophenol	15.0	98455.0000	0.4505	25.0	120824.000	0.4248	80.0	561104.000	0.4189
2,4-Dichlorophenol	15.0	129832.000	0.3216	25.0	155198.000	0.2990	80.0	721773.000	0.2968
2-Nitrophenol	15.0	86762.0000	0.2149	25.0	104626.000	0.2016	80.0	495667.000	0.2038
4-Chloro-3-Methylphenol	15.0	135954.000	0.3367	25.0	165841.000	0.3195	80.0	736979.000	0.3030
Acenaphthene	15.0	308283.000	1.411	25.0	374212.000	1.316	80.0	1552886.00	1.159
Benzo[a]pyrene	15.0	523262.000	1.221	25.0	631349.000	1.172	80.0	3085269.00	1.147
Di-n-Octyl Phthalate	15.0	702006.000	1.639	25.0	847194.000	1.572	80.0	3741903.00	1.391
Fluoranthene	15.0	582199.000	1.432	25.0	707993.000	1.352	80.0	2919669.00	1.189
Hexachlorobutadiene	15.0	87437.0000	0.2166	25.0	107000.000	0.2061	80.0	472618.000	0.1943
Pentachlorophenol	15.0	61186.0000	0.1505	25.0	76011.0000	0.1451	80.0	391686.000	0.1595
Phenol	15.0	167753.000	1.586	25.0	203157.000	1.519	80.0	912105.000	1.471
2,4-Dinitrophenol	15.0	18686.0000	0.08550	25.0	25963.0000	0.09130	80.0	220893.000	0.1649
4-Nitrophenol	15.0	57622.0000	0.2636	25.0	70012.0000	0.2462	80.0	314421.000	0.2348
Hexachlorocyclopentadiene	15.0	70608.0000	0.3231	25.0	86283.0000	0.3034	80.0	410823.000	0.3067
n-Nitrosodipropylamine	15.0	93125.0000	0.8803	25.0	113449.000	0.8483	80.0	441740.000	0.7126
1,2,4-Trichlorobenzene	15.0	150872.000	0.3737	25.0	184850.000	0.3561	80.0	833267.000	0.3426
1,2-Dichlorobenzene	15.0	164298.000	1.553	25.0	197753.000	1.479	80.0	876272.000	1.414
1,3-Dichlorobenzene	15.0	174863.000	1.653	25.0	211468.000	1.581	80.0	946153.000	1.526
2,4,5-Trichlorophenol	15.0	103766.000	0.4748	25.0	127732.000	0.4491	80.0	597406.000	0.4460
2,4-Dimethylphenol	15.0	138019.000	0.3418	25.0	169883.000	0.3273	80.0	775101.000	0.3187
2,4-Dinitrotoluene	15.0	113339.000	0.5186	25.0	138978.000	0.4886	80.0	611077.000	0.4562
2,6-Dinitrotoluene	15.0	86215.0000	0.3945	25.0	103621.000	0.3643	80.0	483979.000	0.3614
2-Chloronaphthalene	15.0	342908.000	1.569	25.0	415064.000	1.459	80.0	1808200.00	1.350
2-Chlorophenol	15.0	147897.000	1.398	25.0	181850.000	1.360	80.0	826534.000	1.333
2-Methylnaphthalene	15.0	302236.000	0.7485	25.0	363480.000	0.7002	80.0	1590639.00	0.6540
2-Methylphenol	15.0	115291.000	1.090	25.0	140896.000	1.054	80.0	621927.000	1.003
2-Nitroaniline	15.0	84000.0000	0.3843	25.0	102727.000	0.3612	80.0	463218.000	0.3459
3,3'-Dichlorobenzidine	15.0	190168.000	0.4468	25.0	227983.000	0.4165	80.0	1114052.00	0.4181
3-Nitroaniline	15.0	87639.0000	0.4010	25.0	107447.000	0.3778	80.0	499347.000	0.3728
4,6-Dinitro-2-Methylphenol	15.0	43373.0000	0.1067	25.0	57902.0000	0.1105	80.0	371453.000	0.1513
4-Bromophenyl Phenyl Ether	15.0	108196.000	0.2662	25.0	131168.000	0.2504	80.0	600297.000	0.2445
4-Chloroaniline	15.0	186095.000	0.4609	25.0	225051.000	0.4336	80.0	1031768.00	0.4242
4-Chlorophenyl Phenyl Ether	15.0	186881.000	0.8550	25.0	227580.000	0.8002	80.0	968076.000	0.7228
4-Nitroaniline	15.0	87639.0000	0.4010	25.0	107447.000	0.3778	80.0	499347.000	0.3728
Acenaphthylene	15.0	497567.000	2.277	25.0	604333.000	2.125	80.0	2521954.00	1.883
Anthracene	15.0	564810.000	1.389	25.0	692070.000	1.321	80.0	2821494.00	1.149
Benzo[a]anthracene	15.0	568132.000	1.335	25.0	679661.000	1.242	80.0	3106873.00	1.166
Benzo[b]fluoranthene	15.0	599350.000	1.399	25.0	712127.000	1.322	80.0	3396892.00	1.262
Benzo[ghi]perylene	15.0	453179.000	1.058	25.0	540651.000	1.003	80.0	2756082.00	1.024
Benzo[k]fluoranthene	15.0	537911.000	1.256	25.0	654144.000	1.214	80.0	2633407.00	0.9785
Butyl Benzyl Phthalate	15.0	293203.000	0.6889	25.0	356390.000	0.6511	80.0	1380873.00	0.5183

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Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number:L09050029
Analytical Method:8270C

Instrument ID:HPMS12
Initial Calibration Date:13-MAY-09 18:16
Column ID:F

Analyte	WG302078-05			WG302078-06			WG302078-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Carbazole	15.0	490991.000	1.208	25.0	593274.000	1.133	80.0	2553053.00	1.040
Chrysene	15.0	530368.000	1.246	25.0	637101.000	1.164	80.0	2858907.00	1.073
Di-n-Butyl Phthalate	15.0	662143.000	1.629	25.0	805132.000	1.537	80.0	3158526.00	1.286
Dibenz[ah]anthracene	15.0	456006.000	1.064	25.0	547991.000	1.017	80.0	2790029.00	1.037
Dibenzofuran	15.0	432406.000	1.978	25.0	528546.000	1.858	80.0	2152002.00	1.607
Diethylphthalate	15.0	378234.000	1.731	25.0	458776.000	1.613	80.0	1938293.00	1.447
Dimethylphthalate	15.0	362386.000	1.658	25.0	443745.000	1.560	80.0	1897927.00	1.417
Fluorene	15.0	365806.000	1.674	25.0	445303.000	1.566	80.0	1827071.00	1.364
Hexachlorobenzene	15.0	106850.000	0.2629	25.0	128004.000	0.2444	80.0	583442.000	0.2376
Hexachloroethane	15.0	64037.0000	0.6054	25.0	76134.0000	0.5693	80.0	345028.000	0.5566
Indeno[1,2,3-cd]pyrene	15.0	549886.000	1.284	25.0	656138.000	1.218	80.0	3316882.00	1.233
Isophorone	15.0	285449.000	0.7070	25.0	351550.000	0.6773	80.0	1525988.00	0.6274
Naphthalene	15.0	455366.000	1.128	25.0	556676.000	1.072	80.0	2356727.00	0.9690
Nitrobenzene	15.0	149319.000	0.3698	25.0	181282.000	0.3492	80.0	809699.000	0.3329
Phenanthrene	15.0	558870.000	1.375	25.0	678057.000	1.295	80.0	2776802.00	1.131
Pyrene	15.0	610798.000	1.435	25.0	744541.000	1.360	80.0	2948104.00	1.107
bis(2-Chloroethoxy)methane	15.0	218957.000	0.5423	25.0	267132.000	0.5146	80.0	1108454.00	0.4558
bis(2-Chloroethyl)ether	15.0	101562.000	0.9601	25.0	123439.000	0.9230	80.0	511019.000	0.8244
bis(2-Chloroisopropyl)ether	15.0	207954.000	1.966	25.0	256117.000	1.915	80.0	1109527.00	1.790
bis(2-Ethylhexyl)phthalate	15.0	417199.000	0.9803	25.0	500951.000	0.9152	80.0	2167226.00	0.8134

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Instrument ID: HPMS12
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Column ID: F

Analyte	WG302078-08			WG302078-09		
	CONC	RESP	RF	CONC	RESP	RF
1,4-Dichlorobenzene	100	1317091.00	1.580	120	1217249.00	1.496
2,4,6-Trichlorophenol	100	770778.000	0.4338	120	718498.000	0.4060
2,4-Dichlorophenol	100	995113.000	0.3090	120	928188.000	0.2910
2-Nitrophenol	100	691534.000	0.2147	120	636858.000	0.1996
4-Chloro-3-Methylphenol	100	982002.000	0.3049	120	927044.000	0.2906
Acenaphthene	100	2025313.00	1.140	120	1923667.00	1.087
Benzo[a]pyrene	100	4189430.00	1.179	120	3853100.00	1.109
Di-n-Octyl Phthalate	100	4831287.00	1.360	120	4534644.00	1.305
Fluoranthene	100	3697689.00	1.139	120	3507146.00	1.083
Hexachlorobutadiene	100	639092.000	0.1984	120	595808.000	0.1868
Pentachlorophenol	100	544211.000	0.1676	120	505188.000	0.1561
Phenol	100	1241611.00	1.489	120	1159506.00	1.425
2,4-Dinitrophenol	100	325494.000	0.1832	120	317762.000	0.1796
4-Nitrophenol	100	454533.000	0.2558	120	419934.000	0.2373
Hexachlorocyclopentadiene	100	530618.000	0.2987	120	429737.000	0.2428
n-Nitrosodipropylamine	100	566489.000	0.6795	120	544057.000	0.6687
1,2,4-Trichlorobenzene	100	1128307.00	0.3503	120	1048980.00	0.3288
1,2-Dichlorobenzene	100	1189753.00	1.427	120	1107112.00	1.361
1,3-Dichlorobenzene	100	1288124.00	1.545	120	1195908.00	1.470
2,4,5-Trichlorophenol	100	808635.000	0.4552	120	757805.000	0.4282
2,4-Dimethylphenol	100	1058090.00	0.3285	120	1008471.00	0.3161
2,4-Dinitrotoluene	100	787931.000	0.4435	120	751692.000	0.4248
2,6-Dinitrotoluene	100	661728.000	0.3725	120	621855.000	0.3514
2-Chloronaphthalene	100	2385453.00	1.343	120	2243637.00	1.268
2-Chlorophenol	100	1128484.00	1.354	120	1054156.00	1.296
2-Methylnaphthalene	100	2109832.00	0.6551	120	1987247.00	0.6229
2-Methylphenol	100	859396.000	1.031	120	806600.000	0.9914
2-Nitroaniline	100	622952.000	0.3506	120	586114.000	0.3312
3,3'-Dichlorobenzidine	100	1508398.00	0.4282	120	1388592.00	0.4016
3-Nitroaniline	100	684286.000	0.3852	120	636586.000	0.3597
4,6-Dinitro-2-Methylphenol	100	529381.000	0.1630	120	503830.000	0.1556
4-Bromophenyl Phenyl Ether	100	804649.000	0.2478	120	758333.000	0.2343
4-Chloroaniline	100	1407159.00	0.4369	120	1313376.00	0.4117
4-Chlorophenyl Phenyl Ether	100	1244931.00	0.7007	120	1181670.00	0.6678
4-Nitroaniline	100	684286.000	0.3852	120	636586.000	0.3597
Acenaphthylene	100	3259765.00	1.835	120	3103487.00	1.754
Anthracene	100	3538722.00	1.090	120	3388620.00	1.047
Benzo[a]anthracene	100	4092921.00	1.162	120	3848503.00	1.113
Benzo[b]fluoranthene	100	4644398.00	1.307	120	4423663.00	1.273
Benzo[ghi]perylene	100	3738007.00	1.052	120	3348870.00	0.9635
Benzo[k]fluoranthene	100	3352326.00	0.9435	120	2970452.00	0.8546
Butyl Benzyl Phthalate	100	1718536.00	0.4878	120	1637928.00	0.4737

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Column ID:F

Analyte	WG302078-08			WG302078-09		
	CONC	RESP	RF	CONC	RESP	RF
Carbazole	100	3289144.00	1.013	120	3116275.00	0.9627
Chrysene	100	3748386.00	1.064	120	3528065.00	1.020
Di-n-Butyl Phthalate	100	3935978.00	1.212	120	3761095.00	1.162
Dibenz[ah]anthracene	100	3801337.00	1.070	120	3432796.00	0.9876
Dibenzofuran	100	2747172.00	1.546	120	2628808.00	1.486
Diethylphthalate	100	2543887.00	1.432	120	2410188.00	1.362
Dimethylphthalate	100	2519776.00	1.418	120	2386907.00	1.349
Fluorene	100	2359564.00	1.328	120	2262582.00	1.279
Hexachlorobenzene	100	791959.000	0.2439	120	732556.000	0.2263
Hexachloroethane	100	470604.000	0.5645	120	434665.000	0.5342
Indeno[1,2,3-cd]pyrene	100	4489737.00	1.264	120	4078662.00	1.173
Isophorone	100	2050908.00	0.6368	120	1938255.00	0.6076
Naphthalene	100	3092709.00	0.9602	120	2920386.00	0.9154
Nitrobenzene	100	1095416.00	0.3401	120	1021297.00	0.3201
Phenanthrene	100	3542160.00	1.091	120	3389751.00	1.047
Pyrene	100	3678308.00	1.044	120	3503884.00	1.013
bis(2-Chloroethoxy)methane	100	1436512.00	0.4460	120	1363769.00	0.4275
bis(2-Chloroethyl)ether	100	672429.000	0.8065	120	635280.000	0.7808
bis(2-Chloroisopropyl)ether	100	1490359.00	1.788	120	1411173.00	1.735
bis(2-Ethylhexyl)phthalate	100	2796834.00	0.7939	120	2634623.00	0.7620

INT_CAL - Modified 03/06/2008
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Report generated 05/18/2009 09:13



Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: <u>L09050029</u>	Run Date: <u>05/13/2009</u>	Sample ID: <u>WG302078-10</u>
Instrument ID: <u>HPMS12</u>	Run Time: <u>18:49</u>	Method: <u>8270C</u>
File ID: <u>12M25824</u>	Analyst: <u>MDC</u>	QC Key: <u>STD</u>
ICal Workgroup: <u>WG302078</u>	Cal ID: <u>HPMS12 - 13-MAY-09</u>	

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Phenol	CCC	50000	49500	ug/L	1.50	1.10	30	
1,4-Dichlorobenzene	CCC	50000	49600	ug/L	1.60	0.800	30	
2-Nitrophenol	CCC	50000	53200	ug/L	0.221	6.40	30	
2,4-Dichlorophenol	CCC	50000	48900	ug/L	0.300	2.20	30	
Hexachlorobutadiene	CCC	50000	52000	ug/L	0.214	4.10	30	
4-Chloro-3-Methylphenol	CCC	50000	49000	ug/L	0.310	2.10	30	
2,4,6-Trichlorophenol	CCC	50000	50700	ug/L	0.437	1.40	30	
Acenaphthene	CCC	50000	50800	ug/L	1.29	1.60	30	
n-Nitrosodiphenylamine	CCC	50000	50000	ug/L	0.711	0.100	30	
Pentachlorophenol	CCC	50000	65000	ug/L	0.198	30.0	40	
Fluoranthene	CCC	50000	51500	ug/L	1.33	3.00	30	
Di-n-Octyl Phthalate	CCC	50000	48800	ug/L	1.47	2.40	30	
Benzo[a]pyrene	CCC	50000	52200	ug/L	1.23	4.40	30	
n-Nitrosodipropylamine	SPCC	50000	51600	ug/L	0.815	3.10	30	
Hexachlorocyclopentadiene	SPCC	50000	58900	ug/L	0.337	17.9	40	
2,4-Dinitrophenol	SPCC	50000	60100	ug/L	0.193	20.2	40	
4-Nitrophenol	SPCC	50000	45500	ug/L	0.223	9.00	40	
bis(2-Chloroethyl)ether		50000	49000	ug/L	0.868	2.00	30	
2-Chlorophenol		50000	48600	ug/L	1.32	2.70	30	
1,3-Dichlorobenzene		50000	50100	ug/L	1.58	0.100	30	
1,2-Dichlorobenzene		50000	50700	ug/L	1.49	1.50	30	
2-Methylphenol		50000	49200	ug/L	1.02	1.60	30	
3-,4-Methylphenol		50000	49200	ug/L	1.35	1.60	30	
bis(2-Chloroisopropyl)ether		50000	48500	ug/L	1.79	3.00	30	
Hexachloroethane		50000	48900	ug/L	0.560	2.20	30	
Nitrobenzene		50000	49700	ug/L	0.346	0.700	30	
Isophorone		50000	48700	ug/L	0.646	2.60	30	
2,4-Dimethylphenol		50000	48800	ug/L	0.323	2.40	30	
bis(2-Chloroethoxy)methane		50000	38900	ug/L	0.385	22.2	30	
1,2,4-Trichlorobenzene		50000	49600	ug/L	0.355	0.800	30	
Naphthalene		50000	51000	ug/L	1.06	1.90	30	
4-Chloroaniline		50000	49400	ug/L	0.433	1.20	40	
2-Methylnaphthalene		50000	53500	ug/L	0.745	7.00	30	
2,4,5-Trichlorophenol		50000	51800	ug/L	0.469	3.60	30	
2-Chloronaphthalene		50000	43700	ug/L	1.26	12.6	30	
2-Nitroaniline		50000	54200	ug/L	0.381	8.40	40	
Dimethylphthalate		50000	46500	ug/L	1.42	7.00	30	
Acenaphthylene		50000	50300	ug/L	2.07	0.600	30	
2,6-Dinitrotoluene		50000	50100	ug/L	0.372	0.100	30	
3-Nitroaniline		50000	49000	ug/L	0.372	1.90	40	
Dibenzofuran		50000	50600	ug/L	1.79	1.20	30	
2,4-Dinitrotoluene		50000	51600	ug/L	0.490	3.10	30	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 1389759
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: <u>L09050029</u>	Run Date: <u>05/13/2009</u>	Sample ID: <u>WG302078-10</u>
Instrument ID: <u>HPMS12</u>	Run Time: <u>18:49</u>	Method: <u>8270C</u>
File ID: <u>12M25824</u>	Analyst: <u>MDC</u>	QC Key: <u>STD</u>
ICal Workgroup: <u>WG302078</u>	Cal ID: <u>HPMS12 - 13-MAY-09</u>	

Analyte	Expected	Found	Units	RF	%D	UCL	Q
Diethylphthalate	50000	45400	ug/L	1.42	9.30	30	
4-Chlorophenyl Phenyl Ether	50000	47000	ug/L	0.728	6.00	30	
Fluorene	50000	51000	ug/L	1.54	2.00	30	
4-Nitroaniline	50000	49000	ug/L	0.372	1.90	40	
4,6-Dinitro-2-Methylphenol	50000	57800	ug/L	0.170	15.5	30	
Hexachlorobenzene	50000	50600	ug/L	0.254	1.30	30	
Phenanthrene	50000	50100	ug/L	1.25	0.100	30	
Anthracene	50000	50900	ug/L	1.28	1.80	30	
Di-n-Butyl Phthalate	50000	50400	ug/L	1.29	0.800	30	
Pyrene	50000	59600	ug/L	1.31	19.1	30	
Butyl Benzyl Phthalate	50000	57800	ug/L	0.599	15.6	30	
Benzo[a]anthracene	50000	51400	ug/L	1.28	2.90	30	
Chrysene	50000	51600	ug/L	1.19	3.30	30	
bis(2-Ethylhexyl)phthalate	50000	48800	ug/L	0.865	2.30	30	
Benzo[b]fluoranthene	50000	49800	ug/L	1.33	0.300	30	
Benzo[k]fluoranthene	50000	54400	ug/L	1.18	8.80	30	
Indeno[1,2,3-cd]pyrene	50000	50300	ug/L	1.25	0.600	30	
Dibenz[ah]anthracene	50000	51300	ug/L	1.06	2.70	30	
Benzo[ghi]perylene	50000	51300	ug/L	1.05	2.70	30	
Carbazole	50000	51100	ug/L	1.13	2.20	30	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L09050029 Run Date: 05/13/2009 Sample ID: WG302078-11
Instrument ID: HPMS12 Run Time: 19:22 Method: 8270C
File ID: 12M25825 Analyst: MDC QC Key: STD
ICal Workgroup: WG302078 Cal ID: HPMS12 - 13-MAY-09

Analyte		Expected	Found	Units	RF	%D	UCL	Q
3,3'-Dichlorobenzidine		50000	51800	ug/L	0.440	3.50	40	

* Exceeds %D Limit

CCC Calibration Check Compounds

SPCC System Performance Check Compounds

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029	Run Date: 05/15/2009	Sample ID: WG302402-02
Instrument ID: HPMS12	Run Time: 10:35	Method: 8270C
File ID: 12M25860	Analyst: ECL	QC Key: STD
Workgroup (AAB#): WG302017	Cal ID: HPMS12 - 13-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Phenol	CCC	50000	48800	ug/L	1.48	2.32	20	
1,4-Dichlorobenzene	CCC	50000	48100	ug/L	1.56	3.80	20	
2-Nitrophenol	CCC	50000	47900	ug/L	0.199	4.15	20	
2,4-Dichlorophenol	CCC	50000	47500	ug/L	0.292	4.98	20	
Hexachlorobutadiene	CCC	50000	47000	ug/L	0.194	5.93	20	
4-Chloro-3-Methylphenol	CCC	50000	48600	ug/L	0.307	2.86	20	
2,4,6-Trichlorophenol	CCC	50000	47800	ug/L	0.412	4.44	20	
Acenaphthene	CCC	50000	50400	ug/L	1.28	0.887	20	
n-Nitrosodiphenylamine	CCC	50000	49600	ug/L	0.705	0.888	20	
Pentachlorophenol	CCC	50000	50200	ug/L	0.153	0.393	20	
Fluoranthene	CCC	50000	49500	ug/L	1.28	0.916	20	
Di-n-Octyl Phthalate	CCC	50000	50500	ug/L	1.52	1.10	20	
Benzo[a]pyrene	CCC	50000	49500	ug/L	1.17	0.922	20	
n-Nitrosodipropylamine	SPCC	50000	50400	ug/L	0.797	0.895	40	
Hexachlorocyclopentadiene	SPCC	50000	59600	ug/L	0.341	19.1	40	
2,4-Dinitrophenol	SPCC	50000	49700	ug/L	0.151	0.694	40	
4-Nitrophenol	SPCC	50000	49400	ug/L	0.242	1.14	40	
bis(2-Chloroethyl)ether		50000	49600	ug/L	0.877	0.892	40	
2-Chlorophenol		50000	47900	ug/L	1.30	4.19	40	
1,3-Dichlorobenzene		50000	47700	ug/L	1.50	4.54	40	
1,2-Dichlorobenzene		50000	47700	ug/L	1.41	4.53	40	
2-Methylphenol		50000	48100	ug/L	1.00	3.72	40	
3-,4-Methylphenol		50000	48400	ug/L	1.33	3.29	40	
bis(2-Chloroisopropyl)ether		50000	51200	ug/L	1.89	2.34	40	
Hexachloroethane		50000	47700	ug/L	0.546	4.66	40	
Nitrobenzene		50000	49000	ug/L	0.341	2.06	40	
Isophorone		50000	49600	ug/L	0.657	0.820	40	
2,4-Dimethylphenol		50000	48800	ug/L	0.322	2.46	40	
bis(2-Chloroethoxy)methane		50000	50400	ug/L	0.498	0.714	40	
1,2,4-Trichlorobenzene		50000	48000	ug/L	0.344	3.93	40	
Naphthalene		50000	49100	ug/L	1.03	1.74	40	
4-Chloroaniline		50000	48500	ug/L	0.424	3.09	40	
2-Methylnaphthalene		50000	48700	ug/L	0.677	2.66	40	
2,4,5-Trichlorophenol		50000	47800	ug/L	0.432	4.50	40	
2-Chloronaphthalene		50000	48500	ug/L	1.39	3.07	40	
2-Nitroaniline		50000	50200	ug/L	0.353	0.355	40	
Dimethylphthalate		50000	48300	ug/L	1.47	3.31	40	
Acenaphthylene		50000	49300	ug/L	2.03	1.34	40	
2,6-Dinitrotoluene		50000	47900	ug/L	0.356	4.11	40	
3-Nitroaniline		50000	48000	ug/L	0.364	3.93	40	
Dibenzofuran		50000	49300	ug/L	1.74	1.35	40	
2,4-Dinitrotoluene		50000	49700	ug/L	0.472	0.621	40	

CCV - Modified 03/05/2008

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/15/2009 Sample ID: WG302402-02
 Instrument ID: HPMS12 Run Time: 10:35 Method: 8270C
 File ID: 12M25860 Analyst: ECL QC Key: STD
 Workgroup (AAB#): WG302017 Cal ID: HPMS12 - 13-MAY-09
 Matrix: WATER

Analyte	Expected	Found	UNITS	RF	%D	UCL	Q
Diethylphthalate	50000	48400	ug/L	1.52	3.12	40	
4-Chlorophenyl Phenyl Ether	50000	48700	ug/L	0.754	2.69	40	
Fluorene	50000	49400	ug/L	1.49	1.27	40	
4-Nitroaniline	50000	48000	ug/L	0.364	3.93	40	
4,6-Dinitro-2-Methylphenol	50000	48600	ug/L	0.139	2.81	40	
4-Bromophenyl Phenyl Ether	50000	48200	ug/L	0.245	3.53	40	
Hexachlorobenzene	50000	47400	ug/L	0.237	5.17	40	
Phenanthrene	50000	49500	ug/L	1.23	1.02	40	
Anthracene	50000	50100	ug/L	1.26	0.295	40	
Di-n-Butyl Phthalate	50000	57000	ug/L	1.45	14.1	40	
Pyrene	50000	59000	ug/L	1.30	17.9	40	
Butyl Benzyl Phthalate	50000	59800	ug/L	0.617	19.7	40	
3,3'-Dichlorobenzidine	50000	49100	ug/L	0.417	1.79	40	
Benzo[a]anthracene	50000	49200	ug/L	1.22	1.52	40	
Chrysene	50000	49700	ug/L	1.15	0.518	40	
bis(2-Ethylhexyl)phthalate	50000	50100	ug/L	0.887	0.106	40	
Benzo[b]fluoranthene	50000	50500	ug/L	1.35	0.966	40	
Benzo[k]fluoranthene	50000	52400	ug/L	1.14	4.78	40	
Indeno[1,2,3-cd]pyrene	50000	50400	ug/L	1.25	0.818	40	
Dibenz[ah]anthracene	50000	50700	ug/L	1.05	1.48	40	
Benzo[ghi]perylene	50000	50300	ug/L	1.03	0.615	40	
Carbazole	50000	49900	ug/L	1.10	0.260	40	

* Exceeds %D Criteria

CCC Calibration Check Compounds
 SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
 PDF File ID: 1389761
 Report generated 05/18/2009 09:15



Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L09050029
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302078-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302078-02	NA	NA	279529	603406	1209765	1083422	1228497	1127786
Upper Limit	NA	NA	559058	1206812	2419530	2166844	2456994	2255572
Lower Limit	NA	NA	139765	301703	604883	541711	614249	563893
L09050029-01	1.00	01	212525	439796	772534	837466	755105	773709
L09050029-03	1.00	01	292993	624843	1187943	1149795	1196014	1122812
L09050029-05	1.00	01	205873	435206	810985	815344	800970	775564
L09050029-07	1.00	01	211931	431621	784197	807028	769321	777049
L09050029-09	1.00	01	208917	426502	784873	792720	763016	761660
L09050029-11	1.00	01	212634	441263	792936	814253	782469	777635
WG301563-01	1.00	01	212525	439796	772534	837466	755105	773709
WG301563-02	1.00	01	238668	482213	863368	901304	840142	855752
WG301563-03	1.00	01	209866	445961	844864	805628	827472	804434
WG301563-04	1.00	01	292993	624843	1187943	1149795	1196014	1122812
WG301563-05	1.00	01	205873	435206	810985	815344	800970	775564

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L09050029
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302402-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302402-02	NA	NA	209687	437808	833555	801334	822179	800540
Upper Limit	NA	NA	419374	875616	1667110	1602668	1644358	1601080
Lower Limit	NA	NA	104844	218904	416778	400667	411090	400270
L09050029-13	1.00	01	301568	628191	1214365	1158521	1180613	1125484
L09050029-13	5.00	DL01	291614	593819	1121488	1108580	1062839	1048293

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L09050029
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302078-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302078-02	NA	NA	8.48	12.15	16.66	10.07	19.3	13.76
Upper Limit	NA	NA	8.98	12.65	17.16	10.57	19.8	14.26
Lower Limit	NA	NA	7.98	11.65	16.16	9.57	18.8	13.26
L09050029-01	1.00	01	8.48	12.15	16.653	10.072	19.282	13.747
L09050029-03	1.00	01	8.48	12.15	16.675	10.082	19.308	13.752
L09050029-05	1.00	01	8.479	12.15	16.664	10.071	19.292	13.752
L09050029-07	1.00	01	8.479	12.15	16.658	10.061	19.287	13.747
L09050029-09	1.00	01	8.48	12.15	16.659	10.061	19.287	13.752
L09050029-11	1.00	01	8.479	12.144	16.658	10.061	19.287	13.752
WG301563-01	1.00	01	8.48	12.15	16.653	10.072	19.282	13.747
WG301563-02	1.00	01	8.48	12.15	16.653	10.061	19.282	13.747
WG301563-03	1.00	01	8.48	12.15	16.659	10.061	19.282	13.752
WG301563-04	1.00	01	8.48	12.15	16.675	10.082	19.308	13.752
WG301563-05	1.00	01	8.479	12.15	16.664	10.071	19.292	13.752

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L09050029
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302402-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302402-02	NA	NA	8.48	12.15	16.66	10.06	19.28	13.75
Upper Limit	NA	NA	8.98	12.65	17.16	10.56	19.78	14.25
Lower Limit	NA	NA	7.98	11.65	16.16	9.56	18.78	13.25
L09050029-13	1.00	01	8.479	12.15	16.653	10.061	19.282	13.752
L09050029-13	5.00	DL01	8.479	12.15	16.653	10.061	19.281	13.752

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac Laboratories Inc.
METALS

Microbac Login No: L09050029

METHOD

Preparation: SW-846 3005A

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 Calibrations: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Samples: All acceptance criteria were met.

Continuing Calibration: WG301711(6010) - Due to continuing calibration blank failure for sodium on 07-MAY-2009 at 17:00, client samples 10, 12 and 14 were reanalyzed on 08-MAY-2009 for sodium.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

MS/MSD: WG301711(6010) - Sample 02 was chosen by the client for MS/MSD analysis. Samples 04(MS) and 06(MSD) yielded noncompliant recoveries for three analytes.

Serial Dilution/Post Digestion Spike: WG301711(6010) - All acceptance criteria were met.

SAMPLES

WG301711(6010) - Client samples 02, 04(MS), 06(MSD) and 14 required dilution analyses in order to obtain results for sodium within the linear range.

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 hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: EDA

LABORATORY REPORT

L09050029

05/19/09 14:14

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-02	6010B	1	01-MAY-09
MW-09R-043009	L09050029-02	6010B	5	01-MAY-09
MW-09R-043009-MS	L09050029-04	6010B	5	01-MAY-09
MW-09R-043009-MS	L09050029-04	6010B	1	01-MAY-09
MW-09R-043009-MSD	L09050029-06	6010B	5	01-MAY-09
MW-09R-043009-MSD	L09050029-06	6010B	1	01-MAY-09
MW-13-043009	L09050029-08	6010B	1	01-MAY-09
MW-19-043009	L09050029-10	6010B	1	01-MAY-09
MW-19-043009	L09050029-10	6010B	1	01-MAY-09
PZ-01-043009	L09050029-12	6010B	1	01-MAY-09
PZ-01-043009	L09050029-12	6010B	1	01-MAY-09
PZ-03-043009	L09050029-14	6010B	1	01-MAY-09
PZ-03-043009	L09050029-14	6010B	100	01-MAY-09



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-02**
 Client ID: **MW-09R-043009**
 Matrix: **Water**
 Workgroup Number: **WG301711**
 Collect Date: **04/30/2009 09:40**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**
 Prep Date: **05/04/2009 07:03**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 12:13**
 File ID: **T2.050709.121327**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5		U	0.100	0.0500
Barium, Dissolved	7440-39-3	0.0467		0.0100	0.00250
Beryllium, Dissolved	7440-41-7		U	0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.00172		0.000500	0.000250
Calcium, Dissolved	7440-70-2	261		0.200	0.100
Chromium, Dissolved	7440-47-3		U	0.00500	0.00250
Cobalt, Dissolved	7440-48-4		U	0.0200	0.00250
Copper, Dissolved	7440-50-8		U	0.00500	0.00250
Iron, Dissolved	7439-89-6	2.00		0.100	0.0250
Lead, Dissolved	7439-92-1	0.00482	J	0.00500	0.00250
Magnesium, Dissolved	7439-95-4	95.7		0.500	0.250
Manganese, Dissolved	7439-96-5	0.387		0.0100	0.00500
Nickel, Dissolved	7440-02-0		U	0.0400	0.00500
Potassium, Dissolved	7440-09-7	6.85		1.00	0.250
Silver, Dissolved	7440-22-4		U	0.0100	0.00500
Vanadium, Dissolved	7440-62-2		U	0.0100	0.00500
Zinc, Dissolved	7440-66-6		U	0.0200	0.00500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-02**
Client ID: **MW-09R-043009**
Matrix: **Water**
Workgroup Number: **WG301711**
Collect Date: **04/30/2009 09:40**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **5**
Units: **mg/L**

Instrument: **ICP-THERM02**
Prep Date: **05/04/2009 07:03**
Cal Date: **05/07/2009 11:19**
Run Date: **05/07/2009 13:35**
File ID: **T2.050709.133508**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	716		2.50	1.25

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-04**
Client ID: **MW-09R-043009-MS**
Matrix: **Water**
Workgroup Number: **WG301711**
Collect Date: **04/30/2009 09:40**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **5**
Units: **mg/L**

Instrument: **ICP-THERM02**
Prep Date: **05/04/2009 07:03**
Cal Date: **05/07/2009 11:19**
Run Date: **05/07/2009 13:41**
File ID: **T2.050709.134112**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	740		2.50	1.25

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-04**
 Client ID: **MW-09R-043009-MS**
 Matrix: **Water**
 Workgroup Number: **WG301711**
 Collect Date: **04/30/2009 09:40**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**
 Prep Date: **05/04/2009 07:03**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 12:19**
 File ID: **T2.050709.121938**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5	5.18		0.100	0.0500
Barium, Dissolved	7440-39-3	0.560		0.0100	0.00250
Beryllium, Dissolved	7440-41-7	0.0242		0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.0275		0.000500	0.000250
Calcium, Dissolved	7440-70-2	266		0.200	0.100
Chromium, Dissolved	7440-47-3	0.240		0.00500	0.00250
Cobalt, Dissolved	7440-48-4	0.0993		0.0200	0.00250
Copper, Dissolved	7440-50-8	0.251		0.00500	0.00250
Iron, Dissolved	7439-89-6	4.07		0.100	0.0250
Lead, Dissolved	7439-92-1	0.255		0.00500	0.00250
Magnesium, Dissolved	7439-95-4	100		0.500	0.250
Manganese, Dissolved	7439-96-5	0.637		0.0100	0.00500
Nickel, Dissolved	7440-02-0	0.250		0.0400	0.00500
Potassium, Dissolved	7440-09-7	32.7		1.00	0.250
Silver, Dissolved	7440-22-4	0.199		0.0100	0.00500
Vanadium, Dissolved	7440-62-2	0.493		0.0100	0.00500
Zinc, Dissolved	7440-66-6	0.490		0.0200	0.00500

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-06**
Client ID: **MW-09R-043009-MSD**
Matrix: **Water**
Workgroup Number: **WG301711**
Collect Date: **04/30/2009 09:40**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **5**
Units: **mg/L**

Instrument: **ICP-THERM02**
Prep Date: **05/04/2009 07:03**
Cal Date: **05/07/2009 11:19**
Run Date: **05/07/2009 13:47**
File ID: **T2.050709.134713**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	760		2.50	1.25

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-06**
 Client ID: **MW-09R-043009-MSD**
 Matrix: **Water**
 Workgroup Number: **WG301711**
 Collect Date: **04/30/2009 09:40**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**
 Prep Date: **05/04/2009 07:03**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 12:25**
 File ID: **T2.050709.122537**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5	5.16		0.100	0.0500
Barium, Dissolved	7440-39-3	0.564		0.0100	0.00250
Beryllium, Dissolved	7440-41-7	0.0243		0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.0276		0.000500	0.000250
Calcium, Dissolved	7440-70-2	273		0.200	0.100
Chromium, Dissolved	7440-47-3	0.243		0.00500	0.00250
Cobalt, Dissolved	7440-48-4	0.100		0.0200	0.00250
Copper, Dissolved	7440-50-8	0.253		0.00500	0.00250
Iron, Dissolved	7439-89-6	4.14		0.100	0.0250
Lead, Dissolved	7439-92-1	0.250		0.00500	0.00250
Magnesium, Dissolved	7439-95-4	102		0.500	0.250
Manganese, Dissolved	7439-96-5	0.650		0.0100	0.00500
Nickel, Dissolved	7440-02-0	0.252		0.0400	0.00500
Potassium, Dissolved	7440-09-7	33.1		1.00	0.250
Silver, Dissolved	7440-22-4	0.201		0.0100	0.00500
Vanadium, Dissolved	7440-62-2	0.497		0.0100	0.00500
Zinc, Dissolved	7440-66-6	0.496		0.0200	0.00500

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-08**
 Client ID: **MW-13-043009**
 Matrix: **Water**
 Workgroup Number: **WG301711**
 Collect Date: **04/30/2009 11:35**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**
 Prep Date: **05/04/2009 07:03**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 12:31**
 File ID: **T2.050709.123137**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5		U	0.100	0.0500
Barium, Dissolved	7440-39-3	0.104		0.0100	0.00250
Beryllium, Dissolved	7440-41-7		U	0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.000270	J	0.000500	0.000250
Calcium, Dissolved	7440-70-2	117		0.200	0.100
Chromium, Dissolved	7440-47-3		U	0.00500	0.00250
Cobalt, Dissolved	7440-48-4		U	0.0200	0.00250
Copper, Dissolved	7440-50-8		U	0.00500	0.00250
Iron, Dissolved	7439-89-6	5.10		0.100	0.0250
Lead, Dissolved	7439-92-1		U	0.00500	0.00250
Magnesium, Dissolved	7439-95-4	13.0		0.500	0.250
Manganese, Dissolved	7439-96-5	0.232		0.0100	0.00500
Nickel, Dissolved	7440-02-0		U	0.0400	0.00500
Potassium, Dissolved	7440-09-7	2.35		1.00	0.250
Silver, Dissolved	7440-22-4		U	0.0100	0.00500
Sodium, Dissolved	7440-23-5	35.5		0.500	0.250
Vanadium, Dissolved	7440-62-2		U	0.0100	0.00500
Zinc, Dissolved	7440-66-6		U	0.0200	0.00500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-10**
 Client ID: **MW-19-043009**
 Matrix: **Water**
 Workgroup Number: **WG301711**
 Collect Date: **04/30/2009 13:00**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**
 Prep Date: **05/04/2009 07:03**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 15:59**
 File ID: **T2.050709.155917**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5		U	0.100	0.0500
Barium, Dissolved	7440-39-3	0.133		0.0100	0.00250
Beryllium, Dissolved	7440-41-7		U	0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.00107		0.000500	0.000250
Calcium, Dissolved	7440-70-2	156		0.200	0.100
Chromium, Dissolved	7440-47-3		U	0.00500	0.00250
Cobalt, Dissolved	7440-48-4		U	0.0200	0.00250
Copper, Dissolved	7440-50-8		U	0.00500	0.00250
Iron, Dissolved	7439-89-6	2.35		0.100	0.0250
Lead, Dissolved	7439-92-1	0.00445	J	0.00500	0.00250
Magnesium, Dissolved	7439-95-4	48.3		0.500	0.250
Manganese, Dissolved	7439-96-5	0.939		0.0100	0.00500
Nickel, Dissolved	7440-02-0		U	0.0400	0.00500
Potassium, Dissolved	7440-09-7	0.781	J	1.00	0.250
Silver, Dissolved	7440-22-4		U	0.0100	0.00500
Vanadium, Dissolved	7440-62-2		U	0.0100	0.00500
Zinc, Dissolved	7440-66-6	0.00622	J	0.0200	0.00500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-10**
Client ID: **MW-19-043009**
Matrix: **Water**
Workgroup Number: **WG301711**
Collect Date: **04/30/2009 13:00**
Sample Tag: **02**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **1**
Units: **mg/L**

Instrument: **ICP-THERM02**
Prep Date: **05/04/2009 07:03**
Cal Date: **05/08/2009 11:53**
Run Date: **05/08/2009 12:34**
File ID: **T2.050809.123452**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	101		0.500	0.250

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-12**
 Client ID: **PZ-01-043009**
 Matrix: **Water**
 Workgroup Number: **WG301711**
 Collect Date: **04/30/2009 09:57**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**
 Prep Date: **05/04/2009 07:03**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 16:05**
 File ID: **T2.050709.160518**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5		U	0.100	0.0500
Barium, Dissolved	7440-39-3	1.14		0.0100	0.00250
Beryllium, Dissolved	7440-41-7		U	0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.00155		0.000500	0.000250
Calcium, Dissolved	7440-70-2	118		0.200	0.100
Chromium, Dissolved	7440-47-3		U	0.00500	0.00250
Cobalt, Dissolved	7440-48-4		U	0.0200	0.00250
Copper, Dissolved	7440-50-8		U	0.00500	0.00250
Iron, Dissolved	7439-89-6	4.59		0.100	0.0250
Lead, Dissolved	7439-92-1	0.00505		0.00500	0.00250
Magnesium, Dissolved	7439-95-4	102		0.500	0.250
Manganese, Dissolved	7439-96-5	0.0434		0.0100	0.00500
Nickel, Dissolved	7440-02-0		U	0.0400	0.00500
Potassium, Dissolved	7440-09-7	3.84		1.00	0.250
Silver, Dissolved	7440-22-4		U	0.0100	0.00500
Vanadium, Dissolved	7440-62-2		U	0.0100	0.00500
Zinc, Dissolved	7440-66-6		U	0.0200	0.00500

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-12**
Client ID: **PZ-01-043009**
Matrix: **Water**
Workgroup Number: **WG301711**
Collect Date: **04/30/2009 09:57**
Sample Tag: **02**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **1**
Units: **mg/L**

Instrument: **ICP-THERM02**Prep Date: **05/04/2009 07:03**Cal Date: **05/08/2009 11:53**Run Date: **05/08/2009 12:40**File ID: **T2.050809.124054**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	90.9		0.500	0.250

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-14**
 Client ID: **PZ-03-043009**
 Matrix: **Water**
 Workgroup Number: **WG301711**
 Collect Date: **04/30/2009 12:37**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**
 Prep Date: **05/04/2009 07:03**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 16:11**
 File ID: **T2.050709.161123**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5		U	0.100	0.0500
Barium, Dissolved	7440-39-3	0.0312		0.0100	0.00250
Beryllium, Dissolved	7440-41-7		U	0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.00224		0.000500	0.000250
Calcium, Dissolved	7440-70-2	550		0.200	0.100
Chromium, Dissolved	7440-47-3	0.00268	J	0.00500	0.00250
Cobalt, Dissolved	7440-48-4	0.00384	J	0.0200	0.00250
Copper, Dissolved	7440-50-8		U	0.00500	0.00250
Iron, Dissolved	7439-89-6	6.18		0.100	0.0250
Lead, Dissolved	7439-92-1	0.00439	J	0.00500	0.00250
Magnesium, Dissolved	7439-95-4	134		0.500	0.250
Manganese, Dissolved	7439-96-5	0.933		0.0100	0.00500
Nickel, Dissolved	7440-02-0	0.0121	J	0.0400	0.00500
Potassium, Dissolved	7440-09-7	22.5		1.00	0.250
Silver, Dissolved	7440-22-4		U	0.0100	0.00500
Vanadium, Dissolved	7440-62-2		U	0.0100	0.00500
Zinc, Dissolved	7440-66-6	0.0136	J	0.0200	0.00500

J The analyte was positively identified, but the quantitation was below the RL
 U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-14**
Client ID: **PZ-03-043009**
Matrix: **Water**
Workgroup Number: **WG301711**
Collect Date: **04/30/2009 12:37**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **100**
Units: **mg/L**

Instrument: **ICP-THERM02**
Prep Date: **05/04/2009 07:03**
Cal Date: **05/08/2009 11:53**
Run Date: **05/08/2009 12:46**
File ID: **T2.050809.124657**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	1530		50.0	25.0

2.3.1.2 QC Summary Data

Example 6010 Calculations
Perkin Elmer Optima 4300 DV

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system in ug/mL (ppm)

Vf = Final volume (mL)

Vi = Initial volume (mL)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/mL (mg/L)

Example:

0.1

50

50

1

0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (mg/L) (ppm)

Vf = Final volume (mL)

Vi = Initial weight (g)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/g (mg/kg)

Example:

0.1

50

1

1

5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:

Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

$Cdry$ = Concentration calculated as dry weight (mg/kg)

Example:

5

80

6.25

Example 6010 Calculations
Thermo Scientific IRIS Advantage

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system in ug/mL (ppm)

Vf = Final volume (mL)

Vi = Initial volume (mL)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/mL (mg/L)

Example:

0.1

50

50

1

0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (mg/L) (ppm)

Vf = Final volume (mL)

Vi = Initial weight (g)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/g (mg/kg)

Example:

0.1

50

1

1

5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:

Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

$Cdry$ = Concentration calculated as dry weight (mg/kg)

Example:

5

80

6.25

Example 6010 Calculations
Thermo Scientific iCAP 6500

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system in ug/mL (ppm)

Vf = Final volume (mL)

Vi = Initial volume (mL)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/mL (mg/L)

Example:

0.1

50

50

1

0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (mg/L) (ppm)

Vf = Final volume (mL)

Vi = Initial weight (g)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/g (mg/kg)

Example:

0.1

50

1

1

5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:

Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

$Cdry$ = Concentration calculated as dry weight (mg/kg)

Example:

5

80

6.25

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG301401
Analyst: VC
Spike Analyst: VC
Method: 3005A
Run Date: 05/04/2009 07:03
Hotblock Start Temp: 95.2 @ 06:50
Hotblock End Temp: 94.1 @ 10:50

SOP: ME401 Revision 13
Spike Solution: STD27613
Spike Witness: REK
HN03 Lot #: COA13771
HCL Lot #: COA13815
Digest tubes Lot #: COA13830

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG301401-02	BLANK	1	50 mL	50 mL		
2	WG301401-03	LCS	1	50 mL	50 mL	5 mL	
3	WG301401-01	REF	1	50 mL	50 mL		
4	L09050029-02	RS02	1	50 mL	50 mL		05/12/09
5	WG301401-04	MS	1	50 mL	50 mL	5 mL	
6	L09050029-04	MS02	1	50 mL	50 mL	5 mL	05/12/09
7	WG301401-05	MSD	1	50 mL	50 mL	5 mL	
8	L09050029-06	SD02	1	50 mL	50 mL	5 mL	05/12/09
9	L09050029-08	SAMP	1	50 mL	50 mL		05/12/09
10	L09050029-10	SAMP	1	50 mL	50 mL		05/12/09
11	L09050029-12	SAMP	1	50 mL	50 mL		05/12/09
12	L09050029-14	SAMP	1	50 mL	50 mL		05/12/09
13	L09050033-02	SAMP	1	50 mL	50 mL		05/15/09
14	L09050033-03	SAMP	1	50 mL	50 mL		05/15/09
15	L09050033-04	SAMP	1	50 mL	50 mL		05/15/09
16	L09050033-05	SAMP	1	50 mL	50 mL		05/15/09
17	L09050033-06	SAMP	1	50 mL	50 mL		05/15/09
18	L09050033-07	SAMP	1	50 mL	50 mL		05/15/09
19	L09050037-01	SAMP	1	50 mL	50 mL		05/08/09
20	L09050037-02	SAMP	1	50 mL	50 mL		05/08/09
21	L09050038-01	SAMP	1	50 mL	50 mL		05/08/09
22	L09050038-02	SAMP	1	50 mL	50 mL		05/08/09

Analyst: Vicki Collier

Reviewer: REK

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050709T2.2
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28641

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301749, 301760, 301762

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T2.050709.105551	WG301810-01	Calibration Point		1		05/07/09 10:55
2	T2.050709.110155	WG301810-02	Calibration Point		1		05/07/09 11:01
3	T2.050709.110801	WG301810-03	Calibration Point		1		05/07/09 11:08
4	T2.050709.111407	WG301810-04	Calibration Point		1		05/07/09 11:14
5	T2.050709.111956	WG301810-05	Calibration Point		1		05/07/09 11:19
6	T2.050709.112544	WG301810-06	Initial Calibration Verification		1		05/07/09 11:25
7	T2.050709.113134	WG301810-07	Initial Calib Blank		1		05/07/09 11:31
8	T2.050709.113740	WG301810-08	Interference Check		1		05/07/09 11:37
9	T2.050709.114341	WG301810-09	Interference Check		1		05/07/09 11:43
10	T2.050709.114935	WG301810-10	CCV		1		05/07/09 11:49
11	T2.050709.115525	WG301810-11	CCB		1		05/07/09 11:55
12	T2.050709.120131	WG301401-02	Method/Prep Blank	50/50	1		05/07/09 12:01
13	T2.050709.120735	WG301401-03	Laboratory Control S	50/50	1		05/07/09 12:07
14	T2.050709.121327	WG301401-01	Reference Sample		1	L09050029-02	05/07/09 12:13
15	T2.050709.121938	WG301401-04	Matrix Spike	50/50	1	L09050029-02	05/07/09 12:19
16	T2.050709.122537	WG301401-05	Matrix Spike Duplica	50/50	1	L09050029-02	05/07/09 12:25
17	T2.050709.123137	L09050029-08	MW-13-043009	50/50	1		05/07/09 12:31
18	T2.050709.123740	WG301711-01	Post Digestion Spike		1	L09050029-08	05/07/09 12:37
19	T2.050709.124334	WG301711-02	Serial Dilution		5	L09050029-08	05/07/09 12:43
20	T2.050709.124938	L09050037-01	SE-3037P	50/50	1		05/07/09 12:49
21	T2.050709.125540	L09050037-02	SE-3037F	50/50	1		05/07/09 12:55
22	T2.050709.130143	WG301810-12	CCV		1		05/07/09 13:01
23	T2.050709.130733	WG301810-13	CCB		1		05/07/09 13:07
24	T2.050709.131339	L09050038-01	SE-3026-P	50/50	1		05/07/09 13:13
25	T2.050709.131941	L09050038-02	SE-3026-F	50/50	1		05/07/09 13:19
26	T2.050709.132544	WG301401-01	Reference Sample		2	L09050029-02	05/07/09 13:25
27	T2.050709.133508	WG301401-01	Reference Sample		5	L09050029-02	05/07/09 13:35
28	T2.050709.134112	WG301401-04	Matrix Spike	50/50	5	L09050029-02	05/07/09 13:41
29	T2.050709.134713	WG301401-05	Matrix Spike Duplica	50/50	5	L09050029-02	05/07/09 13:47
30	T2.050709.135314	WG301810-14	CCV		1		05/07/09 13:53
31	T2.050709.135904	WG301810-15	CCB		1		05/07/09 13:59
32	T2.050709.140511	WG301287-02	Method/Prep Blank	5/50	1		05/07/09 14:05
33	T2.050709.141116	WG301287-03	Laboratory Control S	5/50	1		05/07/09 14:11
34	T2.050709.141709	WG301225-01	Fluid Blank		1		05/07/09 14:17
35	T2.050709.142313	L09040671-01	GM09020	5/50	1		05/07/09 14:23
36	T2.050709.142916	L09040671-02	GM09021	5/50	1		05/07/09 14:29
37	T2.050709.143518	L09040671-03	GM09022	5/50	1		05/07/09 14:35

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Maren Beery



Microbac Laboratories Inc. Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050709T2.2
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28641

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301749, 301760, 301762

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
38	T2.050709.144123	L09040671-05	GM09024	5/50	1		05/07/09 14:41
39	T2.050709.144727	L09040672-01	GM090001	5/50	1		05/07/09 14:47
40	T2.050709.145330	L09040673-01	GT090038	5/50	1		05/07/09 14:53
41	T2.050709.145935	WG301749-01	Post Digestion Spike		1	L09040673-01	05/07/09 14:59
42	T2.050709.150530	WG301810-16	CCV		1		05/07/09 15:05
43	T2.050709.151119	WG301810-17	CCB		1		05/07/09 15:11
44	T2.050709.151726	WG301749-02	Serial Dilution		5	L09040673-01	05/07/09 15:17
45	T2.050709.152332	L09040673-02	GT090039	5/50	1		05/07/09 15:23
46	T2.050709.152933	WG301287-01	Reference Sample		1	L09040673-03	05/07/09 15:29
47	T2.050709.153537	WG301287-04	Matrix Spike	5/50	1	L09040673-03	05/07/09 15:35
48	T2.050709.154128	WG301287-05	Matrix Spike Duplica	5/50	1	L09040673-03	05/07/09 15:41
49	T2.050709.154722	WG301810-18	CCV		1		05/07/09 15:47
50	T2.050709.155312	WG301810-19	CCB		1		05/07/09 15:53
51	T2.050709.155917	L09050029-10	MW-19-043009	50/50	1		05/07/09 15:59
52	T2.050709.160518	L09050029-12	PZ-01-043009	50/50	1		05/07/09 16:05
53	T2.050709.161123	L09050029-14	PZ-03-043009	50/50	1		05/07/09 16:11
54	T2.050709.161733	L09050033-02	SAR-MW832-003	50/50	1		05/07/09 16:17
55	T2.050709.162352	L09050033-03	SAR-MW844-003	50/50	1		05/07/09 16:23
56	T2.050709.163000	L09050033-04	SAR-MW823-003	50/50	1		05/07/09 16:30
57	T2.050709.163615	L09050033-05	SAR-MW843-003	50/50	1		05/07/09 16:36
58	T2.050709.164227	L09050033-06	SAR-MW840-003	50/50	1		05/07/09 16:42
59	T2.050709.164838	L09050033-07	SAR-MW841-003	50/50	1		05/07/09 16:48
60	T2.050709.165455	WG301810-20	CCV		1		05/07/09 16:54
61	T2.050709.170045	WG301810-21	CCB		1		05/07/09 17:00
62	T2.050709.170651	WG301745-01	Method/Prep Blank	1/50	1		05/07/09 17:06
63	T2.050709.171256	WG301745-02	Laboratory Control S	1/50	1		05/07/09 17:12
64	T2.050709.171849	WG301745-03	Laboratory Control S	1/50	1		05/07/09 17:18
65	T2.050709.172443	L09050113-01	C10732 CAT	1/50	1		05/07/09 17:24
66	T2.050709.173045	WG301760-01	Post Digestion Spike		1	L09050113-01	05/07/09 17:30
67	T2.050709.173640	WG301760-02	Serial Dilution		5	L09050113-01	05/07/09 17:36
68	T2.050709.174245	L09050114-01	C10863 PLATE	1/50	1		05/07/09 17:42
69	T2.050709.174850	L09050115-01	C10733 VASE	1/50	1		05/07/09 17:48
70	T2.050709.175454	WG301810-22	CCV		1		05/07/09 17:54
71	T2.050709.180044	WG301810-23	CCB		1		05/07/09 18:00
72	T2.050709.180652	WG301530-02	Method/Prep Blank	50/50	1		05/07/09 18:06
73	T2.050709.181257	WG301530-03	Laboratory Control S	50/50	1		05/07/09 18:12
74	T2.050709.181849	L09050044-02	BBLD-PIT-SSP-050109	50/50	1		05/07/09 18:18

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Maren Beery



Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050709T2.2
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28641

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301749, 301760, 301762

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
75	T2.050709.182507	L09050044-04	MW-01-050109	50/50	1		05/07/09 18:25
76	T2.050709.183110	L09050044-06	MW-03-050109	50/50	1		05/07/09 18:31
77	T2.050709.183712	L09050044-08	DUP-GW--050109	50/50	1		05/07/09 18:37
78	T2.050709.184313	L09050046-01	904-306		1		05/07/09 18:43
79	T2.050709.184917	L09050047-02	SAR-MW839-003	50/50	1		05/07/09 18:49
80	T2.050709.185543	L09050047-03	SAR-MW838-003	50/50	1		05/07/09 18:55
81	T2.050709.190153	L09050047-04	SAR-MW834-003	50/50	1		05/07/09 19:01
82	T2.050709.190821	WG301810-24	CCV		1		05/07/09 19:08
83	T2.050709.191410	WG301810-25	CCB		1		05/07/09 19:14
84	T2.050709.192017	L09050047-05	SAR-MW613-003	50/50	1		05/07/09 19:20
85	T2.050709.192629	L09050047-07	SAR-MW614-003	50/50	1		05/07/09 19:26
86	T2.050709.193241	L09050051-01	OHIO RIVER \#1	50/50	1		05/07/09 19:32
87	T2.050709.193914	WG301530-01	Reference Sample		1	L09050057-02	05/07/09 19:39
88	T2.050709.194515	WG301530-04	Matrix Spike	50/50	1	L09050057-02	05/07/09 19:45
89	T2.050709.195107	WG301530-05	Matrix Spike Duplica	50/50	1	L09050057-02	05/07/09 19:51
90	T2.050709.195658	L09050057-05	SAR-MW835-003	50/50	1		05/07/09 19:56
91	T2.050709.200308	WG301762-01	Post Digestion Spike		1	L09050057-05	05/07/09 20:03
92	T2.050709.200907	WG301762-02	Serial Dilution		5	L09050057-05	05/07/09 20:09
93	T2.050709.201510	L09050057-08	SAR-MW837-003	50/50	1		05/07/09 20:15
94	T2.050709.202121	WG301810-26	CCV		1		05/07/09 20:21
95	T2.050709.202711	WG301810-27	CCB		1		05/07/09 20:27
96	T2.050709.203318	L09050057-09	SAR-MW824-003	50/50	1		05/07/09 20:33
97	T2.050709.203935	WG301810-28	CCV		1		05/07/09 20:39
98	T2.050709.204525	WG301810-29	CCB		1		05/07/09 20:45

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Maren Beery



Microbac Laboratories Inc. Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050809T2.1
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28658

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301906, 301710, 301762, 301907

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T2.050809.112910	WG301912-01	Calibration Point		1		05/08/09 11:29
2	T2.050809.113514	WG301912-02	Calibration Point		1		05/08/09 11:35
3	T2.050809.114119	WG301912-03	Calibration Point		1		05/08/09 11:41
4	T2.050809.114725	WG301912-04	Calibration Point		1		05/08/09 11:47
5	T2.050809.115312	WG301912-05	Calibration Point		1		05/08/09 11:53
6	T2.050809.115902	WG301912-06	Initial Calibration Verification		1		05/08/09 11:59
7	T2.050809.120453	WG301912-07	Initial Calib Blank		1		05/08/09 12:04
8	T2.050809.121059	WG301912-08	Interference Check		1		05/08/09 12:10
9	T2.050809.121700	WG301912-09	Interference Check		1		05/08/09 12:17
10	T2.050809.122255	WG301912-10	CCV		1		05/08/09 12:22
11	T2.050809.122845	WG301912-11	CCB		1		05/08/09 12:28
12	T2.050809.123452	L09050029-10	MW-19-043009	50/50	1		05/08/09 12:34
13	T2.050809.124054	L09050029-12	PZ-01-043009	50/50	1		05/08/09 12:40
14	T2.050809.124657	L09050029-14	PZ-03-043009	50/50	100		05/08/09 12:46
15	T2.050809.125302	WG301843-02	Method/Prep Blank	50/50	1		05/08/09 12:53
16	T2.050809.125908	WG301843-03	Laboratory Control S	50/50	1		05/08/09 12:59
17	T2.050809.130502	L09050142-01	STORMWATER/OUTLET 00	50/50	1		05/08/09 13:05
18	T2.050809.131102	WG301906-01	Post Digestion Spike		1	L09050142-01	05/08/09 13:11
19	T2.050809.131656	WG301906-02	Serial Dilution		5	L09050142-01	05/08/09 13:16
20	T2.050809.132302	WG301912-12	CCV		1		05/08/09 13:23
21	T2.050809.132852	WG301912-13	CCB		1		05/08/09 13:28
22	T2.050809.133459	WG301843-01	Reference Sample		1	L09050142-02	05/08/09 13:34
23	T2.050809.134103	WG301843-04	Matrix Spike	50/50	1	L09050142-02	05/08/09 13:41
24	T2.050809.134654	WG301843-05	Matrix Spike Duplica	50/50	1	L09050142-02	05/08/09 13:46
25	T2.050809.135458	L09050140-01	INLET CHILLER	50/50	1		05/08/09 13:54
26	T2.050809.140057	WG301912-14	CCV		1		05/08/09 14:00
27	T2.050809.140648	WG301912-15	CCB		1		05/08/09 14:06
28	T2.050809.141351	WG301657-02	Method/Prep Blank	5/50	1		05/08/09 14:13
29	T2.050809.141952	WG301657-03	Laboratory Control S	5/50	1		05/08/09 14:19
30	T2.050809.142546	WG301604-01	Fluid Blank		1		05/08/09 14:25
31	T2.050809.143150	L09050056-01	BIOBAG SLUDGE	5/50	1		05/08/09 14:31
32	T2.050809.143752	L09050064-01	KA3104	5/50	1		05/08/09 14:37
33	T2.050809.144357	WG301710-03	Post Digestion Spike		1	L09050064-01	05/08/09 14:43
34	T2.050809.144952	WG301710-04	Serial Dilution		5	L09050064-01	05/08/09 14:49
35	T2.050809.145557	WG301657-01	Reference Sample		1	L09050064-03	05/08/09 14:55
36	T2.050809.150202	WG301657-04	Matrix Spike	5/50	1	L09050064-03	05/08/09 15:02
37	T2.050809.150758	WG301657-05	Matrix Spike Duplica	5/50	1	L09050064-03	05/08/09 15:07

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Maren Beery



Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050809T2.1
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28658

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301906, 301710, 301762, 301907

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
38	T2.050809.151354	WG301912-16	CCV		1		05/08/09 15:13
39	T2.050809.151945	WG301912-17	CCB		1		05/08/09 15:19
40	T2.050809.152552	WG301530-02	Method/Prep Blank	50/50	1		05/08/09 15:25
41	T2.050809.153157	WG301530-03	Laboratory Control S	50/50	1		05/08/09 15:31
42	T2.050809.153751	WG301530-01	Reference Sample		1	L09050057-02	05/08/09 15:37
43	T2.050809.154353	WG301530-04	Matrix Spike	50/50	1	L09050057-02	05/08/09 15:43
44	T2.050809.154947	WG301530-05	Matrix Spike Duplica	50/50	1	L09050057-02	05/08/09 15:49
45	T2.050809.155540	L09050057-05	SAR-MW835-003	50/50	100		05/08/09 15:55
46	T2.050809.160148	WG301762-01	Post Digestion Spike		100	L09050057-05	05/08/09 16:01
47	T2.050809.160744	WG301762-02	Serial Dilution		500	L09050057-05	05/08/09 16:07
48	T2.050809.161349	L09050046-01	904-306		100		05/08/09 16:13
49	T2.050809.161955	WG301912-18	CCV		1		05/08/09 16:19
50	T2.050809.162546	WG301912-19	CCB		1		05/08/09 16:25
51	T2.050809.163152	L09050044-02	BBLD-PIT-SSP-050109	50/50	100		05/08/09 16:31
52	T2.050809.163757	L09050044-04	MW-01-050109	50/50	1		05/08/09 16:37
53	T2.050809.164401	L09050044-06	MW-03-050109	50/50	100		05/08/09 16:44
54	T2.050809.165005	L09050044-08	DUP-GW--050109	50/50	100		05/08/09 16:50
55	T2.050809.165612	WG301912-20	CCV		1		05/08/09 16:56
56	T2.050809.170201	WG301912-21	CCB		1		05/08/09 17:02
57	T2.050809.170808	L09050135-02	MW#1	50/50	1		05/08/09 17:08
58	T2.050809.171410	L09050135-04	MW#2	50/50	1		05/08/09 17:14
59	T2.050809.172011	L09050135-06	MW#3	50/50	1		05/08/09 17:20
60	T2.050809.172614	L09050135-08	MW#4	50/50	1		05/08/09 17:26
61	T2.050809.173216	L09050135-10	MW#6	50/50	1		05/08/09 17:32
62	T2.050809.173818	L09050135-12	MW#7	50/50	1		05/08/09 17:38
63	T2.050809.174422	L09050135-14	FIELD BLANK	50/50	1		05/08/09 17:44
64	T2.050809.175029	L09050135-16	DUPLICATE	50/50	1		05/08/09 17:50
65	T2.050809.175632	L09050139-05	001/COMP.	50/50	1		05/08/09 17:56
66	T2.050809.180236	WG301912-22	CCV		1		05/08/09 18:02
67	T2.050809.180827	WG301912-23	CCB		1		05/08/09 18:08
68	T2.050809.181433	WG301842-02	Method/Prep Blank	5/50	1		05/08/09 18:14
69	T2.050809.182036	WG301842-03	Laboratory Control S	5/50	1		05/08/09 18:20
70	T2.050809.182630	WG301698-01	Fluid Blank		1		05/08/09 18:26
71	T2.050809.183234	WG301806-01	Fluid Blank		1		05/08/09 18:32
72	T2.050809.183838	L09050130-04	KA3161	5/50	1		05/08/09 18:38
73	T2.050809.184443	WG301907-01	Post Digestion Spike		1	L09050130-04	05/08/09 18:44
74	T2.050809.185037	WG301907-02	Serial Dilution		5	L09050130-04	05/08/09 18:50

Page: 2 Approved: May 11, 2009

Maren Beery



Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050809T2.1
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28658

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301906, 301710, 301762, 301907

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
75	T2.050809.185643	WG301842-01	Reference Sample		1	L09050130-05	05/08/09 18:56
76	T2.050809.190249	WG301842-04	Matrix Spike	5/50	1	L09050130-05	05/08/09 19:02
77	T2.050809.190844	WG301842-05	Matrix Spike Duplica	5/50	1	L09050130-05	05/08/09 19:08
78	T2.050809.191440	WG301912-24	CCV		1		05/08/09 19:14
79	T2.050809.192029	WG301912-25	CCB		1		05/08/09 19:20
80	T2.050809.192636	L09040699-01	WITCONATE 90		10		05/08/09 19:26
81	T2.050809.193242	L09050071-01	USED FLUE BRICK	5/50	1		05/08/09 19:32
82	T2.050809.193848	WG301912-26	CCV		1		05/08/09 19:38
83	T2.050809.194438	WG301912-27	CCB		1		05/08/09 19:44

Page: 3 Approved: May 11, 2009

Maren Beery



Microbac Laboratories Inc.

Data Checklist

Date: 07-MAY-2009

Analyst: EDA

Analyst: NA

Method: 6010B

Instrument: ICP-THERM02

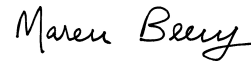
Curve Workgroup: 301810

Runlog ID: 27960

Analytical Workgroups: 301711, 301749, 301760, 301762

Calibration/Linearity	X
ICV/CCV	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	
Case Narrative	029, 033, 057, 044, 047
Client Forms	
Level X	
Level 3	029, 044
Level 4	033, 057, 047
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	EDA
Secondary Reviewer	MMB
Comments	

Primary Reviewer:


Secondary Reviewer:
08-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 08-MAY-2009

Analyst: EDA

Analyst: NA

Method: 6010B

Instrument: ICP-THERM02

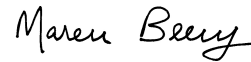
Curve Workgroup: 301912

Runlog ID: 27987

Analytical Workgroups: 301711, 301906, 301710, 301762, 301907

Calibration/Linearity	X
ICV/CCV	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	
Case Narrative	029, 044, 046, 057, 130
Client Forms	
Level X	
Level 3	029, 044
Level 4	057, 130
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	EDA
Secondary Reviewer	MMB
Comments	

Primary Reviewer:


Secondary Reviewer:
11-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: **6010B**

AAB#: **WG301711**

Login Number: **L09050029**

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-09R-043009	04/30/09	05/01/09	05/04/09	180	3.89	05/07/09	180	3.22	
MW-09R-043009-MS	04/30/09	05/01/09	05/04/09	180	3.89	05/07/09	180	3.22	
PZ-01-043009	04/30/09	05/01/09	05/04/09	180	3.88	05/08/09	180	4.23	
MW-13-043009	04/30/09	05/01/09	05/04/09	180	3.81	05/07/09	180	3.23	
MW-09R-043009-MSD	04/30/09	05/01/09	05/04/09	180	3.89	05/07/09	180	3.22	
PZ-03-043009	04/30/09	05/01/09	05/04/09	180	3.77	05/07/09	180	3.38	
PZ-03-043009	04/30/09	05/01/09	05/04/09	180	3.77	05/08/09	180	4.24	
MW-19-043009	04/30/09	05/01/09	05/04/09	180	3.75	05/08/09	180	4.23	
MW-09R-043009	04/30/09	05/01/09	05/04/09	180	3.89	05/07/09	180	3.27	
MW-09R-043009-MS	04/30/09	05/01/09	05/04/09	180	3.89	05/07/09	180	3.28	
MW-19-043009	04/30/09	05/01/09	05/04/09	180	3.75	05/07/09	180	3.37	
PZ-01-043009	04/30/09	05/01/09	05/04/09	180	3.88	05/07/09	180	3.38	
MW-09R-043009-MSD	04/30/09	05/01/09	05/04/09	180	3.89	05/07/09	180	3.28	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
 PDF File ID: 1386674
 Report generated 05/08/2009 14:31



METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: T2.050709.120131
 Prep Date: 05/04/09 07:03
 Analyzed Date: 05/07/09 12:01
 Analyst: EDA

Work Group: WG301711
 Blank Sample ID: WG301401-02
 Instrument ID: ICP-THERM02
 Method: 6010B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301401-03	T2.050709.120735	05/07/09 12:07	01
MW-09R-043009	L09050029-02	T2.050709.121327	05/07/09 12:13	01
MW-09R-043009-MS	L09050029-04	T2.050709.121938	05/07/09 12:19	01
MW-09R-043009-MSD	L09050029-06	T2.050709.122537	05/07/09 12:25	01
MW-13-043009	L09050029-08	T2.050709.123137	05/07/09 12:31	01
MW-09R-043009	L09050029-02	T2.050709.133508	05/07/09 13:35	DL01
MW-09R-043009-MS	L09050029-04	T2.050709.134112	05/07/09 13:41	DL01
MW-09R-043009-MSD	L09050029-06	T2.050709.134713	05/07/09 13:47	DL01
MW-19-043009	L09050029-10	T2.050709.155917	05/07/09 15:59	01
PZ-01-043009	L09050029-12	T2.050709.160518	05/07/09 16:05	01
PZ-03-043009	L09050029-14	T2.050709.161123	05/07/09 16:11	01
MW-19-043009	L09050029-10	T2.050809.123452	05/08/09 12:34	02
PZ-01-043009	L09050029-12	T2.050809.124054	05/08/09 12:40	02
PZ-03-043009	L09050029-14	T2.050809.124657	05/08/09 12:46	DL01

Report Name: BLANK_SUMMARY
 PDF File ID: 1386675
 Report generated 05/08/2009 14:31



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 **Prep Date:** 05/04/09 07:03 **Sample ID:** WG301401-02
Instrument ID: ICP-THERM02 **Run Date:** 05/07/09 12:01 **Prep Method:** 3005A
File ID: T2.050709.120131 **Analyst:** EDA **Method:** 6010B
Workgroup (AAB#): WG301711 **Matrix:** Water **Units:** mg/L
Contract #: _____ **Cal ID:** ICP-TH - 07-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Aluminum, Dissolved	0.0500	0.100	0.0500	1	U
Barium, Dissolved	0.00250	0.0100	0.00250	1	U
Beryllium, Dissolved	0.000500	0.00200	0.000500	1	U
Cadmium, Dissolved	0.000250	0.000500	0.000290	1	J
Calcium, Dissolved	0.100	0.200	0.100	1	U
Chromium, Dissolved	0.00250	0.00500	0.00250	1	U
Cobalt, Dissolved	0.00250	0.0200	0.00250	1	U
Copper, Dissolved	0.00250	0.00500	0.00250	1	U
Iron, Dissolved	0.0250	0.100	0.0250	1	U
Lead, Dissolved	0.00250	0.00500	0.00250	1	U
Magnesium, Dissolved	0.250	0.500	0.250	1	U
Manganese, Dissolved	0.00500	0.0100	0.00500	1	U
Nickel, Dissolved	0.00500	0.0400	0.00500	1	U
Potassium, Dissolved	0.250	1.00	0.250	1	U
Silver, Dissolved	0.00500	0.0100	0.00500	1	U
Sodium, Dissolved	0.250	0.500	0.250	1	U
Vanadium, Dissolved	0.00500	0.0100	0.00500	1	U
Zinc, Dissolved	0.00500	0.0200	0.00500	1	U

MDL Method Detection Limit
 RL Reporting/Practical Quantitation Limit
 ND Analyte Not detected at or above reporting limit
 * |Analyte concentration| > RL

Report Name: BLANK
 PDF ID: 1386676
 08-MAY-2009 14:31



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: <u>L09050029</u>	Run Date: <u>05/07/2009</u>	Sample ID: <u>WG301401-03</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>12:07</u>	Prep Method: <u>3005A</u>
File ID: <u>T2.050709.120735</u>	Analyst: <u>EDA</u>	Method: <u>6010B</u>
Workgroup (AAB#): <u>WG301711</u>	Matrix: <u>Water</u>	Units: <u>mg/L</u>
QC Key: <u>STD</u>	Lot#: <u>STD27613</u>	Cal ID: <u>ICP-TH - 07-MAY-09</u>

Analytes	Expected	Found	% Rec	LCS Limits			Q
Aluminum, Dissolved	5.00	5.20	104	85	-	115	
Barium, Dissolved	0.500	0.516	103	85	-	115	
Beryllium, Dissolved	0.0250	0.0257	103	85	-	115	
Cadmium, Dissolved	0.0250	0.0261	104	85	-	115	
Calcium, Dissolved	5.00	5.12	102	85	-	115	
Chromium, Dissolved	0.250	0.261	104	85	-	115	
Cobalt, Dissolved	0.100	0.104	104	85	-	115	
Copper, Dissolved	0.250	0.265	106	85	-	115	
Iron, Dissolved	2.00	2.09	104	85	-	115	
Lead, Dissolved	0.250	0.261	105	85	-	115	
Magnesium, Dissolved	5.00	5.14	103	85	-	115	
Manganese, Dissolved	0.250	0.265	106	85	-	115	
Nickel, Dissolved	0.250	0.266	106	85	-	115	
Potassium, Dissolved	25.0	25.0	100	85	-	115	
Silver, Dissolved	0.200	0.209	105	85	-	115	
Sodium, Dissolved	25.0	25.5	102	85	-	115	
Vanadium, Dissolved	0.500	0.517	103	85	-	115	
Zinc, Dissolved	0.500	0.515	103	85	-	115	

LCS - Modified 03/06/2008
 PDF File ID: 1386677
 Report generated: 05/08/2009 14:31



MS/MSD REPORT

Loginnum: L09050029Cal ID: ICP-THERM02- 07-MAY-09Worknum: WG301711Instrument ID: ICP-THERM02

Contract #:

Prep Method: 3005AParent ID: L09050029-02File ID: T2.050709.121327Dil: 1Method: 6010BSample ID: L09050029-04 MSFile ID: T2.050709.121938Dil: 1Matrix: WaterSample ID: L09050029-06 MSDFile ID: T2.050709.122537Dil: 1Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum, Dissolved	U	5.00	5.18	104	5.00	5.16	103	0.451	80 - 120	20	
Barium, Dissolved	0.0467	0.500	0.560	103	0.500	0.564	103	0.733	80 - 120	20	
Beryllium, Dissolved	U	0.0250	0.0242	96.9	0.0250	0.0243	97.3	0.412	80 - 120	20	
Cadmium, Dissolved	0.00172	0.0250	0.0275	103	0.0250	0.0276	104	0.327	80 - 120	20	
Calcium, Dissolved	261	5.00	266	99.4	5.00	273	235	2.52	80 - 120	20	*
Chromium, Dissolved	U	0.250	0.240	96	0.250	0.243	97	1.09	80 - 120	20	
Cobalt, Dissolved	U	0.100	0.0993	99.3	0.100	0.100	100	0.773	80 - 120	20	
Copper, Dissolved	U	0.250	0.251	101	0.250	0.253	101	0.804	80 - 120	20	
Iron, Dissolved	2.00	2.00	4.07	103	2.00	4.14	107	1.87	80 - 120	20	
Lead, Dissolved	0.00482	0.250	0.255	100	0.250	0.250	98	2.11	80 - 120	20	
Magnesium, Dissolved	95.7	5.00	100	88.6	5.00	102	131	2.10	80 - 120	20	*
Manganese, Dissolved	0.387	0.250	0.637	100	0.250	0.650	105	1.95	80 - 120	20	
Nickel, Dissolved	U	0.250	0.250	99.8	0.250	0.252	101	0.889	80 - 120	20	
Potassium, Dissolved	6.85	25.0	32.7	103	25.0	33.1	105	1.22	80 - 120	20	
Silver, Dissolved	U	0.200	0.199	99.3	0.200	0.201	100	1.03	80 - 120	20	
Vanadium, Dissolved	U	0.500	0.493	98.5	0.500	0.497	99.5	0.937	80 - 120	20	
Zinc, Dissolved	U	0.500	0.490	97.9	0.500	0.496	99.2	1.25	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 1386678

Report generated 05/08/2009 14:31

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MS/MSD REPORT

Loginnum: L09050029 Cal ID: ICP-THERM02- 07-MAY-09
 Instrument ID: ICP-THERM02 Contract #: _____
 Parent ID: L09050029-02 File ID: T2.050709.133508 Dil: 5
 Sample ID: L09050029-04 MS File ID: T2.050709.134112 Dil: 5
 Sample ID: L09050029-06 MSD File ID: T2.050709.134713 Dil: 5

Worknum: WG301711
 Prep Method: 3005A
 Method: 6010B
 Matrix: Water
 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Sodium, Dissolved	716	25.0	740	94.8	25.0	760	178	2.77	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L09050029

Cal ID: ICP-THERMO -

Worknum: WG301711

Instrument ID: ICP-THERMO

Contract #:

Method: 6010B

Parent ID: WG301401-01

File ID: T2.050709.121327

Dil: 1

Matrix: WATER

Sample ID: WG301401-04 MS

File ID: T2.050709.121938

Dil: 1

Units: mg/L

Sample ID: WG301401-05 MSD

File ID: T2.050709.122537

Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum, Dissolved	ND	5.00	5.18	104	5.00	5.16	103	0.451	80 - 120	20	
Barium, Dissolved	0.0467	0.500	0.560	103	0.500	0.564	103	0.733	80 - 120	20	
Beryllium, Dissolved	ND	0.0250	0.0242	96.9	0.0250	0.0243	97.3	0.412	80 - 120	20	
Cadmium, Dissolved	0.00172	0.0250	0.0275	103	0.0250	0.0276	104	0.327	80 - 120	20	
Calcium, Dissolved	261	5.00	266	99.4	5.00	273	235	2.52	80 - 120	20	*
Chromium, Dissolved	ND	0.250	0.240	96.0	0.250	0.243	97.0	1.09	80 - 120	20	
Cobalt, Dissolved	ND	0.100	0.0993	99.3	0.100	0.100	100	0.773	80 - 120	20	
Copper, Dissolved	ND	0.250	0.251	101	0.250	0.253	101	0.804	80 - 120	20	
Iron, Dissolved	2.00	2.00	4.07	103	2.00	4.14	107	1.87	80 - 120	20	
Lead, Dissolved	0.00482	0.250	0.255	100	0.250	0.250	98.0	2.11	80 - 120	20	
Magnesium, Dissolved	95.7	5.00	100	88.6	5.00	102	131	2.10	80 - 120	20	*
Manganese, Dissolved	0.387	0.250	0.637	100	0.250	0.650	105	1.95	80 - 120	20	
Nickel, Dissolved	ND	0.250	0.250	99.8	0.250	0.252	101	0.889	80 - 120	20	
Potassium, Dissolved	6.85	25.0	32.7	103	25.0	33.1	105	1.22	80 - 120	20	
Silver, Dissolved	ND	0.200	0.199	99.3	0.200	0.201	100	1.03	80 - 120	20	
Vanadium, Dissolved	ND	0.500	0.493	98.5	0.500	0.497	99.5	0.937	80 - 120	20	
Zinc, Dissolved	ND	0.500	0.490	97.9	0.500	0.496	99.2	1.25	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 03/07/2008

PDF File ID: 1386679

Report generated 05/08/2009 14:31



MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L09050029 Cal ID: ICP-THERMO- Worknum: WG301711
 Instrument ID: ICP-THERMO Contract #: _____ Method: 6010B
 Parent ID: WG301401-01 File ID: T2.050709.133508 Dil: 5 Matrix: WATER
 Sample ID: WG301401-04 MS File ID: T2.050709.134112 Dil: 5 Units: mg/L
 Sample ID: WG301401-05 MSD File ID: T2.050709.134713 Dil: 5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Sodium, Dissolved	716	25.0	740	94.8	25.0	760	178	2.77	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

Microbac Laboratories Inc.
Serial Dilution Report

Login: L09050029 **Worknum:** WG301711
Instrument: ICP-THERMO2 **Method:** 6010B
Serial Dil: WG301711-02 **File ID:** T2.050709.124334 **Dil:** 5 **Units:** mg/L
Sample: L09050029-08 **File ID:** T2.050709.123137 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	ND	U	ND	U		
Barium	.104	X	.103	X	0.96	
Beryllium	ND	U	ND	U		
Cadmium	.00027	F	ND	U		
Calcium	117		116.5		0.43	
Chromium	ND	U	ND	U		
Cobalt	ND	U	ND	U		
Copper	ND	U	ND	U		
Iron	5.1		5.2		1.96	
Lead	ND	U	ND	U		
Magnesium	13		12.95		0.39	
Manganese	.232	X	.23	X	0.86	
Nickel	ND	U	ND	U		
Potassium	2.35	X	2.645	F	12.60	
Silver	ND	U	ND	U		
Sodium	35.5		35.3		0.56	
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.

F = Result is greater than or equal to MDL and less than the RL.

X = Result is greater than or equal to RL and less than 50 times the MDL.

E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008

PDF File ID: 1386672

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Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L09050029
Instrument ID: ICP-THERM02
Post Spike ID: WG301711-01
Sample ID: L09050029-08

Worknum: WG301711
Method: 6010B
Units: mg/L
Matrix: Water
File ID: T2.050709.123740 Dil: 1
File ID: T2.050709.123137 Dil: 1

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5.15		0	U	5	102.9	75 - 125	
BARIUM	0.606		0.104		.5	102.4	75 - 125	
BERYLLIUM	0.0256		0	U	.025	102.3	75 - 125	
CADMIUM	0.0265		0	F	.025	105.9	75 - 125	
CALCIUM	112		117		5	123.9	75 - 125	
CHROMIUM	0.256		0	U	.25	102.5	75 - 125	
COBALT	0.104		0	U	.1	104.4	75 - 125	
COPPER	0.265		0	U	.25	106.0	75 - 125	
IRON	6.69		5.10		2	104.7	75 - 125	
LEAD	0.265		0	U	.25	106.1	75 - 125	
MAGNESIUM	16.9		13.0		5	104.0	75 - 125	
MANGANESE	0.469		0.232		.25	104.1	75 - 125	
NICKEL	0.265		0	U	.25	106.1	75 - 125	
POTASSIUM	27.3		2.35		25	100.8	75 - 125	
SILVER	0.207		0	U	.2	103.5	75 - 125	
SODIUM	57.8		35.5		25	103.7	75 - 125	
VANADIUM	0.516		0	U	.5	103.1	75 - 125	
ZINC	0.514		0	U	.5	102.8	75 - 125	

N = % Recovery exceeds control limits

F = Result is between MDL and RL

U = Sample result is below MDL. A value of zero is used in the calculation

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L09050029	Workgroup (AAB#):	WG301711
Analytical Method:	6010B	Instrument ID:	ICP-THERMO2
ICAL Worknum:	WG301810	Initial Calibration Date:	07-MAY-2009 11:19

	WG301810-01		WG301810-02		WG301810-03		WG301810-04		WG301810-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000730	.1	0.000980	.2	0.00132	5	0.0276	10	0.0551	.999952	
BARIUM	0	0.00584	.01	0.0125	.02	0.0187	.5	0.655	1	1.31	.999993	
BERYLLIUM	0	-0.00158	.0005	0.000610	.001	0.00284	.025	0.205	.05	0.409	.999968	
CADMIUM	0	-0.000180	.0005	0.0000100	.001	0.0000800	.025	0.0102	.05	0.0205	.99874	
CALCIUM	0	-0.00211	.1	-0.00129	.2	-0.000310	5	0.0883	10	0.180	.999977	
CHROMIUM	0	0.000350	.005	0.00127	.01	0.00230	.25	0.100	.5	0.198	.999969	
COBALT	0	-0.0000300	.002	0.000330	.004	0.000700	.1	0.0334	.2	0.0664	.999947	
COPPER	0	0.000260	-1	0.000480	.01	0.000680	.25	0.0233	.5	0.0461	.999963	
IRON	0	-0.0000400	.04	0.000420	.08	0.000650	2	0.0312	4	0.0626	.999633	
LEAD	0	-0.0000700	.005	0.0000100	.01	0.0000900	.25	0.00773	.5	0.0153	.99996	
MAGNESIUM	0	0.0000300	.1	0.000230	.2	0.000410	5	0.0175	10	0.0352	.999958	
MANGANESE	0	-0.0000300	.005	0.000610	.01	0.000980	.25	0.0488	.5	0.0982	.999836	
NICKEL	0	-0.000280	.005	-0.0000600	.01	0.000130	.25	0.0186	.5	0.0368	.999848	
POTASSIUM	0	0.00270	.5	0.00599	1	0.00965	25	0.348	50	0.708	.999938	
SILVER	0	-0.000930	20	0.000550	.008	0.00191	.2	0.118	.4	0.234	.999746	
SODIUM	0	-0.00499	.5	0.0114	1	0.0275	25	1.60	50	3.24	.999988	
VANADIUM	0	-0.000550	.01	0.00378	.02	0.00793	.5	0.414	1	0.827	.999993	
ZINC	0	0.000190	.01	0.00186	.02	0.00362	.5	0.169	1	0.339	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	<u>L09050029</u>	Workgroup (AAB#):	<u>WG301711</u>
Analytical Method:	<u>6010B</u>	Instrument ID:	<u>ICP-THERMO2</u>
ICAL Worknum:	<u>WG301912</u>	Initial Calibration Date:	<u>08-MAY-2009 11:53</u>

	WG301912-01		WG301912-02		WG301912-03		WG301912-04		WG301912-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000570	.1	0.000760	.2	0.00102	5	0.0218	10	0.0427	.999943	
BARIUM	0	0.00426	.01	0.00969	.02	0.0148	.5	0.534	1	1.05	.999974	
BERYLLIUM	0	-0.00106	.0005	0.000450	.001	0.00206	.025	0.163	.05	0.321	.999958	
CADMIUM	0	-0.000110	.0005	-0.0000600	.001	0.0000700	.025	0.00832	.05	0.0165	.999709	
CALCIUM	0	-0.00177	.1	0.000410	.2	0.00107	5	0.0715	10	0.141	.990542	Q
CHROMIUM	0	0.000110	.005	0.00101	.01	0.00176	.25	0.0785	.5	0.154	.999892	
COBALT	0	-0.0000500	.002	0.000240	.004	0.000510	.1	0.0272	.2	0.0532	.999926	
COPPER	0	0.000210	-.1	0.000370	.01	0.000600	.25	0.0191	.5	0.0371	.999892	
IRON	0	-0.0000200	.04	0.000280	.08	0.000490	2	0.0252	4	0.0495	.999898	
LEAD	0	-0.0000700	.005	-0.0000300	.01	0.0000700	.25	0.00618	.5	0.0121	.99966	
MAGNESIUM	0	-0.0000100	.1	0.000180	.2	0.000270	5	0.0142	10	0.0280	.999788	
MANGANESE	0	-0.0000400	.005	0.000390	.01	0.000690	.25	0.0388	.5	0.0766	.999953	
NICKEL	0	-0.000180	.005	-0.0000200	.01	0.000130	.25	0.0150	.5	0.0296	.99996	
POTASSIUM	0	-0.000830	.5	0.00243	1	0.00559	25	0.313	50	0.625	.999995	
SILVER	0	-0.000490	20	0.000430	.008	0.00152	.2	0.0940	.4	0.185	.999943	
SODIUM	0	-0.00188	.5	0.0110	1	0.0239	25	1.30	50	2.58	.999989	
VANADIUM	0	-0.000400	.01	0.00299	.02	0.00656	.5	0.332	1	0.654	.999967	
ZINC	0	0.000120	.01	0.00157	.02	0.00296	.5	0.138	1	0.271	.999936	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: <u>L09050029</u>	Run Date: <u>05/07/2009</u>	Sample ID: <u>WG301810-07</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>11:31</u>	Method: <u>6010</u>
File ID: <u>T2.050709.113134</u>	Analyst: <u>EDA</u>	Units: <u>mg/L</u>
Workgroup (AAB#): <u>WG301711</u>	Cal ID: <u>ICP-THERM - 07-MAY-09</u>	
Matrix: <u>WATER</u>		

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.05	.1	.05	U
BARIUM	.0025	.01	.0025	U
BERYLLIUM	.0005	.002	.0005	U
CADMIUM	.00025	.0005	.00026	F
CALCIUM	.1	.2	.1	U
CHROMIUM	.0025	.005	.0025	U
COBALT	.0025	.02	.0025	U
COPPER	.0025	.005	.0025	U
IRON	.025	.1	.025	U
LEAD	.0025	.005	.0025	U
MAGNESIUM	.25	.5	.25	U
MANGANESE	.005	.01	.005	U
NICKEL	.005	.04	.005	U
POTASSIUM	.25	1	.25	U
SILVER	.005	.01	.005	U
SODIUM	.25	.5	.25	U
VANADIUM	.005	.01	.005	U
ZINC	.005	.02	.005	U

ICB - Modified 03/06/2008
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Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: <u>L09050029</u>	Run Date: <u>05/08/2009</u>	Sample ID: <u>WG301912-07</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>12:04</u>	Method: <u>6010</u>
File ID: <u>T2.050809.120453</u>	Analyst: <u>EDA</u>	Units: <u>mg/L</u>
Workgroup (AAB#): <u>WG301711</u>	Cal ID: <u>ICP-THERM - 08-MAY-09</u>	
Matrix: <u>WATER</u>		

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.05	.1	.05	U
BARIUM	.0025	.01	.0025	U
BERYLLIUM	.0005	.002	.0005	U
CADMIUM	.00025	.0005	.0003	F
CALCIUM	.1	.2	.1	U
CHROMIUM	.0025	.005	.0025	U
COBALT	.0025	.02	.0025	U
COPPER	.0025	.005	.0025	U
IRON	.025	.1	.025	U
LEAD	.0025	.005	.00379	F
MAGNESIUM	.25	.5	.25	U
MANGANESE	.005	.01	.005	U
NICKEL	.005	.04	.005	U
POTASSIUM	.25	1	.25	U
SILVER	.005	.01	.005	U
SODIUM	.25	.5	.25	U
VANADIUM	.005	.01	.005	U
ZINC	.005	.02	.005	U

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029	Run Date: 05/07/2009	Sample ID: WG301810-11
Instrument ID: ICP-THERM02	Run Time: 11:55	Method: 6010B
File ID: T2.050709.115525	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029	Run Date: 05/07/2009	Sample ID: WG301810-13
Instrument ID: ICP-THERM02	Run Time: 13:07	Method: 6010B
File ID: T2.050709.130733	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029	Run Date: 05/07/2009	Sample ID: WG301810-15
Instrument ID: ICP-THERM02	Run Time: 13:59	Method: 6010B
File ID: T2.050709.135904	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029	Run Date: 05/07/2009	Sample ID: WG301810-19
Instrument ID: ICP-THERM02	Run Time: 15:53	Method: 6010B
File ID: T2.050709.155312	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	-0.0551	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000390	F
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029	Run Date: 05/07/2009	Sample ID: WG301810-21
Instrument ID: ICP-THERM02	Run Time: 17:00	Method: 6010B
File ID: T2.050709.170045	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	-0.0808	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.534	*
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029	Run Date: 05/08/2009	Sample ID: WG301912-11
Instrument ID: ICP-THERM02	Run Time: 12:28	Method: 6010B
File ID: T2.050809.122845	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029	Run Date: 05/08/2009	Sample ID: WG301912-13
Instrument ID: ICP-THERM02	Run Time: 13:28	Method: 6010B
File ID: T2.050809.132852	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1386687
Report generated 05/08/2009 14:33



Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
 (Alternate Source)

Login Number: <u>L09050029</u>	Run Date: <u>05/07/2009</u>	Sample ID: <u>WG301810-06</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>11:25</u>	Method: <u>6010B</u>
File ID: <u>T2.050709.112544</u>	Analyst: <u>EDA</u>	Units: <u>mg/L</u>
Workgroup (AAB#): <u>WG301711</u>	Cal ID: <u>ICP-TH - 07-MAY-09</u>	
QC Key: <u>STD</u>		

Analyte	Expected	Found	%REC	LIMITS	Q
Aluminum	10	10.1	101	90 - 110	
Barium	1	1.01	101	90 - 110	
Beryllium	.05	0.0509	102	90 - 110	
Cadmium	.05	0.0508	102	90 - 110	
Calcium	10	10.1	101	90 - 110	
Chromium	.5	0.516	103	90 - 110	
Cobalt	.2	0.205	103	90 - 110	
Copper	.5	0.513	103	90 - 110	
Iron	4	4.10	103	90 - 110	
Lead	.5	0.507	101	90 - 110	
Magnesium	10	10.3	103	90 - 110	
Manganese	.5	0.515	103	90 - 110	
Nickel	.5	0.515	103	90 - 110	
Potassium	50	50.1	100	90 - 110	
Silver	.4	0.406	102	90 - 110	
Sodium	50	50.9	102	90 - 110	
Vanadium	1	1.02	102	90 - 110	
Zinc	1	1.02	102	90 - 110	

* Exceeds LIMITS Limit



Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
 (Alternate Source)

Login Number: <u>L09050029</u>	Run Date: <u>05/08/2009</u>	Sample ID: <u>WG301912-06</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>11:59</u>	Method: <u>6010B</u>
File ID: <u>T2.050809.115902</u>	Analyst: <u>EDA</u>	Units: <u>mg/L</u>
Workgroup (AAB#): <u>WG301711</u>	Cal ID: <u>ICP-TH - 08-MAY-09</u>	
QC Key: <u>STD</u>		

Analyte	Expected	Found	%REC	LIMITS	Q
Aluminum	10	10.1	101	90 - 110	
Barium	1	1.00	100	90 - 110	
Beryllium	.05	0.0498	99.5	90 - 110	
Cadmium	.05	0.0505	101	90 - 110	
Calcium	10	9.71	97.1	90 - 110	
Chromium	.5	0.505	101	90 - 110	
Cobalt	.2	0.204	102	90 - 110	
Copper	.5	0.511	102	90 - 110	
Iron	4	4.05	101	90 - 110	
Lead	.5	0.502	100	90 - 110	
Magnesium	10	10.1	101	90 - 110	
Manganese	.5	0.516	103	90 - 110	
Nickel	.5	0.511	102	90 - 110	
Potassium	50	49.8	99.5	90 - 110	
Silver	.4	0.401	100	90 - 110	
Sodium	50	50.1	100	90 - 110	
Vanadium	1	0.994	99.4	90 - 110	
Zinc	1	1.01	101	90 - 110	

* Exceeds LIMITS Limit



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029	Run Date: 05/07/2009	Sample ID: WG301810-10
Instrument ID: ICP-THERM02	Run Time: 11:49	Method: 6010B
File ID: T2.050709.114935	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analyte	Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum	10.0	10.2	mg/L	102	90 - 110		
Barium	1.00	1.01	mg/L	101	90 - 110		
Beryllium	0.0500	0.0505	mg/L	101	90 - 110		
Cadmium	0.0500	0.0511	mg/L	102	90 - 110		
Calcium	10.0	10.1	mg/L	101	90 - 110		
Chromium	0.500	0.513	mg/L	103	90 - 110		
Cobalt	0.200	0.205	mg/L	103	90 - 110		
Copper	0.500	0.513	mg/L	103	90 - 110		
Iron	4.00	4.09	mg/L	102	90 - 110		
Lead	0.500	0.515	mg/L	103	90 - 110		
Magnesium	10.0	10.2	mg/L	102	90 - 110		
Manganese	0.500	0.511	mg/L	102	90 - 110		
Nickel	0.500	0.520	mg/L	104	90 - 110		
Potassium	50.0	50.0	mg/L	100	90 - 110		
Silver	0.400	0.406	mg/L	101	90 - 110		
Sodium	50.0	50.8	mg/L	102	90 - 110		
Vanadium	1.00	1.00	mg/L	100	90 - 110		
Zinc	1.00	1.01	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029	Run Date: 05/07/2009	Sample ID: WG301810-12
Instrument ID: ICP-THERM02	Run Time: 13:01	Method: 6010B
File ID: T2.050709.130143	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analyte	Expected	Found	UNITS	%REC	LIMITS	Q
Aluminum	10.0	10.1	mg/L	101	90 - 110	
Barium	1.00	1.01	mg/L	101	90 - 110	
Beryllium	0.0500	0.0506	mg/L	101	90 - 110	
Cadmium	0.0500	0.0510	mg/L	102	90 - 110	
Calcium	10.0	9.97	mg/L	99.7	90 - 110	
Chromium	0.500	0.513	mg/L	103	90 - 110	
Cobalt	0.200	0.205	mg/L	102	90 - 110	
Copper	0.500	0.512	mg/L	102	90 - 110	
Iron	4.00	4.06	mg/L	101	90 - 110	
Lead	0.500	0.511	mg/L	102	90 - 110	
Magnesium	10.0	10.2	mg/L	102	90 - 110	
Manganese	0.500	0.517	mg/L	103	90 - 110	
Nickel	0.500	0.516	mg/L	103	90 - 110	
Potassium	50.0	49.6	mg/L	99.2	90 - 110	
Silver	0.400	0.407	mg/L	102	90 - 110	
Sodium	50.0	50.5	mg/L	101	90 - 110	
Vanadium	1.00	1.01	mg/L	101	90 - 110	
Zinc	1.00	1.01	mg/L	101	90 - 110	

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029	Run Date: 05/07/2009	Sample ID: WG301810-14
Instrument ID: ICP-THERM02	Run Time: 13:53	Method: 6010B
File ID: T2.050709.135314	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.99	mg/L	99.9	90 - 110		
Barium		1.00	0.998	mg/L	99.8	90 - 110		
Beryllium		0.0500	0.0493	mg/L	98.7	90 - 110		
Cadmium		0.0500	0.0511	mg/L	102	90 - 110		
Calcium		10.0	9.86	mg/L	98.6	90 - 110		
Chromium		0.500	0.504	mg/L	101	90 - 110		
Cobalt		0.200	0.204	mg/L	102	90 - 110		
Copper		0.500	0.507	mg/L	101	90 - 110		
Iron		4.00	4.03	mg/L	101	90 - 110		
Lead		0.500	0.515	mg/L	103	90 - 110		
Magnesium		10.0	10.0	mg/L	100	90 - 110		
Manganese		0.500	0.506	mg/L	101	90 - 110		
Nickel		0.500	0.516	mg/L	103	90 - 110		
Potassium		50.0	49.3	mg/L	98.5	90 - 110		
Silver		0.400	0.398	mg/L	99.4	90 - 110		
Sodium		50.0	50.1	mg/L	100	90 - 110		
Vanadium		1.00	0.982	mg/L	98.2	90 - 110		
Zinc		1.00	0.992	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029	Run Date: 05/07/2009	Sample ID: WG301810-18
Instrument ID: ICP-THERM02	Run Time: 15:47	Method: 6010B
File ID: T2.050709.154722	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analyte	Expected	Found	UNITS	%REC	LIMITS	Q
Aluminum	10.0	10.1	mg/L	101	90 - 110	
Barium	1.00	1.01	mg/L	101	90 - 110	
Beryllium	0.0500	0.0508	mg/L	102	90 - 110	
Cadmium	0.0500	0.0508	mg/L	102	90 - 110	
Calcium	10.0	10.0	mg/L	100	90 - 110	
Chromium	0.500	0.514	mg/L	103	90 - 110	
Cobalt	0.200	0.204	mg/L	102	90 - 110	
Copper	0.500	0.509	mg/L	102	90 - 110	
Iron	4.00	4.06	mg/L	102	90 - 110	
Lead	0.500	0.510	mg/L	102	90 - 110	
Magnesium	10.0	10.1	mg/L	101	90 - 110	
Manganese	0.500	0.510	mg/L	102	90 - 110	
Nickel	0.500	0.515	mg/L	103	90 - 110	
Potassium	50.0	50.1	mg/L	100	90 - 110	
Silver	0.400	0.406	mg/L	102	90 - 110	
Sodium	50.0	50.8	mg/L	102	90 - 110	
Vanadium	1.00	1.01	mg/L	101	90 - 110	
Zinc	1.00	0.999	mg/L	99.9	90 - 110	

* Exceeds LIMITS Criteria



CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/07/2009 Sample ID: WG301810-20
 Instrument ID: ICP-THERM02 Run Time: 16:54 Method: 6010B
 File ID: T2.050709.165455 Analyst: EDA QC Key: STD
 Workgroup (AAB#): WG301711 Cal ID: ICP-TH - 07-MAY-09
 Matrix: WATER

Analyte	Expected	Found	UNITS	%REC	LIMITS	Q
Aluminum	10.0	9.97	mg/L	99.7	90 - 110	
Barium	1.00	1.01	mg/L	101	90 - 110	
Beryllium	0.0500	0.0498	mg/L	99.5	90 - 110	
Cadmium	0.0500	0.0511	mg/L	102	90 - 110	
Calcium	10.0	10.1	mg/L	101	90 - 110	
Chromium	0.500	0.502	mg/L	100	90 - 110	
Cobalt	0.200	0.205	mg/L	103	90 - 110	
Copper	0.500	0.517	mg/L	103	90 - 110	
Iron	4.00	4.07	mg/L	102	90 - 110	
Lead	0.500	0.509	mg/L	102	90 - 110	
Magnesium	10.0	10.1	mg/L	101	90 - 110	
Manganese	0.500	0.505	mg/L	101	90 - 110	
Nickel	0.500	0.515	mg/L	103	90 - 110	
Potassium	50.0	50.0	mg/L	100	90 - 110	
Silver	0.400	0.399	mg/L	99.8	90 - 110	
Sodium	50.0	51.5	mg/L	103	90 - 110	
Vanadium	1.00	0.994	mg/L	99.4	90 - 110	
Zinc	1.00	1.01	mg/L	101	90 - 110	

* Exceeds LIMITS Criteria

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029	Run Date: 05/08/2009	Sample ID: WG301912-10
Instrument ID: ICP-THERM02	Run Time: 12:22	Method: 6010B
File ID: T2.050809.122255	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Barium		1.00	0.996	mg/L	99.6	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.3	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Calcium		10.0	9.72	mg/L	97.2	90 - 110		
Chromium		0.500	0.503	mg/L	101	90 - 110		
Cobalt		0.200	0.200	mg/L	100	90 - 110		
Copper		0.500	0.503	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	101	90 - 110		
Lead		0.500	0.498	mg/L	99.6	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Manganese		0.500	0.506	mg/L	101	90 - 110		
Nickel		0.500	0.501	mg/L	100	90 - 110		
Potassium		50.0	49.4	mg/L	98.8	90 - 110		
Silver		0.400	0.398	mg/L	99.6	90 - 110		
Sodium		50.0	50.1	mg/L	100	90 - 110		
Vanadium		1.00	0.993	mg/L	99.3	90 - 110		
Zinc		1.00	0.995	mg/L	99.5	90 - 110		

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029	Run Date: 05/08/2009	Sample ID: WG301912-12
Instrument ID: ICP-THERM02	Run Time: 13:23	Method: 6010B
File ID: T2.050809.132302	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301711	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.89	mg/L	98.9	90 - 110		
Barium		1.00	0.991	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Calcium		10.0	9.68	mg/L	96.8	90 - 110		
Chromium		0.500	0.501	mg/L	100	90 - 110		
Cobalt		0.200	0.201	mg/L	100	90 - 110		
Copper		0.500	0.509	mg/L	102	90 - 110		
Iron		4.00	4.02	mg/L	101	90 - 110		
Lead		0.500	0.493	mg/L	98.7	90 - 110		
Magnesium		10.0	10.0	mg/L	100	90 - 110		
Manganese		0.500	0.504	mg/L	101	90 - 110		
Nickel		0.500	0.499	mg/L	99.9	90 - 110		
Potassium		50.0	49.2	mg/L	98.4	90 - 110		
Silver		0.400	0.396	mg/L	99.1	90 - 110		
Sodium		50.0	49.8	mg/L	99.6	90 - 110		
Vanadium		1.00	0.993	mg/L	99.3	90 - 110		
Zinc		1.00	1.01	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L09050029
Instrument ID: ICP-THERMO2
Sol. A : WG301810-08
Sol. AB : WG301810-09

File ID: T2.050709.113740
File ID: T2.050709.114341

Workgroup (AAB#): WG301711
Method: 6010B
Units: mg/L
Matrix: Water

ANALYTE	Sol. A			Sol. AB			Q
	True	Found	%Recovery	True	Found	%Recovery	
Aluminum	250	251	100	250	261	104	
Barium	NS	-0.000350	NS	0.250	0.256	102	
Beryllium	NS	0.0000400	NS	0.250	0.248	99.2	
Cadmium	NS	0.000100	NS	0.500	0.504	101	
Calcium	250	248	99.2	250	259	104	
Chromium	NS	0.00199	NS	0.250	0.243	97.2	
Cobalt	NS	0.00110	NS	0.250	0.242	96.8	
Copper	NS	0.00140	NS	0.250	0.249	99.6	
Iron	100	97.7	97.7	100	102	102	
Lead	NS	-0.000330	NS	0.500	0.493	98.6	
Magnesium	250	246	98.4	250	257	103	
Manganese	NS	-0.00152	NS	0.250	0.253	101	
Nickel	NS	-0.000640	NS	0.500	0.488	97.6	
Potassium	NS	-0.0145	NS	5.00	5.06	101	
Silver	NS	0.000590	NS	0.500	0.494	98.8	
Sodium	NS	0.0192	NS	5.00	5.22	104	
Vanadium	NS	0.000970	NS	0.250	0.247	98.8	
Zinc	NS	-0.00478	NS	0.500	0.474	94.8	

NS = Not spiked

* = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.

= Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L09050029
Instrument ID: ICP-THERMO2
Sol. A : WG301912-08
Sol. AB : WG301912-09

File ID: T2.050809.121059
File ID: T2.050809.121700

Workgroup (AAB#): WG301711
Method: 6010B
Units: mg/L
Matrix: Water

ANALYTE	Sol. A			Sol. AB			Q
	True	Found	%Recovery	True	Found	%Recovery	
Aluminum	250	248	99.2	250	253	101	
Barium	NS	-0.0000100	NS	0.250	0.251	100	
Beryllium	NS	0.0000100	NS	0.250	0.243	97.2	
Cadmium	NS	0.000150	NS	0.500	0.492	98.4	
Calcium	250	243	97.2	250	246	98.4	
Chromium	NS	0.00340	NS	0.250	0.239	95.6	
Cobalt	NS	0.00128	NS	0.250	0.238	95.2	
Copper	NS	0.00150	NS	0.250	0.245	98.0	
Iron	100	97.6	97.6	100	99.2	99.2	
Lead	NS	0.000880	NS	0.500	0.482	96.4	
Magnesium	250	247	98.8	250	249	99.6	
Manganese	NS	-0.000880	NS	0.250	0.248	99.2	
Nickel	NS	0.000220	NS	0.500	0.477	95.4	
Potassium	NS	0.00794	NS	5.00	5.04	101	
Silver	NS	-0.000540	NS	0.500	0.482	96.4	
Sodium	NS	-0.00198	NS	5.00	5.15	103	
Vanadium	NS	0.00126	NS	0.250	0.242	96.8	
Zinc	NS	-0.00374	NS	0.500	0.466	93.2	

NS = Not spiked

*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**

= Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050029
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	AL	AS	B	BA	BE
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0.0000210	0	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	0.00250	0	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0.000249	0	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	-0.0000300	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	-0.0000120	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0.0000420	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 1386681
Report generated: 05/08/2009 14:31



Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050029
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	CA	CO	CR	CU	FE
ALUMINUM	308.20	0	-0.000820	0	0	0
ANTIMONY	206.80	0	0	0.00950	0	0.0000560
ARSENIC	189.00	0	0	0.000490	0	-0.0000120
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0.00343	0	0	-0.000619
CADMIUM	228.80	0	0	0	0	0.0000220
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0.0000220
COBALT	228.60	0	0	0.000108	0	0
COPPER	224.70	0	0.0000770	0	0	0.000480
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	-0.0000930	-0.000172	0.000809	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	-0.0000920	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0.000100	0	0	0.0000320
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0.0000140	0	0	0	0
THALLIUM	190.80	0	0.00397	0.000276	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.0000300
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 1386681
Report generated: 05/08/2009 14:31



Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050029
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	LI	MG	MN	MO	NA
ALUMINUM	308.20	0	0	0	0.0153	0
ANTIMONY	206.80	0	0	0	0.000670	0
ARSENIC	189.00	0	0	0	0.00109	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	-0.00169	0
CADMIUM	228.80	0	0	0	0.0000220	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0.000160	0	0
COBALT	228.60	0	0	0	-0.000983	0
COPPER	224.70	0	0	0	0.00274	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0	0	-0.00183	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	-0.00190	-0.0110	0
MANGANESE	257.60	0	0.0000190	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0.000156	0
SILICON	212.40	0	0	0	0.0187	0
SILVER	328.00	0	0	0	-0.0000440	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	-0.000153	0
VANADIUM	292.40	0	0	0	-0.00778	0
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
 PDF File ID: 1386681
 Report generated: 05/08/2009 14:31



Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050029
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	NI	SB	SN	SR	TI
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	-0.00840	0	-0.000990
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	-0.000128	0	0	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0.0000550
COBALT	228.60	0.000175	0	0	0	0.00188
COPPER	224.70	-0.0120	0	0	0	0.000269
IRON	261.20	0	0	0	0	0
LEAD	220.30	0.000110	0	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	-0.00290
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	-0.00620
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	-0.00170
TIN	189.90	0	0	0	0	-0.00220
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0.000824
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 1386681
Report generated: 05/08/2009 14:31



Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050029
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	V	ZN
ALUMINUM	308.20	0.00300	0
ANTIMONY	206.80	-0.00438	0
ARSENIC	189.00	0.000107	0
BARIUM	455.40	0	0
BERYLLIUM	313.00	0	0
BORON	249.70	0	0
CADMIUM	228.80	0.000102	0
CALCIUM	422.70	0	0
CHROMIUM	267.70	0	0
COBALT	228.60	0.0000200	0
COPPER	224.70	0	0
IRON	261.20	0	0
LEAD	220.30	-0.000126	0
LITHIUM	670.80	0	0
MAGNESIUM	279.10	0	0
MANGANESE	257.60	0	0
MOLYBDENUM	202.03	-0.000110	0
NICKEL	231.60	0	0
POTASSIUM	766.40	0	0
SELENIUM	196.00	0	0
SILICON	212.40	0	0
SILVER	328.00	-0.00617	0
SODIUM	589.50	0	0
STRONTIUM	407.80	0	0
THALLIUM	190.80	-0.0282	0
TIN	189.90	0	0
TITANIUM	337.30	0	0
VANADIUM	292.40	0	0
ZINC	206.20	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 1386681
Report generated: 05/08/2009 14:31



Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L09050029
Instrument ID: ICP-THERM02

Date: 03/19/2009
Method: 6010B

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	10.00	90.0
Arsenic	10.00	90.0
Barium	10.00	90.0
Beryllium	15.00	9.0
Boron	10.00	90.0
Cadmium	10.00	18.0
Calcium	10.00	900.0
Chromium	10.00	90.0
Cobalt	10.00	90.0
Copper	10.00	180.0
Iron	5.00	900.0
Lead	10.00	180.0
Lithium	10.00	90.0
Magnesium	15.00	900.0
Manganese	15.00	180.0
Molybdenum	10.00	18.0
Nickel	10.00	90.0
Potassium	10.00	315.0
Selenium	10.00	90.0
Silicon	10.00	90.0
Silver	5.00	9.0
Sodium	10.00	315.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	90.0
Titanium	15.00	90.0
Vanadium	10.00	90.0
Zinc	10.00	45.0

Comments:

All analytes passed acceptance criteria at the specified concentration.

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac Laboratories Inc.
METALS

Microbac Login No: L09050029

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 Calibrations: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Samples: 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.

MS/MSD: WG301578(6020) - Sample 02 was chosen by the client for MS/MSD analysis. Samples 04 (MS) and 06(MSD) met all acceptance criteria.

Serial Dilution/Post Digestion Spike: WG301578(6020) - All acceptance criteria were met.

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 hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: JYH

LABORATORY REPORT

L09050029

05/19/09 14:14

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-02	6020	1	01-MAY-09
MW-09R-043009-MS	L09050029-04	6020	1	01-MAY-09
MW-09R-043009-MSD	L09050029-06	6020	1	01-MAY-09
MW-13-043009	L09050029-08	6020	1	01-MAY-09
MW-19-043009	L09050029-10	6020	1	01-MAY-09
PZ-01-043009	L09050029-12	6020	1	01-MAY-09
PZ-03-043009	L09050029-14	6020	1	01-MAY-09



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-02**
Client ID: **MW-09R-043009**
Matrix: **Water**
Workgroup Number: **WG301578**
Collect Date: **04/30/2009 09:40**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **3015**
Analytical Method: **6020**
Analyst: **JYH**
Dilution: **1**
Units: **mg/L**

Instrument: **ELAN-ICP**
Prep Date: **05/04/2009 07:42**
Cal Date: **05/05/2009 12:10**
Run Date: **05/05/2009 14:37**
File ID: **EL.050509.143752**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0		U	0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.00630		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.00694		0.00100	0.000500
Thallium, Dissolved	7440-28-0		U	0.000200	0.0000500

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-04**
Client ID: **MW-09R-043009-MS**
Matrix: **Water**
Workgroup Number: **WG301578**
Collect Date: **04/30/2009 09:40**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **3015**
Analytical Method: **6020**
Analyst: **JYH**
Dilution: **1**
Units: **mg/L**

Instrument: **ELAN-ICP**
Prep Date: **05/04/2009 07:42**
Cal Date: **05/05/2009 12:10**
Run Date: **05/05/2009 14:44**
File ID: **EL.050509.144428**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0	0.0661		0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.0679		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.0586		0.00100	0.000500
Thallium, Dissolved	7440-28-0	0.0655		0.000200	0.0000500

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-06**
Client ID: **MW-09R-043009-MSD**
Matrix: **Water**
Workgroup Number: **WG301578**
Collect Date: **04/30/2009 09:40**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **3015**
Analytical Method: **6020**
Analyst: **JYH**
Dilution: **1**
Units: **mg/L**

Instrument: **ELAN-ICP**
Prep Date: **05/04/2009 07:42**
Cal Date: **05/05/2009 12:10**
Run Date: **05/05/2009 14:51**
File ID: **EL.050509.145103**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0	0.0649		0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.0659		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.0571		0.00100	0.000500
Thallium, Dissolved	7440-28-0	0.0646		0.000200	0.0000500

3 of 7



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-08**
 Client ID: **MW-13-043009**
 Matrix: **Water**
 Workgroup Number: **WG301578**
 Collect Date: **04/30/2009 11:35**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3015**
 Analytical Method: **6020**
 Analyst: **JYH**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ELAN-ICP**
 Prep Date: **05/04/2009 07:42**
 Cal Date: **05/05/2009 12:10**
 Run Date: **05/05/2009 14:57**
 File ID: **EL.050509.145739**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0		U	0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.00150		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.00174		0.00100	0.000500
Thallium, Dissolved	7440-28-0	0.0000688	J	0.000200	0.0000500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-10**
Client ID: **MW-19-043009**
Matrix: **Water**
Workgroup Number: **WG301578**
Collect Date: **04/30/2009 13:00**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **3015**
Analytical Method: **6020**
Analyst: **JYH**
Dilution: **1**
Units: **mg/L**

Instrument: **ELAN-ICP**
Prep Date: **05/04/2009 07:42**
Cal Date: **05/05/2009 12:10**
Run Date: **05/05/2009 15:04**
File ID: **EL.050509.150415**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0		U	0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.00548		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.00798		0.00100	0.000500
Thallium, Dissolved	7440-28-0		U	0.000200	0.0000500

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-12**
 Client ID: **PZ-01-043009**
 Matrix: **Water**
 Workgroup Number: **WG301578**
 Collect Date: **04/30/2009 09:57**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3015**
 Analytical Method: **6020**
 Analyst: **JYH**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ELAN-ICP**
 Prep Date: **05/04/2009 07:42**
 Cal Date: **05/05/2009 12:10**
 Run Date: **05/05/2009 15:10**
 File ID: **EL.050509.151052**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0		U	0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.00828		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.00452		0.00100	0.000500
Thallium, Dissolved	7440-28-0		U	0.000200	0.0000500

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-14**
 Client ID: **PZ-03-043009**
 Matrix: **Water**
 Workgroup Number: **WG301578**
 Collect Date: **04/30/2009 12:37**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3015**
 Analytical Method: **6020**
 Analyst: **JYH**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ELAN-ICP**
 Prep Date: **05/04/2009 07:42**
 Cal Date: **05/05/2009 12:10**
 Run Date: **05/05/2009 15:17**
 File ID: **EL.050509.151729**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0	0.000257	J	0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.0232		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.00307		0.00100	0.000500
Thallium, Dissolved	7440-28-0		U	0.000200	0.0000500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer ELAN 6100

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (ug/L)

Vf = Final volume

Vi = Initial volume

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in (ug/L)

Example:

0.1

100

40

1

0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (ug/L)

Vf = Final volume

Vi = Initial volume

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in (ug/kg)

Example:

0.1

200

0.5

1

40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:

Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

$Cdry$ = Concentration calculated as dry weight (ug/kg)

Example:

40

80

50

50 ug/kg = 0.050 mg/kg

Perkin Elmer ELAN ICP/MS

STANDARDS KEY

QC Std 1 - ICV

QC Std 2 - ICB

QC Std 3 - CRI - Soil

QC Std 4 - CRI - Water

QC Std 5 - ICSA

QC Std 6 - ICSAB

QC Std 7 - CCV

QC Std 8 - CCB

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.0004	0.05	0.1
Sb	10	0	0.0004	0.05	0.1
As	10	0	0.0004	0.05	0.1
Ba	10	0	0.0004	0.05	0.1
Be	10	0	0.0004	0.05	0.1
Ca	1000	0	0.04	5	10
Cd	10	0	0.0004	0.05	0.1
Cr	10	0	0.0004	0.05	0.1
Co	10	0	0.0004	0.05	0.1
Cu	10	0	0.0004	0.05	0.1
Fe	1000	0	0.04	5	10
Pb	10	0	0.0004	0.05	0.1
Mg	1000	0	0.04	5	10
Mn	10	0	0.0004	0.05	0.1
Ni	10	0	0.0004	0.05	0.1
K	1000	0	0.04	5	10
Se	10	0	0.0004	0.05	0.1
Ag	10	0	0.0004	0.05	0.1
Na	1000	0	0.04	5	10
Tl	10	0	0.0004	0.05	0.1
V	10	0	0.0004	0.05	0.1
Zn	10	0	0.0004	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG301408
Analyst: VC
Spike Analyst: VC
Run Date: 05/04/2009 07:42
Method: 3015

SOP: ME407 Revision 10
Spike Solution: STD30482
Spike Witness: REK
HN03 Lot #: COA13771
Digest tubes Lot #: COA13830

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG301408-03	BLANK	1	40 mL	100 mL	206.26 g	206.251 g		
2	WG301228-01	FBLK	18	40 mL	100 mL	208.157 g	208.14 g		
3	WG301408-04	LCS	1	40 mL	100 mL	206.343 g	206.323 g	.25 mL	
4	L09040689-03	SAMP	18	40 mL	100 mL	208.274 g	208.253 g		05/08/09
5	L09040689-05	SAMP	18	40 mL	100 mL	206.224 g	206.196 g		05/08/09
6	L09040689-07	SAMP	18	40 mL	100 mL	206.353 g	206.333 g		05/08/09
7	WG301408-01	REF	18	40 mL	100 mL	206.778 g	206.76 g		
8	L09040689-09	RS02	18	40 mL	100 mL	206.778 g	206.76 g		05/08/09
9	WG301408-05	MS	18	40 mL	100 mL	206.171 g	206.15 g	.25 mL	
10	L09040689-11	MS02	18	40 mL	100 mL	206.171 g	206.15 g	.25 mL	05/08/09
11	WG301408-06	MSD	18	40 mL	100 mL	205.946 g	205.924 g	.25 mL	
12	L09040689-13	SD02	18	40 mL	100 mL	205.946 g	205.924 g	.25 mL	05/08/09
13	WG301408-02	REF	1	40 mL	100 mL	206.192 g	206.179 g		
14	L09050029-02	RS02	1	40 mL	100 mL	206.192 g	206.179 g		05/12/09
15	WG301408-07	MS	1	40 mL	100 mL	206.381 g	206.357 g	.25 mL	
16	L09050029-04	MS02	1	40 mL	100 mL	206.381 g	206.357 g	.25 mL	05/12/09
17	WG301408-08	MSD	1	40 mL	100 mL	205.695 g	205.673 g	.25 mL	
18	L09050029-06	SD02	1	40 mL	100 mL	205.695 g	205.673 g	.25 mL	05/12/09
19	L09050029-08	SAMP	1	40 mL	100 mL	206.56 g	206.522 g		05/12/09
20	L09050029-10	SAMP	1	40 mL	100 mL	205.879 g	205.837 g		05/12/09
21	L09050029-12	SAMP	1	40 mL	100 mL	205.34 g	205.308 g		05/12/09
22	L09050029-14	SAMP	1	40 mL	100 mL	206.037 g	206.01 g		05/12/09

Analyst: Veeha Collier

Reviewer: REK

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ELAN-ICP Dataset: 050509A.REP
 Analyst1: JYH Analyst2: N/A
 Method: 6020 SOP: ME700 Rev: 5
 Maintenance Log ID: 28632

Calibration Std: STD32234 ICV/CCV Std: STD32127 Post Spike: STD27580
 ICSA: STD32228 ICSAB: STD32229 Int. Std: STD32010

Workgroups: 301578,301498

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	EL.050509.114747	Blank	Blank		1		05/05/09 11:47
2	EL.050509.115330	WG301766-01	Calibration Point		1		05/05/09 11:53
3	EL.050509.115913	WG301766-02	Calibration Point		1		05/05/09 11:59
4	EL.050509.120457	WG301766-03	Calibration Point		1		05/05/09 12:04
5	EL.050509.121042	WG301766-04	Calibration Point		1		05/05/09 12:10
6	EL.050509.121627	WG301766-05	Initial Calibration Verification		1		05/05/09 12:16
7	EL.050509.122322	WG301766-06	Initial Calib Blank		1		05/05/09 12:23
8	EL.050509.123017	WG301766-07	CRQL Check Solid		1		05/05/09 12:30
9	EL.050509.123716	WG301766-08	CRQL Check Water		1		05/05/09 12:37
10	EL.050509.124414	WG301766-09	Interference Check		1		05/05/09 12:44
11	EL.050509.125111	WG301766-10	Interference Check		1		05/05/09 12:51
12	EL.050509.125807	WG301766-11	CCV		1		05/05/09 12:58
13	EL.050509.130501	WG301766-12	CCB		1		05/05/09 13:05
14	EL.050509.131134	WG301408-03	Method/Prep Blank	40/100	1		05/05/09 13:11
15	EL.050509.131808	WG301228-01	Fluid Blank		1		05/05/09 13:18
16	EL.050509.132442	WG301408-04	Laboratory Control S	40/100	1		05/05/09 13:24
17	EL.050509.133117	WG301408-01	Reference Sample		1	L09040689-09	05/05/09 13:31
18	EL.050509.133752	WG301408-05	Matrix Spike	40/100	1	L09040689-09	05/05/09 13:37
19	EL.050509.134428	WG301408-06	Matrix Spike Duplica	40/100	1	L09040689-09	05/05/09 13:44
20	EL.050509.135104	L09040689-03	AV-OU7-SED-G3-042809	40/100	1		05/05/09 13:51
21	EL.050509.135740	L09040689-05	AV-OU7-SED-G2-042809	40/100	1		05/05/09 13:57
22	EL.050509.140416	WG301578-01	Post Digestion Spike		1	L09040689-05	05/05/09 14:04
23	EL.050509.141053	WG301578-02	Serial Dilution		5	L09040689-05	05/05/09 14:10
24	EL.050509.141750	WG301766-13	CCV		1		05/05/09 14:17
25	EL.050509.142445	WG301766-14	CCB		1		05/05/09 14:24
26	EL.050509.143118	L09040689-07	AV-OU7-SED-G2-D-042809	40/100	1		05/05/09 14:31
27	EL.050509.143752	WG301408-02	Reference Sample		1	L09050029-02	05/05/09 14:37
28	EL.050509.144428	WG301408-07	Matrix Spike	40/100	1	L09050029-02	05/05/09 14:44
29	EL.050509.145103	WG301408-08	Matrix Spike Duplica	40/100	1	L09050029-02	05/05/09 14:51
30	EL.050509.145739	L09050029-08	MW-13-043009	40/100	1		05/05/09 14:57
31	EL.050509.150415	L09050029-10	MW-19-043009	40/100	1		05/05/09 15:04
32	EL.050509.151052	L09050029-12	PZ-01-043009	40/100	1		05/05/09 15:10
33	EL.050509.151729	L09050029-14	PZ-03-043009	40/100	1		05/05/09 15:17
34	EL.050509.152426	WG301766-15	CCV		1		05/05/09 15:24
35	EL.050509.153120	WG301766-16	CCB		1		05/05/09 15:31
36	EL.050509.160038	IDL1	IDL1		1		05/05/09 16:00
37	EL.050509.160715	IDL2	IDL2		1		05/05/09 16:07

Page: 1 Approved: May 07, 2009

Maren Beery



Microbac Laboratories Inc. Instrument Run Log

Instrument: ELAN-ICP Dataset: 050509A.REP
 Analyst1: JYH Analyst2: N/A
 Method: 6020 SOP: ME700 Rev: 5
 Maintenance Log ID: 28632

Calibration Std: STD32234 ICV/CCV Std: STD32127 Post Spike: STD27580
 ICSA: STD32228 ICSAB: STD32229 Int. Std: STD32010

Workgroups: 301578,301498

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
38	EL.050509.161351	IDL3	IDL3		1		05/05/09 16:13
39	EL.050509.162028	IDL4	IDL4		1		05/05/09 16:20
40	EL.050509.162706	IDL5	IDL5		1		05/05/09 16:27
41	EL.050509.163343	IDL6	IDL6		1		05/05/09 16:33
42	EL.050509.164020	IDL7	IDL7		1		05/05/09 16:40
43	EL.050509.164715	WG301766-17	CCV		1		05/05/09 16:47
44	EL.050509.165409	WG301766-18	CCB		1		05/05/09 16:54
45	EL.050509.170043	WG300748-02	Method/Prep Blank	40/100	1		05/05/09 17:00
46	EL.050509.170718	WG300748-03	Laboratory Control S	40/100	1		05/05/09 17:07
47	EL.050509.171353	WG300748-01	Reference Sample		1	L09040610-22	05/05/09 17:13
48	EL.050509.172029	WG300748-04	Matrix Spike	40/100	1	L09040610-22	05/05/09 17:20
49	EL.050509.172705	WG300748-05	Matrix Spike Duplica	40/100	1	L09040610-22	05/05/09 17:27
50	EL.050509.173341	L09040610-02	8714 P	40/100	1		05/05/09 17:33
51	EL.050509.174018	L09040610-04	MW8910 PR	40/100	1		05/05/09 17:40
52	EL.050509.174655	WG301498-01	Post Digestion Spike		1	L09040610-04	05/05/09 17:46
53	EL.050509.175332	WG301498-02	Serial Dilution		5	L09040610-04	05/05/09 17:53
54	EL.050509.180029	WG301766-19	CCV		1		05/05/09 18:00
55	EL.050509.180723	WG301766-20	CCB		1		05/05/09 18:07
56	EL.050509.181358	L09040610-06	8905 L	40/100	1		05/05/09 18:13
57	EL.050509.182036	L09040610-10	8906 L	40/100	1		05/05/09 18:20
58	EL.050509.182713	L09040610-12	8716 P	40/100	1		05/05/09 18:27
59	EL.050509.183348	L09040610-14	8907 U	40/100	1		05/05/09 18:33
60	EL.050509.184024	L09040610-16	8908 L	40/100	1		05/05/09 18:40
61	EL.050509.184659	L09040610-18	8004	40/100	1		05/05/09 18:46
62	EL.050509.185336	L09040610-20	8912 L	40/100	1		05/05/09 18:53
63	EL.050509.190012	L09040610-28	8902 L	40/100	1		05/05/09 19:00
64	EL.050509.190649	L09040610-30	8902 U	40/100	1		05/05/09 19:06
65	EL.050509.191326	L09040610-32	8002	40/100	1		05/05/09 19:13
66	EL.050509.192023	WG301766-21	CCV		1		05/05/09 19:20
67	EL.050509.192717	WG301766-22	CCB		1		05/05/09 19:27
68	EL.050509.193352	L09040610-34	8911 U	40/100	1		05/05/09 19:33
69	EL.050509.194030	L09040610-36	8911 U DUP	40/100	1		05/05/09 19:40
70	EL.050509.194709	L09040610-38	8913 PR	40/100	1		05/05/09 19:47
71	EL.050509.195347	L09040610-08	8905 U	40/100	1		05/05/09 19:53
72	EL.050509.200045	WG301766-23	CCV		1		05/05/09 20:00
73	EL.050509.200739	WG301766-24	CCB		1		05/05/09 20:07

Page: 2 Approved: May 07, 2009

Maren Beery



Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2009

Analyst: JYH

Analyst: NA

Method: 6020

Instrument: ELAN

Curve Workgroup: 301766

Runlog ID: 27950

Analytical Workgroups: 301576,301498

Calibration/Linearity	X
ICV/CCV	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	X
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	
Case Narrative	689,029,610
Client Forms	X
Level X	
Level 3	029
Level 4	689
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	MMB
Comments	

Primary Reviewer:


Secondary Reviewer:
07-MAY-2009


Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method:6020

AAB#:WG301578

Login Number:L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-13-043009	04/30/09	05/01/09	05/04/09	180	3.84	05/05/09	180	1.30	
MW-19-043009	04/30/09	05/01/09	05/04/09	180	3.78	05/05/09	180	1.31	
PZ-01-043009	04/30/09	05/01/09	05/04/09	180	3.91	05/05/09	180	1.31	
MW-09R-043009-MSD	04/30/09	05/01/09	05/04/09	180	3.92	05/05/09	180	1.30	
MW-09R-043009-MS	04/30/09	05/01/09	05/04/09	180	3.92	05/05/09	180	1.29	
MW-09R-043009	04/30/09	05/01/09	05/04/09	180	3.92	05/05/09	180	1.29	
PZ-03-043009	04/30/09	05/01/09	05/04/09	180	3.80	05/05/09	180	1.32	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID:1385449
Report generated 05/07/2009 09:03



METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: EL.050509.131134
 Prep Date: 05/04/09 07:42
 Analyzed Date: 05/05/09 13:11
 Analyst: JYH

Work Group: WG301578
 Blank Sample ID: WG301408-03
 Instrument ID: ELAN-ICP
 Method: 6020

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301408-04	EL.050509.132442	05/05/09 13:24	01
MW-09R-043009	L09050029-02	EL.050509.143752	05/05/09 14:37	01
MW-09R-043009-MS	L09050029-04	EL.050509.144428	05/05/09 14:44	01
MW-09R-043009-MSD	L09050029-06	EL.050509.145103	05/05/09 14:51	01
MW-13-043009	L09050029-08	EL.050509.145739	05/05/09 14:57	01
MW-19-043009	L09050029-10	EL.050509.150415	05/05/09 15:04	01
PZ-01-043009	L09050029-12	EL.050509.151052	05/05/09 15:10	01
PZ-03-043009	L09050029-14	EL.050509.151729	05/05/09 15:17	01



METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/04/09 07:42 Sample ID: WG301408-03
Instrument ID: ELAN-ICP Run Date: 05/05/09 13:11 Prep Method: 3015
File ID: EL.050509.131134 Analyst: JYH Method: 6020
Workgroup (AAB#): WG301578 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: ELAN-I - 05-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Antimony, Dissolved	0.000250	0.00100	0.000250	1	U
Arsenic, Dissolved	0.000250	0.00100	0.000250	1	U
Selenium, Dissolved	0.000500	0.00100	0.000500	1	U
Thallium, Dissolved	0.0000500	0.000200	0.0000500	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1385451

07-MAY-2009 09:03



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301408-04
Instrument ID: ELAN-ICP Run Time: 13:24 Prep Method: 3015
File ID: EL.050509.132442 Analyst: JYH Method: 6020
Workgroup (AAB#): WG301578 Matrix: Water Units: mg/L
QC Key: STD Lot#: STD30482 Cal ID: ELAN-I - 05-MAY-09

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Dissolved	0.0625	0.0604	96.6	80 - 120	
Arsenic, Dissolved	0.0625	0.0597	95.6	80 - 120	
Selenium, Dissolved	0.0625	0.0615	98.3	80 - 120	
Thallium, Dissolved	0.0625	0.0598	95.7	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 1385452
Report generated: 05/07/2009 09:03



MS/MSD REPORT

Loginnum: L09050029 Cal ID: ELAN-ICP- 05-MAY-09
 Instrument ID: ELAN-ICP Contract #: _____
 Parent ID: L09050029-02 File ID: EL.050509.143752 Dil: 1
 Sample ID: L09050029-04 MS File ID: EL.050509.144428 Dil: 1
 Sample ID: L09050029-06 MSD File ID: EL.050509.145103 Dil: 1

Worknum: WG301578
 Prep Method: 3015
 Method: 6020
 Matrix: Water
 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Dissolved	U	0.0625	0.0661	106	0.0625	0.0649	104	1.82	75 - 125	20	
Arsenic, Dissolved	0.00630	0.0625	0.0679	98.6	0.0625	0.0659	95.3	3.07	75 - 125	20	
Selenium, Dissolved	0.00694	0.0625	0.0586	82.6	0.0625	0.0571	80.2	2.60	75 - 125	20	
Thallium, Dissolved	U	0.0625	0.0655	105	0.0625	0.0646	103	1.29	75 - 125	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

Microbac Laboratories Inc.
Serial Dilution Report

Login: L09050029 Worknum: WG301578
Instrument: ELAN-ICP Method: 6020
Serial Dil: WG301578-02 File ID: EL.050509.141053 Dil: 5 Units: ug/L
Sample: L09040689-05 File ID: EL.050509.135740 Dil: 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	1.96	X	2	X	2.04	
Arsenic	4.44	X	4.73	X	6.53	
Selenium	ND	U	ND	U		
Thallium	ND	U	ND	U		

U = Result is below MDL.

F = Result is greater than or equal to MDL and less than the RL.

X = Result is greater than or equal to RL and less than 100 times the MDL.

E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008

PDF File ID: 1385447

05/07/2009 09:03



Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L09050029

Worknum: WG301578

Instrument ID: ELAN-ICP

Method: 6020

Post Spike ID: WG301578-01

File ID: EL.050509.140416

Dil: 1

Units: ug/L

Sample ID: L09040689-05

File ID: EL.050509.135740

Dil: 1

Matrix: Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.6		1.96		50	99.2	75 - 125	
ARSENIC	50.3		4.44		50	91.7	75 - 125	
SELENIUM	41.6		0	U	50	83.2	75 - 125	
THALLIUM	49.3		0	U	50	98.6	75 - 125	

N = % Recovery exceeds control limits

F = Result is between MDL and RL

U = Sample result is below MDL. A value of zero is used in the calculation

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	<u>L09050029</u>	Workgroup (AAB#):	<u>WG301578</u>
Analytical Method:	<u>6020</u>	Instrument ID:	<u>ELAN-ICP</u>
ICAL Worknum:	<u>WG301766</u>	Initial Calibration Date:	<u>05-MAY-2009 12:10</u>

	WG301766-01		WG301766-02		WG301766-03		WG301766-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	13.3	.4	2040	50	190000	100	371000	.999914	
ARSENIC	0	-285	.4	285	50	71900	100	141000	.999996	
SELENIUM	0	13.7	.4	61.0	50	6030	100	11700	.999999	
THALLIUM	0	10.3	.4	1930	50	229000	100	449000	.999998	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
***** = Out of Compliance; R < 0.995

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301766-06
Instrument ID: ELAN-ICP Run Time: 12:23 Method: 6020
File ID: EL.050509.122322 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301578 Cal ID: ELAN-ICP - 05-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ARSENIC	.1	.4	.1	U
ANTIMONY	.1	.4	.1	U
SELENIUM	.2	.4	.2	U
THALLIUM	.02	.08	.02	U

ICB - Modified 03/06/2008
PDF File ID: 1385459
Report generated 05/07/2009 09:03



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301766-12
Instrument ID: ELAN-ICP Run Time: 13:05 Method: 6020
File ID: EL.050509.130501 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301578 Cal ID: ELAN-I - 05-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.100	0.400	0.100	U
Arsenic	0.100	0.400	0.100	U
Selenium	0.200	0.400	0.200	U
Thallium	0.0200	0.0800	0.0200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1385462
Report generated 05/07/2009 09:03



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301766-14
Instrument ID: ELAN-ICP Run Time: 14:24 Method: 6020
File ID: EL.050509.142445 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301578 Cal ID: ELAN-I - 05-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.100	0.400	0.100	U
Arsenic	0.100	0.400	0.100	U
Selenium	0.200	0.400	0.200	U
Thallium	0.0200	0.0800	0.0200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1385462
Report generated 05/07/2009 09:03



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301766-16
Instrument ID: ELAN-ICP Run Time: 15:31 Method: 6020
File ID: EL.050509.153120 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301578 Cal ID: ELAN-I - 05-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.100	0.400	0.100	U
Arsenic	0.100	0.400	0.100	U
Selenium	0.200	0.400	0.200	U
Thallium	0.0200	0.0800	0.0200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1385462
Report generated 05/07/2009 09:03



Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301766-05
Instrument ID: ELAN-ICP Run Time: 12:16 Method: 6020
File ID: EL.050509.121627 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301578 Cal ID: ELAN-I - 05-MAY-09
QC Key: STD

Analyte	Expected	Found	%REC	LIMITS	Q
Antimony	50	50.1	100	90 - 110	
Arsenic	50	49.2	98.4	90 - 110	
Selenium	50	50.5	101	90 - 110	
Thallium	50	50.5	101	90 - 110	

* Exceeds LIMITS Limit

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301766-11
Instrument ID: ELAN-ICP Run Time: 12:58 Method: 6020
File ID: EL.050509.125807 Analyst: JYH QC Key: STD
Workgroup (AAB#): WG301578 Cal ID: ELAN-I - 05-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	50.2	ug/L	100	90 - 110		
Arsenic		50.0	48.4	ug/L	96.9	90 - 110		
Selenium		50.0	49.4	ug/L	98.7	90 - 110		
Thallium		50.0	50.1	ug/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1385461
Report generated 05/07/2009 09:03



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: <u>L09050029</u>	Run Date: <u>05/05/2009</u>	Sample ID: <u>WG301766-13</u>
Instrument ID: <u>ELAN-ICP</u>	Run Time: <u>14:17</u>	Method: <u>6020</u>
File ID: <u>EL.050509.141750</u>	Analyst: <u>JYH</u>	QC Key: <u>STD</u>
Workgroup (AAB#): <u>WG301578</u>	Cal ID: <u>ELAN-I - 05-MAY-09</u>	
Matrix: <u>WATER</u>		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	50.4	ug/L	101	90 - 110		
Arsenic		50.0	49.8	ug/L	99.6	90 - 110		
Selenium		50.0	50.5	ug/L	101	90 - 110		
Thallium		50.0	50.3	ug/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1385461
Report generated 05/07/2009 09:03



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: <u>L09050029</u>	Run Date: <u>05/05/2009</u>	Sample ID: <u>WG301766-15</u>
Instrument ID: <u>ELAN-ICP</u>	Run Time: <u>15:24</u>	Method: <u>6020</u>
File ID: <u>EL.050509.152426</u>	Analyst: <u>JYH</u>	QC Key: <u>STD</u>
Workgroup (AAB#): <u>WG301578</u>	Cal ID: <u>ELAN-I - 05-MAY-09</u>	
Matrix: <u>WATER</u>		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	49.1	ug/L	98.3	90 - 110		
Arsenic		50.0	48.1	ug/L	96.3	90 - 110		
Selenium		50.0	46.8	ug/L	93.6	90 - 110		
Thallium		50.0	49.6	ug/L	99.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1385461
Report generated 05/07/2009 09:03



Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L09050029
Instrument ID: ELAN-ICP
Sol. A : WG301766-09
Sol. AB : WG301766-10

File ID: EL.050509.124414
File ID: EL.050509.125111

Workgroup (AAB#): WG301578
Method: 6020
Units: ug/L
Matrix: Water

ANALYTE	Sol. A			Sol. AB			Q
	True	Found	%Recovery	True	Found	%Recovery	
Antimony	NS	-0.0736	NS	100	102	102	
Arsenic	NS	-0.0248	NS	100	102	102	
Selenium	NS	-0.0924	NS	100	109	109	
Thallium	NS	0.00530	NS	100	100	100	

NS = Not spiked

* = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.

= Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).

Microbac Laboratories Inc.
CRI SAMPLE

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301766-08
Instrument ID: ELAN-ICP Run Time: 12:37 Prep Method: 3015
File ID: EL.050509.123716 Analyst: JYH Method: 6020
Workgroup (AAB#): WG301766 Matrix: Water Units: ug/L
Contract #: _____ Cal ID: ELAN-ICP - 05-MAY-2009 12:10

Analytes	Expected	Found	% Rec	Limits	Q
Thallium, Dissolved	0.0800	0.0725	90.6	50 - 150	

CRI - Modified 03/06/2008
PDF File ID: 1385455
Report generated 05/07/2009 09:03



INTERNAL STANDARD REPORT

Login: L09050029 Analytical Method: 6020
 Analytical Workgroup: WG301578 Matrix: 1
 Instrument: ELAN-ICP Analyst: JYH
 ICAL Date: 05-MAY-2009 11:53

Sample	Type	Run Date	BISMUTH	GERMANIUM	INDIUM	TERBIUM
			% Rec	% Rec	% Rec	% Rec
L09050029-02	SAMP	05-MAY-2009 14:37	77.009	86.993	76.024	77.431
L09050029-04	SAMP	05-MAY-2009 14:44	75.326	83.706	71.896	73.952
L09050029-06	SAMP	05-MAY-2009 14:51	75.937	84.028	71.904	74.382
L09050029-08	SAMP	05-MAY-2009 14:57	86.1	91.865	79.706	80.158
L09050029-10	SAMP	05-MAY-2009 15:04	85.432	91.194	77.05	77.375
L09050029-12	SAMP	05-MAY-2009 15:10	84.412	88.482	77.609	80.023
L09050029-14	SAMP	05-MAY-2009 15:17	66.207	75.637	64.434	68.245
WG301228-01	FBLK	05-MAY-2009 13:18	94.329	97.157	95.7	94.283
WG301408-01	REF	05-MAY-2009 13:31	95.796	95.733	90.983	89.456
WG301408-02	REF	05-MAY-2009 14:37	77.009	86.993	76.024	77.431
WG301408-03	BLANK	05-MAY-2009 13:11	93.086	97.833	97.453	95.125
WG301408-04	LCS	05-MAY-2009 13:24	94.27	95.345	94.704	93.709
WG301408-05	MS	05-MAY-2009 13:37	93.157	94.764	89.283	88.299
WG301408-06	MSD	05-MAY-2009 13:44	92.082	96.23	91.092	87.991
WG301408-07	MS	05-MAY-2009 14:44	75.326	83.706	71.896	73.952
WG301408-08	MSD	05-MAY-2009 14:51	75.937	84.028	71.904	74.382
WG301578-01	PSPK	05-MAY-2009 14:04	86.947	94.27	86.713	85.883
WG301578-02	SERIAL	05-MAY-2009 14:10	91.798	98.682	93.409	91.848
WG301766-05	ICV	05-MAY-2009 12:16	94.498	94.044	91.823	93.039
WG301766-06	ICB	05-MAY-2009 12:23	94.861	93.504	91.761	92.186
WG301766-11	CCV	05-MAY-2009 12:58	92.824	98.006	93.508	91.382
WG301766-12	CCB	05-MAY-2009 13:05	95.746	97.938	95.475	93.592
WG301766-13	CCV	05-MAY-2009 14:17	91.924	96.254	93.107	91.933
WG301766-14	CCB	05-MAY-2009 14:24	90.298	94.53	91.555	89.969
WG301766-15	CCV	05-MAY-2009 15:24	85.649	90.894	80.802	80.373
WG301766-16	CCB	05-MAY-2009 15:31	86.11	88.852	82.562	81.047

Acceptance criteria: 30% - 120%
 Underlined recoveries are out of range

INT_STD_ICPMS - Modified 03/05/2008
 PDF File ID: 1385456
 Report generated: 05/07/2009 09:03



Microbac Laboratories Inc.**INTERNAL STANDARD REPORT**

Login: L09050029 **Analytical Method:** 6020
Analytical Workgroup: WG301578 **Matrix:** 18
Instrument: ELAN-ICP **Analyst:** JYH
ICAL Date: 05-MAY-2009 11:53

Sample	Type	Run Date	BISMUTH	GERMANIUM	INDIUM	TERBIUM
			% Rec	% Rec	% Rec	% Rec
L09040689-05	SAMP	05-MAY-2009 13:57	88.251	94.962	86.801	86.687

Acceptance criteria: 30% - 120%
Underlined recoveries are out of range

INT_STD_ICPMS - Modified 03/05/2008
PDF File ID: 1385456
Report generated: 05/07/2009 09:03



Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L09050029

Date: 04/01/2009

Instrument ID: ELAN-ICP

Method: 6020

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:

All analytes passed acceptance criteria at the specified concentration.

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac Laboratories Inc.
METALS

Microbac Login No: L09050029

METHOD

Preparation: SW-846 7470A

Analysis: SW-846 7470A

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibrations: 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.

MS/MSD: WG301611(7470A) - Sample 02 was chosen by the client for MS/MSD analysis. Samples 04(MS) and 06(MSD) met all acceptance criteria.

Serial Dilution/Post Digestion Spike: WG301611(7470A) - All acceptance criteria were met.

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 hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: ADC

Approved: 13-MAY-09

Shirley L. Plabon

LABORATORY REPORT

L09050029

05/19/09 14:15

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-02	7470A	1	01-MAY-09
MW-09R-043009-MS	L09050029-04	7470A	1	01-MAY-09
MW-09R-043009-MSD	L09050029-06	7470A	1	01-MAY-09
MW-13-043009	L09050029-08	7470A	1	01-MAY-09
MW-19-043009	L09050029-10	7470A	1	01-MAY-09
PZ-01-043009	L09050029-12	7470A	1	01-MAY-09
PZ-03-043009	L09050029-14	7470A	1	01-MAY-09



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-02**
Client ID: **MW-09R-043009**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **04/30/2009 09:40**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:21**
File ID: **HY.050809.152136**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6		U	0.000200	0.000100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-04**
Client ID: **MW-09R-043009-MS**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **04/30/2009 09:40**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:24**
File ID: **HY.050809.152402**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6	0.00483		0.000222	0.000111

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-06**
Client ID: **MW-09R-043009-MSD**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **04/30/2009 09:40**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:25**
File ID: **HY.050809.152546**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6	0.00503		0.000222	0.000111

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-08**
Client ID: **MW-13-043009**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **04/30/2009 11:35**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:27**
File ID: **HY.050809.152740**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6		U	0.000200	0.000100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-10**
Client ID: **MW-19-043009**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **04/30/2009 13:00**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:31**
File ID: **HY.050809.153105**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6		U	0.000200	0.000100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-12**
Client ID: **PZ-01-043009**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **04/30/2009 09:57**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:32**
File ID: **HY.050809.153248**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6		U	0.000200	0.000100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-14**
Client ID: **PZ-03-043009**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **04/30/2009 12:37**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:39**
File ID: **HY.050809.153918**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6		U	0.000200	0.000100

U Not detected at or above the reporting limit (RL).

2.3.3.2 QC Summary Data

Example Cold Vapor Mercury Calculations

Hydra AA Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (ug/L)

Vf = Diluted to Volume (mL)

Vi = Aliquot Volume (mL)

D = Manual dilution factor, if required (10X = 10)

Example:

0.1

40

40

1

Cx = Concentration of element in ppb (ug/L)

0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:

Cs = Concentration computed by the data system (ug/L)

Vf = Diluted to volume (mL)

Ws = Aliquot weight (g)

D = Manual dilution factor

Example:

0.1

40

0.6

1

Cx = Concentration of element in ug/kg

6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

6.67

80

$Cdry$ = Concentration calculated as dry weight (ug/kg)

8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG301538

Analyst: REK

Spike Analyst: REK

Method: 7470A

Run Date: 05/05/2009 07:45

Hotblock Start Temp: 94.1 @ 07:40

Hotblock End Temp: 95.6 @ 09:40

SOP: ME404 Revision 11

Spike Solution: STD32634

Spike Witness: VC

H2SO4 Lot #: COA13254

HN03 Lot #: COA13771

Digest tubes Lot #: COA13830

KMn04 1:1 Lot #: RGT13758

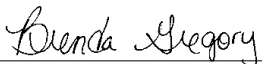
K2S208 1:1 Lot #: RGT13759

Mercury Water ICV Lot #: STD32636

HG H2O STDS 10PPM Lot #: STD32642

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG301538-02	BLANK	1	40 mL	40 mL		
2	WG301460-01	FBLK	17	4 mL	40 mL		
3	WG301538-03	LCS	1	40 mL	40 mL	4 mL	
4	L09040727-02	SAMP	1	40 mL	40 mL		05/14/09
5	L09040727-04	SAMP	1	40 mL	40 mL		05/14/09
6	L09040727-06	SAMP	1	40 mL	40 mL		05/14/09
7	L09040727-08	SAMP	1	40 mL	40 mL		05/14/09
8	L09040727-10	SAMP	1	40 mL	40 mL		05/14/09
9	L09050017-01	SAMP	17	4 mL	40 mL		05/12/09
10	L09050017-02	SAMP	17	4 mL	40 mL		05/12/09
11	L09050017-03	SAMP	17	4 mL	40 mL		05/12/09
12	L09050017-05	SAMP	17	4 mL	40 mL		05/12/09
13	WG301538-01	REF	1	40 mL	40 mL		
14	L09050029-02	RS02	1	40 mL	40 mL		05/12/09
15	WG301538-04	MS	1	36 mL	40 mL	4 mL	
16	L09050029-04	MS02	1	36 mL	40 mL	4 mL	05/12/09
17	WG301538-05	MSD	1	36 mL	40 mL	4 mL	
18	L09050029-06	SD02	1	36 mL	40 mL	4 mL	05/12/09
19	L09050029-08	SAMP	1	40 mL	40 mL		05/12/09
20	L09050029-10	SAMP	1	40 mL	40 mL		05/12/09
21	L09050029-12	SAMP	1	40 mL	40 mL		05/12/09
22	L09050029-14	SAMP	1	40 mL	40 mL		05/12/09
23	L09050044-02	SAMP	1	40 mL	40 mL		05/18/09
24	L09050044-04	SAMP	1	40 mL	40 mL		05/18/09
25	L09050044-06	SAMP	1	40 mL	40 mL		05/18/09
26	L09050044-08	SAMP	1	40 mL	40 mL		05/18/09

Analyst: 

Reviewer: 

Microbac Laboratories Inc.
Instrument Run Log

Instrument: HYDRA Dataset: 050809B.PRN
 Analyst1: ADC Analyst2: N/A
 Method: 7470A SOP: 404 Rev: 11
 Maintenance Log ID: 28662

Calibration Std: STD32642 ICV/CCV Std: STD32636 Post Spike: STD32642
 ICSA: N/A ICSAB: N/A Int. Std: _____

Workgroups: WG301611

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	HY.050809.143412	WG302041-01	Calibration Point		1		05/08/09 14:34
2	HY.050809.143556	WG302041-02	Calibration Point		1		05/08/09 14:35
3	HY.050809.143751	WG302041-03	Calibration Point		1		05/08/09 14:37
4	HY.050809.143935	WG302041-04	Calibration Point		1		05/08/09 14:39
5	HY.050809.144128	WG302041-05	Calibration Point		1		05/08/09 14:41
6	HY.050809.144315	WG302041-06	Calibration Point		1		05/08/09 14:43
7	HY.050809.144532	WG302041-07	Initial Calibration Verification		1		05/08/09 14:45
8	HY.050809.144718	WG302041-08	Initial Calib Blank		1		05/08/09 14:47
9	HY.050809.144900	WG302041-09	CCV		1		05/08/09 14:49
10	HY.050809.145055	WG302041-10	CCB		1		05/08/09 14:50
11	HY.050809.145358	WG301538-02	Method/Prep Blank	40/40	1		05/08/09 14:53
12	HY.050809.145549	WG301538-03	Laboratory Control S	40/40	1		05/08/09 14:55
13	HY.050809.145752	WG301460-01	Fluid Blank		1		05/08/09 14:57
14	HY.050809.145939	L09040727-02	MW-06-042909	40/40	1		05/08/09 14:59
15	HY.050809.150127	L09040727-04	MW-14-042909	40/40	1		05/08/09 15:01
16	HY.050809.150316	L09040727-06	MW-25-042909	40/40	1		05/08/09 15:03
17	HY.050809.150501	L09040727-08	MW-18-042909	40/40	1		05/08/09 15:05
18	HY.050809.150642	L09040727-10	MW-20-042909	40/40	1		05/08/09 15:06
19	HY.050809.150829	L09050017-01	GM090027	4/40	1		05/08/09 15:08
20	HY.050809.151014	WG301611-01	Post Digestion Spike		1	L09050017-01	05/08/09 15:10
21	HY.050809.151201	WG302041-11	CCV		1		05/08/09 15:12
22	HY.050809.151353	WG302041-12	CCB		1		05/08/09 15:13
23	HY.050809.151537	L09050017-02	GM090028	4/40	1		05/08/09 15:15
24	HY.050809.151720	L09050017-03	GM090029	4/40	1		05/08/09 15:17
25	HY.050809.151932	L09050017-05	GM090031	4/40	1		05/08/09 15:19
26	HY.050809.152136	L09050029-02	MW-09R-043009	40/40	1	WG301538-01	05/08/09 15:21
27	HY.050809.152402	L09050029-04	MW-09R-043009-MS	36/40	1	WG301538-04	05/08/09 15:24
28	HY.050809.152546	L09050029-06	MW-09R-043009-MSD	36/40	1	WG301538-05	05/08/09 15:25
29	HY.050809.152740	L09050029-08	MW-13-043009	40/40	1		05/08/09 15:27
30	HY.050809.152922	WG301611-02	Post Digestion Spike		1	L09050029-08	05/08/09 15:29
31	HY.050809.153105	L09050029-10	MW-19-043009	40/40	1		05/08/09 15:31
32	HY.050809.153248	L09050029-12	PZ-01-043009	40/40	1		05/08/09 15:32
33	HY.050809.153430	WG302041-13	CCV		1		05/08/09 15:34
34	HY.050809.153654	WG302041-14	CCB		1		05/08/09 15:36
35	HY.050809.153918	L09050029-14	PZ-03-043009	40/40	1		05/08/09 15:39
36	HY.050809.154110	L09050044-02	BBLD-PIT-SSP-050109	40/40	1		05/08/09 15:41
37	HY.050809.154253	L09050044-04	MW-01-050109	40/40	1		05/08/09 15:42

Page: 1 Approved: May 12, 2009

Maren Beery



Microbac Laboratories Inc.

Instrument Run Log

Instrument: HYDRA Dataset: 050809B.PRN
 Analyst1: ADC Analyst2: N/A
 Method: 7470A SOP: 404 Rev: 11
 Maintenance Log ID: 28662

Calibration Std: STD32642 ICV/CCV Std: STD32636 Post Spike: STD32642
 ICSA: N/A ICSAB: N/A Int. Std: _____

Workgroups: WG301611

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
38	HY.050809.154504	L09050044-06	MW-03-050109	40/40	1		05/08/09 15:45
39	HY.050809.154647	L09050044-08	DUP-GW--050109	40/40	1		05/08/09 15:46
40	HY.050809.154833	WG302041-15	CCV		1		05/08/09 15:48
41	HY.050809.155020	WG302041-16	CCB		1		05/08/09 15:50

Page: 2 Approved: May 12, 2009

Maren Beery



Microbac Laboratories Inc.

Data Checklist

Date: 08-MAY-2009

Analyst: ADC

Analyst: NA

Method: 7470A

Instrument: HYDRA

Curve Workgroup: WG302041

Runlog ID: 28014

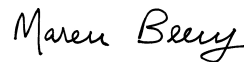
Analytical Workgroups: WG301611

Calibration/Linearity	X
ICV/CCV	X
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0727, 0017, 0029, 0044
Client Forms	X
Level X	
Level 3	0727, 0029, 0044
Level 4	
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	ADC
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
11-MAY-2009



Secondary Reviewer:
12-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method:7470A

AAB#:WG301611

Login Number:L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
PZ-01-043009	04/30/09	05/01/09	05/05/09	28	4.91	05/08/09	28	3.32	
MW-09R-043009-MSD	04/30/09	05/01/09	05/05/09	28	4.92	05/08/09	28	3.32	
MW-09R-043009-MS	04/30/09	05/01/09	05/05/09	28	4.92	05/08/09	28	3.32	
MW-13-043009	04/30/09	05/01/09	05/05/09	28	4.84	05/08/09	28	3.32	
MW-19-043009	04/30/09	05/01/09	05/05/09	28	4.78	05/08/09	28	3.32	
MW-09R-043009	04/30/09	05/01/09	05/05/09	28	4.92	05/08/09	28	3.32	
PZ-03-043009	04/30/09	05/01/09	05/05/09	28	4.80	05/08/09	28	3.33	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID:1388913
Report generated 05/11/2009 15:52



METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: HY.050809.145358
 Prep Date: 05/05/09 07:45
 Analyzed Date: 05/08/09 14:53
 Analyst: ADC

Work Group: WG301611
 Blank Sample ID: WG301538-02
 Instrument ID: HYDRA
 Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301538-03	HY.050809.145549	05/08/09 14:55	01
MW-09R-043009	L09050029-02	HY.050809.152136	05/08/09 15:21	01
MW-09R-043009-MS	L09050029-04	HY.050809.152402	05/08/09 15:24	01
MW-09R-043009-MSD	L09050029-06	HY.050809.152546	05/08/09 15:25	01
MW-13-043009	L09050029-08	HY.050809.152740	05/08/09 15:27	01
MW-19-043009	L09050029-10	HY.050809.153105	05/08/09 15:31	01
PZ-01-043009	L09050029-12	HY.050809.153248	05/08/09 15:32	01
PZ-03-043009	L09050029-14	HY.050809.153918	05/08/09 15:39	01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/05/09 07:45 Sample ID: WG301538-02
Instrument ID: HYDRA Run Date: 05/08/09 14:53 Prep Method: 7470A
File ID: HY.050809.145358 Analyst: ADC Method: 7470A
Workgroup (AAB#): WG301611 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: HYDRA - 08-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Mercury, Dissolved	0.000100	0.000200	0.000100	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1388915

11-MAY-2009 15:52



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG301538-03
Instrument ID: HYDRA Run Time: 14:55 Prep Method: 7470A
File ID: HY.050809.145549 Analyst: ADC Method: 7470A
Workgroup (AAB#): WG301611 Matrix: Water Units: mg/L
QC Key: STD Lot#: STD32634 Cal ID: HYDRA - 08-MAY-09

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury, Dissolved	0.00400	0.00420	105	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 1388916
Report generated: 05/11/2009 15:52



MS/MSD REPORT

Loginnum: L09050029 Cal ID: HYDRA- 08-MAY-09
 Instrument ID: HYDRA Contract #: _____
 Parent ID: L09050029-02 File ID: HY.050809.152136 Dil: 1
 Sample ID: L09050029-04 MS File ID: HY.050809.152402 Dil: 1
 Sample ID: L09050029-06 MSD File ID: HY.050809.152546 Dil: 1

Worknum: WG301611
 Prep Method: 7470A
 Method: 7470A
 Matrix: Water
 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury, Dissolved	U	0.00444	0.00483	109	0.00444	0.00503	113	4.05	85 - 115	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L09050029 Cal ID: HYDRA - Worknum: WG301611
 Instrument ID: HYDRA Contract #: _____ Method: 7470A
 Parent ID: WG301538-01 File ID: HY.050809.152136 Dil: 1 Matrix: WATER
 Sample ID: WG301538-04 MS File ID: HY.050809.152402 Dil: 1 Units: mg/L
 Sample ID: WG301538-05 MSD File ID: HY.050809.152546 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury, Dissolved	ND	0.00444	0.00483	109	0.00444	0.00503	113	4.05	85 - 115	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L09050029

Worknum: WG301611

Instrument ID: HYDRA

Method: 7470A

Post Spike ID: WG301611-02

File ID: HY.050809.152922

Dil: 1

Units: ug/L

Sample ID: L09050029-08

File ID: HY.050809.152740

Dil: 1

Matrix: Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	0.984		0	U	1	98.4	85 - 115	

N = % Recovery exceeds control limits

F = Result is between MDL and RL

U = Sample result is below MDL. A value of zero is used in the calculation



Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L09050029
Analytical Method: 7470A
ICAL Worknum: WG302041

Workgroup (AAB#): WG301611
Instrument ID: HYDRA
Initial Calibration Date: 05/08/2009 14:43

Analyte	WG302041-01		WG302041-02		WG302041-03		WG302041-04		WG302041-05		WG302041-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	-11	0.200	833	1.00	3949	2.00	8001	5.00	20202	10.0	41044

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 1388919
Report generated 05/11/2009 15:52



Login Number: L09050029
Analytical Method: 7470A
ICAL Worknum: WG302041

Workgroup (AAB#): WG301611
Instrument ID: HYDRA
Initial Calibration Date: 05/08/2009 14:43

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; $R < 0.995$

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-08
Instrument ID: HYDRA Run Time: 14:47 Method: 7471
File ID: HY.050809.144718 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.2	.1	U

ICB - Modified 03/06/2008
PDF File ID: 1388921
Report generated 05/11/2009 15:52



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-10
Instrument ID: HYDRA Run Time: 14:50 Method: 7470A
File ID: HY.050809.145055 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1388923
Report generated 05/11/2009 15:52



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-12
Instrument ID: HYDRA Run Time: 15:13 Method: 7470A
File ID: HY.050809.151353 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1388923
Report generated 05/11/2009 15:52



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-14
Instrument ID: HYDRA Run Time: 15:36 Method: 7470A
File ID: HY.050809.153654 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1388923
Report generated 05/11/2009 15:52



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-16
Instrument ID: HYDRA Run Time: 15:50 Method: 7470A
File ID: HY.050809.155020 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1388923
Report generated 05/11/2009 15:52



Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-07
Instrument ID: HYDRA Run Time: 14:45 Method: 7470A
File ID: HY.050809.144532 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
QC Key: STD

Analyte	Expected	Found	%REC	LIMITS	Q
Mercury	2	1.96	98.0	90 - 110	

* Exceeds LIMITS Limit



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-09
Instrument ID: HYDRA Run Time: 14:49 Method: 7470A
File ID: HY.050809.144900 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00193	mg/L	96.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1388922
Report generated 05/11/2009 15:52



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-11
Instrument ID: HYDRA Run Time: 15:12 Method: 7470A
File ID: HY.050809.151201 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00195	mg/L	97.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1388922
Report generated 05/11/2009 15:52



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-13
Instrument ID: HYDRA Run Time: 15:34 Method: 7470A
File ID: HY.050809.153430 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00192	mg/L	96.0	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1388922
Report generated 05/11/2009 15:52



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050029 Run Date: 05/08/2009 Sample ID: WG302041-15
Instrument ID: HYDRA Run Time: 15:48 Method: 7470A
File ID: HY.050809.154833 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00191	mg/L	95.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1388922
Report generated 05/11/2009 15:52



2.4 General Chemistry Data

KEMRON ENVIRONMENTAL SERVICES
GENERAL CHEMISTRY**KEMRON Login No.:** L0508590**METHOD****Analysis:** See report for method reference.**HOLDING TIMES****Sample Preparation:** All holding times were met.**Sample Analysis:** Nitrate is analyzed by subtracting the nitrite result from the nitrate-nitrite result. The nitrite was analyzed within the 48 hour hold time. Nitrate-nitrite has a 28 day hold, so the analysis was performed within hold.**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**

There were no technical difficulties with the sample group.

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 hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: DIH

Approved: 07-MAY-09



2.4.1 Alkalinity Data

2.4.1.1 Summary Data

LABORATORY REPORT

L09050029

05/19/09 14:15

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-01	310.2	5	01-MAY-09
MW-13-043009	L09050029-07	310.2	2	01-MAY-09
MW-19-043009	L09050029-09	310.2	2	01-MAY-09
PZ-01-043009	L09050029-11	310.2	2	01-MAY-09
PZ-03-043009	L09050029-13	310.2	2	01-MAY-09



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: L09050029-01	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-09R-043009	Prep Method: 310.2	Prep Date: 05/06/2009 09:13
Matrix: Water	Analytical Method: 310.2	Cal Date: 05/06/2009 08:46
Workgroup Number: WG301646	Analyst: DIH	Run Date: 05/06/2009 09:13
Collect Date: 04/30/2009 09:40	Dilution: 5	File ID: SC090506001.053
Sample Tag: DL01	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Alkalinity, Total		737		50.0	25.0

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: L09050029-07	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-13-043009	Prep Method: 310.2	Prep Date: 05/06/2009 10:29
Matrix: Water	Analytical Method: 310.2	Cal Date: 05/06/2009 10:14
Workgroup Number: WG301679	Analyst: DIH	Run Date: 05/06/2009 10:29
Collect Date: 04/30/2009 11:35	Dilution: 2	File ID: SC090506002.034
Sample Tag: DL01	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Alkalinity, Total		340		20.0	10.0

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: L09050029-09	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-19-043009	Prep Method: 310.2	Prep Date: 05/06/2009 09:16
Matrix: Water	Analytical Method: 310.2	Cal Date: 05/06/2009 08:46
Workgroup Number: WG301646	Analyst: DIH	Run Date: 05/06/2009 09:16
Collect Date: 04/30/2009 13:00	Dilution: 2	File ID: SC090506001.057
Sample Tag: DL01	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Alkalinity, Total		450		20.0	10.0

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: L09050029-11	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: PZ-01-043009	Prep Method: 310.2	Prep Date: 05/06/2009 09:16
Matrix: Water	Analytical Method: 310.2	Cal Date: 05/06/2009 08:46
Workgroup Number: WG301646	Analyst: DIH	Run Date: 05/06/2009 09:16
Collect Date: 04/30/2009 09:57	Dilution: 2	File ID: SC090506001.058
Sample Tag: DL01	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Alkalinity, Total		564		20.0	10.0

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-13**
Client ID: **PZ-03-043009**
Matrix: **Water**
Workgroup Number: **WG301646**
Collect Date: **04/30/2009 12:37**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **310.2**
Analytical Method: **310.2**
Analyst: **DIH**
Dilution: **2**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/06/2009 09:17**
Cal Date: **05/06/2009 08:46**
Run Date: **05/06/2009 09:17**
File ID: **SC090506001.059**

Analyte	CAS. Number	Result	Qual	RL	MDL
Alkalinity, Total		464		20.0	10.0

2.4.1.2 QC Summary Data

Example Alkalinity (Colormetric) Calculations

$$(\text{absorbance} - \text{intercept})/(\text{slope} * \text{dilution}) = \text{mg/L}$$

where:

absorbance = reading from the spectrophotometer

intercept = calculated from calibration standard absorbencies

slope = calculated from calibration standard absorbencies

dilution = dilution of the distillate in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 06-MAY-2009

Analyst: DIH

Analyst: NA

Method: ALK

Instrument: SC

Curve Workgroup: NA

Runlog ID: _____

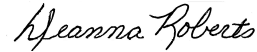
Analytical Workgroups: WG301645 WG301646

Calibration/Linearity	5/6/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
08-MAY-2009



Secondary Reviewer:
10-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 06-MAY-2009

Analyst: DIH

Analyst: NA

Method: ALK

Instrument: SC

Curve Workgroup: NA

Runlog ID: _____

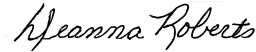
Analytical Workgroups: WG301679

Calibration/Linearity	5/6/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
08-MAY-2009



Secondary Reviewer:
10-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2

AAB#: WG301646

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
PZ-01-043009	04/30/09	05/01/09	05/06/09	14	5.97	05/06/09	14	5.97	
MW-19-043009	04/30/09	05/01/09	05/06/09	14	5.84	05/06/09	14	5.84	
MW-09R-043009	04/30/09	05/01/09	05/06/09	14	5.98	05/06/09	14	5.98	
PZ-03-043009	04/30/09	05/01/09	05/06/09	14	5.86	05/06/09	14	5.86	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1386298
Report generated 05/07/2009 15:18



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2
Login Number: L09050029

AAB#: WG301679

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-13-043009	04/30/09	05/01/09	05/06/09	14	5.95	05/06/09	14	5.95	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS



METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: SC090506001.036
 Prep Date: 05/06/09 09:03
 Analyzed Date: 05/06/09 09:03
 Analyst: DIH

Work Group: WG301646
 Blank Sample ID: WG301646-01
 Instrument ID: SMARTCHEM
 Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301646-02	SC090506001.037	05/06/09 09:04	01
LCS2	WG301646-03	SC090506001.038	05/06/09 09:04	01
MW-09R-043009	L09050029-01	SC090506001.053	05/06/09 09:13	DL01
MW-19-043009	L09050029-09	SC090506001.057	05/06/09 09:16	DL01
PZ-01-043009	L09050029-11	SC090506001.058	05/06/09 09:16	DL01
PZ-03-043009	L09050029-13	SC090506001.059	05/06/09 09:17	DL01
DUP	WG301646-05	SC090506001.060	05/06/09 09:18	DL01

METHOD BLANK SUMMARY

Login Number: L09050029
Blank File ID: SC090506002.010
Prep Date: 05/06/09 10:15
Analyzed Date: 05/06/09 10:15
Analyst: DIH

Work Group: WG301679
Blank Sample ID: WG301679-01
Instrument ID: SMARTCHEM
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301679-02	SC090506002.011	05/06/09 10:15	01
LCS2	WG301679-03	SC090506002.012	05/06/09 10:16	01
DUP	WG301679-05	SC090506002.030	05/06/09 10:27	DL01
MW-13-043009	L09050029-07	SC090506002.034	05/06/09 10:29	DL01



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/06/09 09:03 Sample ID: WG301646-01
Instrument ID: SMARTCHEM Run Date: 05/06/09 09:03 Prep Method: 310.2
File ID: SC090506001.036 Analyst: DIH Method: 310.2
Workgroup (AAB#): WG301646 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 06-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Alkalinity, Total	5.00	10.0	-6.51	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386300

07-MAY-2009 15:18



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/06/09 10:15 Sample ID: WG301679-01
Instrument ID: SMARTCHEM Run Date: 05/06/09 10:15 Prep Method: 310.2
File ID: SC090506002.010 Analyst: DIH Method: 310.2
Workgroup (AAB#): WG301679 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 06-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Alkalinity, Total	5.00	10.0	-16.1	1	*

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386300

07-MAY-2009 15:18



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: DIH Prep Method: 310.2
 Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
 Workgroup (AAB#): WG301646 Units: mg/L
 QC Key: STD Lot #: STD32223
 Sample ID: WG301646-02 LCS File ID: SC090506001.037 Run Date: 05/06/2009 09:04
 Sample ID: WG301646-03 LCS2 File ID: SC090506001.038 Run Date: 05/06/2009 09:04

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total	200	210	105	200	204	102	2.56	85 - 115	25	



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: DIH Prep Method: 310.2
 Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
 Workgroup (AAB#): WG301679 Units: mg/L
 QC Key: STD Lot #: STD32223
 Sample ID: WG301679-02 LCS File ID: SC090506002.011 Run Date: 05/06/2009 10:15
 Sample ID: WG301679-03 LCS2 File ID: SC090506002.012 Run Date: 05/06/2009 10:16

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total	200	198	99.0	200	197	98.5	0.489	85 - 115	25	



2.4.1.3 Raw Data

SMARTCHEM RUN LOG

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☐ NO3 Reagent bottle connected / purged
☐ NO3 pH adj to pH 5-9
- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check

- 1) Workgroup
 Plan # 20090506002
 2) Workgroup _____
 Plan # _____
 3) Workgroup _____
 Plan # _____

Analyte	1	2	3
User Prepared Curve	ALK		
SC Prepared Curve			
Position			
1-1	ICV 250		
1-2	BIK		
1-3	LCS 200		
1-4	LCS DUP		
1-5	05-069-02		
1-6	05-090-01		B,C
1-7	05-057-02	1/3	T,C
1-8	05	1/5	↓
1-9	08	1/5	
1-10	09		↓
1-11	05-063-01		B,C
1-12	03		↓
1-13	05		
1-14	07		↓
1-15	09		↓
1-16	05-075-01	1/2	
1-17	03	1/2	
1-18	05	1/2	
1-19	07	1/100	
1-20	DUP 07	↓	
1-21	05-047-03	1/10	BTC
1-22	05-029-07	1/2	
2-1	05-044-01	1/20	
2-2			
2-3			

NOTES:

- * Run NO2 std on NO3 runs
 * LCS/LCS Dup all parameters
 * MS/MSD (NO3, TKN, NH3)

Position	1	2	3
2-4			
2-5			
2-6			
2-7			
2-8			
2-9			
2-10			
2-11			
2-12			
2-13			
2-14			
2-15			
2-16			
2-17			
2-18			
2-19			
2-20			
2-21			
2-22			
2-23			
2-24			
2-25			
2-26			
3-1			
3-2			

DCN#79335



Heanna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

Analyte	1	2	3
Position			
3-3			
3-4			
3-5			
3-6			
3-7			
3-8			
3-9			
3-10			
3-11			
3-12			
3-13			
3-14			
3-15			

Analyte	1	2	3
Position			
3-16			
3-17			
3-18			
3-19			
3-20			
3-21			
3-22			
3-23			
3-24			
3-25			
3-26			
3-27			
3-28			

☐ Chloride EPA 325.2/SM 4500-Cl⁻ E
☐ Sulfate EPA 375.4
☒ Alkalinity EPA 310.2
☐ Nitrate-Nitrite EPA 353.2/SM 4500-NO₃ F

☐ Ammonia EPA 350.1/SM 4500-NH₃ B
☐ TKN EPA 351.2
☐ Phos EPA 365.4

Analyte	Alk		
SOP & Revision	K 3102		
Curve Stock (SC made)			
Curve ID (user made)	std 31639		
ICV	std 32222		
CCV	std 32224		
LCS	std 32223		
MS			
	Dilution N/A		

Comments: all 05-090, 05-057, 05-063, 05-047 pH < 8.3

Analyst: Deanne Brown

Date: 5/6/09

DCN#79335



Deanne Roberts

Approved: May 10, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.00	0.6557	0.00		10:08:00 AM
DIL-1	RBL	0.00	0.6498	0.00		10:08:18 AM
DIL-1	RBL	0.00	0.6537	0.00		10:09:12 AM
DIL-1	Std-1	0.00	-0.0026	0.00		10:09:30 AM
SR5-1	Std-2	10.00	-0.0153	0.00		10:10:24 AM
SR5-2	Std-3	20.00	-0.0270	0.00		10:10:42 AM
SR5-3	Std-4	50.00	-0.0702	0.00		10:11:36 AM
SR5-4	Std-5	100.00	-0.1400	0.00		10:11:54 AM
SR5-5	Std-6	200.00	-0.3009	0.00		10:12:48 AM
SR5-6	Std-7	250.00	-0.3734	0.00		10:13:06 AM
SR5-7	Std-8	300.00	-0.4541	0.00		10:14:00 AM
1	ICV 250	249.19	-0.3730	0.00		10:14:18 AM
2	WG301679-01 BLANK	-16.08	0.0223	0.00	INV,><,LL	10:15:12 AM
3	WG301679-02 LCS	198.00	-0.2923	0.00		10:15:30 AM
4	WG301679-03 LCSDUP	197.03	-0.2908	0.00		10:16:24 AM
5	L09050069-02	275.05	-0.4147	0.00		10:16:42 AM
6	L09050090-01	187.48	-0.2760	0.00		10:17:36 AM
7	L09050057-02 (3)	132.12	-0.1918	0.00		10:17:54 AM
8	L09050057-05 (5)	174.54	-0.2561	0.00		10:18:48 AM
9	L09050057-08 (5)	95.41	-0.1373	0.00		10:19:06 AM
10	L09050057-09	73.26	-0.1049	0.00		10:20:00 AM
ST-2	CCV (200 mg/L)	204.11	-0.3018	102.05		10:20:18 AM
ST-3	CCB (0 mg/L)	-17.45	0.0242	0.00	INV,><,LL	10:21:13 AM
11	L09050063-01	284.99	-0.4309	0.00		10:21:31 AM
12	L09050063-03	41.18	-0.0586	0.00		10:22:24 AM
13	L09050063-05	279.60	-0.4221	0.00		10:22:43 AM
14	L09050063-07	204.81	-0.3029	0.00		10:23:37 AM
15	L09050063-09	266.66	-0.4011	0.00		10:23:55 AM
16	L09050075-01 (2)	284.50	-0.4301	0.00		10:24:49 AM
17	L09050075-03 (2)	222.17	-0.3301	0.00		10:25:07 AM
18	L09050075-05 (2)	195.87	-0.2890	0.00		10:26:01 AM
19	L09050075-07 (100)	145.42	-0.2118	0.00		10:26:19 AM

Report Date :05/06/2009

Run Date :5/6/2009

Operator : WESTCO

Plan # :20090506002

Plan Description : ALK-B-DIH/5/6/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	WG301679-07 (100)	136.25	-0.1980	0.00		10:27:13 AM
ST-2	CCV (200 mg/L)	211.02	-0.3126	105.51		10:27:31 AM
ST-3	CCB (0 mg/L)	-7.21	0.0099	0.00	INV,><,LL	10:28:25 AM
21	L09050047-03 (5)(10)	146.28	-0.2131	0.00		10:28:43 AM
22	L09050029-07 (2)	170.23	-0.2495	0.00		10:29:37 AM
23	L09050044-01 (20)	181.57	-0.2669	0.00		10:29:55 AM
24	ID 24	9.51	-0.0136	0.00		10:30:49 AM
25	ID 25	12.84	-0.0183	0.00		10:31:07 AM
ST-2	CCV (200 mg/L)	205.64	-0.3042	102.82		10:32:01 AM
ST-3	CCB (0 mg/L)	-4.85	0.0066	0.00	INV,><,LL	10:32:19 AM

Report Date : 05/06/2009 Run Date : 5/6/2009 Operator : WESTCO Plan # : 20090506002
Plan Description : ALK-B-DIH/5/6/2009

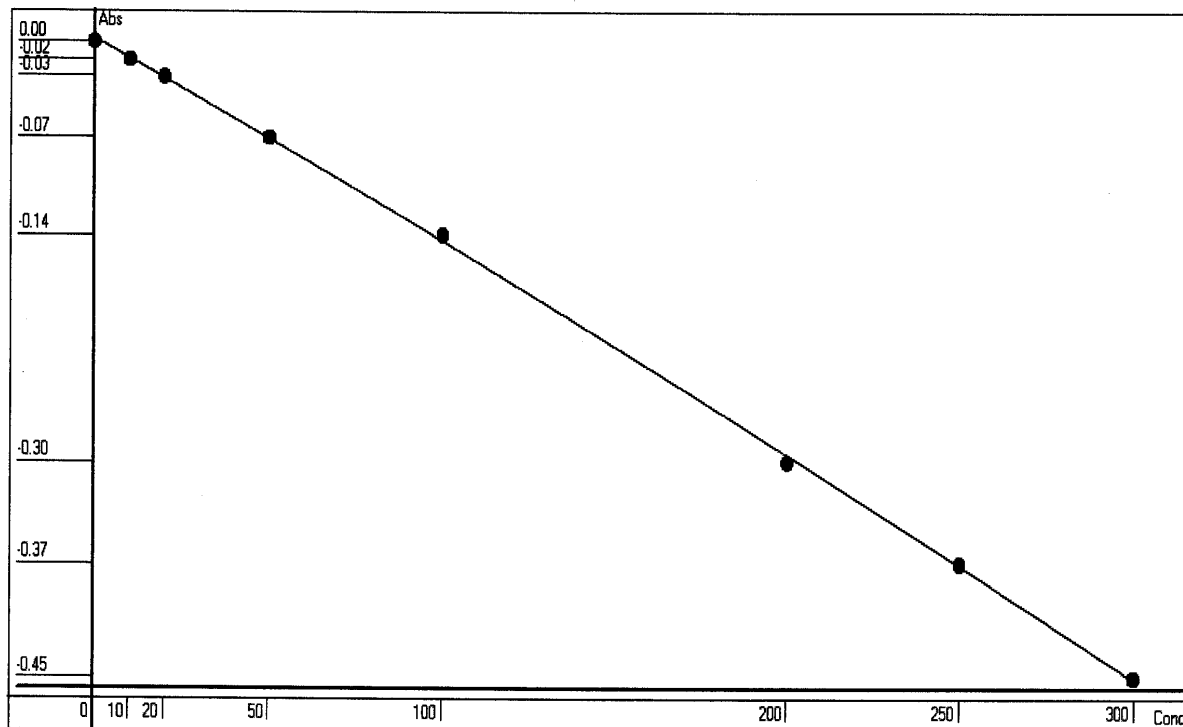
Heanna Roberts

Approved: May 10, 2009

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090506002 Description : [ALK-B-DIH/5/6/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	-0.0026	0	1.7030	170.30
2	-0.0153	10	10.7189	7.19
3	-0.0270	20	18.9915	-5.04
4	-0.0702	50	49.2600	-1.48
5	-0.1400	100	97.2455	-2.75
6	-0.3009	200	203.5281	1.76
7	-0.3734	250	249.4435	-0.22
8	-0.4541	300	299.1093	-0.30

Conc= -116.6921*Abso^2 -712.0004*Abso -0.1474 R²=0.9997

RBL
0.6547
0

Report Date 5/6/2009 Run Date 5/6/2009

Heanna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

301646

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☐ NO3 Reagent bottle connected / purged
☐ NO3 pH adj to pH 5-9
- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check

- 1) Workgroup _____
 Plan # 20090506001
 2) Workgroup _____
 Plan # _____
 3) Workgroup _____
 Plan # _____

Analyte	1	2	3
User Prepared Curve	ALK		
SC Prepared Curve			
Position			
1-1	ICV 250		
1-2	BIK		
1-3	LCS 200		
1-4	LCS DUP		
1-5	05-027-01		
1-6	05-035-02	1/4	color
1-7	03	↓	↓
1-8	05	↓	↓
1-9	06	↓	↓
1-10	08	↓	↓
1-11	09	↓	↓
1-12	05-041-01		B,C
1-13	03		↓
1-14	05		↓
1-15	07		↓
1-16	09		↓
1-17	11		↓
1-18	13		↓
1-19	05-085-02	1/4	color
1-20	03	↓	↓
1-21	05	↓	↓
1-22	06	↓	↓
2-1	DUP 06	↓	↓
2-2	BIK		
2-3	LCS		

Analyte	1	2	3
Position			
2-4	LCS		
2-5	05-085-07	1/50	
2-6	05-033-02		T,C
2-7	03	1/2	↓
2-8	04		↓
2-9	05		↓
2-10	06	1/2	↓
2-11	07		↓
2-12	05-047-02	1/10	x T,C
2-13	03		↓
2-14	04		↓
2-15	05	1/2	↓
2-16	07		↓
2-17	05-029-01	1/5	
2-18	07		•
2-19	09	1/2	
2-20	11	1/2	
2-21	13	1/2	
2-22	05-069-02	DUP 029-02 1/2	
2-23	05-044-01	1/10	•
2-24	03		
2-25	05	1/10	
2-26	R 05-047-02		T,C
3-1			
3-2	R 05-047-03	1/2	• T,C

NOTES:

- * Run NO2 std on NO3 runs
 * LCS/LCS Dup all parameters
 * MS/MSD (NO3, TKN, NH3)

DCN#79329



Heanna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

Analyte	1	2	3
Position			
3-3			
3-4			
3-5			
3-6			
3-7			
3-8			
3-9			
3-10			
3-11			
3-12			
3-13			
3-14			
3-15			

Analyte	1	2	3
Position			
3-16			
3-17			
3-18			
3-19			
3-20			
3-21			
3-22			
3-23			
3-24			
3-25			
3-26			
3-27			
3-28			

☐ Chloride EPA 325.2/SM 4500-Cl⁻ E
☐ Sulfate EPA 375.4
☒ Alkalinity EPA 310.2
☐ Nitrate-Nitrite EPA 353.2/SM 4500-NO₃ F

☐ Ammonia EPA 350.1/SM 4500-NH₃ B
☐ TKN EPA 351.2
☐ Phos EPA 365.4

Analyte	ALK		
SOP & Revision	K 3102		
Curve Stock (SC made)	std 31639		
Curve ID (user made)			
ICV	std 32222		
CCV	std 32224		
LCS	std 32223		
MS			
	Dilution N/A		

Comments: all 05-041, 05-033, 05-047 pH < 8.3

Analyst: Deanna Roberts Date: 5/6/09

DCN#79329



Deanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.00	0.7351	0.00		8:40:54 AM
DIL-1	RBL	0.00	0.7399	0.00		8:41:12 AM
DIL-1	RBL	0.00	0.7286	0.00		8:42:06 AM
DIL-1	Std-1	0.00	0.0025	0.00	INV	8:42:24 AM
SR5-1	Std-2	10.00	-0.0161	0.00		8:43:18 AM
SR5-2	Std-3	20.00	-0.0232	0.00		8:43:36 AM
SR5-3	Std-4	50.00	-0.0720	0.00		8:44:30 AM
SR5-4	Std-5	100.00	-0.1390	0.00		8:44:48 AM
SR5-5	Std-6	200.00	-0.3057	0.00		8:45:42 AM
SR5-6	Std-7	250.00	-0.3924	0.00		8:46:00 AM
SR5-7	Std-8	300.00	-0.4771	0.00		8:46:54 AM
1	ICV 250	260.42	-0.4077	0.00		8:47:12 AM
2	WG301645-01 BLANK	-13.44	0.0210	0.00	INV,><,LL	8:48:06 AM
3	WG301645-02 LCS	202.77	-0.3083	0.00		8:48:24 AM
4	WG301645-03 LCSDUP	200.68	-0.3048	0.00		8:49:18 AM
5	L09050027-01	54.35	-0.0761	0.00		8:49:36 AM
6	L09050035-02 (4)	275.02	-0.4339	0.00		8:50:30 AM
7	L09050035-03 (4)	168.98	-0.2527	0.00		8:50:49 AM
8	L09050035-05 (4)	286.28	-0.4544	0.00		8:51:43 AM
9	L09050035-06 (4)	183.46	-0.2763	0.00		8:52:01 AM
10	L09050035-08 (4)	147.78	-0.2187	0.00		8:52:55 AM
ST-2	CCV (200 mg/L)	210.27	-0.3209	105.14		8:53:13 AM
ST-3	CCB (0 mg/L)	-18.60	0.0282	0.00	INV,><,LL	8:54:07 AM
11	L09050035-09 (4)	241.32	-0.3741	0.00		8:54:25 AM
12	L09050041-01	195.51	-0.2962	0.00		8:55:19 AM
13	L09050041-03	239.31	-0.3706	0.00		8:55:37 AM
14	L09050041-05	195.69	-0.2965	0.00		8:56:31 AM
15	L09050041-07	197.02	-0.2987	0.00		8:56:49 AM
16	L09050041-09	195.75	-0.2966	0.00		8:57:43 AM
17	L09050041-11	175.51	-0.2633	0.00		8:58:01 AM
18	L09050041-13	4.41	-0.0041	0.00		8:58:55 AM
19	L09050085-02 (4)	252.79	-0.3942	0.00		8:59:13 AM

Report Date :05/06/2009

Run Date :5/6/2009

Operator : WESTCO

Plan # :20090506001

Plan Description : ALK-A-DIH/5/6/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	L09050085-03 (4)	182.24	-0.2743	0.00		9:00:07 AM
ST-2	CCV (200 mg/L)	204.38	-0.3110	102.19		9:00:25 AM
ST-3	CCB (0 mg/L)	-4.09	0.0079	0.00	INV,><,LL	9:01:19 AM
21	L09050085-05 (4)	253.70	-0.3958	0.00		9:01:37 AM
22	L09050085-06 (4)	167.75	-0.2507	0.00		9:02:31 AM
23	WG301646-05 (4) DUP	176.98	-0.2657	0.00		9:02:49 AM
24	WG301646-01 BLK	-6.51	0.0113	0.00	INV,><,LL	9:03:43 AM
25	WG301646-02 LCS	209.56	-0.3197	0.00		9:04:01 AM
26	WG301646-03 LCSDUP	204.26	-0.3108	0.00		9:04:55 AM
27	L09050085-07 (50)	116.82	-0.1702	0.00		9:05:13 AM
28	L09050033-02	72.13	-0.1024	0.00		9:06:07 AM
29	L09050033-03 (2)	195.99	-0.2970	0.00		9:06:25 AM
30	L09050033-04	91.31	-0.1312	0.00		9:07:19 AM
ST-2	CCV (200 mg/L)	211.58	-0.3231	105.79		9:07:37 AM
ST-3	CCB (0 mg/L)	-3.03	0.0064	0.00	INV,><,LL	9:08:31 AM
31	L09050033-05	141.91	-0.2094	0.00		9:08:49 AM
32	L09050033-06 (2)	295.12	-0.4707	0.00		9:09:43 AM
33	L09050033-07	69.03	-0.0978	0.00		9:10:01 AM
34	L09050047-02 2X (10)	11.03 X	-0.0135	0.00		9:10:55 AM
35	L09050047-03	387.61 X	-0.6531	0.00	><,LH	9:11:13 AM
36	L09050047-04	54.62	-0.0765	0.00		9:12:07 AM
37	L09050047-05 (2)	103.09	-0.1491	0.00		9:12:25 AM
38	L09050047-07	295.82	-0.4720	0.00		9:13:19 AM
39	L09050029-01 (5)	147.34	-0.2180	0.00		9:13:37 AM
40	L09050029-07	321.71 X	-0.5208	0.00	><,LH	9:14:31 AM
ST-2	CCV (200 mg/L)	193.64	-0.2931	96.82		9:14:49 AM
ST-3	CCB (0 mg/L)	0.73	0.0011	0.00	INV	9:15:43 AM
41	L09050029-09 (2)	224.76	-0.3455	0.00		9:16:01 AM
42	L09050029-11 (2)	282.18	-0.4469	0.00		9:16:55 AM
43	L09050029-13 (2)	232.03	-0.3580	0.00		9:17:13 AM
44	WG301646-05 (2) DUP	234.99	-0.3631	0.00		9:18:07 AM
45	L09050044-01 (10)	315.27 X	-0.5085	0.00	><,LH	9:18:25 AM

Report Date : 05/06/2009 Run Date : 5/6/2009 Operator : WESTCO Plan # : 20090506001
Plan Description : ALK-A-DIH/5/6/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
46	L09050044-03	168.00	-0.2511	0.00		9:19:19 AM
47	L09050044-05 (10)	115.65	-0.1684	0.00		9:19:37 AM
48	ID 48 05-047-02	41.28	-0.0570	0.00		9:20:31 AM
49	ID 49	20.00	X -0.0263	0.00		9:20:49 AM
50	ID 50 05-047-03(2)	379.88	X -0.6369	0.00	><,LH	9:21:44 AM
ST-2	CCV (200 mg/L)	215.36	-0.3295	107.68		9:22:01 AM
ST-3	CCB (0 mg/L)	0.31	0.0017	0.00	INV	9:22:55 AM
35-[1/2]	L09050047-03	761.77	X -0.6390	0.00	><,LH	9:30:36 AM
40-[1/2]	L09050029-07	384.39	X -0.2907	0.00	LH	9:31:48 AM
45-[1/2]	L09050044-01 (10)	411.39	X -0.3132	0.00	LH	9:33:00 AM
50-[1/2]	ID 50 047-03(2)	682.76	X -0.5590	0.00	><,LH	9:34:12 AM
ST-2	CCV (200 mg/L)	219.89	X -0.3372	109.95		9:34:12 AM
ST-3	CCB (0 mg/L)	12.23	X -0.0152	0.00		9:35:06 AM
35-[1/4]	L09050047-03	1377.69	X -0.5650	0.00	><,LH	9:42:46 AM
50-[1/4]	ID 50	826.59	-0.3148	0.00	LH	9:43:58 AM
ST-2	CCV (200 mg/L)	213.77	-0.3268	106.88		9:43:58 AM
ST-3	CCB (0 mg/L)	11.67	-0.0144	0.00		9:44:52 AM
35-[1/10]	L09050047-03	186.76	-0.0244	0.00		9:52:32 AM
ST-2	CCV (200 mg/L)	206.59	-0.3147	103.29		9:52:32 AM
ST-3	CCB (0 mg/L)	20.70	X -0.0273	0.00		9:53:26 AM

Report Date : 05/06/2009 Run Date : 5/6/2009 Operator : WESTCO Plan # : 20090506001
Plan Description : ALK-A-DIH/5/6/2009

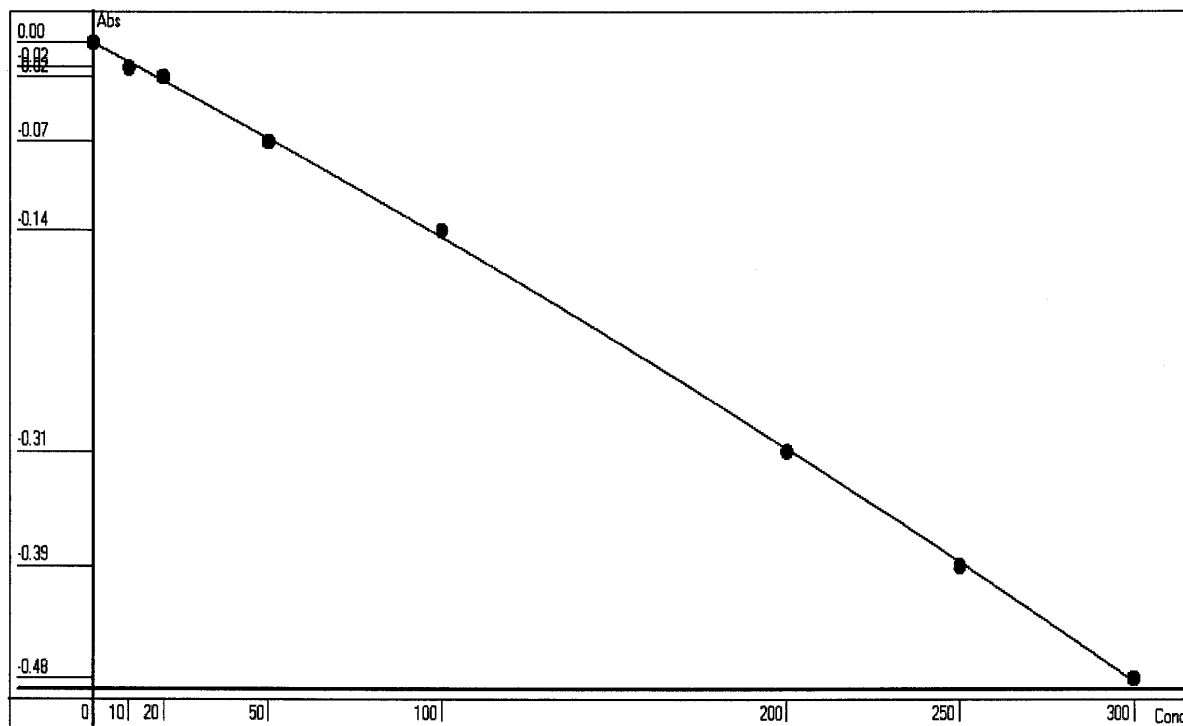
Heanna Roberts

Approved: May 10, 2009

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090506001 Description : [ALK-A-DIH/5/6/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0025	0	-0.2615	-26.15
2	-0.0161	10	12.8604	28.60
3	-0.0232	20	17.8367	-10.82
4	-0.0720	50	51.5522	3.10
5	-0.1390	100	96.4554	-3.54
6	-0.3057	200	201.2144	0.61
7	-0.3924	250	251.7725	0.71
8	-0.4771	300	298.5698	-0.48

Conc= -178.7258*Abso^2 -707.9076*Abso +1.5094 R²=0.9996

RBL
0.7375
0

Report Date 5/6/2009 Run Date 5/6/2009

Heanna Roberts

Approved: May 10, 2009

2.4.2 Ferrous Iron Data

2.4.2.1 Summary Data

LABORATORY REPORT

L09050029

05/19/09 14:15

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-01	SM3500	1	01-MAY-09
MW-13-043009	L09050029-07	SM3500	2	01-MAY-09
MW-19-043009	L09050029-09	SM3500	2	01-MAY-09
PZ-01-043009	L09050029-11	SM3500	1	01-MAY-09
PZ-03-043009	L09050029-13	SM3500	1	01-MAY-09



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-01**
Client ID: **MW-09R-043009**
Matrix: **Water**
Workgroup Number: **WG301355**
Collect Date: **04/30/2009 09:40**

PrePrep Method: **NONE**
Prep Method: **SM3500**
Analytical Method: **SM3500**
Analyst: **TMM**
Dilution: **1**
Units: **mg/L**

Instrument: **UV-120-1V**
Prep Date: **05/01/2009 12:55**
Cal Date:
Run Date: **05/01/2009 12:55**
File ID: **1V.0905011255-09**

Analyte	CAS. Number	Result	Qual	RL	MDL
Iron, Ferrous	7439-89-6	0.195		0.0400	0.0200

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-07**
Client ID: **MW-13-043009**
Matrix: **Water**
Workgroup Number: **WG301355**
Collect Date: **04/30/2009 11:35**

PrePrep Method: **NONE**
Prep Method: **SM3500**
Analytical Method: **SM3500**
Analyst: **TMM**
Dilution: **2**
Units: **mg/L**

Instrument: **UV-120-1V**
Prep Date: **05/01/2009 12:55**
Cal Date:
Run Date: **05/01/2009 12:55**
File ID: **1V.0905011255-08**

Analyte	CAS. Number	Result	Qual	RL	MDL
Iron, Ferrous	7439-89-6	0.863		0.0800	0.0400

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-09**
Client ID: **MW-19-043009**
Matrix: **Water**
Workgroup Number: **WG301355**
Collect Date: **04/30/2009 13:00**

PrePrep Method: **NONE**
Prep Method: **SM3500**
Analytical Method: **SM3500**
Analyst: **TMM**
Dilution: **2**
Units: **mg/L**

Instrument: **UV-120-1V**
Prep Date: **05/01/2009 12:55**
Cal Date:
Run Date: **05/01/2009 12:55**
File ID: **1V.0905011255-07**

Analyte	CAS. Number	Result	Qual	RL	MDL
Iron, Ferrous	7439-89-6	0.734		0.0800	0.0400

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-11**
Client ID: **PZ-01-043009**
Matrix: **Water**
Workgroup Number: **WG301355**
Collect Date: **04/30/2009 09:57**

PrePrep Method: **NONE**
Prep Method: **SM3500**
Analytical Method: **SM3500**
Analyst: **TMM**
Dilution: **1**
Units: **mg/L**

Instrument: **UV-120-1V**
Prep Date: **05/01/2009 12:55**
Cal Date:
Run Date: **05/01/2009 12:55**
File ID: **1V.0905011255-06**

Analyte	CAS. Number	Result	Qual	RL	MDL
Iron, Ferrous	7439-89-6		U	0.0400	0.0200

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-13**
Client ID: **PZ-03-043009**
Matrix: **Water**
Workgroup Number: **WG301355**
Collect Date: **04/30/2009 12:37**

PrePrep Method: **NONE**
Prep Method: **SM3500**
Analytical Method: **SM3500**
Analyst: **TMM**
Dilution: **1**
Units: **mg/L**

Instrument: **UV-120-1V**
Prep Date: **05/01/2009 12:55**
Cal Date:
Run Date: **05/01/2009 12:55**
File ID: **1V.0905011255-05**

Analyte	CAS. Number	Result	Qual	RL	MDL
Iron, Ferrous	7439-89-6	0.0920		0.0400	0.0200

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation

b = intercept from the linear equation

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

$$y = mx + b$$

Step 3: Solve for analyte concentration in sample, Cy

$$C_y = (y) (D)$$

Example Calculation (LCS):

Value of m from plot:	2.7599
Value of b from plot:	0.0153
Absorbance of unknown from quantitation report (x):	0.3765
Calculated concentration (y):	1.05440235
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	1.05 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

$$y = Ax^2 + Bx + C$$

Step 3: Solve for analyte concentration in sample, Cy

$$C_y = (y) (D)$$

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 01-MAY-2009

Analyst: TMM

Analyst: NA

Method: FERROUS

Instrument: UV-120-1V

Curve Workgroup: NA

Runlog ID: _____

Analytical Workgroups: WG301355

Calibration/Linearity	2/12/09
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
01-MAY-2009

Sammy Morris

Secondary Reviewer:
01-MAY-2009

Donald Hesson

Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500

AAB#: WG301355

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
PZ-03-043009	04/30/09	05/01/09	05/01/09	7	1.01	05/01/09	7	1.01	
MW-19-043009	04/30/09	05/01/09	05/01/09	7	0.997	05/01/09	7	0.997	
PZ-01-043009	04/30/09	05/01/09	05/01/09	7	1.12	05/01/09	7	1.12	
MW-09R-043009	04/30/09	05/01/09	05/01/09	7	1.14	05/01/09	7	1.14	
MW-13-043009	04/30/09	05/01/09	05/01/09	7	1.06	05/01/09	7	1.06	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1381340
Report generated 05/01/2009 15:53



METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: 1V.0905011255-02
 Prep Date: 05/01/09 12:55
 Analyzed Date: 05/01/09 12:55
 Analyst: TMM

Work Group: WG301355
 Blank Sample ID: WG301355-01
 Instrument ID: UV-120-1V
 Method: SM3500

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301355-02	1V.0905011255-03	05/01/09 12:55	
LCS2	WG301355-03	1V.0905011255-04	05/01/09 12:55	
PZ-03-043009	L09050029-13	1V.0905011255-05	05/01/09 12:55	
PZ-01-043009	L09050029-11	1V.0905011255-06	05/01/09 12:55	
MW-19-043009	L09050029-09	1V.0905011255-07	05/01/09 12:55	
MW-13-043009	L09050029-07	1V.0905011255-08	05/01/09 12:55	
MW-09R-043009	L09050029-01	1V.0905011255-09	05/01/09 12:55	
DUP	WG301355-05	1V.0905011255-10	05/01/09 12:55	

METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/01/09 12:55 Sample ID: WG301355-01
Instrument ID: UV-120-1V Run Date: 05/01/09 12:55 Prep Method: SM3500
File ID: 1V.0905011255-02 Analyst: TMM Method: SM3500
Workgroup (AAB#): WG301355 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: UV-120 -

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Iron, Ferrous	0.0200	0.0400	0.0200	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1381342

01-MAY-2009 15:53



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: TMM Prep Method: SM3500
Instrument ID: UV-120-1V Matrix: Water Method: SM3500
Workgroup (AAB#): WG301355 Units: mg/L
QC Key: STD Lot #: STD29965
Sample ID: WG301355-02 LCS File ID: 1V.0905011255-03 Run Date: 05/01/2009 12:55
Sample ID: WG301355-03 LCS2 File ID: 1V.0905011255-04 Run Date: 05/01/2009 12:55

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous	0.200	0.203	102	0.200	0.203	102	0.00	75 - 125	25	



2.4.2.3 Raw Data

WgZ921799

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: 100mg/L STD 29968

Concentration: 100 mg/L

Recipe for preparation of curve standards found in:

SOP: 3500 Revision: 1 Page: 7

Second Source Stock: 5429965 (concentration: 100 mg/L)

Daily Preparation: $2(100)/1000 =$

concentration = 0.2

[illegible]

Analyst: Jimmy Mout

Date/Time: 2/12/09 @ 1125

DCN#78377



Dennafsson

Approved: February 13, 2009

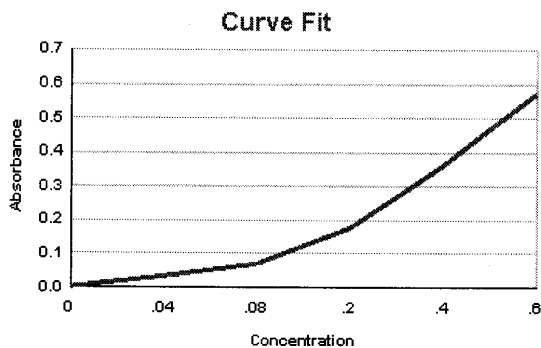
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG294799
Analytical Method: FERROUS
Instrument ID: UV-120-1V

Analyst: TMM
Initial Calibration Date: 02/12/2009

Analyte: IRON
Number of Points: 6
Slope: 0.945533
Y-Intercept: -0.00501729
Coef. Of Correlation (R^2): 0.998710
Coef. Of Correlation (R): 0.999355

Concentration X	Absorbance Y	X ²	X * Y	Y-Fitted (mX^2+B)
0.00	0.00200	0.00	0.00	-0.00501729
0.0400	0.0340	0.00160	0.00136	0.0328040
0.0800	0.0710	0.00640	0.00568	0.0706254
0.200	0.177	0.0400	0.0354	0.184089
0.400	0.362	0.160	0.145	0.373196
0.600	0.572	0.360	0.343	0.562303



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 02/12/2009 11:44



Annika Jansson

Approved: February 13, 2009

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG294799
File ID: 1V.0902121125-07
CCV ID: WG294799-07
Units: mg/L
Analyte: IRON

Instrument ID: UV-120-1V
Run Date: 02/12/2009
Run Time: 11:25
Analyst: TMM
Cal ID: UV-120 -

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.198	0.910	1.0	

* Exceeds %D Limit

CCC Calibration Check Compounds

SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 02/12/2009 11:44



Danna Hesson

Approved: February 13, 2009

Ferrous Iron

ISM 3500Fe-B

SM 3500Fe-B(HACH mod.)

☐ Other

SOP K3500 Revision # 1

CCV: Std 29968

Daily Dilution: $3(100)/1000$

Daily Dilution: = 0.3

LCS: Std 29965

Daily Dilution: $\frac{2(100)}{1000}$

Daily Dilution: ≈ 0.2

Instrument: ☒ ~~UV~~-120-IV

□ IV-120-02

Curve Reference: 21209

Spike: 51 51 29965
Daily Dilution: 20.11/100/50
Daily Dilution: 202

Daily Dilution: 20/2[illegible]

Analyst: Tammy Marcus

Date/Time: 5/1/09 @ 1255

DCN#79295



Linnafsson

Approved: May 01, 2009

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG301355
Analyte: IRON

Analyst: TMM
Date: 05/01/2009

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG301355-01	50	50	0	0.9455	-0.005017	0.0053063	0.0053063	1	mg/L
WG301355-02	50	50	0.187	0.9455	-0.005017	0.20308	0.20308	1	mg/L
WG301355-03	50	50	0.187	0.9455	-0.005017	0.20308	0.20308	1	mg/L
L09050029-13	50	50	0.0820	0.9455	-0.005017	0.092030	0.092030	1	mg/L
L09050029-11	50	50	0.00300	0.9455	-0.005017	0.0084791	ND	1	mg/L
L09050029-09	50	50	0.342	0.9455	-0.005017	0.36701	0.73401	2	mg/L
L09050029-07	50	50	0.403	0.9455	-0.005017	0.43152	0.86304	2	mg/L
WG301355-04	50	50	0.403	0.9455	-0.005017	0.43152	0.86304	2	mg/L
L09050029-01	50	50	0.179	0.9455	-0.005017	0.19462	0.19462	1	mg/L
WG301355-06	50	50	0.179	0.9455	-0.005017	0.19462	0.19462	1	mg/L
WG301355-05	50	50	0.399	0.9455	-0.005017	0.42729	0.85458	2	mg/L
WG301355-07	50	50	0.374	0.9455	-0.005017	0.40085	0.40085	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 05/01/2009 15:27



Anna-Louise

Approved: May 01, 2009

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG301357 Instrument ID: UV-120-1V
File ID: 1V.0905011255-01 Run Date: 05/01/2009
CCV ID: WG301357-01 Run Time: 12:55
Units: mg/L Analyst: TMM
Analyte: IRON Cal ID: UV-120 -

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.306	0.947	2.0	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 05/01/2009 15:28



Danna Hesson

Approved: May 01, 2009

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG301357 Instrument ID: UV-120-1V
File ID: 1V.0905011255-12 Run Date: 05/01/2009
CCV ID: WG301357-02 Run Time: 12:55
Units: mg/L Analyst: TMM
Analyte: IRON Cal ID: UV-120 -

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.310	0.960	3.3	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 05/01/2009 15:28



Danna Hesson

Approved: May 01, 2009

2.4.3 Nitrate Data

2.4.3.1 Summary Data

LABORATORY REPORT

L09050029

05/19/09 14:15

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-01	353.2	1	01-MAY-09
MW-13-043009	L09050029-07	353.2	1	01-MAY-09
MW-19-043009	L09050029-09	353.2	1	01-MAY-09
PZ-01-043009	L09050029-11	353.2	1	01-MAY-09
PZ-03-043009	L09050029-13	353.2	1	01-MAY-09

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: L09050029-01	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-09R-043009	Prep Method: 353.2	Prep Date: 05/06/2009 15:41
Matrix: Water	Analytical Method: 353.2	Cal Date: 05/05/2009 14:08
Workgroup Number: WG301673	Analyst: DIH	Run Date: 05/06/2009 15:41
Collect Date: 04/30/2009 09:40	Dilution: 1	File ID: SC09050714155001
	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Nitrate	14797-55-8		U	0.0500	0.0250

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: L09050029-07	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-13-043009	Prep Method: 353.2	Prep Date: 05/06/2009 15:41
Matrix: Water	Analytical Method: 353.2	Cal Date: 05/05/2009 14:08
Workgroup Number: WG301673	Analyst: DIH	Run Date: 05/06/2009 15:41
Collect Date: 04/30/2009 11:35	Dilution: 1	File ID: SC09050714155601
	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Nitrate	14797-55-8		U	0.0500	0.0250

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: L09050029-09	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-19-043009	Prep Method: 353.2	Prep Date: 05/06/2009 15:41
Matrix: Water	Analytical Method: 353.2	Cal Date: 05/05/2009 14:08
Workgroup Number: WG301673	Analyst: DIH	Run Date: 05/06/2009 15:41
Collect Date: 04/30/2009 13:00	Dilution: 1	File ID: SC09050714160101
	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Nitrate	14797-55-8		U	0.0500	0.0250

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: L09050029-11	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: PZ-01-043009	Prep Method: 353.2	Prep Date: 05/06/2009 15:41
Matrix: Water	Analytical Method: 353.2	Cal Date: 05/05/2009 14:08
Workgroup Number: WG301673	Analyst: DIH	Run Date: 05/06/2009 15:41
Collect Date: 04/30/2009 09:57	Dilution: 1	File ID: SC09050714160401
	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Nitrate	14797-55-8		U	0.0500	0.0250

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-13**
Client ID: **PZ-03-043009**
Matrix: **Water**
Workgroup Number: **WG301673**
Collect Date: **04/30/2009 12:37**

PrePrep Method: **NONE**
Prep Method: **353.2**
Analytical Method: **353.2**
Analyst: **DIH**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/06/2009 15:41**
Cal Date: **05/05/2009 14:08**
Run Date: **05/06/2009 15:41**
File ID: **SC09050714160901**

Analyte	CAS. Number	Result	Qual	RL	MDL
Nitrate	14797-55-8		U	0.0500	0.0250

U Not detected at or above the reporting limit (RL).

2.4.3.2 QC Summary Data

Example Nitrate Calculations

$$(\text{absorbance} - \text{intercept})/(\text{slope} * \text{dilution}) = \text{mg/L}$$

where:

absorbance = reading from the spectrophotometer

intercept = calculated from calibration standard absorbencies

slope = calculated from calibration standard absorbencies

dilution = dilution of the distillate in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 06-MAY-2009

Analyst: DIH

Analyst: NA

Method: NO3

Instrument: SC

Curve Workgroup: NA

Runlog ID: _____

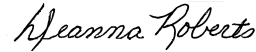
Analytical Workgroups: WG301675 WG301678 WG301673

Calibration/Linearity	5/6/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
08-MAY-2009



Secondary Reviewer:
09-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method:353.2

AAB#:WG301673

Login Number:L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
PZ-01-043009	04/30/09	05/01/09	05/06/09	2	6.24	05/06/09	2	6.24	*ANAL
PZ-03-043009	04/30/09	05/01/09	05/06/09	2	6.13	05/06/09	2	6.13	*ANAL
MW-09R-043009	04/30/09	05/01/09	05/06/09	2	6.25	05/06/09	2	6.25	*ANAL
MW-19-043009	04/30/09	05/01/09	05/06/09	2	6.11	05/06/09	2	6.11	*ANAL
MW-13-043009	04/30/09	05/01/09	05/06/09	2	6.17	05/06/09	2	6.17	*ANAL

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: SC09050714141701
 Prep Date: 05/06/09 15:41
 Analyzed Date: 05/06/09 15:41
 Analyst: DIH

Work Group: WG301673
 Blank Sample ID: WG301673-01
 Instrument ID: SMARTCHEM
 Method: 353.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
PZ-01-043009	L09050029-11	SC09050714160401	05/06/09 15:41	
LCS	WG301673-02	SC09050714142401	05/06/09 15:41	
LCS2	WG301673-03	SC09050714143001	05/06/09 15:41	
PZ-03-043009	L09050029-13	SC09050714160901	05/06/09 15:41	
MW-13-043009	L09050029-07	SC09050714155601	05/06/09 15:41	
MW-19-043009	L09050029-09	SC09050714160101	05/06/09 15:41	
DUP	WG301673-05	SC09050714143701	05/06/09 15:41	
MW-09R-043009	L09050029-01	SC09050714155001	05/06/09 15:41	



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/06/09 15:41 Sample ID: WG301673-01
Instrument ID: SMARTCHEM Run Date: 05/06/09 15:41 Prep Method: 353.2
File ID: SC09050714141701 Analyst: DIH Method: 353.2
Workgroup (AAB#): WG301673 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 05-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Nitrate	0.0250	0.0500	0.0250	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386496

07-MAY-2009 16:36



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: DIH Prep Method: 353.2
 Instrument ID: SMARTCHEM Matrix: Water Method: 353.2
 Workgroup (AAB#): WG301673 Units: mg/L
 QC Key: STD Lot #: STD32552
 Sample ID: WG301673-02 LCS File ID: SC09050714142401 Run Date: 05/06/2009 15:41
 Sample ID: WG301673-03 LCS2 File ID: SC09050714143001 Run Date: 05/06/2009 15:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Nitrate	1.00	0.993	99.3	1.00	1.01	101	1.40	90 - 110	15	

LCS_LCS2 - Modified 03/06/2008
 PDF File ID: 1386497
 Report generated: 05/07/2009 16:36



2.4.3.3 Raw Data

SMARTCHEM RUN LOG

301675

301678

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☒ NO3 Reagent bottle connected / purged
☒ NO3 pH adj to pH 5-9

- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check
 cat coil cleaned 5/10

- 1) Workgroup
 Plan # 20090506003
 2) Workgroup
 Plan #
 3) Workgroup
 Plan #

Analyte	1	2	3
User Prepared Curve	NO3		
SC Prepared Curve			
Position			
1-1	ICV 1.5		
1-2	BLK		
1-3	LCS 1		
1-4	LCS DUP		
1-5	NO2 1		
1-6	04-727-01		
1-7	03		
1-8	05		
1-9	07		
1-10	09		
1-11	05-023-02	1/20	
1-12	04-732-01		
1-13	05-029-01		
1-14	07		
1-15	09		
1-16	11		
1-17	13		
1-18	05-044-01	1/10	blank
1-19	05-044-03		blank
1-20	05-1/10	gas/air	blank
1-21	05-079-01	DUP 727-01	
1-22	MS 727-01		
2-1	MSD		
2-2	BLK		
2-3	LCS		

NOTES:
 * Run NO2 std on NO3 runs
 * LCS/LCS Dup all parameters
 * MS/MSD (NO3, TKN, NH3)

Analyte	1	2	3
Position			
2-4	LCS DUP		
2-5	05-059-01		
2-6	02		
2-7	05-075-01		
2-8	03		
2-9	05		
2-10	07	1/50	color
2-11	05-085-08	1/5	
2-12	09	1/50	↓
2-13	05-079-01		
2-14	04-76730-02		auto 1/2
2-15	03		
2-16	05		
2-17	05-033-02		
2-18	03		
2-19	04		
2-20	05		
2-21	06		
2-22	07		
2-23	DUP		
2-24	MS		
2-25	MSD		
2-26	05-092-01	1/75	
3-1	05-097-01		
3-2	BLK		

DCN#79333



Danna Hesson
 Approved: May 08, 2009

Keanna Roberts
 Approved: May 09, 2009

SMARTCHEM RUN LOG

Analyte	1	2	3
Position			
3-3	LCS		
3-4	LCS DVP		
3-5	05-047-02		
3-6	03		
3-7	04		
3-8	05		
3-9	07		
3-10	05-057-02		
3-11	05		
3-12	08		
3-13	09		
3-14	DVP		
3-15	MS		

Analyte	1	2	3
Position			
3-16	MSD		
3-17	05-023-02	1/20	CCV
3-18	05-044-01	05-044-01	1/25 *
3-19	05-727-01		
3-20	MSD		
3-21	05-736-02	1/10	
3-22	CCV		
3-23	05-044-01	1/50	*
3-24	03	1/10	*
3-25	CCV		
3-26	05-044-05	1/25	*
3-27			
3-28			

☐ Chloride EPA 325.2/SM 4500-Cl E
☐ Sulfate EPA 375.4
☒ Alkalinity EPA 310.2
☒ Nitrate-Nitrite EPA 353.2/SM 4500-NO3 F

☐ Ammonia EPA 350.1/SM 4500-NH3 B
☐ TKN EPA 351.2
☐ Phos EPA 365.4

Analyte		
SOP & Revision	NO3	
Curve Stock (SC made)	1K 3532	
Curve ID (user made)	std 32554	
ICV	std 32551	NO2
CCV	std 32553	std 32555
LCS	std 32552	
MS	std 30016	
	Dilution 0.1/5(25) = 0.5	

Comments:

Analyst:

Date:

044(1,3,5)
 * diluted due to matrix interference
 any lower dilution 'kills' the
 Cd coil. Ran several times and
 this is the best I could do

DCN#79333



Danna Hesson
 Approved: May 08, 2009

Kleana Roberts
 Approved: May 09, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-NitrItc

Smp#[[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0130	0.00		3:29:30 PM
DIL-1	RBL	0.000	0.0151	0.00		3:30:42 PM
DIL-1	RBL	0.000	0.0156	0.00		3:31:54 PM
DIL-1	Std-1	0.000	-0.0028	0.00	INV	3:33:06 PM
SR5-1	Std-2	0.040	0.0140	0.00		3:34:18 PM
SR5-2	Std-3	0.100	0.0332	0.00		3:35:30 PM
SR5-3	Std-4	0.500	0.1798	0.00		3:36:42 PM
SR5-4	Std-5	1.000	0.3606	0.00		3:37:54 PM
ST-1	Std-6	2.000	0.7293	0.00		3:39:06 PM
1	ICV 1.5	1.489	0.5415	0.00		3:40:18 PM
2	WG301673-01 BLK	0.010	0.0009	0.00		3:41:30 PM
3	WG301673-02 LCS	0.993	0.3601	0.00		3:42:42 PM
4	WG301673-03 LCSDUP	1.007	0.3653	0.00		3:43:54 PM
5	NO2 1	0.966	0.3505	0.00		3:45:06 PM
6	L09040727-01	0.019	0.0042	0.00	NO2	3:46:18 PM
7	L09040727-03	0.027	0.0072	0.00	0	3:47:30 PM
8	L09040727-05	0.360	0.1289	0.00	0	3:48:42 PM
9	L09040727-07	0.014	0.0025	0.00	0	3:49:54 PM
10	L09040727-09	0.886	0.3210	0.00	0	3:51:06 PM
ST-2	CCV (1 mg/L)	1.015	0.3682	101.49		3:52:18 PM
ST-3	CCB (0 mg/L)	0.003	-0.0017	0.00	INV	3:53:31 PM
11	L09050023-02 (20)	0.941	0.3413	0.00	0.761	3:54:43 PM
12	L09040732-01	0.772	0.2793	0.00	0.0098	3:55:54 PM
13	L09050029-01	0.014	0.0023	0.00	0	3:57:07 PM
14	L09050029-07	0.025	0.0065	0.00	0	3:58:19 PM
15	L09050029-09	0.012	0.0015	0.00	0	3:59:31 PM
16	L09050029-11	0.000	-0.0026	0.00	INV	4:00:43 PM
17	L09050029-13	0.015	0.0028	0.00	0	4:01:55 PM
18	L09050044-01 (10) BLK	-0.001	-0.0032	0.00	INV,><,LL	4:03:07 PM
19	L09050044-03	0.005	-0.0007	0.00	INV	4:04:19 PM
20	L09050044-05	-0.003	-0.0038	0.00	INV,><,LL	4:05:31 PM
ST-2	CCV (1 mg/L)	0.986	0.3578	98.64		4:06:43 PM

Report Date :05/06/2009 Run Date :5/6/2009 Operator : WESTCO Plan # :20090506003
Plan Description : NO3-A-DIH/5/6/2009

Danna Hesson
Approved: May 08, 2009

Heanna Roberts
Approved: May 09, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-Nitrite

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	CCB (0 mg/L)	0.008	0.0000	0.00		4:07:55 PM
21	DUP 727-01	0.008	0.0003	0.00		4:09:07 PM
22	MS 727-01	0.446	0.1603	0.00		4:10:19 PM
23	MSD 727-01	0.437	0.1570	0.00		4:11:31 PM
24	WG301675-01 BLANK	0.008	0.0003	0.00		4:12:43 PM
25	WG301675-02 LCS	0.965	0.3499	0.00		4:13:55 PM
26	WG301675-03 LCSDUP	0.971	0.3521	0.00		4:15:07 PM
27	L09050059-01	0.139	0.0480	0.00	0.004	4:16:19 PM
28	L09050059-02	0.233	0.0825	0.00	0.007	4:17:31 PM
29	L09050075-01	0.016	0.0031	0.00		4:18:43 PM
30	L09050075-03	0.016	0.0032	0.00		4:19:55 PM
ST-2	CCV (1 mg/L)	0.987	0.3579	98.67		4:21:07 PM
ST-3	CCB (0 mg/L)	0.010	0.0011	0.00		4:22:19 PM
31	L09050075-05	0.022	0.0054	0.00		4:23:31 PM
32	L09050075-07 (50)	0.020	0.0045	0.00	0	4:24:43 PM
33	L09050085-08 (5)	0.017	0.0036	0.00	0	4:25:55 PM
34	L09050085-09 (50)	1.174	0.4264	0.00	0	4:27:07 PM
35	L09050079-01	0.134	0.0462	0.00	0	4:28:19 PM
36	L09040736-02	7.944X	2.9000	0.00	EPL,><,LH	4:29:31 PM
37	L09040736-03	0.019	0.0041	0.00		4:30:43 PM
38	L09040736-05	0.029	0.0080	0.00		4:31:55 PM
39	L09050033-02	1.682	0.6121	0.00		4:33:07 PM
40	L09050033-03	0.114	0.0389	0.00		4:34:19 PM
ST-2	CCV (1 mg/L)	0.991	0.3595	99.11		4:35:31 PM
ST-3	CCB (0 mg/L)	0.004	-0.0013	0.00	INV	4:36:43 PM
41	L09050033-04	1.557	0.5662	0.00		4:37:55 PM
42	L09050033-05	1.945	0.7082	0.00		4:39:07 PM
43	L09050033-06	0.380	0.1362	0.00		4:40:19 PM
44	L09050033-07	0.934	0.3388	0.00		4:41:31 PM
45	DUP 033-07	0.948	0.3438	0.00		4:42:43 PM
46	MS 033-07	1.335	0.4851	0.00		4:43:55 PM
47	MSD 033-07	1.350	0.4907	0.00		4:45:07 PM

Report Date : 05/06/2009 Run Date : 5/6/2009 Operator : WESTCO Plan # : 20090506003
Plan Description : NO3-A-DIH/5/6/2009

Danna Hesson
Approved: May 08, 2009

Heanna Roberts
Approved: May 09, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
 UNITS: MG/L

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-Nitrite

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
48	L09050092-01 (75)	1.031	0.3739	0.00	1.12	4:46:19 PM
49	L09050097-01	0.746	0.2698	0.00	0.63	4:47:31 PM
50	WG301678-01 BLK	0.008	0.0002	0.00		4:48:43 PM
ST-2	CCV (1 mg/L)	0.971	0.3521	97.08		4:49:55 PM
ST-3	CCB (0 mg/L)	0.010	0.0011	0.00		4:51:07 PM
51	WG301678-02 LCS	0.956	0.3466	0.00		4:52:19 PM
52	WG301678-03 LCSDUP	0.956	0.3466	0.00		4:53:31 PM
53	L09050047-02	0.036	0.0105	0.00		4:54:43 PM
54	L09050047-03	0.114	0.0389	0.00		4:55:55 PM
55	L09050047-04	2.100X	0.7646	0.00	><,LH	4:57:07 PM
56	L09050047-05	0.101	0.0344	0.00		4:58:19 PM
57	L09050047-07	2.538X	0.9246	0.00	><,LH	4:59:32 PM
58	L09050057-02	0.045	0.0137	0.00		5:00:43 PM
59	L09050057-05	0.014	0.0024	0.00		5:01:56 PM
60	L09050057-08	0.013	0.0022	0.00		5:03:07 PM
ST-2	CCV (1 mg/L)	0.960	0.3483	96.04		5:04:20 PM
ST-3	CCB (0 mg/L)	0.004	-0.0013	0.00	INV	5:05:32 PM
61	L09050057-09	0.250	0.0887	0.00		5:06:44 PM
62	DUP 0057-09	0.257	0.0911	0.00		5:07:56 PM
63	MS 0057-09	0.683	0.2470	0.00		5:09:08 PM
64	MSD 0057-09	0.680	0.2458	0.00		5:10:20 PM
65	ID 65 05-0736-02 (10)	0.743	0.2690	0.00		5:11:32 PM
66	ID 66	0.889X	0.3222	0.00		5:12:44 PM
67	ID 67 05-044-01 (50)	-0.004	-0.0043	0.00	INV,><,LL	5:13:56 PM
68	ID 68 05-044-03 (10)	0.031	0.0085	0.00		5:15:08 PM
69	ID 69	0.891X	0.3228	0.00		5:16:20 PM
70	ID 70 05-044-05 (25)	-0.004	-0.0043	0.00	INV,><,LL	5:17:32 PM
ST-2	CCV (1 mg/L)	0.955	0.3464	95.52		5:18:44 PM
ST-3	CCB (0 mg/L)	0.008	0.0002	0.00		5:19:56 PM
36-[1/4]	L09040736-02 (2)	3.822X	0.3465	0.00	LH	5:29:06 PM
55-[1/4]	L09050047-04	2.041	0.1838	0.00	LH	5:31:12 PM
57-[1/4]	L09050047-07	2.551	0.2304	0.00	LH	5:33:18 PM

Report Date :05/06/2009 Run Date :5/6/2009 Operator : WESTCO Plan # :20090506003
 Plan Description : NO3-A-DIH/5/6/2009

Danna Hesson
 Approved: May 08, 2009

Heanna Roberts
 Approved: May 09, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-Nitrite

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-2	CCV (1 mg/L)	0.936	0.3393	93.58		5:34:12 PM
ST-3	CCB (0 mg/L)	-0.002	-0.0034	0.00	INV,><,LL	5:35:24 PM

Report Date :05/06/2009 Run Date :5/6/2009 Operator : WESTCO Plan # :20090506003
Plan Description : NO3-A-DIH/5/6/2009

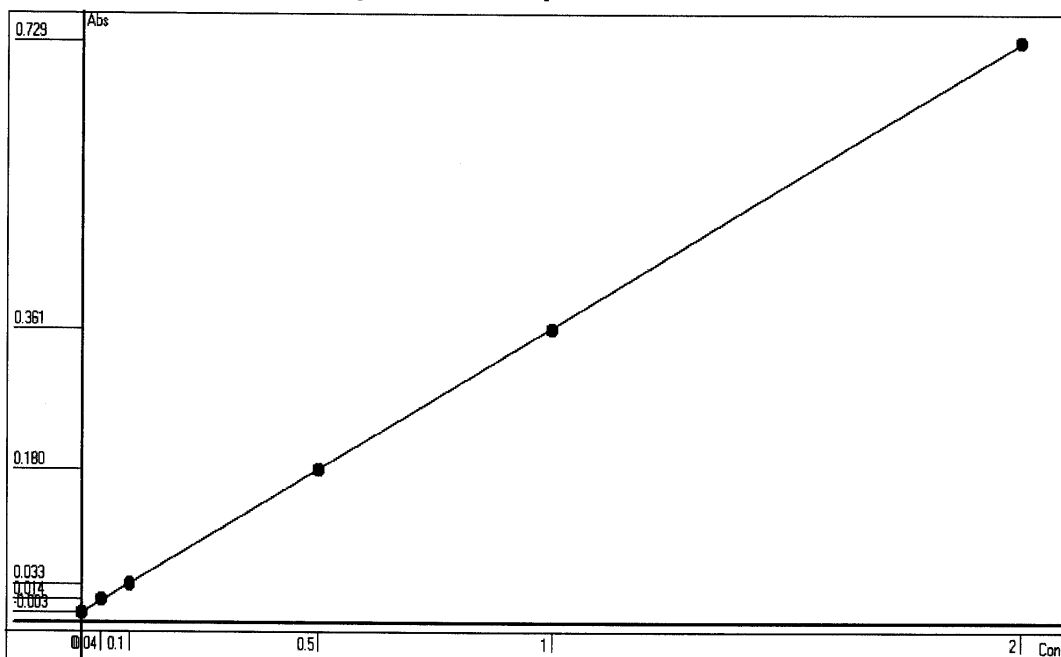

Approved: May 08, 2009


Approved: May 09, 2009

Calibrant Report - WNO3 -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090506003 Description : [NO3-A-DIH/5/6/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	-0.0028	0	-0.0003	-0.03
2	0.0140	0.04	0.0457	14.25
3	0.0332	0.1	0.0983	-1.70
4	0.1798	0.5	0.4994	-0.12
5	0.3606	1	0.9942	-0.58
6	0.7293	2	2.0032	0.16

Conc= +2.7366*Abso +0.0074 R²=1.0000

RBL
0.0154
0

Report Date 5/6/2009 Run Date 5/6/2009

Danna Hesson

Approved: May 08, 2009

Heanna Roberts

Approved: May 09, 2009

2.4.4 Phosphorus Data

2.4.4.1 Summary Data

LABORATORY REPORT

L09050029

05/19/09 14:15

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-01	365.4	1	01-MAY-09
MW-13-043009	L09050029-07	365.4	1	01-MAY-09
MW-19-043009	L09050029-09	365.4	1	01-MAY-09
PZ-01-043009	L09050029-11	365.4	1	01-MAY-09
PZ-03-043009	L09050029-13	365.4	1	01-MAY-09



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-01**
Client ID: **MW-09R-043009**
Matrix: **Water**
Workgroup Number: **WG301470**
Collect Date: **04/30/2009 09:40**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **365.4**
Analytical Method: **365.4**
Analyst: **JBK**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/05/2009 11:53**
Cal Date: **05/05/2009 11:44**
Run Date: **05/05/2009 11:53**
File ID: **SC090505004.021**

Analyte	CAS. Number	Result	Qual	RL	MDL
Phosphorus, Total	7723-14-0	0.170	J	0.200	0.100

J The analyte was positively identified, but the quantitation was below the RL

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-07**
Client ID: **MW-13-043009**
Matrix: **Water**
Workgroup Number: **WG301470**
Collect Date: **04/30/2009 11:35**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **365.4**
Analytical Method: **365.4**
Analyst: **JBK**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/05/2009 11:54**
Cal Date: **05/05/2009 11:44**
Run Date: **05/05/2009 11:54**
File ID: **SC090505004.022**

Analyte	CAS. Number	Result	Qual	RL	MDL
Phosphorus, Total	7723-14-0	0.122	J	0.200	0.100

J The analyte was positively identified, but the quantitation was below the RL

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-09**
Client ID: **MW-19-043009**
Matrix: **Water**
Workgroup Number: **WG301470**
Collect Date: **04/30/2009 13:00**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **365.4**
Analytical Method: **365.4**
Analyst: **JBK**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/05/2009 11:54**
Cal Date: **05/05/2009 11:44**
Run Date: **05/05/2009 11:54**
File ID: **SC090505004.023**

Analyte	CAS. Number	Result	Qual	RL	MDL
Phosphorus, Total	7723-14-0		U	0.200	0.100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-11**
Client ID: **PZ-01-043009**
Matrix: **Water**
Workgroup Number: **WG301470**
Collect Date: **04/30/2009 09:57**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **365.4**
Analytical Method: **365.4**
Analyst: **JBK**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/05/2009 11:55**
Cal Date: **05/05/2009 11:44**
Run Date: **05/05/2009 11:55**
File ID: **SC090505004.024**

Analyte	CAS. Number	Result	Qual	RL	MDL
Phosphorus, Total	7723-14-0		U	0.200	0.100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-13**
Client ID: **PZ-03-043009**
Matrix: **Water**
Workgroup Number: **WG301470**
Collect Date: **04/30/2009 12:37**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **365.4**
Analytical Method: **365.4**
Analyst: **JBK**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/05/2009 11:55**
Cal Date: **05/05/2009 11:44**
Run Date: **05/05/2009 11:55**
File ID: **SC090505004.025**

Analyte	CAS. Number	Result	Qual	RL	MDL
Phosphorus, Total	7723-14-0		U	0.200	0.100

U Not detected at or above the reporting limit (RL).

2.4.4.2 QC Summary Data

Example Phosphorus Calculations

$$(\text{absorbance} - \text{intercept}) / (\text{slope} * \text{dilution}) = \text{mg/L}$$

where:

absorbance = reading from the spectrophotometer

intercept = calculated from calibration standard absorbencies

slope = calculated from calibration standard absorbencies

dilution = dilution of the distillate in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2009

Analyst: JBK

Analyst: NA

Method: PHOS

Instrument: SMARTCHEM

Curve Workgroup: NA

Runlog ID: _____

Analytical Workgroups: WG301470 WG301549

Calibration/Linearity	05/05/09
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JBK
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
05-MAY-2009



Secondary Reviewer:
06-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4

AAB#: WG301470

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-09R-043009	04/30/09	05/01/09	05/05/09	28	5.09	05/05/09	28	5.09	
PZ-01-043009	04/30/09	05/01/09	05/05/09	28	5.08	05/05/09	28	5.08	
MW-19-043009	04/30/09	05/01/09	05/05/09	28	4.95	05/05/09	28	4.95	
MW-13-043009	04/30/09	05/01/09	05/05/09	28	5.01	05/05/09	28	5.01	
PZ-03-043009	04/30/09	05/01/09	05/05/09	28	4.97	05/05/09	28	4.97	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1384925
Report generated 05/06/2009 14:00



METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: SC090505004.008
 Prep Date: 05/05/09 11:45
 Analyzed Date: 05/05/09 11:45
 Analyst: JBK

Work Group: WG301470
 Blank Sample ID: WG301470-01
 Instrument ID: SMARTCHEM
 Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301470-02	SC090505004.009	05/05/09 11:46	01
MW-09R-043009	L09050029-01	SC090505004.021	05/05/09 11:53	01
MW-13-043009	L09050029-07	SC090505004.022	05/05/09 11:54	01
MW-19-043009	L09050029-09	SC090505004.023	05/05/09 11:54	01
PZ-01-043009	L09050029-11	SC090505004.024	05/05/09 11:55	01
PZ-03-043009	L09050029-13	SC090505004.025	05/05/09 11:55	01
DUP	WG301470-04	SC090505004.033	05/05/09 12:00	01

METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/05/09 11:45 Sample ID: WG301470-01
Instrument ID: SMARTCHEM Run Date: 05/05/09 11:45 Prep Method: 365.4
File ID: SC090505004.008 Analyst: JBK Method: 365.4
Workgroup (AAB#): WG301470 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 05-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.200	0.100	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384927

06-MAY-2009 14:00



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Run Date: 05/05/2009 Sample ID: WG301470-02
Instrument ID: SMARTCHEM Run Time: 11:46 Prep Method: 365.4
File ID: SC090505004.009 Analyst: JBK Method: 365.4
Workgroup (AAB#): WG301470 Matrix: Water Units: mg/L
QC Key: STD Lot#: STD32370 Cal ID: SMARTC - 05-MAY-09

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	1.18	118	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 1384928
Report generated: 05/06/2009 14:00



2.4.4.3 Raw Data

SMARTCHEM RUN LOG

Daily Check

- | | |
|--|--|
| ☒ Lamp On | ☒ WBL Run |
| ☒ Probe Rinse Full | ☒ Reagents Full |
| ☒ DI Water > 1/2 Full | ☒ Dilution H ₂ O Full |
| ☒ Wash Solution > 1/2 Full | ☒ Waste Container Check |
| ☐ NO3 Reagent bottle connected / purged | |
| ☐ NO3 pH adj to pH 5-9 | |

- 1) Workgroup _____
 Plan # 20050505004
- 2) Workgroup _____
 Plan # _____
- 3) Workgroup _____
 Plan # _____

Analyte	1	2	3
User Prepared Curve	Phos		
SC Prepared Curve			
Position			
1-1	ICV 1.5		
1-2	Blank		
1-3	LCS 1		
1-4	04-685-01		
1-5	-02		
1-6	-03		
1-7	04-718-01		
1-8	-02		
1-9	-03		
1-10	04-687-03	1/250	
1-11	04-713-01		
1-12	-02		
1-13	05-029-01		
1-14	-07		
1-15	-09		
1-16	-11		
1-17	-13		
1-18	0504-690-01		
1-19	-07		
1-20	-09		
1-21	-11		
1-22	-13		
2-1	Dup 685-01		
2-2	ms		
2-3	msd ↓		

Analyte	1	2	3
Position			
2-4	IL 121.5		
2-5	Blank		
2-6	LCS 1		
2-7	04-693-01		
2-8	-02		
2-9	-03		
2-10	-04		
2-11	-05		
2-12	-06		
2-13	04-727-01		
2-14	-03		
2-15	-05		
2-16	-07		
2-17	-09		
2-18	05-044-01		
2-19	-03		
2-20	-05		
2-21	Dup ↓		
2-22	ms		
2-23	msd ↓		
2-24	22 455-01		
2-25			
2-26			
3-1			
3-2			

NOTES:

- * Run NO2 std on NO3 runs
- * LCS/LCS Dup all parameters
- * MS/MSD (NO3, TKN, NH3)

* W6301549 digested diff. day (see digest loss)

DCN#79317



Dannat/Johnson

Approved: May 06, 2009

SMARTCHEM RUN LOG

Analyte		1	2	3
Position				
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Analyte		1	2	3
Position				
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

☐ Chloride EPA 325.2/SM 4500-Cl E
☐ Sulfate EPA 375.4
☐ Alkalinity EPA 310.2
☐ Nitrate-Nitrite EPA 353.2/SM 4500-NO3 F

☐ Ammonia EPA 350.1/SM 4500-NH3 B
☐ TKN EPA 351.2
☒ Phos EPA 365.4

Analyte			
SOP & Revision	Phos		
Curve Stock (SC made)	K3654		
Curve ID (user made)	SEE		
ICV			
CCV	DILUT		
LCS			
MS	LOG		
	Dilution		

Comments: _____

Analyst: _____

Date: _____

05/05/09

DCN#79317



Danna K. Johnson

Approved: May 06, 2009

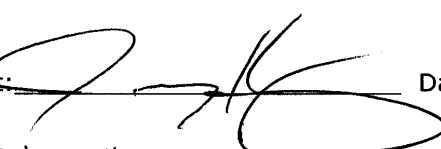
TKN/Phosphorus Digestion Log

TKN WG: 301469
 TKN Std: Std 32416
 TKN CCV: $\downarrow 1/25 = 2.5$
 TKN ICV: Std 32418
 TKN LCS: Std 32417

Phos WG: 301470
 Phos Std: Std 32416
 Phos CCV: $\downarrow 1/2(2) = 1$
 Phos ICV: Std 32371
 Phos LCS: Std 32370

MS/MSD: Std 30130
 Daily Dilution: $1(25)/25 = 1$

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	05-029-11			✓
2	CCV		2.5	1	27	-13			✓
3	ICV T		2		28	04-690-01			✓
4	ICV P			1.5	29	-07			✓
5	Blank		✓	✓	30	-09			✓
6	LCS T		1		31	-11			✓
7	LCS P			1	32	-13			✓
8	04-676-02		1/50		33				
9	-05		$\downarrow$		34				
10	04-685-01*		✓	✓	35				
11	-02		✓	✓	36				
12	-03		✓	✓	37				
13	05-035-02		1/50		38	DUP* 04-685-01	✓	✓	
14	-05		$\downarrow$		39	MS	✓	✓	
15	-08		$\downarrow$		40	MSD $\downarrow$	✓	✓	
16	04-714-01		✓		41				
17	04-718-01		✓	✓	42				
18	-02		✓	✓	43				
19	-03		✓	✓	44				
20	04-687-03			1/250	45				
21	04-713-01			✓	46				
22	-02			✓	47				
23	05-029-01			✓	48				
24	-07			✓	49				
25	-09			✓	50				

Analyst: 

Date: 05/04/09

* Large amt of organic matter (grass). Larger pieces removed prior to digestion



Approved: May 06, 2009

TKN/Phosphorus Digestion Log

TKN WG: _____
 TKN Std: _____
 TKN CCV: _____
 TKN ICV: _____
 TKN LCS: _____

Phos WG: 301549
 Phos Std: Std 32416
 Phos CCV: 1/2(2)=1
 Phos ICV: Std 32371
 Phos LCS: Std 32370

MS/MSD: Std 30130
 Daily Dilution: 1(25)/25 = 1

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std				26				
2	CCV				27				
3	ICV				28				
4	Blank				29				
5	LCS				30				
6	04-693-01				31				
7	-02				32				
8	-03				33				
9	-04				34				
10	-05				35				
11	-06				36				
12	04-727-01				37				
13	-03				38				
14	-05				39				
15	-07				40				
16	-09				41				
17	05-044-01*				42				
18	-03				43				
19	-05				44				
20	Dup				45				
21	MS				46				
22	MSD				47				
23					48				
24					49				
25					50				

* Addition of digest vgt. made orange precip. to come out of sol'n

Analyst: [Signature] Date: 05/05/09

[Signature]

Approved: May 06, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WTPH -Unit [mg/L] - EPA 365.4 PHOSPHORUS

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0406	0.00		11:39:44 AM
DIL-1	RBL	0.000	0.0323	0.00		11:40:02 AM
DIL-1	RBL	0.000	0.0379	0.00		11:40:56 AM
SR5-1	Std-1	0.010	-0.0018	0.00		11:41:14 AM
SR5-2	Std-2	0.200	0.0322	0.00		11:42:09 AM
SR5-3	Std-3	0.500	0.0606	0.00		11:42:26 AM
SR5-4	Std-4	1.000	0.1342	0.00		11:43:21 AM
SR5-5	Std-5	1.500	0.1919	0.00		11:43:38 AM
ST-1	Std-6	2.000	0.2668	0.00		11:44:33 AM
1	ICV 1.5	1.411	0.1858	0.00	EPL	11:44:50 AM
2	WG301470-01 BLANK	0.058	0.0067	0.00		11:45:45 AM
3	WG301470-02 LCS1	1.180	0.1552	0.00		11:46:02 AM
4	L09040685-01	0.351	0.0454	0.00		11:46:57 AM
5	L09040685-02	0.064	0.0075	0.00		11:47:14 AM
6	L09040685-03	0.196	0.0249	0.00		11:48:09 AM
7	L09040718-01	0.045	0.0049	0.00		11:48:26 AM
8	L09040718-02	0.164	0.0207	0.00		11:49:21 AM
9	L09040718-03	0.065	0.0075	0.00		11:49:38 AM
10	L09040687-03 (250)	1.399	0.1842	0.00		11:50:33 AM
ST-2	CCV (1 mg/L)	1.018	0.1338	101.80		11:50:50 AM
ST-3	CCB (0 mg/L)	0.034	0.0035	0.00		11:51:45 AM
11	L09040713-01	0.672	0.0880	0.00		11:52:02 AM
12	L09040713-02	0.791	0.1037	0.00	EPL	11:52:57 AM
13	L09050029-01	0.170	0.0215	0.00		11:53:15 AM
14	L09050029-07	0.122	0.0152	0.00		11:54:09 AM
15	L09050029-09	-0.046	-0.0071	0.00	><,LL	11:54:27 AM
16	L09050029-11	-0.017	-0.0032	0.00	><,LL	11:55:21 AM
17	L09050029-13	-0.084	-0.0121	0.00	><,LL	11:55:39 AM
18	L09040690-01	0.082	0.0099	0.00		11:56:33 AM
19	L09040690-07	-0.076	-0.0111	0.00	><,LL	11:56:51 AM
20	L09040690-09	0.007	-0.0001	0.00		11:57:45 AM
ST-2	CCV (1 mg/L)	0.970	0.1275	97.04		11:58:03 AM

Report Date :05/05/2009

Run Date :5/5/2009

Operator : WESTCO

Plan # :20090505004

Plan Description : PHOS-B-JBK/05/05/2009



Approved: May 06, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WTPH -Unit [mg/L] - EPA 365.4 PHOSPHORUS

Smp#[[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	CCB (0 mg/L)	-0.011	-0.0024	0.00	><,LL	11:58:57 AM
21	L09040690-11	-0.106	-0.0150	0.00	><,LL	11:59:15 AM
22	L09040690-13	-0.072	-0.0106	0.00	><,LL	12:00:09 PM
23	WG301470-04 DUP	0.492	0.0641	0.00		12:00:27 PM
24	WG301470-05 MS	1.630	0.2148	0.00		12:01:21 PM
25	WG301470-06 SD	1.540	0.2029	0.00		12:01:39 PM
26	ICV	1.536	0.2024	0.00		12:02:33 PM
27	WG301549-01 BLANK	-0.011	-0.0024	0.00	><,LL	12:02:51 PM
28	WG301549-02 LCS1	0.924	0.1214	0.00		12:03:45 PM
29	L09040693-01	0.264	0.0339	0.00		12:04:03 PM
30	L09040693-02	1.306	0.1719	0.00		12:04:57 PM
ST-2	CCV (1 mg/L)	0.936	0.1229	93.57		12:05:15 PM
ST-3	CCB (0 mg/L)	-0.008	-0.0020	0.00	><,LL	12:06:09 PM
31	L09040693-03	0.616	0.0806	0.00		12:06:27 PM
32	L09040693-04	0.140	0.0175	0.00		12:07:21 PM
33	L09040693-05	0.008	0.0001	0.00		12:07:39 PM
34	L09040693-06	-0.001	-0.0011	0.00	LL	12:08:33 PM
35	L09040727-01	0.153	0.0192	0.00		12:08:51 PM
36	L09040727-03	0.349	0.0452	0.00		12:09:45 PM
37	L09040727-05	-0.094	-0.0134	0.00	><,LL	12:10:03 PM
38	L09040727-07	-0.001	-0.0012	0.00	LL	12:10:57 PM
39	L09040727-09	-0.076	-0.0111	0.00	><,LL	12:11:15 PM
40	L09050044-01	0.772	0.1012	0.00		12:12:09 PM
ST-2	CCV (1 mg/L)	1.036	0.1362	103.61		12:12:27 PM
ST-3	CCB (0 mg/L)	-0.002	-0.0013	0.00	LL	12:13:21 PM
41	L09050044-03	0.073	0.0087	0.00	EPL	12:13:39 PM
42	L09050044-05	0.347	0.0450	0.00		12:14:33 PM
43	WG301549-04 DUP	0.224	0.0287	0.00	EPL	12:14:51 PM
44	WG301549-05 MS	1.136	0.1494	0.00		12:15:45 PM
45	WG301549-06 SD	1.038	0.1365	0.00		12:16:03 PM
46	ID 46	0.385	0.0500	0.00		12:16:57 PM
47	ID 47	-0.180	-0.0248	0.00	><,LL	12:17:15 PM

Report Date :05/05/2009 Run Date :5/5/2009 Operator : WESTCO Plan # :20090505004
Plan Description : PHOS-B-JBK/05/05/2009

Anna Hesson

Approved: May 06, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WTPH -Unit [mg/L] - EPA 365.4 PHOSPHORUS

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
48	ID 48	-0.087	-0.0125	0.00	><,LL	12:18:09 PM
ST-2	CCV (1 mg/L)	0.858	0.1126	85.79		12:18:27 PM
ST-3	CCB (0 mg/L)	-0.033	-0.0054	0.00	><,LL	12:19:21 PM

Report Date :05/05/2009 Run Date :5/5/2009 Operator : WESTCO Plan # :20090505004
Plan Description : PHOS-B-JBK/05/05/2009

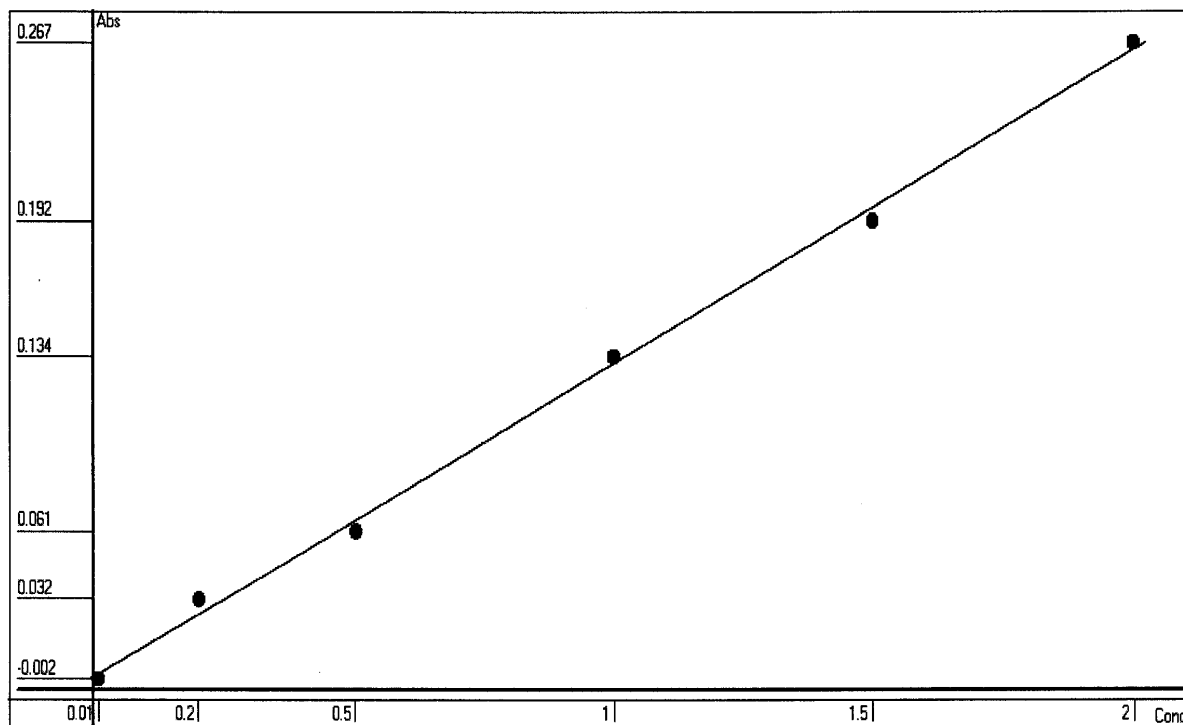
Anna Hesson

Approved: May 06, 2009

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090505004 Description: [PHOS-B-JBK/05/05/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	-0.0018	0.01	-0.0058	-158.00
2	0.0322	0.2	0.2509	25.45
3	0.0606	0.5	0.4654	-6.92
4	0.1342	1	1.0211	2.11
5	0.1919	1.5	1.4568	-2.88
6	0.2668	2	2.0224	1.12

Conc= +7.551*Abso +0.0078 R²=0.9977

RBL
0.0393
0

Report Date 5/5/2009 Run Date 5/5/2009

Annalissa

Approved: May 06, 2009

2.4.5 Sulfate Data

2.4.5.1 Summary Data

LABORATORY REPORT

L09050029

05/19/09 14:15

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-01	375.4	25	01-MAY-09
MW-13-043009	L09050029-07	375.4	1	01-MAY-09
MW-19-043009	L09050029-09	375.4	3	01-MAY-09
PZ-01-043009	L09050029-11	375.4	1	01-MAY-09
PZ-03-043009	L09050029-13	375.4	100	01-MAY-09

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: L09050029-01	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-09R-043009	Prep Method: 375.4	Prep Date: 05/04/2009 11:46
Matrix: Water	Analytical Method: 375.4	Cal Date: 05/04/2009 11:41
Workgroup Number: WG301457	Analyst: DIH	Run Date: 05/04/2009 11:46
Collect Date: 04/30/2009 09:40	Dilution: 25	File ID: SC090504002.016
Sample Tag: DL01	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Sulfate	14808-79-8	635		125	62.5

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-07**
Client ID: **MW-13-043009**
Matrix: **Water**
Workgroup Number: **WG301370**
Collect Date: **04/30/2009 11:35**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **375.4**
Analytical Method: **375.4**
Analyst: **DIH**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/04/2009 09:51**
Cal Date: **05/04/2009 09:44**
Run Date: **05/04/2009 09:51**
File ID: **SC090504001.019**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sulfate	14808-79-8	24.6		5.00	2.50

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-09**
Client ID: **MW-19-043009**
Matrix: **Water**
Workgroup Number: **WG301457**
Collect Date: **04/30/2009 13:00**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **375.4**
Analytical Method: **375.4**
Analyst: **DIH**
Dilution: **3**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/04/2009 09:52**
Cal Date: **05/04/2009 11:41**
Run Date: **05/04/2009 11:46**
File ID: **SC090504002.017**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sulfate	14808-79-8	72.7		15.0	7.50

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-11**
Client ID: **PZ-01-043009**
Matrix: **Water**
Workgroup Number: **WG301370**
Collect Date: **04/30/2009 09:57**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **375.4**
Analytical Method: **375.4**
Analyst: **DIH**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/04/2009 09:52**
Cal Date: **05/04/2009 09:45**
Run Date: **05/04/2009 09:52**
File ID: **SC090504001.021**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sulfate	14808-79-8	25.4		5.00	2.50

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-13**
Client ID: **PZ-03-043009**
Matrix: **Water**
Workgroup Number: **WG301370**
Collect Date: **04/30/2009 12:37**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **375.4**
Analytical Method: **375.4**
Analyst: **DIH**
Dilution: **100**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/04/2009 10:16**
Cal Date: **05/04/2009 09:45**
Run Date: **05/04/2009 10:16**
File ID: **SC090504001.060**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sulfate	14808-79-8	2490		500	250

2.4.5.2 QC Summary Data

Example Sulfate Calculations

$$(\text{absorbance} - \text{intercept})/(\text{slope} * \text{dilution}) = \text{mg/L}$$

where:

absorbance = reading from the spectrophotometer

intercept = calculated from calibration standard absorbencies

slope = calculated from calibration standard absorbencies

dilution = dilution of the distillate in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2009

Analyst: DIH

Analyst: NA

Method: SO4

Instrument: SC

Curve Workgroup: NA

Runlog ID: _____

Analytical Workgroups: WG301371 WG301370

Calibration/Linearity	5/4/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
05-MAY-2009

Imma Hesson

Secondary Reviewer:
10-MAY-2009

Heanna Roberts

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2009

Analyst: DIH

Analyst: NA

Method: SO4

Instrument: SC

Curve Workgroup: NA

Runlog ID: _____

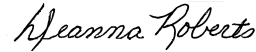
Analytical Workgroups: WG301482 WG301484 WG301457

Calibration/Linearity	5/4/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
05-MAY-2009



Secondary Reviewer:
10-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 375.4

AAB#: WG301370

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
PZ-01-043009	04/30/09	05/01/09	05/04/09	28	4.00	05/04/09	28	4.00	
PZ-03-043009	04/30/09	05/01/09	05/04/09	28	3.90	05/04/09	28	3.90	
MW-13-043009	04/30/09	05/01/09	05/04/09	28	3.93	05/04/09	28	3.93	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1384119
Report generated 05/05/2009 15:09



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 375.4

AAB#: W6301457

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-19-043009	04/30/09	05/01/09	05/04/09	28	3.87	05/04/09	28	0.0794	
MW-09R-043009	04/30/09	05/01/09	05/04/09	28	4.09	05/04/09	28	4.09	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS

METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: SC090504001.010
 Prep Date: 05/04/09 09:46
 Analyzed Date: 05/04/09 09:46
 Analyst: DIH

Work Group: WG301370
 Blank Sample ID: WG301370-01
 Instrument ID: SMARTCHEM
 Method: 375.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301370-02	SC090504001.011	05/04/09 09:46	01
LCS2	WG301370-03	SC090504001.012	05/04/09 09:47	01
MW-13-043009	L09050029-07	SC090504001.019	05/04/09 09:51	01
PZ-01-043009	L09050029-11	SC090504001.021	05/04/09 09:52	01
DUP	WG301370-05	SC090504001.027	05/04/09 09:56	DL01
PZ-03-043009	L09050029-13	SC090504001.060	05/04/09 10:16	DL01



METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: SC090504002.010
 Prep Date: 05/04/09 11:42
 Analyzed Date: 05/04/09 11:42
 Analyst: DIH

Work Group: WG301457
 Blank Sample ID: WG301457-01
 Instrument ID: SMARTCHEM
 Method: 375.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301457-02	SC090504002.011	05/04/09 11:43	01
LCS2	WG301457-03	SC090504002.012	05/04/09 11:44	01
MW-09R-043009	L09050029-01	SC090504002.016	05/04/09 11:46	DL01
MW-19-043009	L09050029-09	SC090504002.017	05/04/09 11:46	DL01
DUP	WG301457-05	SC090504002.034	05/04/09 11:57	01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/04/09 09:46 Sample ID: WG301370-01
Instrument ID: SMARTCHEM Run Date: 05/04/09 09:46 Prep Method: 375.4
File ID: SC090504001.010 Analyst: DIH Method: 375.4
Workgroup (AAB#): WG301370 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 04-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Sulfate	2.50	5.00	2.50	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384121

05-MAY-2009 15:09



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/04/09 11:42 Sample ID: WG301457-01
Instrument ID: SMARTCHEM Run Date: 05/04/09 11:42 Prep Method: 375.4
File ID: SC090504002.010 Analyst: DIH Method: 375.4
Workgroup (AAB#): WG301457 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 04-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Sulfate	2.50	5.00	2.50	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384121

05-MAY-2009 15:09



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: DIH Prep Method: 375.4
Instrument ID: SMARTCHEM Matrix: Water Method: 375.4
Workgroup (AAB#): WG301370 Units: mg/L
QC Key: STD Lot #: STD32347
Sample ID: WG301370-02 LCS File ID: SC090504001.011 Run Date: 05/04/2009 09:46
Sample ID: WG301370-03 LCS2 File ID: SC090504001.012 Run Date: 05/04/2009 09:47

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfate	20.0	19.6	98.2	20.0	20.1	100	2.10	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 1384122
Report generated: 05/05/2009 15:09



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: DIH Prep Method: 375.4
Instrument ID: SMARTCHEM Matrix: Water Method: 375.4
Workgroup (AAB#): WG301457 Units: mg/L
QC Key: STD Lot #: STD32347
Sample ID: WG301457-02 LCS File ID: SC090504002.011 Run Date: 05/04/2009 11:43
Sample ID: WG301457-03 LCS2 File ID: SC090504002.012 Run Date: 05/04/2009 11:44

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfate	20.0	19.9	99.4	20.0	20.2	101	1.76	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 1384122
Report generated: 05/05/2009 15:09



2.4.5.3 Raw Data

301371

SMARTCHEM RUN LOG

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☐ NO3 Reagent bottle connected / purged
☐ NO3 pH adj to pH 5-9
- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check

- 1) Workgroup _____
 Plan # 20090504001
 2) Workgroup _____
 Plan # _____
 3) Workgroup _____
 Plan # _____

Analyte	1	2	3
User Prepared Curve	504		
SC Prepared Curve			
Position			
1-1	ICV 30		
1-2	BIK		
1-3	LCS 20		
1-4	LCS DUP		
1-5	04-687-02 1/500		Color
1-6	04-734-01 1/500	Auto 1/12	Color
1-7	04 1/1000	Auto 1/14	✓
1-8	05-029-01	Auto 1/10	
1-9	07		
1-10	09	Auto 1/12	
1-11	11		
1-12	13	Auto 1/25	1/100
1-13	05-041-01 1/25		
1-14	03 1/15		
1-15	05 1/10		
1-16	DUP 05		
1-17	MS 07		
1-18	MSD 09		
1-19	11 1/5		
1-20	13		
1-21	04-690-01	Auto 1/5	
1-22	07	Auto 1/5	
2-1	09	Auto 1/5	
2-2	BIK		
2-3	LCS		

NOTES:
 * Run NO2 std on NO3 runs
 * LCS/LCS Dup all parameters
 * MS/MSD (NO3, TKN, NH3)

Analyte	1	2	3
Position			
2-4	LCS DUP		
2-5	04-690-11	Auto 1/12	
2-6	13		
2-7	04-693-01 1/10		
2-8	02 1/5		
2-9	03 1/2		
2-10	04		
2-11	05		
2-12	06 BIK		
2-13	04-727-01		
2-14	03		
2-15	05		
2-16	07		
2-17	09		
2-18	DUP		
2-19	MS		
2-20	05-029-13 1/100		
2-21			
2-22			
2-23			
2-24			
2-25			
2-26			
3-1			
3-2			

DCN#79301



Kearna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

Analyte	1	2	3
Position			
3-3			
3-4			
3-5			
3-6			
3-7			
3-8			
3-9			
3-10			
3-11			
3-12			
3-13			
3-14			
3-15			

Analyte	1	2	3
Position			
3-16			
3-17			
3-18			
3-19			
3-20			
3-21			
3-22			
3-23			
3-24			
3-25			
3-26			
3-27			
3-28			

☒ Chloride EPA 325.2/SM 4500-Cl⁻ E
☒ Sulfate EPA 375.4
☐ Alkalinity EPA 310.2
☐ Nitrate-Nitrite EPA 353.2/SM 4500-NO₃ F

☐ Ammonia EPA 350.1/SM 4500-NH₃ B
☐ TKN EPA 351.2
☐ Phos EPA 365.4

Analyte	504		
SOP & Revision	113754		
Curve Stock (SC made)	std 31984		
Curve ID (user made)			
ICV	std 32346		
CCV	std 32499		
LCS	std 32347		
MS	std 30480		
	Dilution 0.1/10 (1000) = 10		

Comments: _____

Analyst: Deanna Lessner Date: 5/4/09

DCN#79301



Deanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WSO4 -Unit [mg/L] - Sulfate EPA 375.4

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.00	0.0051	0.00		9:39:18 AM
DIL-1	RBL	0.00	0.0055	0.00		9:39:36 AM
DIL-1	RBL	0.00	0.0053	0.00		9:40:30 AM
DIL-1	Std-1	0.00	0.0015	0.00		9:40:48 AM
SR5-1	Std-2	5.00	0.0227	0.00		9:41:42 AM
SR5-2	Std-3	10.00	0.0560	0.00		9:42:00 AM
SR5-3	Std-4	15.00	0.0886	0.00		9:42:54 AM
SR5-4	Std-5	20.00	0.1130	0.00		9:43:12 AM
SR5-5	Std-6	25.00	0.1322	0.00		9:44:06 AM
SR5-6	Std-7	30.00	0.1510	0.00		9:44:24 AM
SR5-7	Std-8	35.00	0.1706	0.00		9:45:18 AM
1	ICV 30	29.81	0.1514	0.00		9:45:36 AM
2	WG301370-01 BLANK	1.03	0.0022	0.00	LL	9:46:30 AM
3	WG301370-02 LCS	19.65	0.1083	0.00		9:46:48 AM
4	WG301370-03 LCSDUP	20.06	0.1102	0.00		9:47:43 AM
R-3	CCV (30 mg/L)	28.21	0.1450	94.02		9:48:01 AM
5	L09040687-02 (500)	14.70	0.0845	0.00		9:48:55 AM
6	L09040734-01	98.65 X	0.3561	0.00	><,LH	9:49:13 AM
7	L09040734-04	208.58 X	0.5729	0.00	EPL,><,LH	9:50:07 AM
8	L09050029-01	436.70 X	0.8885	0.00	EPL,><,LH	9:50:25 AM
R-3	CCV (30 mg/L)	30.30	0.1533	100.98		9:51:19 AM
9	L09050029-07	24.61	0.1301	0.00		9:51:37 AM
10	L09050029-09	66.65 X	0.2731	0.00	><,LH	9:52:31 AM
11	L09050029-11	25.41	0.1335	0.00		9:52:49 AM
12	L09050029-13	2558.13 X	2.3562	0.00	EPL,><,LH	9:53:43 AM
R-3	CCV (30 mg/L)	28.73	0.1471	95.77		9:54:01 AM
13	L09050041-01 (25)	30.24	0.1531	0.00		9:54:55 AM
14	L09050041-03 (15)	22.65	0.1217	0.00		9:55:13 AM
15	L09050041-05 (10)	18.09	0.1011	0.00		9:56:07 AM
16	WG301370-05 (10) DUP	18.03	0.1008	0.00		9:56:25 AM
R-3	CCV (30 mg/L)	27.66	0.1428	92.21		9:57:19 AM
17	L09050041-07 (10) MS	18.97	0.1052	0.00		9:57:37 AM

Report Date :05/04/2009

Run Date :5/4/2009

Operator : WESTCO

Plan # :20090504001

Plan Description : SO4-A-DIH/5/4/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WSO4 -Unit [mg/L] - Sulfate EPA 375.4

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L09050041-09 (10) MS	18.58	0.1034	0.00		9:58:31 AM
19	L09050041-11 (5)	23.90	0.1271	0.00		9:58:49 AM
20	L09050041-13	0.83	0.0007	0.00	><,LL	9:59:43 AM
R-3	CCV (30 mg/L)	27.15	0.1407	90.49		10:00:01 AM
21	L09040690-01	218.45 X	0.5893	0.00	EPL,><,LH	10:00:55 AM
22	L09040690-07	194.77 X	0.5493	0.00	EPL,><,LH	10:01:13 AM
23	L09040690-09	181.30 X	0.5255	0.00	EPL,><,LH	10:02:07 AM
24	WG301371-01 BLK	0.94	0.0015	0.00	LL	10:02:25 AM
R-3	CCV (30 mg/L)	27.27	0.1412	90.90		10:03:19 AM
25	WG301371-02 LCS	19.15	0.1060	0.00		10:03:37 AM
26	WG301371-03 LCSDUP	19.32	0.1068	0.00		10:04:31 AM
27	L09040690-11	268.49 X	0.6675	0.00	EPL,><,LH	10:04:49 AM
28	L09040690-13	43.40 X	0.2011	0.00	><,LH	10:05:43 AM
R-3	CCV (30 mg/L)	27.03	0.1402	90.08		10:06:01 AM
29	L09040693-01 (10)	15.32	0.0877	0.00		10:06:55 AM
30	L09040693-02 (5)	15.30	0.0876	0.00		10:07:13 AM
31	L09040693-03 (2)	30.86	0.1555	0.00		10:08:07 AM
32	L09040693-04	6.80	0.0411	0.00	LL	10:08:25 AM
R-3	CCV (30 mg/L)	26.98	0.1400	89.92		10:09:19 AM
33	L09040693-05	7.13 X	0.0431	0.00	LL	10:09:37 AM
34	L09040693-06	6.41 X	0.0387	0.00	LL	10:10:32 AM
35	L09040727-01	15.68 X	0.0894	0.00		10:10:50 AM
36	L09040727-03	42.41 X	0.1977	0.00	><,LH	10:11:44 AM
R-3	CCV (30 mg/L)	26.13	0.1365	87.09		10:12:01 AM
37	L09040727-05	29.93 X	0.1518	0.00		10:12:55 AM
38	L09040727-07	58.30 X	0.2487	0.00	><,LH	10:13:13 AM
39	L09040727-09 <i>ref 301371-04</i>	54.47 X	0.2370	0.00	><,LH	10:14:07 AM
40	WG301371-05 DUP	49.59 X	0.2216	0.00	><,LH	10:14:25 AM
R-3	CCV (30 mg/L)	28.46	0.1460	94.85		10:15:19 AM
41	WG301371-06 MS	49.59 <i>ce</i>	0.2216	0.00	><,LH	10:15:38 AM
42	ID 42 05-029-13 (100)	24.91	0.1314	0.00		10:16:32 AM
43	ID 43	1.08 X	0.0026	0.00	LL	10:16:49 AM

Report Date :05/04/2009

Run Date :5/4/2009

Operator : WESTCO

Plan # :20090504001

Plan Description : SO4-A-DIH/5/4/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WSO4 -Unit [mg/L] - Sulfate EPA 375.4

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
44	ID 44	0.89 X	0.0011	0.00	><,LL	10:17:44 AM
R-3	CCV (30 mg/L)	26.98	0.1400	89.92		10:18:02 AM
6-[1/2]	L09040734-01 (2)	49.77 X	0.1313	0.00	LH	10:26:00 AM
7-[1/2]	L09040734-04 (4)	42.97	0.1166	0.00	LH	10:27:12 AM
8-[1/2]	L09050029-01 (10)	60.90	0.1539	0.00	LH	10:28:24 AM
10-[1/2]	L09050029-09 (2)	35.47	0.0994	0.00	LH	10:29:36 AM
R-3	CCV (30 mg/L)	26.30	0.1372	87.65		10:29:36 AM
12-[1/2]	L09050029-13 (100)	21.31	0.0634	0.00		10:31:06 AM
21-[1/2]	L09040690-01 (5)	29.63	0.0852	0.00		10:32:18 AM
22-[1/2]	L09040690-07 (5)	27.34	0.0794	0.00		10:33:30 AM
23-[1/2]	L090400690-09 (5)	29.11	0.0839	0.00		10:34:42 AM
R-3	CCV (30 mg/L)	24.79	0.1309	82.63		10:34:42 AM
27-[1/2]	L09040690-11 (2)	65.82	0.1634	0.00	LH	10:36:12 AM
28-[1/2]	L09040690-13	41.89	0.1141	0.00	LH	10:37:24 AM
36-[1/2]	L090400727-03	45.29	0.1217	0.00	LH	10:38:36 AM
38-[1/2]	L09040727-07	55.28	0.1427	0.00	LH	10:39:48 AM
R-3	CCV (30 mg/L)	25.29	0.1330	84.29		10:39:48 AM
39-[1/2]	L09040727-09	47.57	0.1266	0.00	LH	10:41:18 AM
40-[1/2]	WG301371-05 DUP	48.54	0.1287	0.00	LH	10:42:30 AM
41-[1/2]	WG301371-06 MS	48.73	0.1291	0.00	LH	10:43:42 AM
R-3	CCV (30 mg/L)	23.75	0.1265	79.18		10:43:42 AM

Report Date : 05/04/2009 Run Date : 5/4/2009 Operator : WESTCO Plan # : 20090504001
Plan Description : SO4-A-DIH/5/4/2009

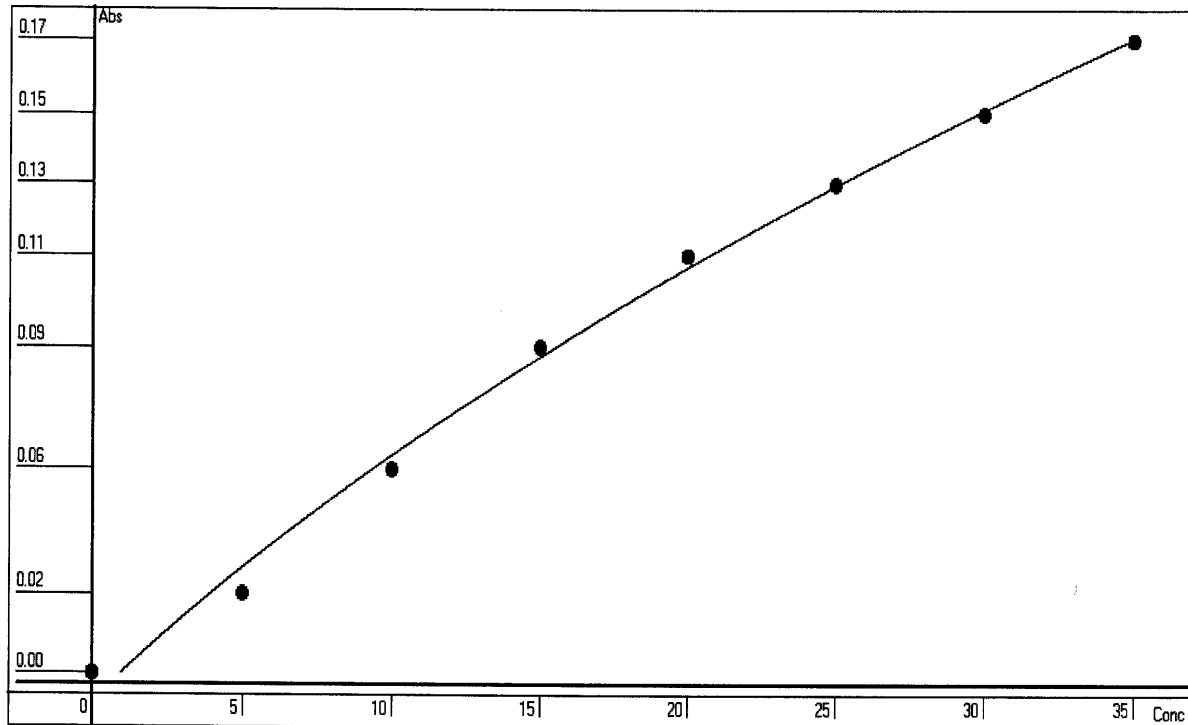
Heanna Roberts

Approved: May 10, 2009

Calibrant Report - WSO4 -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan # : 20090504001 Description : [SO4-A-DIH/5/4/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0015	0	0.9454	94.54
2	0.0227	5	3.9242	-21.52
3	0.0560	10	9.3386	-6.61
4	0.0886	15	15.5097	3.40
5	0.1130	20	20.6920	3.46
6	0.1322	25	25.1091	0.44
7	0.1510	30	29.7236	-0.92
8	0.1706	35	34.8394	-0.46

Conc= +405.1707*Abso^2 +130.7077*Abso +0.7484 R²=0.9968

RBL
0.0054
0

Report Date 5/4/2009 Run Date 5/4/2009

Heanna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

301482

301484

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☐ NO3 Reagent bottle connected / purged
☐ NO3 pH adj to pH 5-9
- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check

- 1) Workgroup 301457
 Plan # 20090504002
 2) Workgroup _____
 Plan # _____
 3) Workgroup 301482, 301484
 Plan # 20090504005

Analyte	1	2	3
User Prepared Curve	504		
SC Prepared Curve			
Position			
1-1	ICV 30		✓
1-2	BIK		✓
1-3	LCS 20		✓
1-4	LCS DUP		✓
1-5	04-734-01 1/4		✓
1-6	04 1/10		✓
1-7	05-029-01 1/25		✓
1-8	09 1/3		✓
1-9	04-690-01 1/5		✓
1-10	07 1/5		✓
1-11	09 1/5		✓
1-12	11 1/5		✓
1-13	13 1/2		✓
1-14	04-693-05		✓
1-15	06		✓
1-16	04-727-01		✓
1-17	03 1/2		✓
1-18	05		✓
1-19	07 1/2		✓
1-20	09 1/2		✓
1-21	DUP 693-05		✓
1-22	MS ↓		✓
2-1	044-03 1/3		✓
2-2	05-044-05		✓
2-3	PIT 044-01 1/10		

NOTES:

- * Run NO2 std on NO3 runs
 * LCS/LCS Dup all parameters
 * MS/MSD (NO3, TKN, NH3)

Position	Analyte	1	2	3
2-4	BIK			✓
2-5	LCS			✓
2-6	LCS			✓
2-7	05-046-03 1/2			✓
2-8	02 1/10			✓
2-9	DUP ↓			✓
2-10	MS ↓			✓
2-11				
2-12				
2-13				
2-14	Run 2			
2-15	1 BIK ICV			
2-16	2 LCS BIK			
2-17	3 LCS DUP			
2-18	4 LCS DUP			
2-19	5 04-690-11 1/15			
2-20	6 05-044-01 1/3 color			
2-21	7 DUP ↓			
2-22	8 MS ↓			
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

DCN#79306



Heanna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

Analyte	1	2	3
Position			
3-3			
3-4			
3-5			
3-6			
3-7			
3-8			
3-9			
3-10			
3-11			
3-12			
3-13			
3-14			
3-15			

Analyte	1	2	3
Position			
3-16			
3-17			
3-18			
3-19			
3-20			
3-21			
3-22			
3-23			
3-24			
3-25			
3-26			
3-27			
3-28			

☐ Chloride EPA 325.2/SM 4500-Cl⁻ E
☒ Sulfate EPA 375.4
☐ Alkalinity EPA 310.2
☐ Nitrate-Nitrite EPA 353.2/SM 4500-NO₃ F

☐ Ammonia EPA 350.1/SM 4500-NH₃ B
☐ TKN EPA 351.2
☐ Phos EPA 365.4

Analyte			
SOP & Revision	504		
Curve Stock (SC made)	13754		
Curve ID (user made)	std 31984		
ICV	std 32346		
CCV	std 32499		
LCS	std 32347		
MS	std 30480		
Dilution	0.1/10(1000)=10		

Comments: _____

Analyst: Joanna LessmanDate: 5/4/09

DCN#79306



Joanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WSO4 -Unit [mg/L] - Sulfate EPA 375.4

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.00	0.0047	0.00		11:35:40 AM
DIL-1	RBL	0.00	0.0065	0.00		11:35:58 AM
DIL-1	RBL	0.00	0.0042	0.00		11:36:52 AM
DIL-1	Std-1	0.00	0.0002	0.00		11:37:10 AM
SR5-1	Std-2	5.00	0.0244	0.00		11:38:05 AM
SR5-2	Std-3	10.00	0.0578	0.00		11:38:22 AM
SR5-3	Std-4	15.00	0.0819	0.00		11:39:16 AM
SR5-4	Std-5	20.00	0.1040	0.00		11:39:34 AM
SR5-5	Std-6	25.00	0.1231	0.00		11:40:28 AM
SR5-6	Std-7	30.00	0.1392	0.00		11:40:46 AM
SR5-7	Std-8	35.00	0.1543	0.00		11:41:41 AM
1	ICV 30	29.06	0.1360	0.00		11:41:58 AM
2	WG301457-01 BLANK	0.58	-0.0003	0.00	><,LL	11:42:52 AM
3	WG301457-02 LCS	19.87	0.1022	0.00		11:43:11 AM
4	WG301457-03 LCSDUP	20.22	0.1036	0.00		11:44:04 AM
R-3	CCV (30 mg/L)	29.21	0.1365	97.37		11:44:22 AM
5	L09040734-01 (4)	24.76	0.1208	0.00		11:45:17 AM
6	L09040734-04 (10)	16.97	0.0903	0.00		11:45:35 AM
7	L09050029-01 (25)	25.42	0.1232	0.00		11:46:29 AM
8	L09050029-09 (3)	24.22	0.1188	0.00		11:46:47 AM
R-3	CCV (30 mg/L)	29.21	0.1365	97.37		11:47:41 AM
9	L09040690-01 (5)	31.11	0.1429	0.00		11:47:59 AM
10	L09040690-07 (5)	27.27	0.1298	0.00		11:48:53 AM
11	L09040690-09 (5)	27.41	0.1303	0.00		11:49:11 AM
12	L09040690-11 (5)	67.92X	0.2442	0.00	><,LH	11:50:05 AM
R-3	CCV (30 mg/L)	29.21	0.1365	97.37		11:50:23 AM
13	L09040690-13 (2)	22.97	0.1142	0.00		11:51:17 AM
14	L09040693-05	6.96	0.0419	0.00	LL	11:51:35 AM
15	L09040693-06	6.21	0.0376	0.00	LL	11:52:29 AM
16	L09040727-01	16.52	0.0884	0.00		11:52:47 AM
R-3	CCV (30 mg/L)	28.19	0.1330	93.97		11:53:41 AM
17	L09040727-03 (2)	24.16	0.1186	0.00		11:53:59 AM

Report Date :05/04/2009

Run Date :5/4/2009

Operator : WESTCO

Plan # :20090504002

Plan Description : SO4-B-DIH/5/4/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WSO4 -Unit [mg/L] - Sulfate EPA 375.4

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L09040727-05	33.10	0.1494	0.00		11:54:53 AM
19	L09040727-07 (2)	28.16	0.1329	0.00		11:55:11 AM
20	L09040727-09 (2)	26.06	0.1255	0.00		11:56:05 AM
R-3	CCV (30 mg/L)	28.25	0.1332	94.16		11:56:23 AM
21	WG301457-05 DUP	6.37	0.0385	0.00	LL	11:57:17 AM
22	WG301457-06 MS	16.50	0.0883	0.00		11:57:35 AM
23	(3) 05-044-03 (3)	19.42	0.1004	0.00		11:58:29 AM
24	ID 24 05-044-05	12.56	0.0707	0.00		11:58:47 AM
R-3	CCV (30 mg/L)	27.67	0.1312	92.24		11:59:41 AM
25	(10) 05-044-01 (10)	0.91X	0.0023	0.00	LL	11:59:59 AM
26	ID 26 wg 301482-01 BIK	0.62	0.0000	0.00	><,LL	12:00:53 PM
27	ID 27 02 L5	18.31	0.0959	0.00		12:01:11 PM
28	ID 28 03 L5D	18.63	0.0972	0.00		12:02:05 PM
R-3	CCV (30 mg/L)	27.76	0.1315	92.53		12:02:23 PM
29	Add-L09050046-03 (2)	27.64	0.1311	0.00		12:03:17 PM
30	Add-L09050046-02 (10)	20.05	0.1029	0.00		12:03:35 PM
31	Add-(10) DUP wg 301482-05	19.62	0.1012	0.00		12:04:29 PM
32	Add-(10) MS -06	19.62	0.1012	0.00		12:04:47 PM
R-3	Add-CCV (30 mg/L)	27.90	0.1320	93.01		12:05:41 PM
12-[1/2]	L09040690-11 (5)	67.25X	0.1511	0.00	LH	12:13:39 PM
R-3	CCV (30 mg/L)	26.25X	0.1262	87.51		12:13:39 PM

Report Date : 05/04/2009

Run Date : 5/4/2009

Operator : WESTCO

Plan # : 20090504002

Plan Description : SO4-B-DIH/5/4/2009

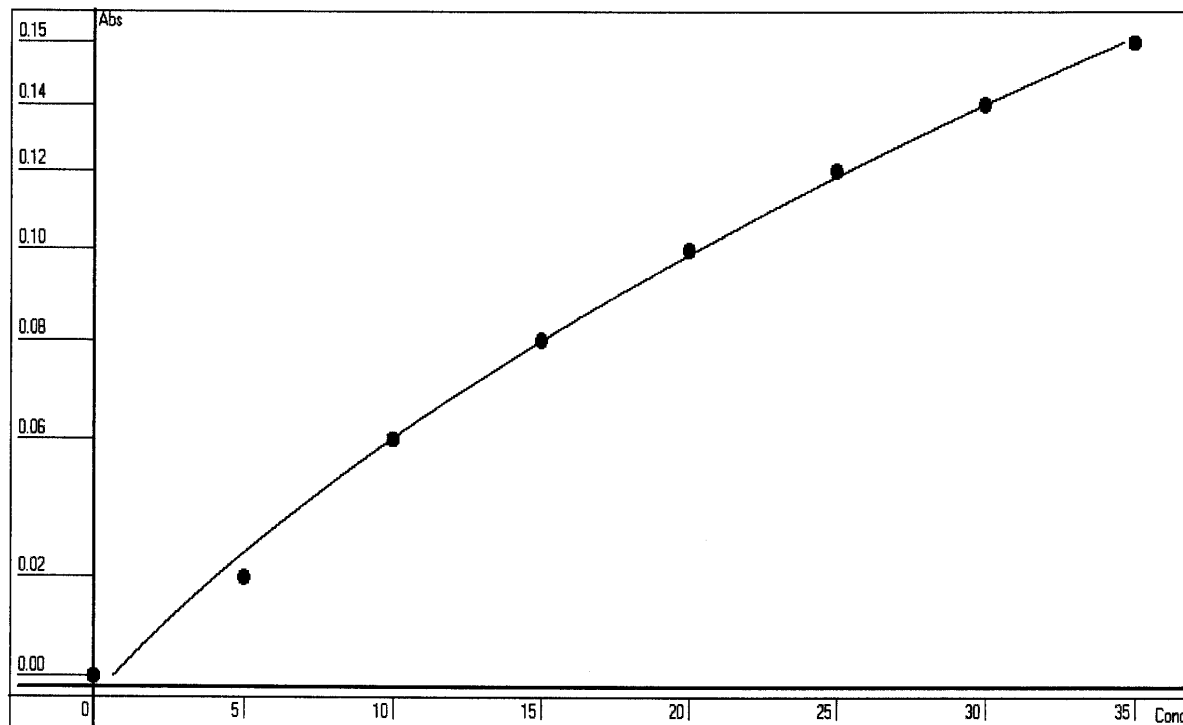
Heanna Roberts

Approved: May 10, 2009

Calibrant Report - WSO4 -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090504002 Description : [SO4-B-DIH/5/4/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0002	0	0.6443	64.43
2	0.0244	5	4.0492	-19.02
3	0.0578	10	9.9303	-0.70
4	0.0819	15	15.0252	0.17
5	0.1040	20	20.3245	1.62
6	0.1231	25	25.3878	1.55
7	0.1392	30	30.0040	0.01
8	0.1543	35	34.6229	-1.08

Conc= +614.3216*Abso^2 +125.5844*Abso +0.6192 R²=0.9984

RBL
0.0045
0

Report Date 5/4/2009 Run Date 5/4/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WSO4 -Unit [mg/L] - Sulfate EPA 375.4

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.00	0.0042	0.00		2:59:33 PM
DIL-1	RBL	0.00	0.0039	0.00		2:59:51 PM
DIL-1	RBL	0.00	0.0042	0.00		3:00:45 PM
DIL-1	Std-1	0.00	0.0017	0.00		3:01:03 PM
SR5-1	Std-2	5.00	0.0290	0.00		3:01:57 PM
SR5-2	Std-3	10.00	0.0601	0.00		3:02:15 PM
SR5-3	Std-4	15.00	0.0861	0.00		3:03:09 PM
SR5-4	Std-5	20.00	0.1100	0.00		3:03:27 PM
SR5-5	Std-6	25.00	0.1292	0.00		3:04:21 PM
SR5-6	Std-7	30.00	0.1450	0.00		3:04:39 PM
SR5-7	Std-8	35.00	0.1629	0.00		3:05:33 PM
1	ICV 30	29.52	0.1445	0.00		3:05:51 PM
2	WG301484-01 BLANK	0.44	0.0014	0.00	><,LL	3:06:45 PM
3	WG301484-02 LCS	20.72	0.1108	0.00		3:07:03 PM
4	WG301484-03 LCSDUP	19.99	0.1078	0.00		3:07:57 PM
R-3	CCV (30 mg/L)	29.05	0.1428	96.83		3:08:15 PM
5	L09040690-11 (15)	23.77	0.1230	0.00		3:09:09 PM
6	L050044-01 (3)	8.07	0.0511	0.00		3:09:27 PM
7	WG301484-05 (3)	7.51	0.0479	0.00	LL	3:10:21 PM
8	WG301484-06 (3)	11.98	0.0716	0.00		3:10:39 PM
R-3	CCV (30 mg/L)	28.64	0.1413	95.45		3:11:34 PM

Report Date :05/04/2009

Run Date :5/4/2009

Operator : WESTCO

Plan # :20090504005

Plan Description : SO4-E-DIH/5/4/2009

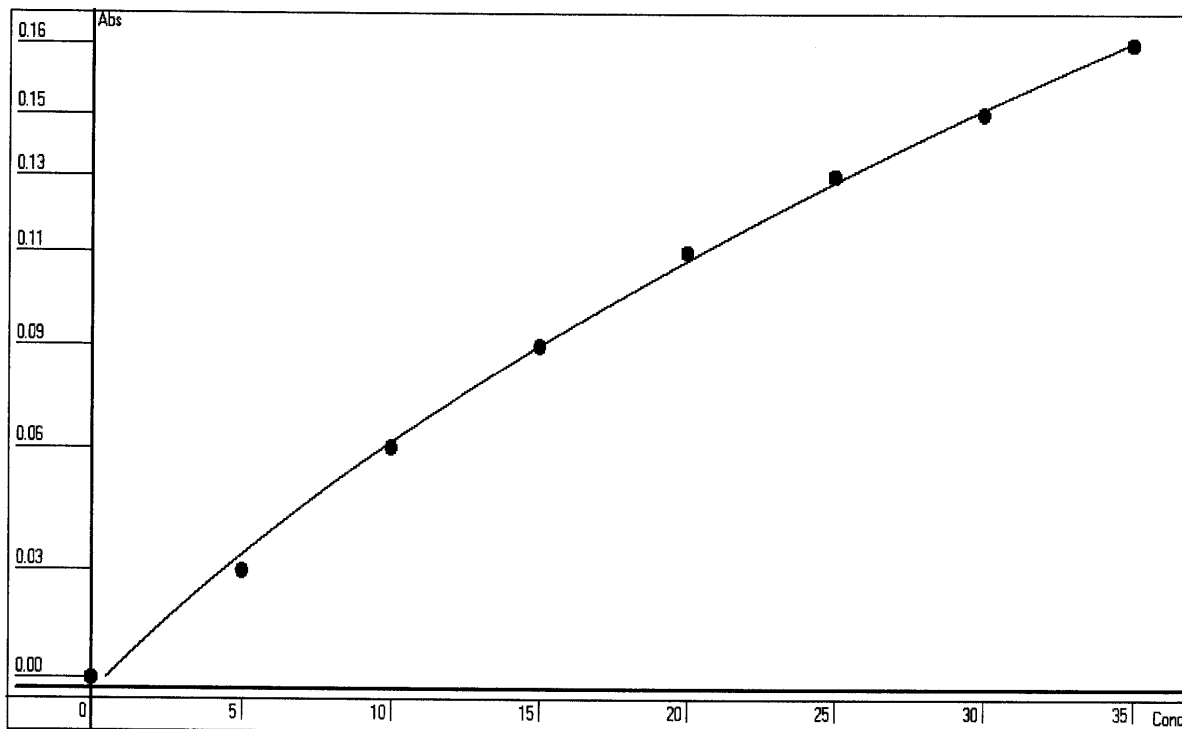
Heanna Roberts

Approved: May 10, 2009

Calibrant Report - WSO4 -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090504005 Description : [SO4-E-DIH/5/4/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0017	0	0.4710	47.10
2	0.0290	5	4.3494	-13.01
3	0.0601	10	9.7316	-2.68
4	0.0861	15	15.0193	0.13
5	0.1100	20	20.5129	2.56
6	0.1292	25	25.3654	1.46
7	0.1450	30	29.6522	-1.16
8	0.1629	35	34.8289	-0.49

Conc= +530.7995*Abso^2 +125.7685*Abso +0.2557 R²=0.9988

RBL
0.0042
0

Report Date 5/4/2009 Run Date 5/4/2009

Heanna Roberts

Approved: May 10, 2009

2.4.6 Total Organic Carbon Data

2.4.6.1 Summary Data

LABORATORY REPORT

L09050029

05/19/09 14:15

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
MW-09R-043009	L09050029-01	415.1	5	01-MAY-09
MW-13-043009	L09050029-07	415.1	3	01-MAY-09
MW-19-043009	L09050029-09	415.1	3	01-MAY-09
PZ-01-043009	L09050029-11	415.1	5	01-MAY-09
PZ-03-043009	L09050029-13	415.1	4	01-MAY-09



Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-01**
Client ID: **MW-09R-043009**
Matrix: **Water**
Workgroup Number: **WG301536**
Collect Date: **04/30/2009 09:40**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **415.1**
Analytical Method: **415.1**
Analyst: **DIH**
Dilution: **5**
Units: **mg/L**

Instrument: **TOC-VWP**
Prep Date: **05/05/2009 11:15**
Cal Date: **01/13/2009 15:07**
Run Date: **05/05/2009 11:15**
File ID: **TC05052009.007**

Analyte	CAS. Number	Result	Qual	RL	MDL
Total Organic Carbon		21.2		5.00	2.50

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-07**
Client ID: **MW-13-043009**
Matrix: **Water**
Workgroup Number: **WG301536**
Collect Date: **04/30/2009 11:35**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **415.1**
Analytical Method: **415.1**
Analyst: **DIH**
Dilution: **3**
Units: **mg/L**

Instrument: **TOC-VWP**
Prep Date: **05/05/2009 11:28**
Cal Date: **01/13/2009 15:07**
Run Date: **05/05/2009 11:28**
File ID: **TC05052009.008**

Analyte	CAS. Number	Result	Qual	RL	MDL
Total Organic Carbon		11.8		3.00	1.50

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-09**
Client ID: **MW-19-043009**
Matrix: **Water**
Workgroup Number: **WG301447**
Collect Date: **04/30/2009 13:00**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **415.1**
Analytical Method: **415.1**
Analyst: **DIH**
Dilution: **3**
Units: **mg/L**

Instrument: **TOC-VWP**
Prep Date: **05/04/2009 17:24**
Cal Date: **01/13/2009 15:07**
Run Date: **05/04/2009 17:24**
File ID: **TC05042009.013**

Analyte	CAS. Number	Result	Qual	RL	MDL
Total Organic Carbon		6.29		3.00	1.50

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-11**
Client ID: **PZ-01-043009**
Matrix: **Water**
Workgroup Number: **WG301447**
Collect Date: **04/30/2009 09:57**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **415.1**
Analytical Method: **415.1**
Analyst: **DIH**
Dilution: **5**
Units: **mg/L**

Instrument: **TOC-VWP**
Prep Date: **05/04/2009 17:37**
Cal Date: **01/13/2009 15:07**
Run Date: **05/04/2009 17:37**
File ID: **TC05042009.014**

Analyte	CAS. Number	Result	Qual	RL	MDL
Total Organic Carbon		23.7		5.00	2.50

Report Number: **L09050029**Report Date : **May 19, 2009**

Sample Number: **L09050029-13**
Client ID: **PZ-03-043009**
Matrix: **Water**
Workgroup Number: **WG301447**
Collect Date: **04/30/2009 12:37**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **415.1**
Analytical Method: **415.1**
Analyst: **DIH**
Dilution: **4**
Units: **mg/L**

Instrument: **TOC-VWP**
Prep Date: **05/04/2009 18:13**
Cal Date: **01/13/2009 15:07**
Run Date: **05/04/2009 18:13**
File ID: **TC05042009.017**

Analyte	CAS. Number	Result	Qual	RL	MDL
Total Organic Carbon		32.5		4.00	2.00

5 of 5



2.4.6.2 QC Summary Data

**Total Organic Carbon Example Calculations
(Direct Readout Parameter)**

$$(\text{Readout})/(\text{dilution}) = \text{mg/L}$$

where:

Readout = direct readout from the instrument

dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2009

Analyst: DIH

Analyst: NA

Method: TOC

Instrument: TOC

Curve Workgroup: NA

Runlog ID: _____

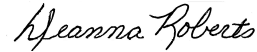
Analytical Workgroups: WG301448 WG301449 WG301447

Calibration/Linearity	1/13/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
05-MAY-2009



Secondary Reviewer:
09-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2009

Analyst: DIH

Analyst: NA

Method: TOC

Instrument: TOC

Curve Workgroup: NA

Runlog ID: _____

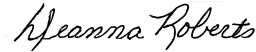
Analytical Workgroups: WG301536 WG301537

Calibration/Linearity	1/13/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
08-MAY-2009



Secondary Reviewer:
10-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1

AAB#: WG301447

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
PZ-01-043009	04/30/09	05/01/09	05/04/09	28	4.32	05/04/09	28	4.32	
MW-19-043009	04/30/09	05/01/09	05/04/09	28	4.18	05/04/09	28	4.18	
PZ-03-043009	04/30/09	05/01/09	05/04/09	28	4.23	05/04/09	28	4.23	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1384049
Report generated 05/06/2009 17:37



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1

AAB#: WG301536

Login Number: L09050029

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-09R-043009	04/30/09	05/01/09	05/05/09	28	5.07	05/05/09	28	5.07	
MW-13-043009	04/30/09	05/01/09	05/05/09	28	5.00	05/05/09	28	5.00	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS

METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: TC05042009.004
 Prep Date: 05/04/09 15:19
 Analyzed Date: 05/04/09 15:19
 Analyst: DIH

Work Group: WG301447
 Blank Sample ID: WG301447-01
 Instrument ID: TOC-VWP
 Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301447-02	TC05042009.005	05/04/09 15:31	01
LCS2	WG301447-03	TC05042009.006	05/04/09 15:43	01
MW-19-043009	L09050029-09	TC05042009.013	05/04/09 17:24	DL01
PZ-01-043009	L09050029-11	TC05042009.014	05/04/09 17:37	DL01
PZ-03-043009	L09050029-13	TC05042009.017	05/04/09 18:13	DL01
DUP	WG301447-05	TC05042009.061	05/05/09 05:16	01

METHOD BLANK SUMMARY

Login Number: L09050029
 Blank File ID: TC05052009.004
 Prep Date: 05/05/09 10:38
 Analyzed Date: 05/05/09 10:38
 Analyst: DIH

Work Group: WG301536
 Blank Sample ID: WG301536-01
 Instrument ID: TOC-VWP
 Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301536-02	TC05052009.005	05/05/09 10:49	01
LCS2	WG301536-03	TC05052009.006	05/05/09 11:02	01
MW-09R-043009	L09050029-01	TC05052009.007	05/05/09 11:15	DL01
MW-13-043009	L09050029-07	TC05052009.008	05/05/09 11:28	DL01
DUP	WG301536-05	TC05052009.031	05/05/09 16:32	01



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/04/09 15:19 Sample ID: WG301447-01
Instrument ID: TOC-VWP Run Date: 05/04/09 15:19 Prep Method: 415.1
File ID: TC05042009.004 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG301447 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: TOC-VW - 13-JAN-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	1.00	0.500	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384051

06-MAY-2009 17:37



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050029 Prep Date: 05/05/09 10:38 Sample ID: WG301536-01
Instrument ID: TOC-VWP Run Date: 05/05/09 10:38 Prep Method: 415.1
File ID: TC05052009.004 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG301536 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: TOC-VW - 13-JAN-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	1.00	0.500	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384051

06-MAY-2009 17:37



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG301536 Units: mg/L
QC Key: STD Lot #: STD31844
Sample ID: WG301536-02 LCS File ID: TC05052009.005 Run Date: 05/05/2009 10:49
Sample ID: WG301536-03 LCS2 File ID: TC05052009.006 Run Date: 05/05/2009 11:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	24.1	96.3	25.0	25.0	100	3.75	85 - 115	15	



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050029 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG301447 Units: mg/L
QC Key: STD Lot #: STD31844
Sample ID: WG301447-02 LCS File ID: TC05042009.005 Run Date: 05/04/2009 15:31
Sample ID: WG301447-03 LCS2 File ID: TC05042009.006 Run Date: 05/04/2009 15:43

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	23.2	92.8	25.0	26.1	104	11.5	85 - 115	15	



2.4.6.3 Raw Data

TC/TIC curves

wg 292773

Total Organic Carbon

MAKE DAILY

CCV (TOC): see below

LCS (TOC): _____

$$\left(\frac{10}{200}\right)(1000) = 50 \text{ mg/L} \quad \left(\frac{2}{200}\right)(1000) = 10 \text{ mg/L}$$

$$\left(\frac{5}{200}\right)(1000) = 25 \text{ mg/L}$$

CCV (TIC): _____

MS (TOC): _____

$$\left(\frac{5}{200}\right)(1000) = 25 \text{ mg/L}$$

Calibration Curve Date: _____



SM5310-C : Matrix 2 WG _____



EPA 415.1/9060A(mod): Matrix 1 WG _____

SOP: K 4151 Rev. 11

WG _____

Instrument: Shimadza TOC-VWP/ASI



drain reservoir filled



ASI water bottle full



dilution water bottle full



DAILY CHECK

3rd bottle full

sufficient gas



sufficient persulfate



sufficient acid

waste container

Position	Sample ID	Dilution
1	TC CURVE	
2	TIC CURVE	
3	TC ICV(25)	
4	TIC ICV(25)	
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16	all curve points and ICV's were injected and analyzed in duplicate	
17		
18		
19		
20		
21		
22		
23		
24		
25		

Position	Sample ID	Dilution
26		
27		
28		
29		
30		
31	CURVE std	
32	std 30838	
33	TIC 28734	
34		
35		
36	ICV	
37	TC std 30420	
38	TIC std 28733	
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57	see SOP for	
58	curve pts	
59		
60		
61		
62	$\frac{5 \text{ ml}}{200}(1000) = 25 \text{ mg/L}$	
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Deanna RobertsDate/Time: 1/13/09

WG: _____

WG: _____

WG: _____

DCN#78103



Deanna Roberts

Approved: January 19, 2009

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TC	TC CURVE		Comple	01/13/2009 03:12:54 PM	0, 1,
2	IC	TIC CURVE		Comple	01/13/2009 04:22:39 PM	0, 6,
3	TC	TC ICV	TC:24.92mg/L	Comple	01/13/2009 04:38:03 PM	11
4	IC	TIC ICV	IC:24.60mg/L	Comple	01/13/2009 04:50:47 PM	12

Heanna Roberts

Approved: January 19, 2009

Instr. Information

System
DetectorTOCVW ASI
Wet Chemical

Cal. Curve

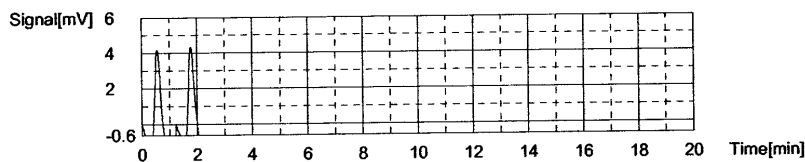
Sample Name: TC CURVE
Sample ID: TCCURVE
Cal. Curve: TCCURVE-01-13-2009.2009_01_13_14_10_52.cal
Status: Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	8.437	500uL	1	*****		01/13/2009 02:14:13 PM
2	8.432	500uL	1	*****		01/13/2009 02:18:55 PM

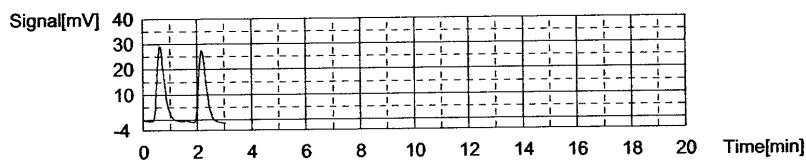
Acid Add. 0.000%
Mean Area 8.434



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	56.85	500uL	1	*****		01/13/2009 02:24:22 PM
2	54.36	500uL	1	*****		01/13/2009 02:29:25 PM

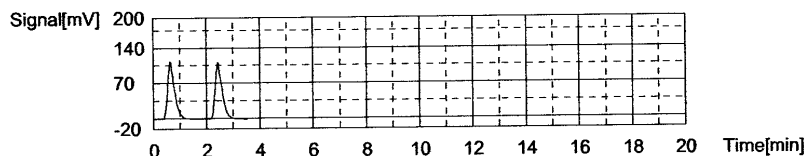
Acid Add. 0.000%
Mean Area 55.61



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	206.9	500uL	1	*****		01/13/2009 02:35:09 PM
2	202.6	500uL	1	*****		01/13/2009 02:39:10 PM

Acid Add. 0.000%
Mean Area 204.8



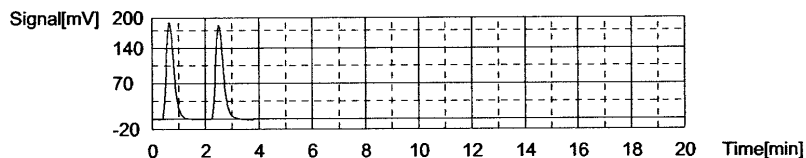
Conc: 10.00mg/L

Kearna Roberts

Approved: January 19, 2009

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	380.7	500uL	1	*****		01/13/2009 02:44:58 PM
2	379.4	500uL	1	*****		01/13/2009 02:49:11 PM

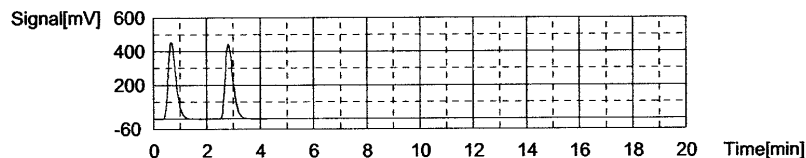
Acid Add. 0.000%
Mean Area 380.1



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	934.8	500uL	1	*****		01/13/2009 02:55:16 PM
2	914.5	500uL	1	*****		01/13/2009 03:00:30 PM

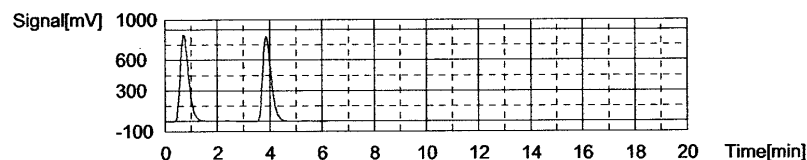
Acid Add. 0.000%
Mean Area 924.7



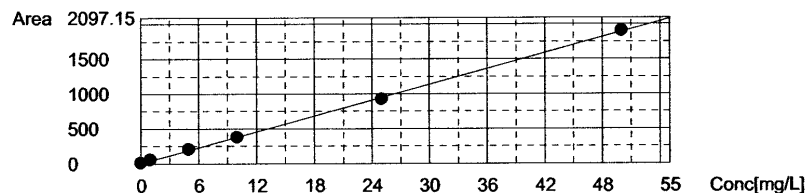
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1922	500uL	1	*****		01/13/2009 03:07:36 PM
2	1891	500uL	1	*****		01/13/2009 03:12:54 PM

Acid Add. 0.000%
Mean Area 1907



Slope: 37.71
Intercept 8.127
 r^2 0.999609
Zero Shift No



Cal. Curve

Sample Name: TIC CURVE
Sample ID: TICCURVE
Cal. Curve: TICCURVE-01-13-2009.2009_01_13_15_12_54.cal
Status: Completed

Type	Anal.
Standard	IC

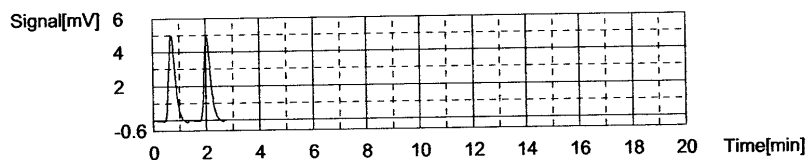
Conc: 0.000mg/L

Heanna Roberts

Approved: January 19, 2009

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	8.658	500uL	1	*****		01/13/2009 03:16:31 PM
2	8.479	500uL	1	*****		01/13/2009 03:20:08 PM

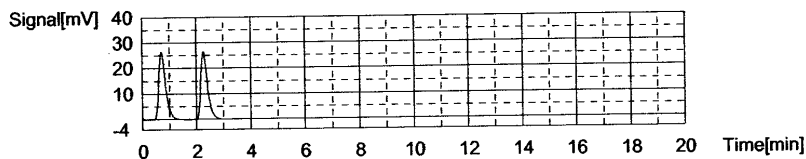
Acid Add. 3.000%
Mean Area 8.569



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	46.56	500uL	1	*****		01/13/2009 03:27:22 PM
2	46.10	500uL	1	*****		01/13/2009 03:31:26 PM

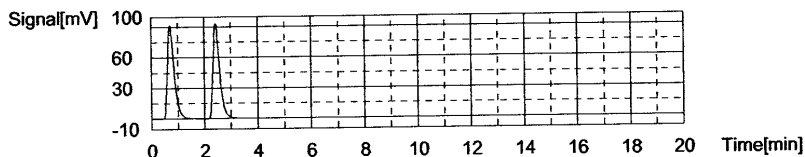
Acid Add. 3.000%
Mean Area 46.33



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	160.8	500uL	1	*****		01/13/2009 03:38:53 PM
2	161.9	500uL	1	*****		01/13/2009 03:43:10 PM

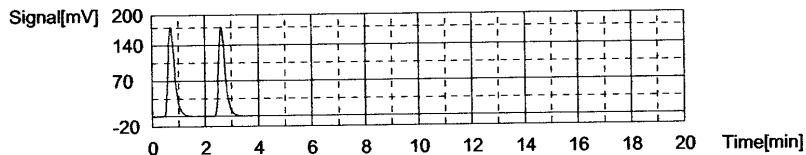
Acid Add. 3.000%
Mean Area 161.4



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	310.0	500uL	1	*****		01/13/2009 03:50:52 PM
2	308.4	500uL	1	*****		01/13/2009 03:55:18 PM

Acid Add. 3.000%
Mean Area 309.2



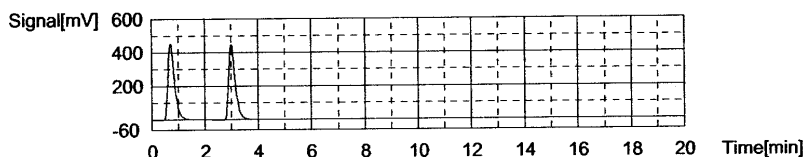
Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	793.7	500uL	1	*****		01/13/2009 04:03:34 PM
2	782.1	500uL	1	*****		01/13/2009 04:08:41 PM

Heanna Roberts

Approved: January 19, 2009

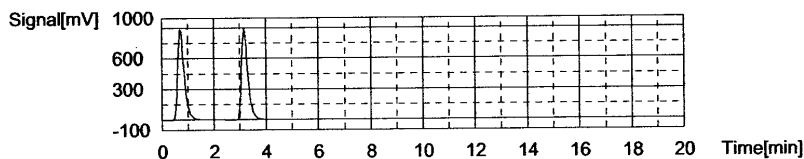
Acid Add. 3.000%
Mean Area 787.9



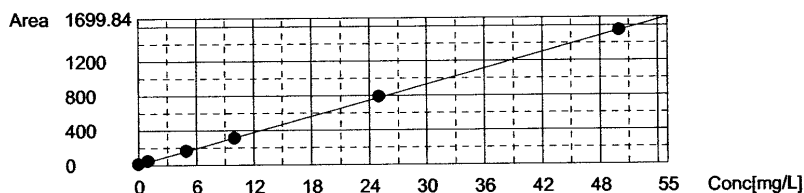
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1547	500uL	1	*****		01/13/2009 04:17:18 PM
2	1537	500uL	1	*****		01/13/2009 04:22:39 PM

Acid Add. 3.000%
Mean Area 1542



Slope: 30.70
Intercept 10.26
 r^2 0.999878
Zero Shift No



Sample

Sample Name: TC ICV
Sample ID: TCCURVE
Origin: TCCURVE-01-13-2009.cal
Status: Completed
Chk. Result

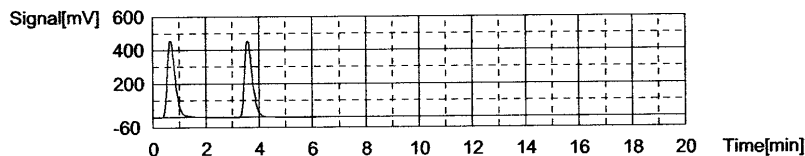
Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.92mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	951.9	25.03mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	01/13/2009 04:31:14 PM
2	943.7	24.81mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	01/13/2009 04:38:03 PM

Mean Area 947.8
Mean Conc. 24.92mg/L



Heanna Roberts

Approved: January 19, 2009

Sample

Sample Name: TIC ICV
Sample ID: TICCURVE
Origin: TICCURVE-01-13-2009.cal
Status: Completed
Chk. Result

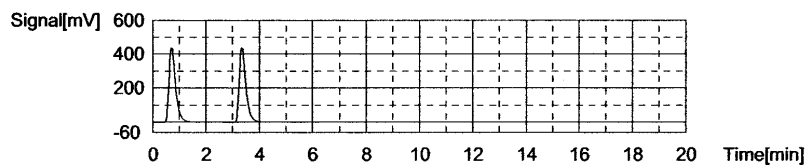
Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:24.60mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	765.5	24.60mg/L	500ul	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	01/13/2009 04:45:09 PM
2	765.4	24.60mg/L	500ul	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	01/13/2009 04:50:47 PM

Mean Area 765.5
Mean Conc. 24.60mg/L

*Kearna Roberts*

Approved: January 19, 2009

3015317

Total Organic Carbon

MAKE DAILY

CCV (TOC): 51d32652

LCS (TOC): 51d31844

 $(\frac{10}{200} (1000) = 50 \text{ mg/L})$ $(\frac{2}{200} (1000) = 10 \text{ mg/L})$

CCV (TIC): 51d31777

MS (TOC): 0.4/40(1000)=10

 $(\frac{5}{200} (1000) = 25 \text{ mg/L})$

Calibration Curve Date: 11/3/09



SM5310-C : Matrix 2 WG



EPA 415.1/9060A(mod): Matrix 1 WG

SOP: K 4151

Rev. 11

WG

Instrument: Shimadza TOC-VWP/ASI



drain reservoir filled



ASI water bottle full



dilution water bottle full



DAILY CHECK



3rd bottle full



sufficient gas



sufficient persulfate



sufficient acid



waste container

Position	Sample ID	Dilution
1	CCV 50	
2	CCV 10	
3	TIC 25	
4	BLK	
5	LCS 25	
6	LCS DUP	
7	05-029-01	1/5
8	07	1/3
9	04-690-09	1/4
10	04-698-02	1/5
11	04-727-01	
12	05	
13	07	
14	09	
15	CCV	
16	CCB	
17	04-736-02	1/3
18	05	1/5
19	05-033-05	
20	06	
21	05-044-01	1/10
22	03	
23	05	1/10
24	05-047-02	1/2 Fe
25	03	1/50

Position	Sample ID	Dilution
26	05-047-04	1/2
27	CCV	
28	CCB	
29	05-047-05	1/2
30	07	
31	DUP	
32	MS	✓
33	BLK	
34	LCS	
35	LCS DUP	
36	05-057-02	
37	05	1/10
38	08	1/4
39	CCV	
40	CCB	
41	05-057-09	
42	DUP	✓
43	MS	✓
44	04-044-01	1/100
45	04-698-02	1/5
46	05-075-01	1/4
47	03	
48	05	1/2
49	07	1/100
50	05-069-02	1/2

Position	Sample ID	Dilution
51	CCV	
52	CCB	
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63	CCV	
64	CCB	
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Deanna

Date/Time: 5/5/09

Ø

069-02 was re-analyzed straight on 5/7.
Result over cal range. This diluted
result is being reported.
Suspect CL interference

DCN#79315



Deanna Roberts

Approved: May 10, 2009

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	CCV 50	!!Error!! TOC:53.88mg/L TC:53.68mg/L IC:-0.2040mg	Comple	05/05/2009 10:06:59 AM	1
2	TOC	CCV 10	!!Error!! TOC:9.623mg/L TC:9.435mg/L IC:-0.1878mg	Comple	05/05/2009 10:19:10 AM	2
3	TOC	TIC 25	TOC:1.659mg/L TC:26.41mg/L IC:24.75mg/L	Comple	05/05/2009 10:32:47 AM	3
4	TOC	WG301536-01 BLANK	!!Error!! TOC:0.1003mg/L TC:-0.05248mg/L IC:-0.152	Comple	05/05/2009 10:42:04 AM	0
5	TOC	WG301536-02 LCS	!!Error!! TOC:24.08mg/L TC:23.87mg/L IC:-0.2093mg	Comple	05/05/2009 10:54:16 AM	5
6	TOC	WG301536-03 LCSDUP	!!Error!! TOC:25.00mg/L TC:24.79mg/L IC:-0.2098mg	Comple	05/05/2009 11:06:40 AM	6
7	TOC	L09050029-01 (5)	TOC:4.241mg/L TC:23.95mg/L IC:19.70mg/L	Comple	05/05/2009 11:20:51 AM	7
8	TOC	L09050029-07 (3)	TOC:3.924mg/L TC:21.11mg/L IC:17.19mg/L	Comple	05/05/2009 11:34:16 AM	8
9	TOC	L09040690-09 (4)	TOC:3.397mg/L TC:15.67mg/L IC:12.27mg/L	Comple	05/05/2009 11:47:04 AM	9
10	TOC	L09040698-02 (15) X	TOC:1.825mg/L TC:6.497mg/L IC:4.672mg/L	Comple	05/05/2009 11:59:33 AM	10
11	TOC	L09040727-01	TOC:6.531mg/L TC:42.06mg/L IC:35.53mg/L	Comple	05/05/2009 12:13:51 PM	11
12	TOC	L09040727-05	TOC:3.914mg/L TC:19.70mg/L IC:15.78mg/L	Comple	05/05/2009 12:27:05 PM	12
13	TOC	L09040727-07 X	TOC:4.949mg/L TC:67.84mg/L IC:62.89mg/L	Comple	05/05/2009 12:42:06 PM	13
14	TOC	L09040727-09 X	TOC:2.536mg/L TC:67.28mg/L IC:64.75mg/L	Comple	05/05/2009 12:57:03 PM	14
15	TOC	CCV	TOC:49.89mg/L TC:49.96mg/L IC:0.06972mg/L	Comple	05/05/2009 01:09:50 PM	15
16	TOC	CCB	!!Error!! TOC:0.05517mg/L TC:-0.06315mg/L IC:-0.11	Comple	05/05/2009 01:18:54 PM	0
17	TOC	L0904736-02 (3)	TOC:11.80mg/L TC:33.70mg/L IC:21.91mg/L	Comple	05/05/2009 01:33:04 PM	17
18	TOC	L09040736-05 (5)	TOC:3.594mg/L TC:27.39mg/L IC:23.80mg/L	Comple	05/05/2009 01:46:45 PM	18
19	TOC	L09050033-05	TOC:2.420mg/L TC:14.07mg/L IC:11.65mg/L	Comple	05/05/2009 02:00:28 PM	19
20	TOC	L09050033-06 X	!!Error!! TOC:-2.620mg/L TC:92.87mg/L IC:95.49mg	Comple	05/05/2009 02:17:21 PM	20
21	TOC	L09050044-01 (10) X	TOC:135.0mg/L TC:156.2mg/L IC:21.10mg/L	Comple	05/05/2009 02:32:31 PM	21
22	TOC	L09050044-03	TOC:3.854mg/L TC:20.06mg/L IC:16.20mg/L	Comple	05/05/2009 02:45:29 PM	22
23	TOC	L09050044-05 (10)	TOC:12.70mg/L TC:33.47mg/L IC:20.77mg/L	Comple	05/05/2009 02:59:02 PM	23
24	TOC	L09050047-02 (2) X	TOC:0.3964mg/L TC:2.250mg/L IC:1.854mg/L	Comple	05/05/2009 03:10:56 PM	24
25	TOC	L09050047-03 (50) X	TOC:3.068mg/L TC:5.380mg/L IC:2.313mg/L	Comple	05/05/2009 03:23:16 PM	25
26	TOC	L09050047-04 (2) X	TOC:1.042mg/L TC:3.049mg/L IC:2.007mg/L	Comple	05/05/2009 03:36:27 PM	26
27	TOC	CCV	!!Error!! TOC:49.50mg/L TC:49.35mg/L IC:-0.1461mg	Comple	05/05/2009 03:49:08 PM	27
28	TOC	CCB	!!Error!! TOC:0.05881mg/L TC:-0.09123mg/L IC:-0.15	Comple	05/05/2009 03:58:15 PM	0
29	TOC	L09050047-05 (2) X	TOC:1.333mg/L TC:9.022mg/L IC:7.688mg/L	Comple	05/05/2009 04:11:01 PM	29
30	TOC	L09050047-07	TOC:4.956mg/L TC:34.69mg/L IC:29.73mg/L	Comple	05/05/2009 04:25:21 PM	30
31	TOC	WG301536-05 DUP	TOC:3.676mg/L TC:35.80mg/L IC:32.12mg/L	Comple	05/05/2009 04:38:49 PM	31
32	TOC	WG301536-06 MS	TOC:14.23mg/L TC:48.13mg/L IC:33.90mg/L	Comple	05/05/2009 04:52:32 PM	32
33	TOC	WG301537-01 BLANK	!!Error!! TOC:0.02792mg/L TC:-0.00867mg/L IC:-0.03	Comple	05/05/2009 05:01:44 PM	0
34	TOC	WG301537-02 LCS	!!Error!! TOC:25.30mg/L TC:25.20mg/L IC:-0.09910m	Comple	05/05/2009 05:14:08 PM	34
35	TOC	WG301537-03 LCSDUP	!!Error!! TOC:24.85mg/L TC:24.71mg/L IC:-0.1410mg	Comple	05/05/2009 05:26:01 PM	35
36	TOC	L09050057-02	TOC:6.300mg/L TC:50.07mg/L IC:43.77mg/L	Comple	05/05/2009 05:41:05 PM	36
37	TOC	L09050057-05 (10)	TOC:2.483mg/L TC:11.44mg/L IC:8.952mg/L	Comple	05/05/2009 05:53:36 PM	37
38	TOC	L09050057-08 (4)	TOC:4.211mg/L TC:19.45mg/L IC:15.24mg/L	Comple	05/05/2009 06:07:03 PM	38
39	TOC	CCV	!!Error!! TOC:49.91mg/L TC:49.83mg/L IC:-0.08308m	Comple	05/05/2009 06:19:51 PM	39
40	TOC	CCB	!!Error!! TOC:0.04742mg/L TC:-0.09314mg/L IC:-0.14	Comple	05/05/2009 06:28:57 PM	0
41	TOC	L09050057-09	TOC:1.351mg/L TC:4.518mg/L IC:3.167mg/L	Comple	05/05/2009 06:42:19 PM	41
42	TOC	WG301537-05 DUP	TOC:1.164mg/L TC:4.126mg/L IC:2.962mg/L	Comple	05/05/2009 06:55:40 PM	42
43	TOC	WG301537-06 MS	TOC:10.18mg/L TC:14.60mg/L IC:4.425mg/L	Comple	05/05/2009 07:10:48 PM	43
44	TOC	L09050044-01 (100)	TOC:15.30mg/L TC:16.73mg/L IC:1.424mg/L	Comple	05/05/2009 07:23:19 PM	44
45	TOC	L09040698-02 (5)	TOC:3.693mg/L TC:10.76mg/L IC:7.063mg/L	Comple	05/05/2009 07:36:02 PM	45
46	TOC	L09050075-01 (4)	TOC:3.946mg/L TC:22.18mg/L IC:18.24mg/L	Comple	05/05/2009 07:48:58 PM	46
47	TOC	L09050075-03 X	!!Error!! TOC:-1.553mg/L TC:81.20mg/L IC:82.76mg	Comple	05/05/2009 08:05:15 PM	47
48	TOC	L09050075-05 (2)	TOC:3.465mg/L TC:34.34mg/L IC:30.88mg/L	Comple	05/05/2009 08:18:58 PM	48
49	TOC	L09050075-07 (100)	TOC:2.653mg/L TC:21.51mg/L IC:18.86mg/L	Comple	05/05/2009 08:32:23 PM	49
50	TOC	L09050069-02 (2) X	!!Error!! TOC:0.2746mg/L TC:0.2565mg/L IC:-0.0180	Comple	05/05/2009 08:43:55 PM	50
51	TOC	CCV	!!Error!! TOC:50.05mg/L TC:49.94mg/L IC:-0.1112mg	Comple	05/05/2009 08:56:42 PM	51
52	TOC	CCB	!!Error!! TOC:0.04502mg/L TC:-0.08460mg/L IC:-0.12	Comple	05/05/2009 09:05:51 PM	0

Heanna Roberts

Approved: May 10, 2009

Instr. Information

System
DetectorTOCVW ASI
Wet Chemical

Sample

Sample Name: CCV 50
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

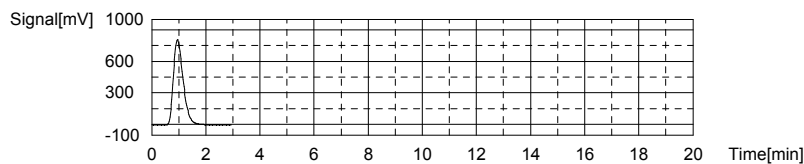
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:53.88mg/L TC:53.68mg/L IC:-0.2040mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2032	53.68mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 10:02:41 AM

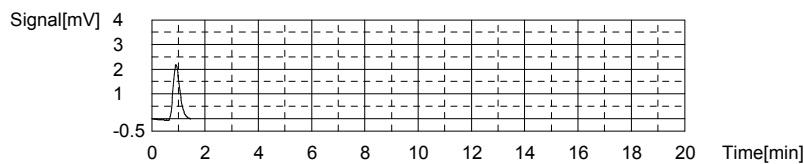
Mean Area 2032
Mean Conc. 53.68mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.995	-0.2040mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 10:06:59 AM

Mean Area 3.995
Mean Conc. -0.2040mg/L



Sample

Sample Name: CCV 10
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:9.623mg/L TC:9.435mg/L IC:-0.1878mg/L

1. Det

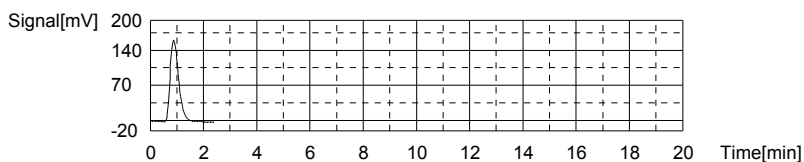
Anal.: TC

Kearna Roberts

Approved: May 10, 2009

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	363.9	9.435mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 10:14:49 AM

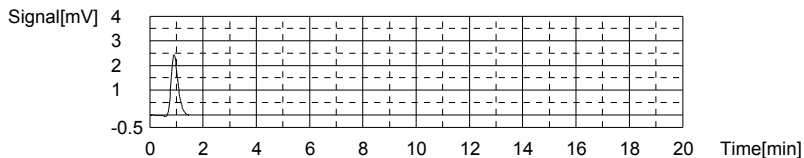
Mean Area 363.9
Mean Conc. 9.435mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.495	-0.1878mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 10:19:10 AM

Mean Area 4.495
Mean Conc. -0.1878mg/L



Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

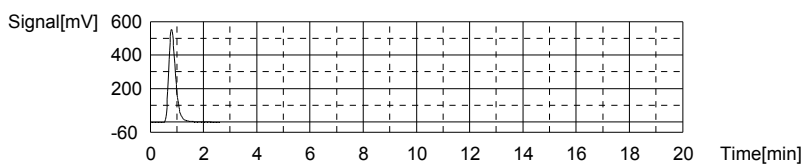
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.659mg/L TC:26.41mg/L IC:24.75mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1004	26.41mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 10:27:12 AM

Mean Area 1004
Mean Conc. 26.41mg/L



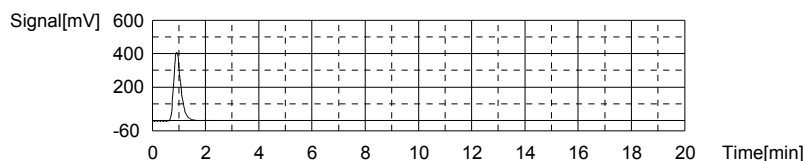
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	770.2	24.75mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 10:32:47 AM

Heanna Roberts

Approved: May 10, 2009

Mean Area 770.2
Mean Conc. 24.75mg/L



Sample

Sample Name: WG301536-01 BLANK
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

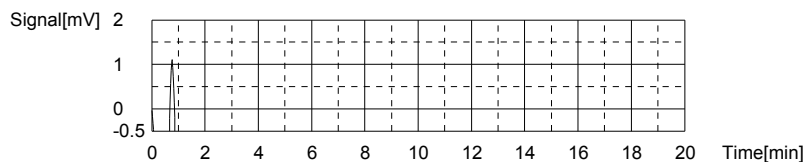
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1003mg/L TC:-0.05248mg/L IC:-0.1528mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.148	-0.05248mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 10:38:06 AM

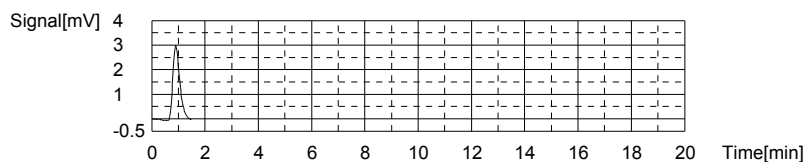
Mean Area 6.148
Mean Conc. -0.05248mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.569	-0.1528mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 10:42:04 AM

Mean Area 5.569
Mean Conc. -0.1528mg/L



Sample

Sample Name: WG301536-02 LCS
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.08mg/L TC:23.87mg/L IC:-0.2093mg/L

Heanna Roberts

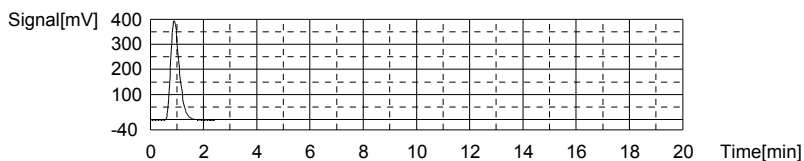
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	908.2	23.87mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 10:49:55 AM

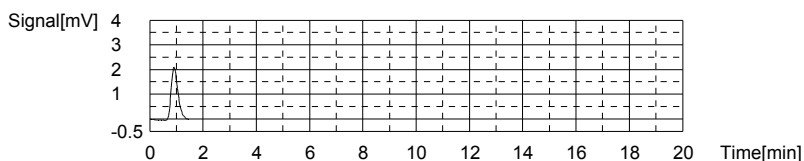
Mean Area 908.2
Mean Conc. 23.87mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.835	-0.2093mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 10:54:16 AM

Mean Area 3.835
Mean Conc. -0.2093mg/L



Sample

Sample Name: WG301536-03 LCSDUP
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

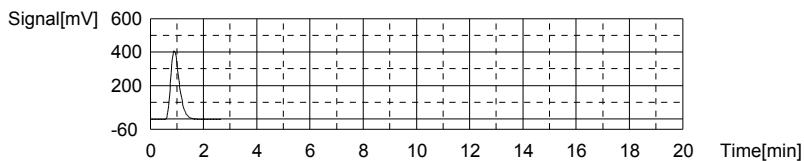
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.00mg/L TC:24.79mg/L IC:-0.2098mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	942.9	24.79mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:02:22 AM

Mean Area 942.9
Mean Conc. 24.79mg/L



Anal.: IC

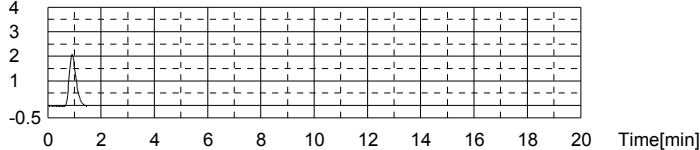
No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.817	-0.2098mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:06:40 AM

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Approved: May 10, 2009

Mean Area 3.817
Mean Conc. -0.2098mg/L

Signal[mV] 4



Sample

Sample Name: L09050029-01 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.241mg/L TC:23.95mg/L IC:19.70mg/L

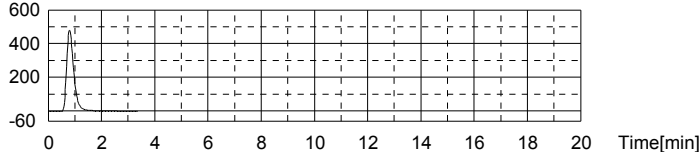
1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	911.0	23.95mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:15:28 AM

Mean Area 911.0
Mean Conc. 23.95mg/L

Signal[mV] 600

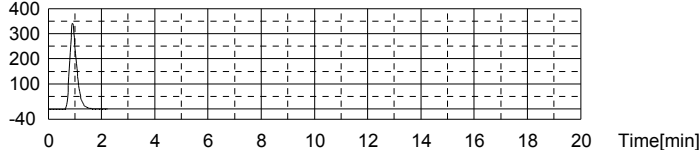


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	615.2	19.70mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:20:51 AM

Mean Area 615.2
Mean Conc. 19.70mg/L

Signal[mV] 400



Sample

Sample Name: L09050029-07 (3)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.924mg/L TC:21.11mg/L IC:17.19mg/L

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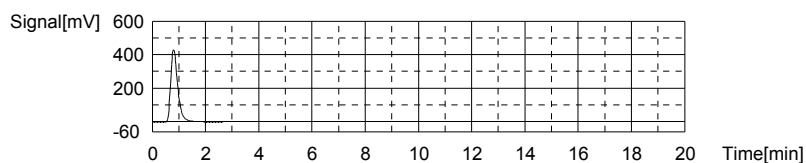
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	804.1	21.11mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:28:56 AM

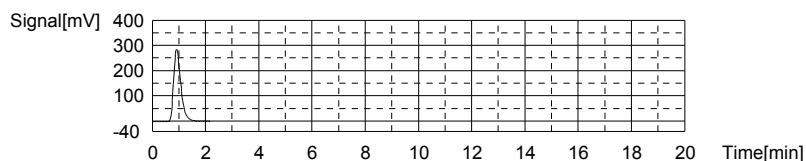
Mean Area 804.1
Mean Conc. 21.11mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	537.9	17.19mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:34:16 AM

Mean Area 537.9
Mean Conc. 17.19mg/L



Sample

Sample Name: L09040690-09 (4)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

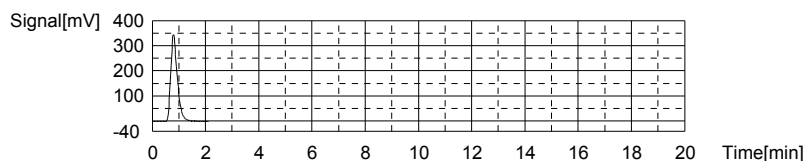
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.397mg/L TC:15.67mg/L IC:12.27mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	598.9	15.67mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:41:48 AM

Mean Area 598.9
Mean Conc. 15.67mg/L

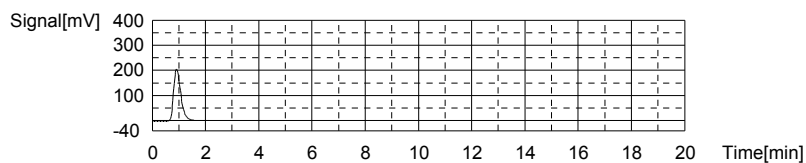


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	387.0	12.27mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:47:04 AM

Approved: May 10, 2009

Mean Area 387.0
Mean Conc. 12.27mg/L



Sample

Sample Name: L09040698-02 (15)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

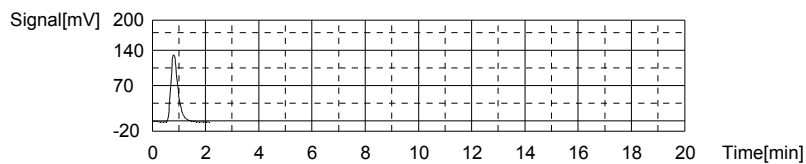
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.825mg/L TC:6.497mg/L IC:4.672mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	253.1	6.497mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:54:38 AM

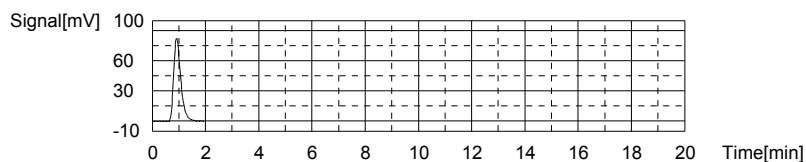
Mean Area 253.1
Mean Conc. 6.497mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	153.7	4.672mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:59:33 AM

Mean Area 153.7
Mean Conc. 4.672mg/L



Sample

Sample Name: L09040727-01
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.531mg/L TC:42.06mg/L IC:35.53mg/L

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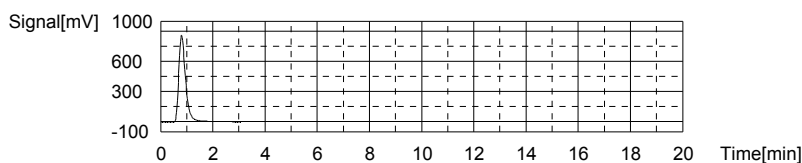
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1594	42.06mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 12:08:04 PM

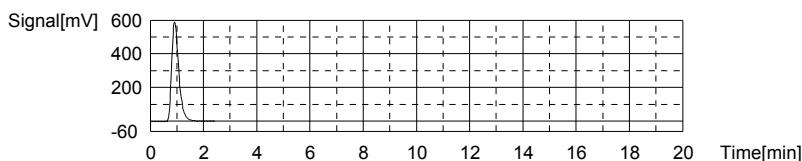
Mean Area 1594
Mean Conc. 42.06mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1101	35.53mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 12:13:51 PM

Mean Area 1101
Mean Conc. 35.53mg/L



Sample

Sample Name: L09040727-05
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

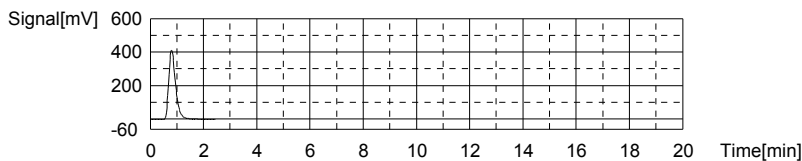
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.914mg/L TC:19.70mg/L IC:15.78mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	750.8	19.70mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 12:21:43 PM

Mean Area 750.8
Mean Conc. 19.70mg/L

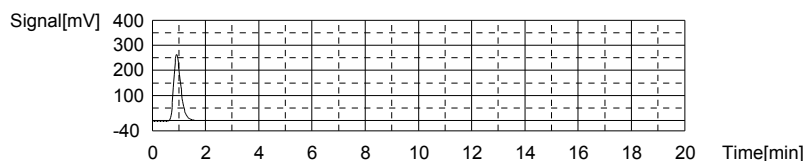


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	494.8	15.78mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 12:27:05 PM

Approved: May 10, 2009

Mean Area 494.8
Mean Conc. 15.78mg/L



Sample

Sample Name: L09040727-07
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

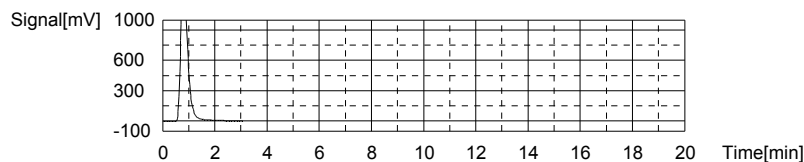
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.949mg/L TC:67.84mg/L IC:62.89mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2566	67.84mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 12:35:35 PM

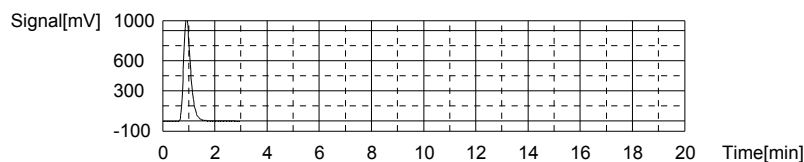
Mean Area 2566
Mean Conc. 67.84mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1941	62.89mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	05/05/2009 12:42:06 PM

Mean Area 1941
Mean Conc. 62.89mg/L



Sample

Sample Name: L09040727-09
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.536mg/L TC:67.28mg/L IC:64.75mg/L

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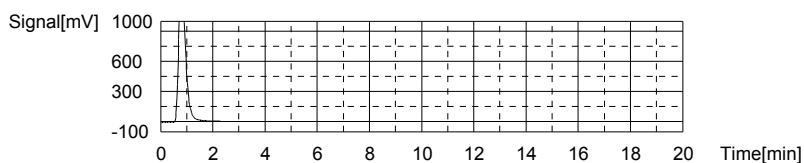
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2545	67.28mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 12:50:46 PM

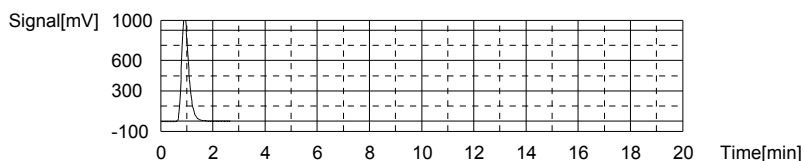
Mean Area 2545
Mean Conc. 67.28mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1998	64.75mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 12:57:03 PM

Mean Area 1998
Mean Conc. 64.75mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

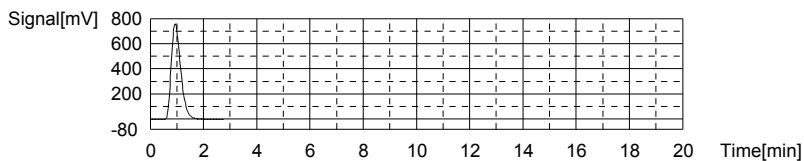
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:49.89mg/L TC:49.96mg/L IC:0.06972mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1892	49.96mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 01:05:15 PM

Mean Area 1892
Mean Conc. 49.96mg/L



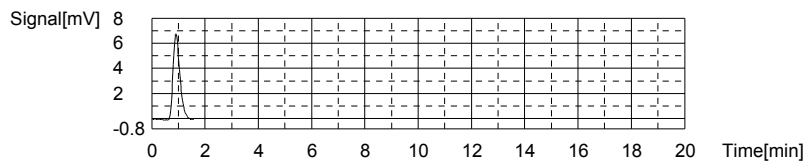
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.40	0.06972mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 01:09:50 PM

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Mean Area 12.40
Mean Conc. 0.06972mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

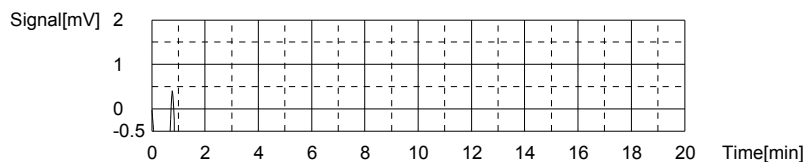
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.05517mg/L TC:-0.06315mg/L IC:-0.1183mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.746	-0.06315mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 01:14:59 PM

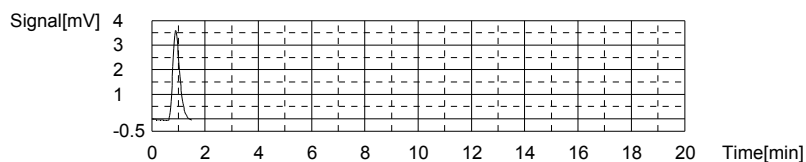
Mean Area 5.746
Mean Conc. -0.06315mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.627	-0.1183mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	05/05/2009 01:18:54 PM

Mean Area 6.627
Mean Conc. -0.1183mg/L



Sample

Sample Name: L0904736-02 (3)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.80mg/L TC:33.70mg/L IC:21.91mg/L

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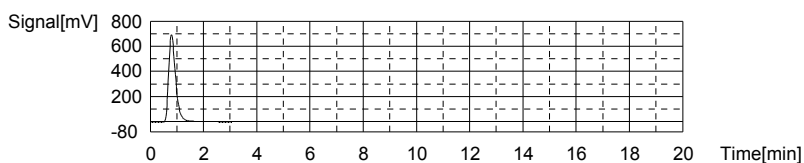
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1279	33.70mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 01:27:24 PM

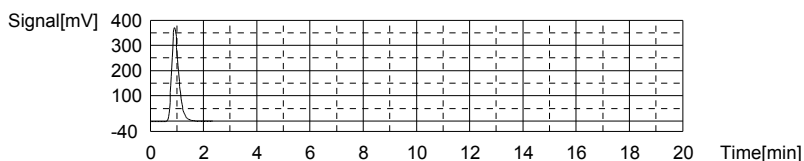
Mean Area 1279
Mean Conc. 33.70mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	682.9	21.91mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 01:33:04 PM

Mean Area 682.9
Mean Conc. 21.91mg/L



Sample

Sample Name: L09040736-05 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

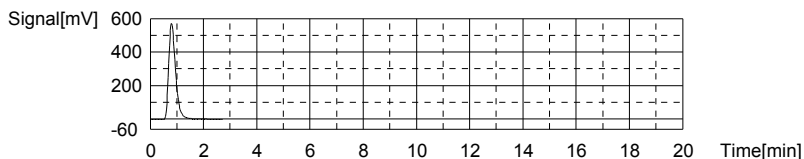
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.594mg/L TC:27.39mg/L IC:23.80mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1041	27.39mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 01:41:13 PM

Mean Area 1041
Mean Conc. 27.39mg/L



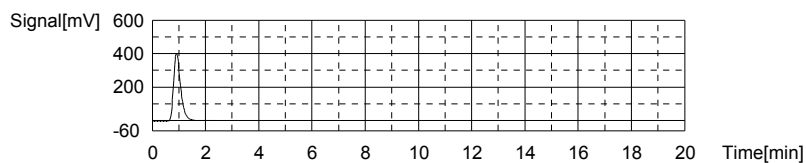
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	740.9	23.80mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 01:46:45 PM

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Approved: May 10, 2009

Mean Area 740.9
Mean Conc. 23.80mg/L



Sample

Sample Name: L09050033-05
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

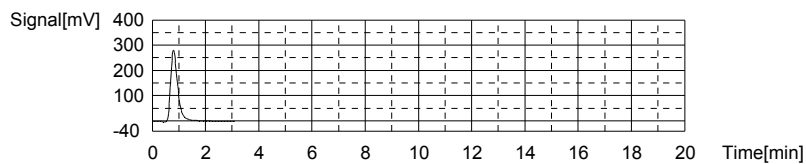
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.420mg/L TC:14.07mg/L IC:11.65mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	538.5	14.07mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 01:55:18 PM

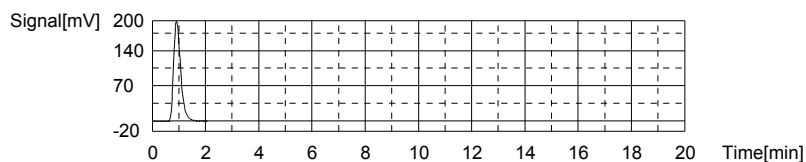
Mean Area 538.5
Mean Conc. 14.07mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	367.8	11.65mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 02:00:28 PM

Mean Area 367.8
Mean Conc. 11.65mg/L



Sample

Sample Name: L09050033-06
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-2.620mg/L TC:92.87mg/L IC:95.49mg/L

Kearna Roberts

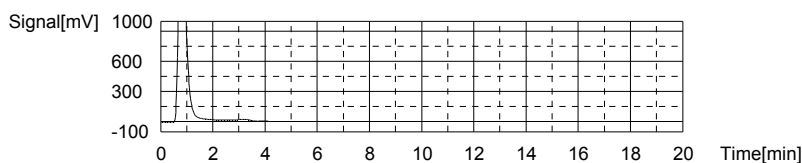
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3510	92.87mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 02:10:28 PM

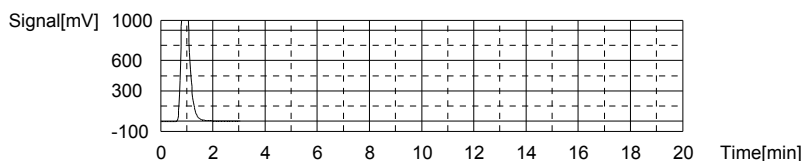
Mean Area 3510
Mean Conc. 92.87mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2942	95.49mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 02:17:21 PM

Mean Area 2942
Mean Conc. 95.49mg/L



Sample

Sample Name: L09050044-01 (10)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

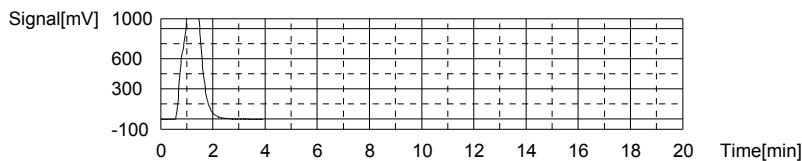
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:135.0mg/L TC:156.2mg/L IC:21.10mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5896	156.2mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 02:26:43 PM

Mean Area 5896
Mean Conc. 156.2mg/L



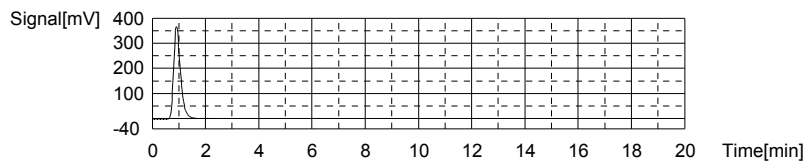
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	658.2	21.10mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 02:32:31 PM

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Approved: May 10, 2009

Mean Area 658.2
Mean Conc. 21.10mg/L



Sample

Sample Name: L09050044-03
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

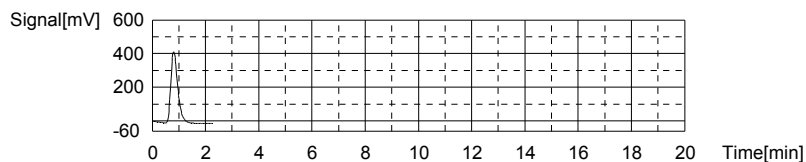
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.854mg/L TC:20.06mg/L IC:16.20mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	764.4	20.06mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 02:40:12 PM

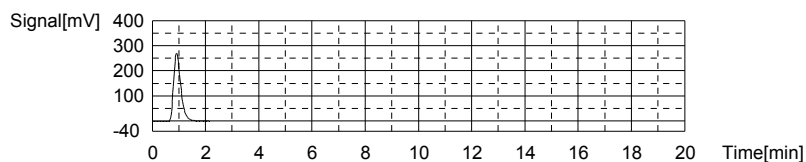
Mean Area 764.4
Mean Conc. 20.06mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	507.7	16.20mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 02:45:29 PM

Mean Area 507.7
Mean Conc. 16.20mg/L



Sample

Sample Name: L09050044-05 (10)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.70mg/L TC:33.47mg/L IC:20.77mg/L

Heanna Roberts

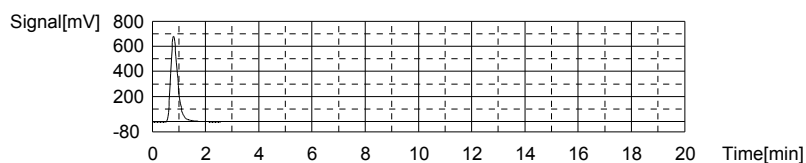
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1270	33.47mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 02:53:30 PM

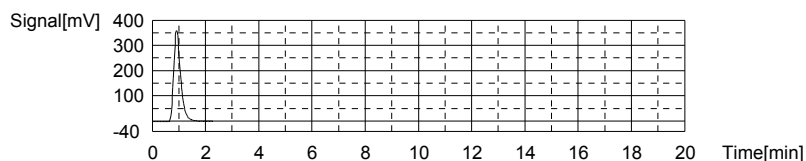
Mean Area 1270
Mean Conc. 33.47mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	647.8	20.77mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 02:59:02 PM

Mean Area 647.8
Mean Conc. 20.77mg/L



Sample

Sample Name: L09050047-02 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

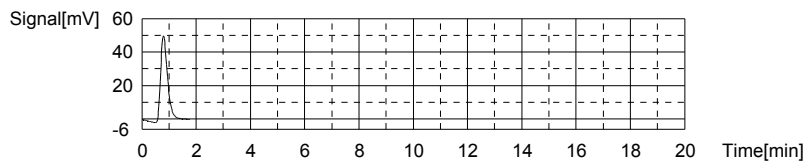
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3964mg/L TC:2.250mg/L IC:1.854mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	92.97	2.250mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 03:06:14 PM

Mean Area 92.97
Mean Conc. 2.250mg/L

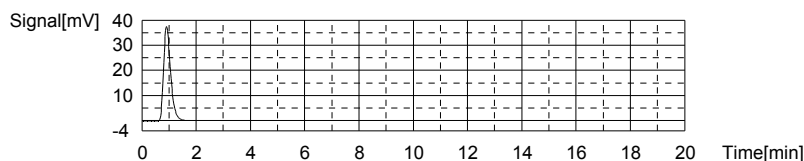


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	67.17	1.854mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 03:10:56 PM

Approved: May 10, 2009

Mean Area 67.17
Mean Conc. 1.854mg/L



Sample

Sample Name: L09050047-03 (50)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

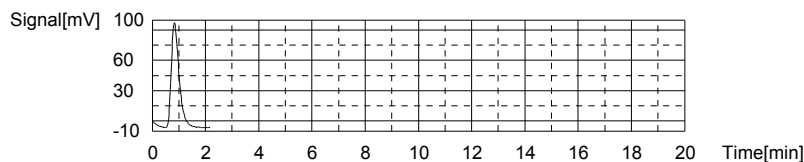
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.068mg/L TC:5.380mg/L IC:2.313mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	211.0	5.380mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 03:18:31 PM

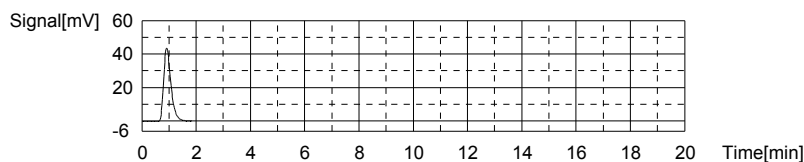
Mean Area 211.0
Mean Conc. 5.380mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	81.26	2.313mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12	05/05/2009 03:23:16 PM

Mean Area 81.26
Mean Conc. 2.313mg/L



Sample

Sample Name: L09050047-04 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.042mg/L TC:3.049mg/L IC:2.007mg/L

Heanna Roberts

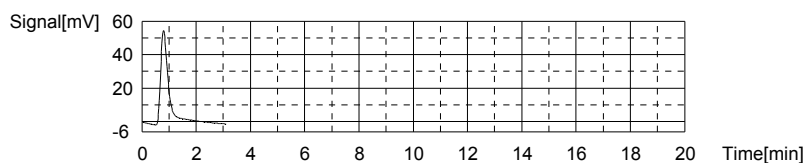
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	123.1	3.049mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 03:31:48 PM

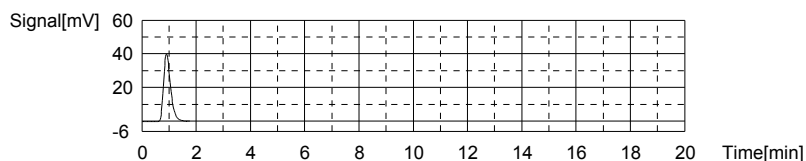
Mean Area 123.1
Mean Conc. 3.049mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	71.88	2.007mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 03:36:27 PM

Mean Area 71.88
Mean Conc. 2.007mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

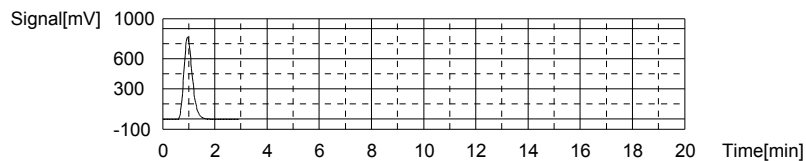
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:49.50mg/L TC:49.35mg/L IC:-0.1461mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1869	49.35mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 03:44:47 PM

Mean Area 1869
Mean Conc. 49.35mg/L

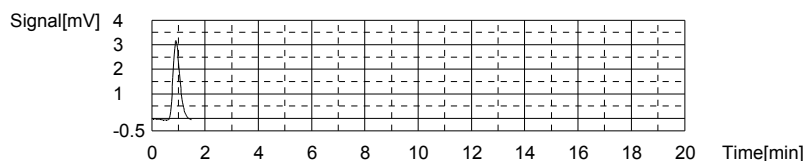


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.775	-0.1461mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 03:49:08 PM

Approved: May 10, 2009

Mean Area 5.775
Mean Conc. -0.1461mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

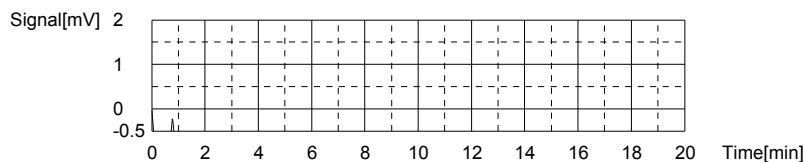
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.05881mg/L TC:-0.09123mg/L IC:-0.1500mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.687	-0.09123mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 03:54:17 PM

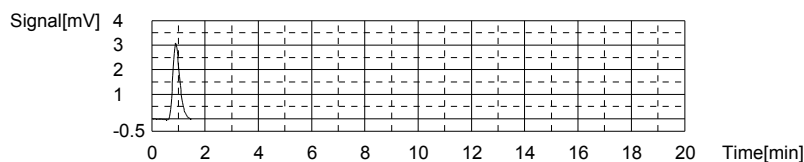
Mean Area 4.687
Mean Conc. -0.09123mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.653	-0.1500mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 03:58:15 PM

Mean Area 5.653
Mean Conc. -0.1500mg/L



Sample

Sample Name: L09050047-05 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.333mg/L TC:9.022mg/L IC:7.688mg/L

Heanna Roberts

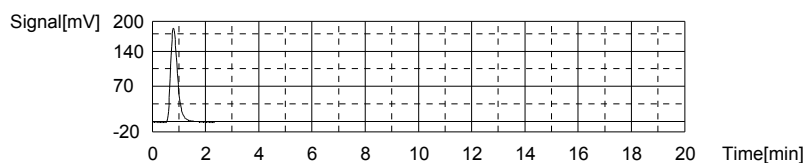
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	348.3	9.022mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:06:03 PM

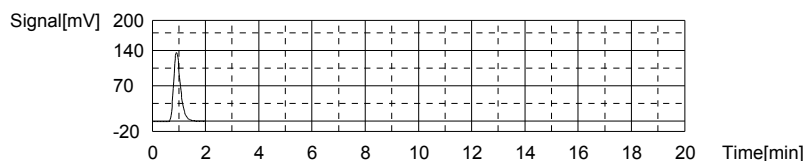
Mean Area 348.3
Mean Conc. 9.022mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	246.3	7.688mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 04:11:01 PM

Mean Area 246.3
Mean Conc. 7.688mg/L



Sample

Sample Name: L09050047-07
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

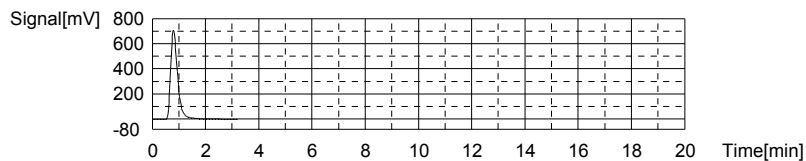
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.956mg/L TC:34.69mg/L IC:29.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1316	34.69mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:19:41 PM

Mean Area 1316
Mean Conc. 34.69mg/L



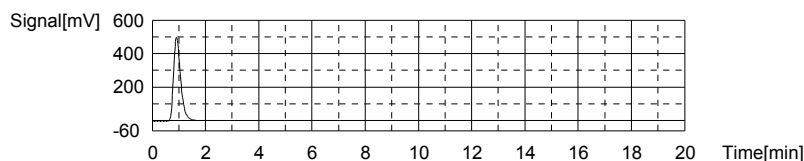
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	923.0	29.73mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 04:25:21 PM

Heanna Roberts

Approved: May 10, 2009

Mean Area 923.0
Mean Conc. 29.73mg/L



Sample

Sample Name: WG301536-05 DUP
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

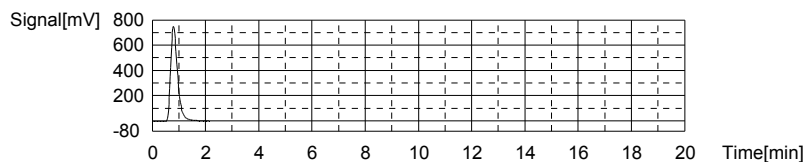
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.676mg/L TC:35.80mg/L IC:32.12mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1358	35.80mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:32:57 PM

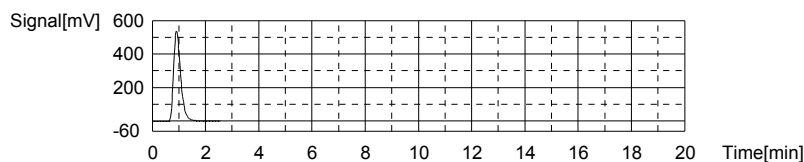
Mean Area 1358
Mean Conc. 35.80mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	996.5	32.12mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 04:38:49 PM

Mean Area 996.5
Mean Conc. 32.12mg/L



Sample

Sample Name: WG301536-06 MS
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.23mg/L TC:48.13mg/L IC:33.90mg/L

Kearna Roberts

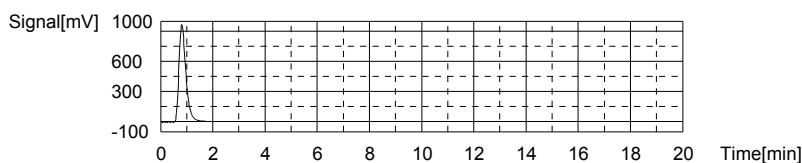
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1823	48.13mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:46:46 PM

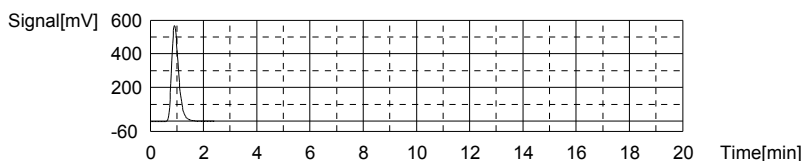
Mean Area 1823
Mean Conc. 48.13mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1051	33.90mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 04:52:32 PM

Mean Area 1051
Mean Conc. 33.90mg/L



Sample

Sample Name: WG301537-01 BLANK
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

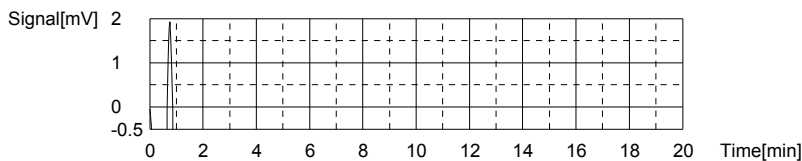
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.02792mg/L TC:-0.00867mg/L IC:-0.03660mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.800	-0.00867mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:57:42 PM

Mean Area 7.800
Mean Conc. -0.00867mg/L



Anal.: IC

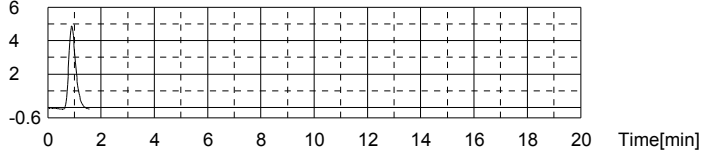
No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.136	-0.03660mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 05:01:44 PM

Heanna Roberts

Approved: May 10, 2009

Mean Area 9.136
Mean Conc. -0.03660mg/L

Signal[mV] 6



Sample

Sample Name: WG301537-02 LCS
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.30mg/L TC:25.20mg/L IC:-0.09910mg/L

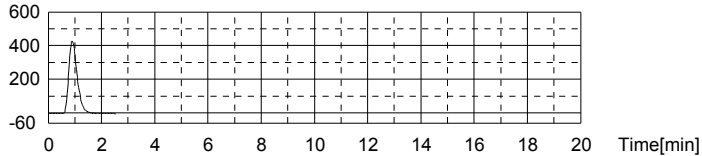
1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	958.5	25.20mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 05:09:44 PM

Mean Area 958.5
Mean Conc. 25.20mg/L

Signal[mV] 600

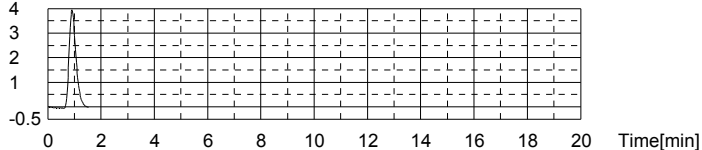


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.217	-0.09910mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 05:14:08 PM

Mean Area 7.217
Mean Conc. -0.09910mg/L

Signal[mV] 4



Sample

Sample Name: WG301537-03 LCSDUP
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.85mg/L TC:24.71mg/L IC:-0.1410mg/L

Heanna Roberts

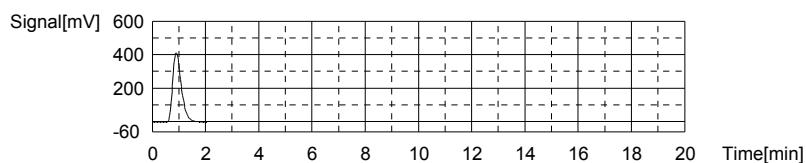
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	939.8	24.71mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 05:21:38 PM

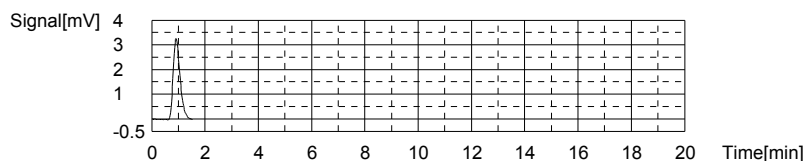
Mean Area 939.8
Mean Conc. 24.71mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.930	-0.1410mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 05:26:01 PM

Mean Area 5.930
Mean Conc. -0.1410mg/L



Sample

Sample Name: L09050057-02
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

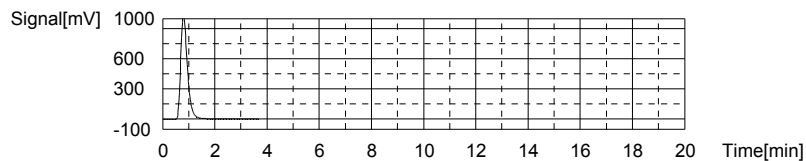
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.300mg/L TC:50.07mg/L IC:43.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1896	50.07mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 05:35:09 PM

Mean Area 1896
Mean Conc. 50.07mg/L

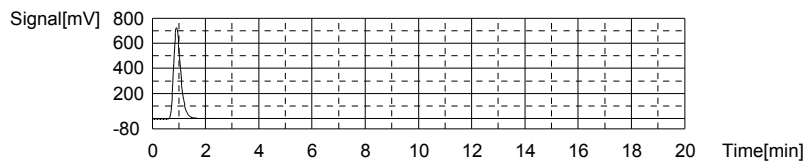


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1354	43.77mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 05:41:05 PM

Approved: May 10, 2009

Mean Area 1354
Mean Conc. 43.77mg/L



Sample

Sample Name: L09050057-05 (10)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

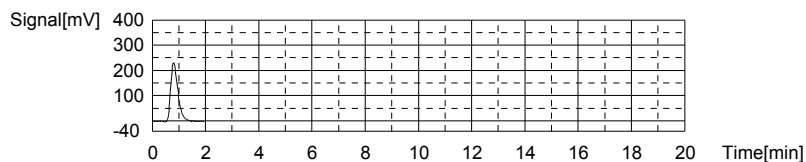
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.483mg/L TC:11.44mg/L IC:8.952mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	439.3	11.44mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 05:48:27 PM

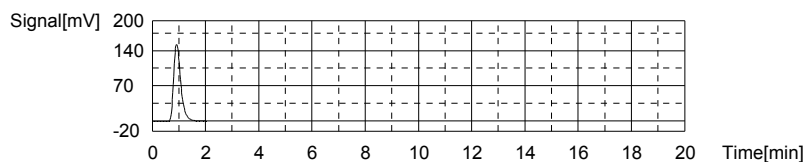
Mean Area 439.3
Mean Conc. 11.44mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	285.1	8.952mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 05:53:36 PM

Mean Area 285.1
Mean Conc. 8.952mg/L



Sample

Sample Name: L09050057-08 (4)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.211mg/L TC:19.45mg/L IC:15.24mg/L

Heanna Roberts

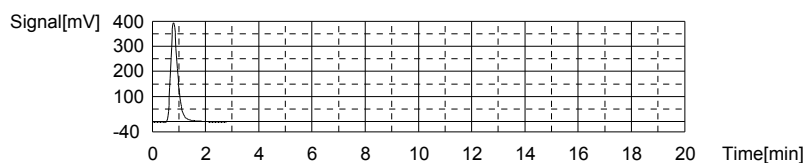
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	741.5	19.45mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 06:01:51 PM

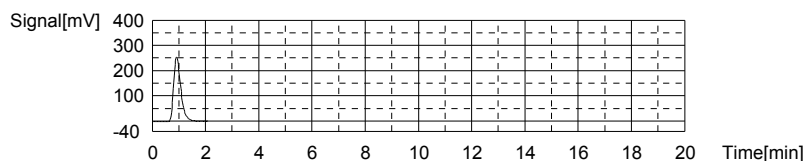
Mean Area 741.5
Mean Conc. 19.45mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	478.1	15.24mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 06:07:03 PM

Mean Area 478.1
Mean Conc. 15.24mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

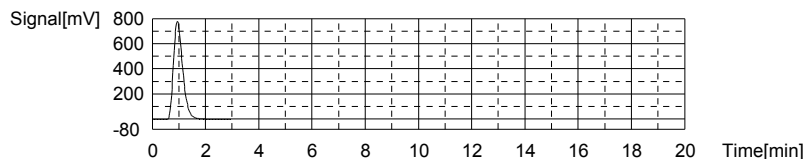
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:49.91mg/L TC:49.83mg/L IC:-0.08308mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1887	49.83mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 06:15:26 PM

Mean Area 1887
Mean Conc. 49.83mg/L

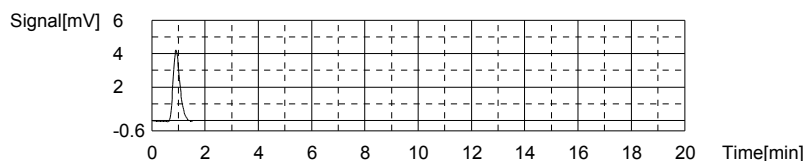


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.709	-0.08308mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 06:19:51 PM

Approved: May 10, 2009

Mean Area 7.709
Mean Conc. -0.08308mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

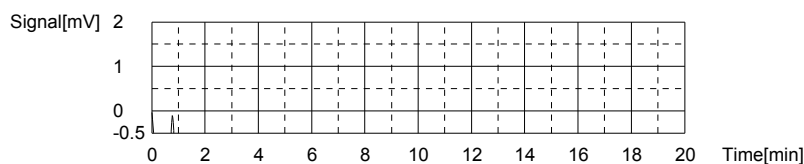
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.04742mg/L TC:-0.09314mg/L IC:-0.1406mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.615	-0.09314mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 06:25:02 PM

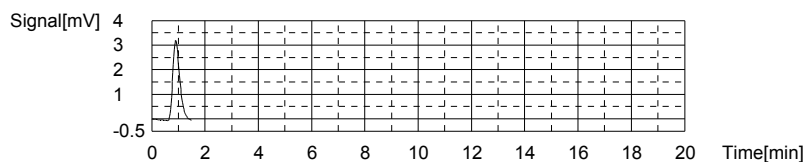
Mean Area 4.615
Mean Conc. -0.09314mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.944	-0.1406mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12	05/05/2009 06:28:57 PM

Mean Area 5.944
Mean Conc. -0.1406mg/L



Sample

Sample Name: L09050057-09
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.351mg/L TC:4.518mg/L IC:3.167mg/L

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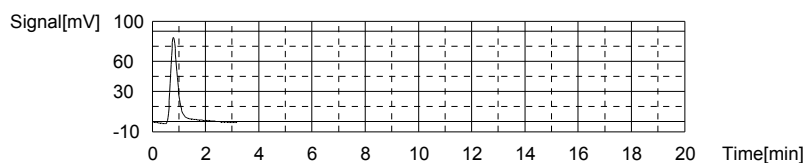
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	178.5	4.518mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 06:37:36 PM

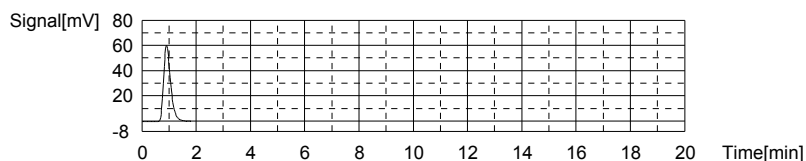
Mean Area 178.5
Mean Conc. 4.518mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.5	3.167mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 06:42:19 PM

Mean Area 107.5
Mean Conc. 3.167mg/L



Sample

Sample Name: WG301537-05 DUP
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

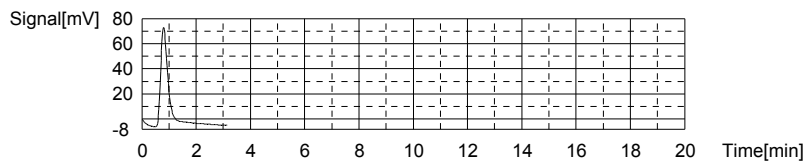
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.164mg/L TC:4.126mg/L IC:2.962mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	163.7	4.126mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 06:50:54 PM

Mean Area 163.7
Mean Conc. 4.126mg/L

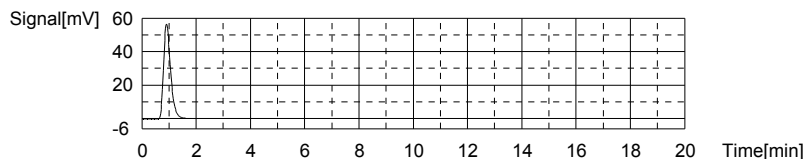


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	101.2	2.962mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 06:55:40 PM

Approved: May 10, 2009

Mean Area 101.2
Mean Conc. 2.962mg/L



Sample

Sample Name: WG301537-06 MS
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

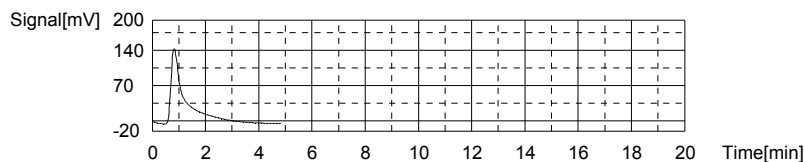
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.18mg/L TC:14.60mg/L IC:4.425mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	558.7	14.60mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 07:05:58 PM

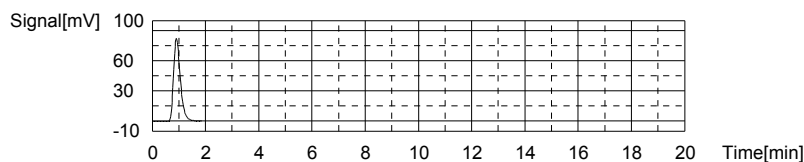
Mean Area 558.7
Mean Conc. 14.60mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	146.1	4.425mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	05/05/2009 07:10:48 PM

Mean Area 146.1
Mean Conc. 4.425mg/L



Sample

Sample Name: L09050044-01 (100)
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.30mg/L TC:16.73mg/L IC:1.424mg/L

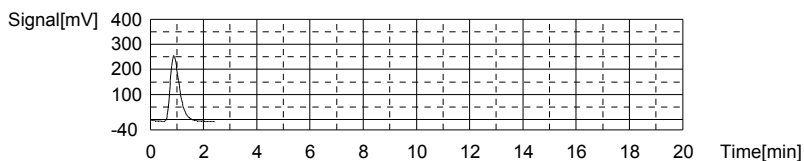
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	638.8	16.73mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 07:18:40 PM

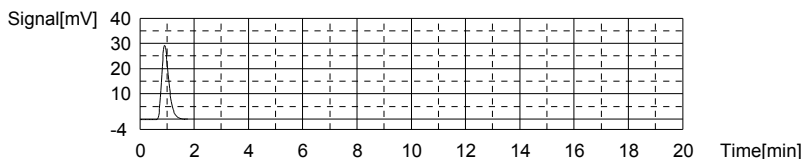
Mean Area 638.8
Mean Conc. 16.73mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.98	1.424mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 07:23:19 PM

Mean Area 53.98
Mean Conc. 1.424mg/L



Sample

Sample Name: L09040698-02 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

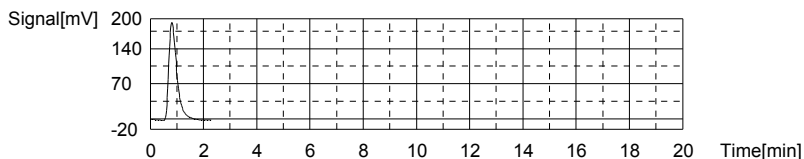
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.693mg/L TC:10.76mg/L IC:7.063mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	413.7	10.76mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 07:31:04 PM

Mean Area 413.7
Mean Conc. 10.76mg/L



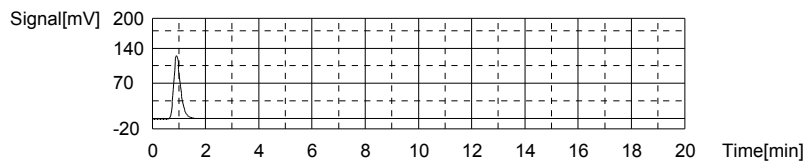
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	227.1	7.063mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 07:36:02 PM

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Approved: May 10, 2009

Mean Area 227.1
Mean Conc. 7.063mg/L



Sample

Sample Name: L09050075-01 (4)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

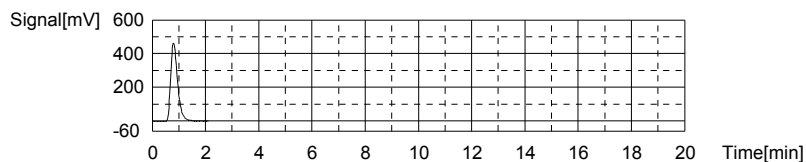
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.946mg/L TC:22.18mg/L IC:18.24mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	844.6	22.18mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 07:43:36 PM

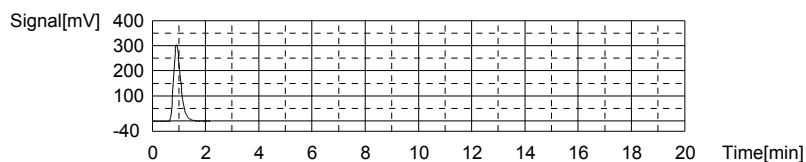
Mean Area 844.6
Mean Conc. 22.18mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	570.2	18.24mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 07:48:58 PM

Mean Area 570.2
Mean Conc. 18.24mg/L



Sample

Sample Name: L09050075-03
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-1.553mg/L TC:81.20mg/L IC:82.76mg/L

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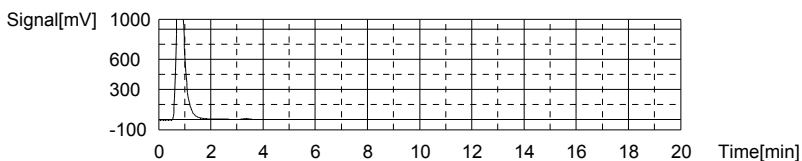
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3070	81.20mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 07:58:37 PM

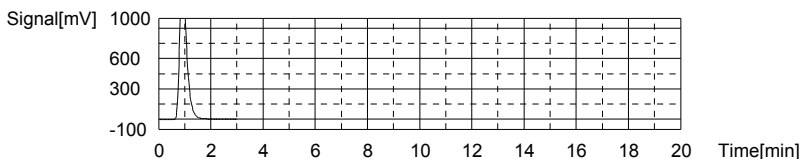
Mean Area 3070
Mean Conc. 81.20mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2551	82.76mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:05:15 PM

Mean Area 2551
Mean Conc. 82.76mg/L



Sample

Sample Name: L09050075-05 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

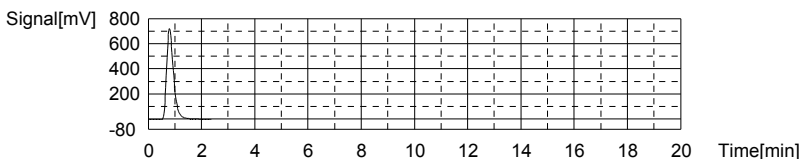
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.465mg/L TC:34.34mg/L IC:30.88mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1303	34.34mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 08:13:05 PM

Mean Area 1303
Mean Conc. 34.34mg/L

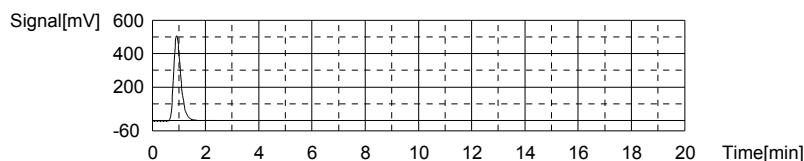


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	958.2	30.88mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:18:58 PM

Approved: May 10, 2009

Mean Area 958.2
Mean Conc. 30.88mg/L



Sample

Sample Name: L09050075-07 (100)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

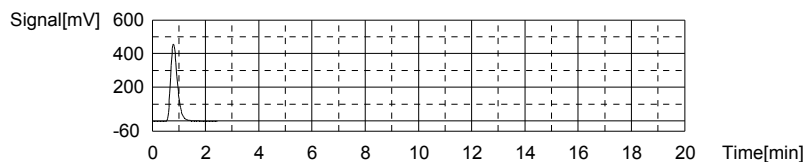
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.653mg/L TC:21.51mg/L IC:18.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	819.2	21.51mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 08:26:53 PM

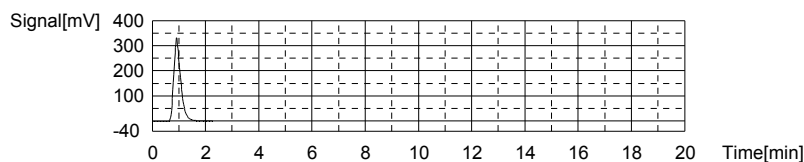
Mean Area 819.2
Mean Conc. 21.51mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	589.2	18.86mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:32:23 PM

Mean Area 589.2
Mean Conc. 18.86mg/L



Sample

Sample Name: L09050069-02 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.2746mg/L TC:0.2565mg/L IC:-0.01806mg/L

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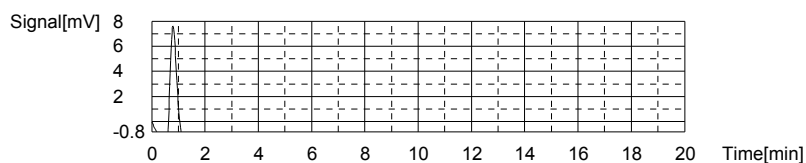
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.80	0.2565mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 08:39:27 PM

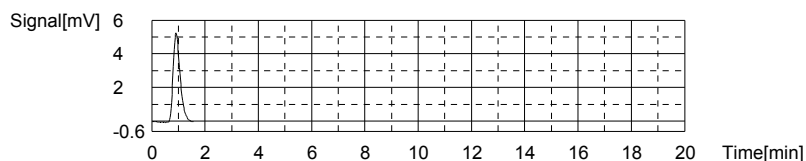
Mean Area 17.80
Mean Conc. 0.2565mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.705	-0.01806mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:43:55 PM

Mean Area 9.705
Mean Conc. -0.01806mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

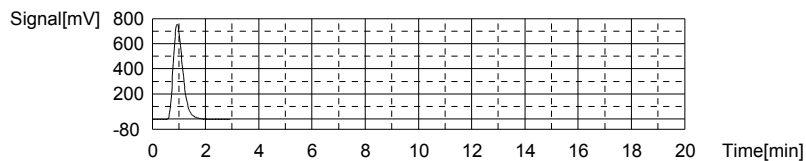
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:50.05mg/L TC:49.94mg/L IC:-0.1112mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1891	49.94mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 08:52:19 PM

Mean Area 1891
Mean Conc. 49.94mg/L

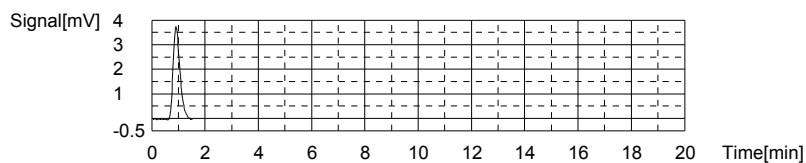


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.846	-0.1112mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:56:42 PM

Approved: May 10, 2009

Mean Area 6.846
Mean Conc. -0.1112mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

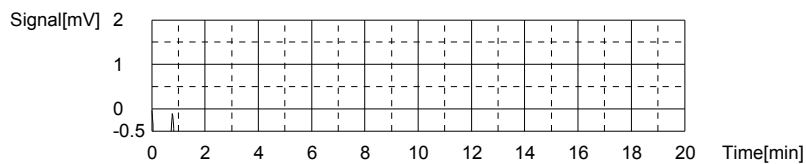
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.04502mg/L TC:-0.08460mg/L IC:-0.1296mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.937	-0.08460mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 09:01:55 PM

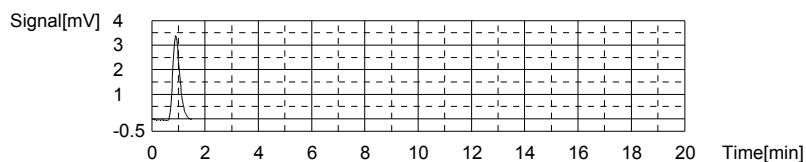
Mean Area 4.937
Mean Conc. -0.08460mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.280	-0.1296mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	05/05/2009 09:05:51 PM

Mean Area 6.280
Mean Conc. -0.1296mg/L



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Approved: May 10, 2009

301448

301449

Total Organic Carbon

MAKE DAILY

CCV (TOC): std 32652LCS (TOC): std 31844 $\left(\frac{10}{200} (1000) = 50 \text{ mg/L}\right)$ $\left(\frac{3}{200} (1000) = 15 \text{ mg/L}\right)$ CCV (TIC): std 31777MS (TOC): 0.4/40 (1000) = 10 $\left(\frac{5}{200} (1000) = 25 \text{ mg/L}\right)$ Calibration Curve Date: 1/13/09SM5310-C: Matrix 2 WG 301448EPA 415.1/9060A(mod): Matrix 1 WG 301447SOP: K 4151 Rev. 11WG 301449

Instrument: Shimadza TOC-VWP/ASI

drain reservoir filled
ASI water bottle full
dilution water bottle fullDAILY CHECK
3rd bottle full
sufficient gas
sufficient persulfatesufficient acid
waste container

Position	Sample ID	Dilution
1	TCV 50	
2	CCV 10	
3	TIC 25	
4	BLK	
5	LCS 25	
6	LCSDUP	
7	04-729-01	1/3
8	02	1/3
9	04-713-01	
10	02	
11	05-029-01	1/3
12	07	
13	09	1/3
14	11	1/5
15	CCV	
16	CCB	
17	05-029-13	1/4
18	04-690-01	1/4
19	07	1/2
20	09	
21	11	1/2
22	13	
23	04-698-02	1/5
24	05	1/10
25	06	1/2

Position	Sample ID	Dilution
26	04-736-02	
27	CCV	
28	CCB	
29	04-736-03	1/5
30	05	1/3
31	BLK	
32	LCS 25	
33	LCSDUP	
34	04-0730-01	1/5
35	DUP	↓
36	MS	↓
37		
38		
39	CCV	
40	CCB/BLK	
41	LCS 25	
42	LCSDUP	
43	04-727-01	1/5
44	03	
45	05	1/2
46	07	1/2
47	09	1/2
48	05-031-02	
49	07	
50	10	

Position	Sample ID	Dilution
51	05-033-002	CCV
52	CCV	CCB
53	05-033-02	
54	05-033-01	1/4
55	04	
56	05	1/2
57	06	1/2
58	07	
59	DUP	↓
60	MS	↓
61	DUP 713-01	
62	MS	↓
63	CCV	
64	CCB	
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

1st w/6
↓Analyst: Deanna BasenDate/Time: 5/4/09

05-033-06
04-727(7,9) were analyzed straight
on 5/5 & went over cal range.
Suspect high CL. The 1/2 dil. results
are being reported.

DCN#79305



Deanna Roberts

Approved: May 09, 2009

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	CCV 50	!!Error!! TOC:51.93mg/L TC:51.79mg/L IC:-0.1411mg/L	Complete	05/04/2009 02:48:24 PM	1
2	TOC	CCV 10	!!Error!! TOC:9.917mg/L TC:9.876mg/L IC:-0.04164mg/L	Complete	05/04/2009 03:00:27 PM	2
3	TOC	TIC 25	TOC:1.094mg/L TC:25.94mg/L IC:24.85mg/L	Complete	05/04/2009 03:13:25 PM	3
4	TOC	WG301447-01 BLANK	!!Error!! TOC:0.04775mg/L TC:-0.02031mg/L IC:-0.06mg/L	Complete	05/04/2009 03:23:06 PM	0
5	TOC	WG301447-02 LCS	!!Error!! TOC:23.21mg/L TC:23.04mg/L IC:-0.1737mg/L	Complete	05/04/2009 03:35:32 PM	5
6	TOC	WG301447-03 LCSDUP	!!Error!! TOC:26.05mg/L TC:25.87mg/L IC:-0.1779mg/L	Complete	05/04/2009 03:48:04 PM	6
7	TOC	L09040729-01 (3)	TOC:4.131mg/L TC:31.82mg/L IC:27.69mg/L	Complete	05/04/2009 04:02:15 PM	7
8	TOC	L09040729-02 (3)	TOC:4.505mg/L TC:28.98mg/L IC:24.48mg/L	Complete	05/04/2009 04:16:05 PM	8
9	TOC	L09040713-01	TOC:5.988mg/L TC:37.07mg/L IC:31.08mg/L	Complete	05/04/2009 04:30:19 PM	9
10	TOC	L09040713-02	TOC:5.768mg/L TC:32.14mg/L IC:26.37mg/L	Complete	05/04/2009 04:45:11 PM	10
11	TOC	L09050029-01 (3) X	TOC:5.881mg/L TC:55.19mg/L IC:49.31mg/L	Complete	05/04/2009 05:00:42 PM	11
12	TOC	L09050029-07 X	TOC:6.959mg/L TC:69.16mg/L IC:62.20mg/L	Complete	05/04/2009 05:16:28 PM	12
13	TOC	L09050029-09 (3)	TOC:2.096mg/L TC:32.62mg/L IC:30.52mg/L	Complete	05/04/2009 05:30:12 PM	13
14	TOC	L09050029-11 (5)	TOC:4.744mg/L TC:13.88mg/L IC:9.131mg/L	Complete	05/04/2009 05:43:05 PM	14
15	TOC	CCV	!!Error!! TOC:49.93mg/L TC:49.86mg/L IC:-0.07650mg/L	Complete	05/04/2009 05:56:06 PM	15
16	TOC	CCB	!!Error!! TOC:0.01730mg/L TC:-0.04405mg/L IC:-0.06mg/L	Complete	05/04/2009 06:05:22 PM	0
17	TOC	L09050029-13 (4)	TOC:8.121mg/L TC:14.31mg/L IC:6.187mg/L	Complete	05/04/2009 06:18:44 PM	17
18	TOC	L09040690-01 (4)	TOC:1.665mg/L TC:13.15mg/L IC:11.48mg/L	Complete	05/04/2009 06:31:56 PM	18
19	TOC	L09040690-07 (2)	TOC:6.767mg/L TC:38.19mg/L IC:31.42mg/L	Complete	05/04/2009 06:46:22 PM	19
20	TOC	L09040690-09 X	TOC:2.519mg/L TC:70.78mg/L IC:68.26mg/L	Complete	05/04/2009 07:01:47 PM	20
21	TOC	L09040690-11 (2)	TOC:2.660mg/L TC:20.61mg/L IC:17.95mg/L	Complete	05/04/2009 07:15:03 PM	21
22	TOC	L09040690-13	TOC:1.966mg/L TC:11.06mg/L IC:9.092mg/L	Complete	05/04/2009 07:28:02 PM	22
23	TOC	L09040698-02 (5) X	TOC:27.34mg/L TC:62.35mg/L IC:35.01mg/L	Complete	05/04/2009 07:43:18 PM	23
24	TOC	L09040698-05 (10)	TOC:1.911mg/L TC:12.67mg/L IC:10.76mg/L	Complete	05/04/2009 07:56:09 PM	24
25	TOC	L09040698-06 (2) X	TOC:2.991mg/L TC:19.29mg/L IC:16.29mg/L	Complete	05/04/2009 08:09:40 PM	25
26	TOC	L09040736-02 X	TOC:6.234mg/L TC:67.20mg/L IC:60.97mg/L	Complete	05/04/2009 08:25:03 PM	26
27	TOC	CCV	TOC:50.13mg/L TC:50.23mg/L IC:0.09643mg/L	Complete	05/04/2009 08:38:17 PM	27
28	TOC	CCB	!!Error!! TOC:0.02008mg/L TC:-0.02527mg/L IC:-0.04mg/L	Complete	05/04/2009 08:47:33 PM	0
29	TOC	L09040736-03 (5)	TOC:1.662mg/L TC:13.01mg/L IC:11.34mg/L	Complete	05/04/2009 09:00:34 PM	29
30	TOC	L09040736-05 (3) X	TOC:5.837mg/L TC:58.24mg/L IC:52.40mg/L	Complete	05/04/2009 09:15:41 PM	30
31	TOC	WG301448-01 BLANK	TOC:0.03127mg/L TC:0.04160mg/L IC:0.01032mg/L	Complete	05/04/2009 09:32:51 PM	0
32	TOC	WG301448-02 LCS	!!Error!! TOC:26.29mg/L TC:26.19mg/L IC:-0.1072mg/L	Complete	05/04/2009 09:54:35 PM	32
33	TOC	WG301448-03 LCSDUP	!!Error!! TOC:24.97mg/L TC:24.84mg/L IC:-0.1280mg/L	Complete	05/04/2009 10:17:04 PM	33
34	TOC	L09040730-01 (5)	TOC:28.01mg/L TC:29.41mg/L IC:1.398mg/L	Complete	05/04/2009 10:43:16 PM	34
35	TOC	WG301448-05 (5) DUP	TOC:20.10mg/L TC:21.71mg/L IC:1.617mg/L	Complete	05/04/2009 11:08:48 PM	35
36	TOC	WG301448-06 (5) MS	TOC:22.60mg/L TC:23.53mg/L IC:0.9306mg/L	Complete	05/04/2009 11:34:16 PM	36
37	TOC	<Untitled>	TOC:13.06mg/L TC:28.68mg/L IC:15.61mg/L	Complete	05/04/2009 11:59:55 PM	37
38	TOC	<Untitled>	TOC:13.52mg/L TC:29.32mg/L IC:15.79mg/L	Complete	05/05/2009 12:25:36 AM	38
39	TOC	CCV	!!Error!! TOC:49.38mg/L TC:49.27mg/L IC:-0.1064mg/L	Complete	05/05/2009 12:38:34 AM	39
40	TOC	WG301449-01 BLANK	!!Error!! TOC:0.02307mg/L TC:-0.04678mg/L IC:-0.06mg/L	Complete	05/05/2009 12:47:54 AM	0
41	TOC	WG301449-02 LCS	!!Error!! TOC:25.38mg/L TC:25.26mg/L IC:-0.1149mg/L	Complete	05/05/2009 01:00:27 AM	41
42	TOC	WG301449-03 LCSDUP	!!Error!! TOC:25.37mg/L TC:25.25mg/L IC:-0.1187mg/L	Complete	05/05/2009 01:13:04 AM	42
43	TOC	L09040727-01 (5) X	TOC:0.9243mg/L TC:3.821mg/L IC:2.897mg/L	Complete	05/05/2009 01:25:21 AM	43
44	TOC	L09040727-02 (3) X	TOC:4.723mg/L TC:25.97mg/L IC:21.25mg/L	Complete	05/05/2009 01:39:13 AM	44
45	TOC	L09040727-05 (2) X	TOC:1.176mg/L TC:2.964mg/L IC:1.788mg/L	Complete	05/05/2009 01:51:24 AM	45
46	TOC	L09040727-07 (2) X	TOC:2.315mg/L TC:9.502mg/L IC:7.187mg/L	Complete	05/05/2009 02:04:18 AM	46
47	TOC	L09040727-09 (2) X	TOC:1.639mg/L TC:7.842mg/L IC:6.203mg/L	Complete	05/05/2009 02:16:55 AM	47
48	TOC	L09050031-02	TOC:2.962mg/L TC:26.41mg/L IC:23.45mg/L	Complete	05/05/2009 02:30:43 AM	48
49	TOC	L09050031-07	TOC:4.650mg/L TC:34.66mg/L IC:30.01mg/L	Complete	05/05/2009 02:44:41 AM	49
50	TOC	L09050031-10	TOC:3.906mg/L TC:26.05mg/L IC:22.15mg/L	Complete	05/05/2009 02:58:41 AM	50
51	TOC	CCV	!!Error!! TOC:48.39mg/L TC:48.37mg/L IC:-0.02197mg/L	Complete	05/05/2009 03:11:21 AM	51
52	TOC	CCB	!!Error!! TOC:0.02299mg/L TC:-0.03989mg/L IC:-0.06mg/L	Complete	05/05/2009 03:20:38 AM	0
53	TOC	L09050033-02	TOC:1.247mg/L TC:2.487mg/L IC:1.240mg/L	Complete	05/05/2009 03:34:11 AM	53
54	TOC	L09050033-03 (4)	TOC:7.398mg/L TC:17.42mg/L IC:10.02mg/L	Complete	05/05/2009 03:47:19 AM	54
55	TOC	L09050033-04	TOC:1.459mg/L TC:3.617mg/L IC:2.158mg/L	Complete	05/05/2009 04:01:04 AM	55
56	TOC	L09050033-05 (2) X	TOC:0.6598mg/L TC:1.368mg/L IC:0.7085mg/L	Complete	05/05/2009 04:13:51 AM	56
57	TOC	L09050033-06 (2) X	TOC:2.153mg/L TC:11.20mg/L IC:9.047mg/L	Complete	05/05/2009 04:27:17 AM	57
58	TOC	L09050033-07	TOC:1.025mg/L TC:1.538mg/L IC:0.5130mg/L	Complete	05/05/2009 04:40:24 AM	58
59	TOC	WG301449-05 DUP	TOC:0.2329mg/L TC:0.9525mg/L IC:0.7195mg/L	Complete	05/05/2009 04:52:02 AM	59
60	TOC	WG301449-06 MS	TOC:8.985mg/L TC:10.76mg/L IC:1.779mg/L	Complete	05/05/2009 05:07:05 AM	60
61	TOC	WG301447-05 DUP	TOC:3.250mg/L TC:7.773mg/L IC:4.522mg/L	Complete	05/05/2009 05:21:05 AM	61
62	TOC	WG301447-06 MS	TOC:13.51mg/L TC:25.22mg/L IC:11.71mg/L	Complete	05/05/2009 05:35:21 AM	62
63	TOC	CCV	!!Error!! TOC:50.77mg/L TC:50.71mg/L IC:-0.06607mg/L	Complete	05/05/2009 05:47:40 AM	63
64	TOC	CCB	!!Error!! TOC:0.01674mg/L TC:-0.05288mg/L IC:-0.06mg/L	Complete	05/05/2009 05:57:00 AM	0

Heanna Roberts

Approved: May 09, 2009

Instr. Information

System
DetectorTOCVW ASI
Wet Chemical

Sample

Sample Name: CCV 50
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

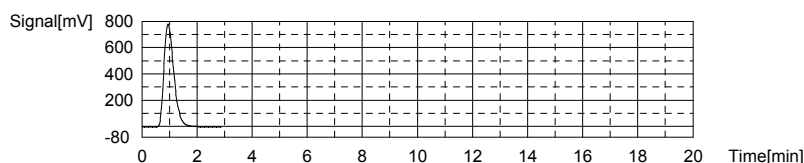
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:51.93mg/L TC:51.79mg/L IC:-0.1411mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1961	51.79mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/04/2009 02:43:52 PM

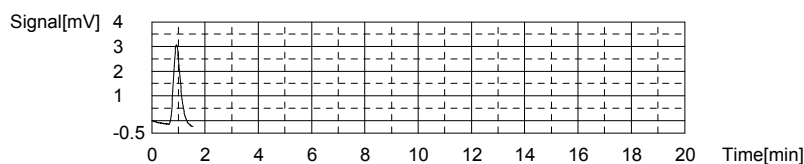
Mean Area 1961
Mean Conc. 51.79mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.929	-0.1411mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/04/2009 02:48:24 PM

Mean Area 5.929
Mean Conc. -0.1411mg/L



Sample

Sample Name: CCV 10
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:9.917mg/L TC:9.876mg/L IC:-0.04164mg/L

1. Det

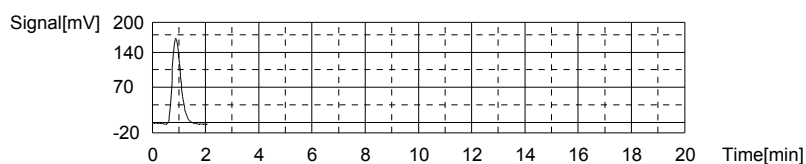
Anal.: TC

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Approved: May 09, 2009

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	380.5	9.876mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/04/2009 02:55:55 PM

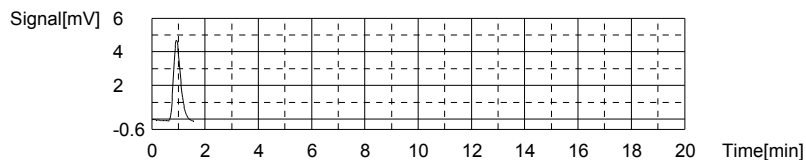
Mean Area 380.5
Mean Conc. 9.876mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.981	-0.04164mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/04/2009 03:00:27 PM

Mean Area 8.981
Mean Conc. -0.04164mg/L



Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

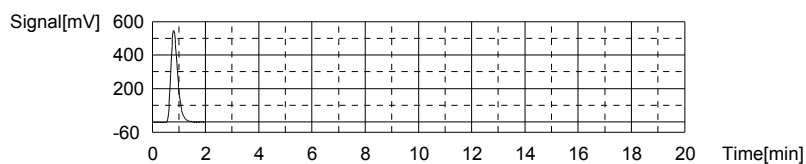
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.094mg/L TC:25.94mg/L IC:24.85mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	986.4	25.94mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/04/2009 03:07:51 PM

Mean Area 986.4
Mean Conc. 25.94mg/L



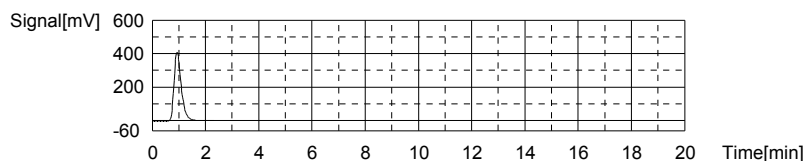
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	773.2	24.85mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/04/2009 03:13:25 PM

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Approved: May 09, 2009

Mean Area 773.2
Mean Conc. 24.85mg/L



Sample

Sample Name: WG301447-01 BLANK
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

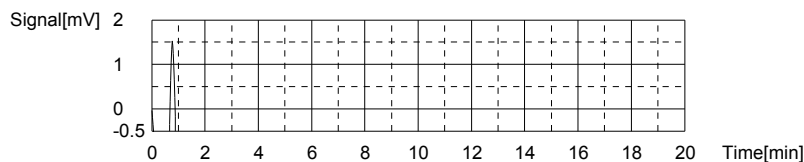
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.04775mg/L TC:-0.02031mg/L IC:-0.06806mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.361	-0.02031mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 03:19:03 PM

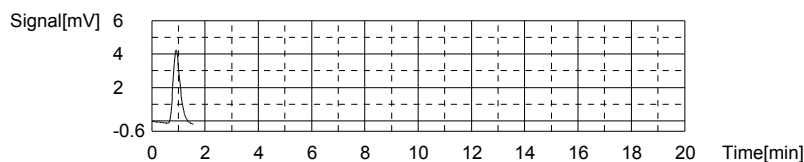
Mean Area 7.361
Mean Conc. -0.02031mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.170	-0.06806mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 03:23:06 PM

Mean Area 8.170
Mean Conc. -0.06806mg/L



Sample

Sample Name: WG301447-02 LCS
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.21mg/L TC:23.04mg/L IC:-0.1737mg/L

Kearna Roberts

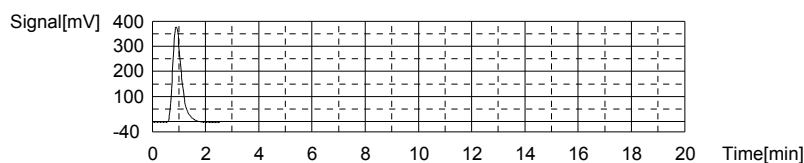
Approved: May 09, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	876.8	23.04mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 03:31:05 PM

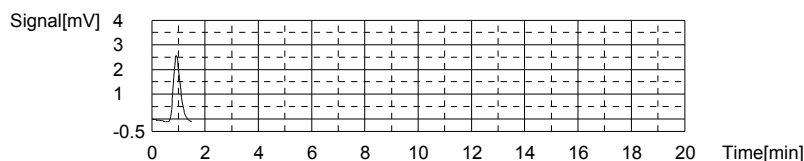
Mean Area 876.8
Mean Conc. 23.04mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.927	-0.1737mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 03:35:32 PM

Mean Area 4.927
Mean Conc. -0.1737mg/L



Sample

Sample Name: WG301447-03 LCSDUP
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

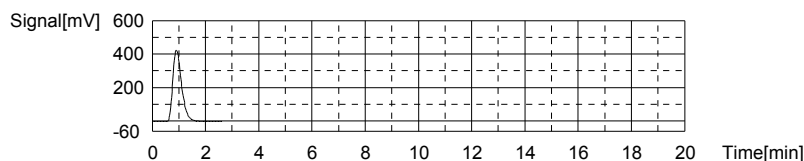
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.05mg/L TC:25.87mg/L IC:-0.1779mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	983.7	25.87mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 03:43:36 PM

Mean Area 983.7
Mean Conc. 25.87mg/L

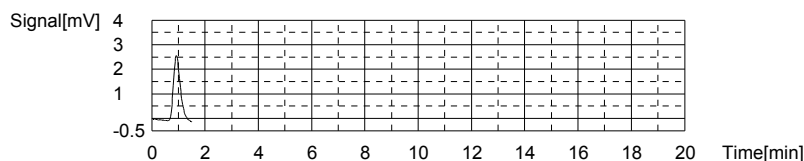


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.797	-0.1779mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 03:48:04 PM

Approved: May 09, 2009

Mean Area 4.797
Mean Conc. -0.1779mg/L



Sample

Sample Name: L09040729-01 (3)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

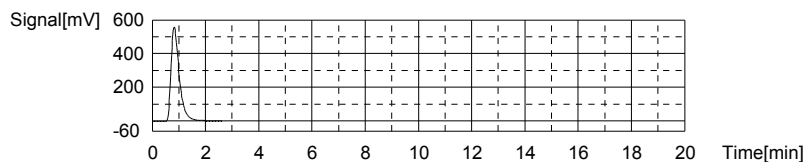
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.131mg/L TC:31.82mg/L IC:27.69mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1208	31.82mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 03:56:07 PM

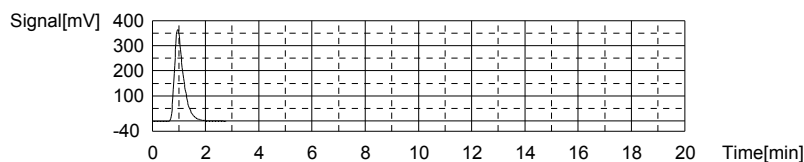
Mean Area 1208
Mean Conc. 31.82mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	860.4	27.69mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 04:02:15 PM

Mean Area 860.4
Mean Conc. 27.69mg/L



Sample

Sample Name: L09040729-02 (3)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.505mg/L TC:28.98mg/L IC:24.48mg/L

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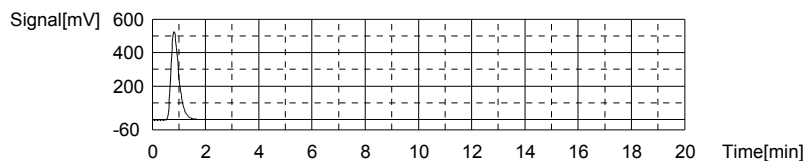
Approved: May 09, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1101	28.98mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 04:10:08 PM

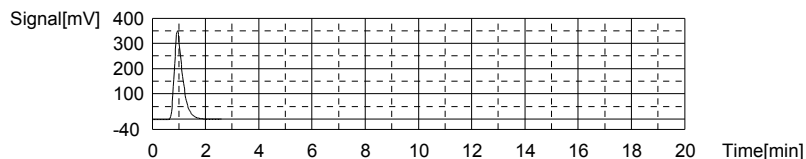
Mean Area 1101
Mean Conc. 28.98mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	761.8	24.48mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 04:16:05 PM

Mean Area 761.8
Mean Conc. 24.48mg/L



Sample

Sample Name: L09040713-01
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

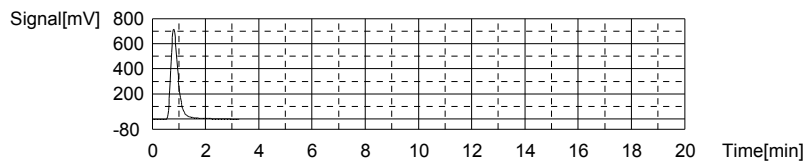
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.988mg/L TC:37.07mg/L IC:31.08mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1406	37.07mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 04:24:48 PM

Mean Area 1406
Mean Conc. 37.07mg/L



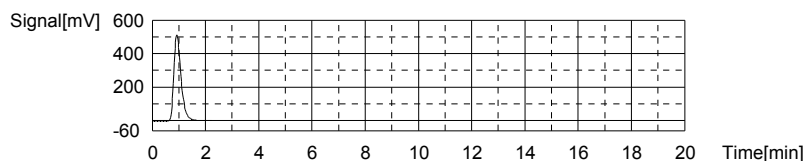
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	964.6	31.08mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 04:30:19 PM

Heanna Roberts

Approved: May 09, 2009

Mean Area 964.6
Mean Conc. 31.08mg/L



Sample

Sample Name: L09040713-02
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

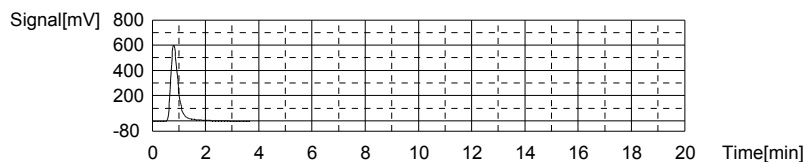
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.768mg/L TC:32.14mg/L IC:26.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1220	32.14mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 04:39:25 PM

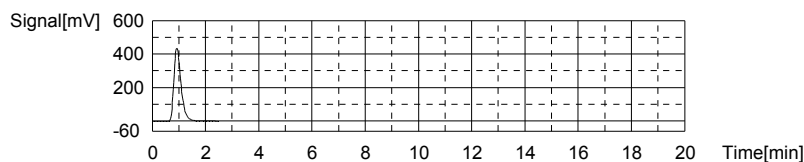
Mean Area 1220
Mean Conc. 32.14mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	819.9	26.37mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 04:45:11 PM

Mean Area 819.9
Mean Conc. 26.37mg/L



Sample

Sample Name: L09050029-01 (3)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.881mg/L TC:55.19mg/L IC:49.31mg/L

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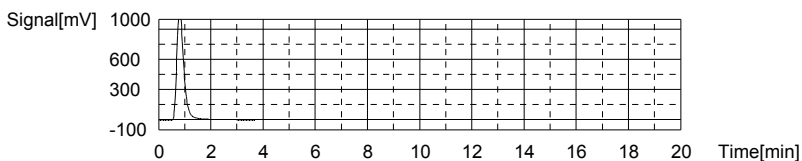
Approved: May 09, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2089	55.19mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 04:54:19 PM

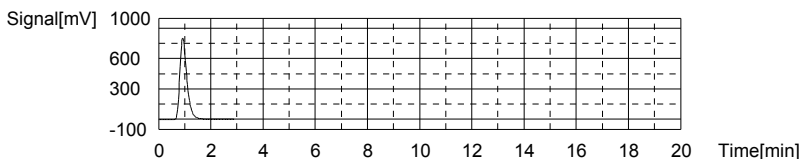
Mean Area 2089
Mean Conc. 55.19mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1524	49.31mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 05:00:42 PM

Mean Area 1524
Mean Conc. 49.31mg/L



Sample

Sample Name: L09050029-07
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

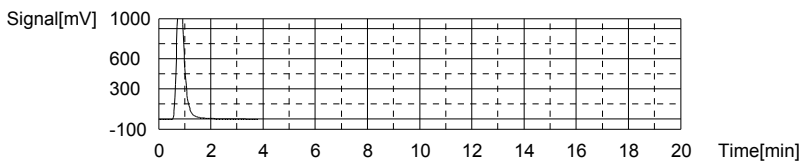
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.959mg/L TC:69.16mg/L IC:62.20mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2616	69.16mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 05:09:55 PM

Mean Area 2616
Mean Conc. 69.16mg/L



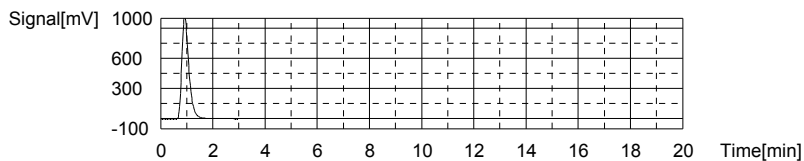
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1920	62.20mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 05:16:28 PM

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Approved: May 09, 2009

Mean Area 1920
Mean Conc. 62.20mg/L



Sample

Sample Name: L09050029-09 (3)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

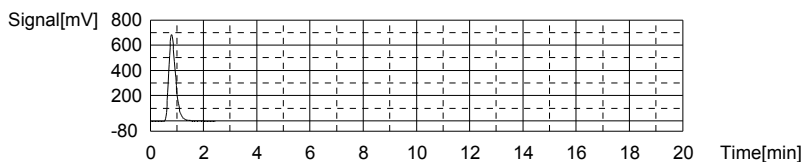
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.096mg/L TC:32.62mg/L IC:30.52mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1238	32.62mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 05:24:20 PM

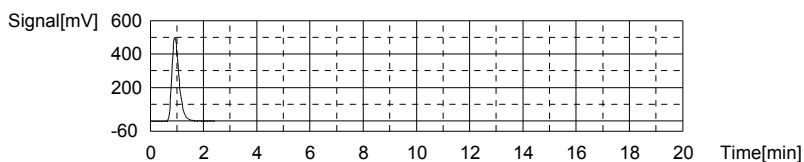
Mean Area 1238
Mean Conc. 32.62mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	947.3	30.52mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 05:30:12 PM

Mean Area 947.3
Mean Conc. 30.52mg/L



Sample

Sample Name: L09050029-11 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.744mg/L TC:13.88mg/L IC:9.131mg/L

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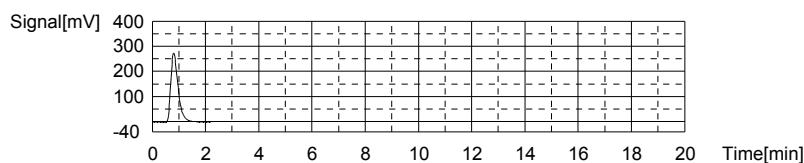
Approved: May 09, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	531.3	13.88mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 05:37:50 PM

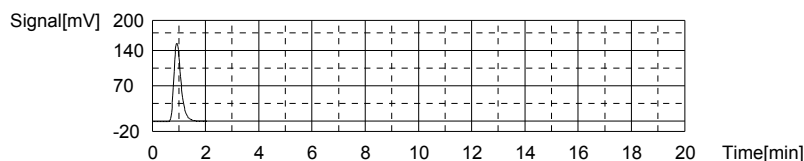
Mean Area 531.3
Mean Conc. 13.88mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	290.6	9.131mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 05:43:05 PM

Mean Area 290.6
Mean Conc. 9.131mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

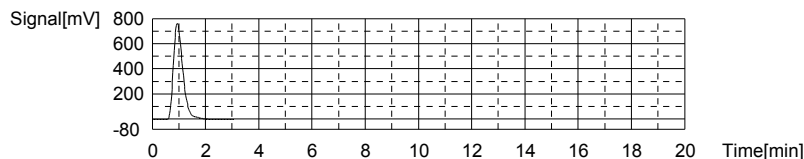
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:49.93mg/L TC:49.86mg/L IC:-0.07650mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1888	49.86mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 05:51:35 PM

Mean Area 1888
Mean Conc. 49.86mg/L

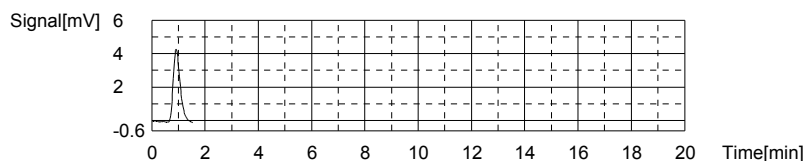


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.911	-0.07650mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 05:56:06 PM

Approved: May 09, 2009

Mean Area 7.911
Mean Conc. -0.07650mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

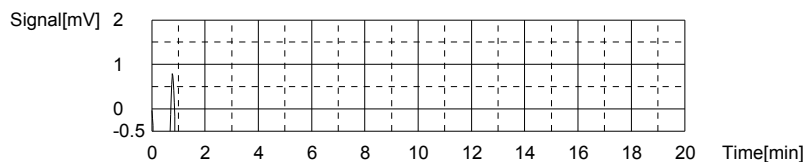
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.01730mg/L TC:-0.04405mg/L IC:-0.06135mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.466	-0.04405mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/04/2009 06:01:17 PM

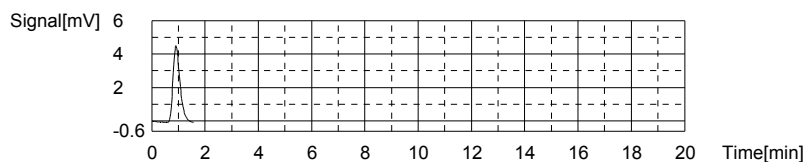
Mean Area 6.466
Mean Conc. -0.04405mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.376	-0.06135mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	05/04/2009 06:05:22 PM

Mean Area 8.376
Mean Conc. -0.06135mg/L



Sample

Sample Name: L09050029-13 (4)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.121mg/L TC:14.31mg/L IC:6.187mg/L

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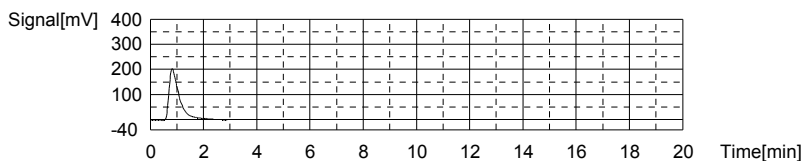
Approved: May 09, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	547.6	14.31mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 06:13:45 PM

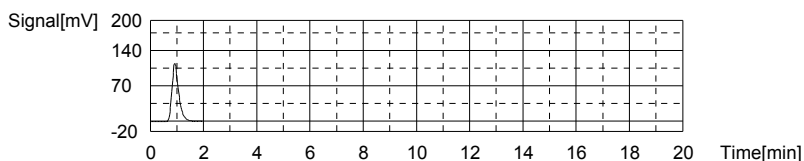
Mean Area 547.6
Mean Conc. 14.31mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	200.2	6.187mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 06:18:44 PM

Mean Area 200.2
Mean Conc. 6.187mg/L



Sample

Sample Name: L09040690-01 (4)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

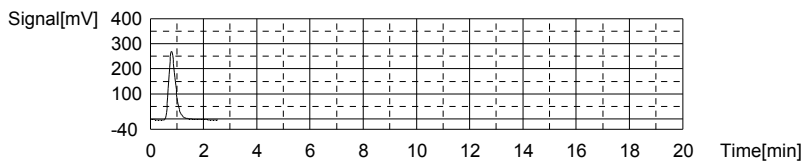
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.665mg/L TC:13.15mg/L IC:11.48mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	503.9	13.15mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 06:26:42 PM

Mean Area 503.9
Mean Conc. 13.15mg/L



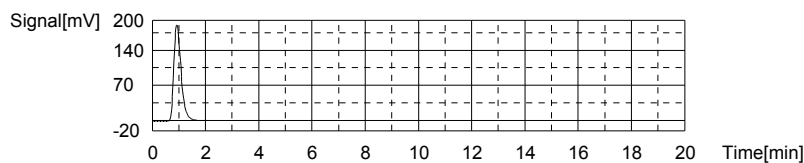
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	362.8	11.48mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 06:31:56 PM

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Mean Area 362.8
Mean Conc. 11.48mg/L



Sample

Sample Name: L09040690-07 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

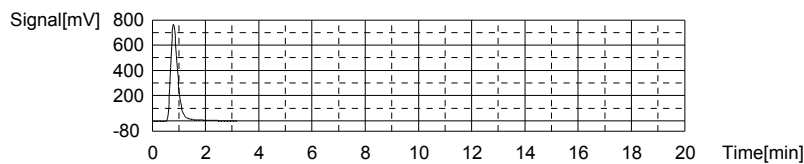
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.767mg/L TC:38.19mg/L IC:31.42mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1448	38.19mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 06:40:32 PM

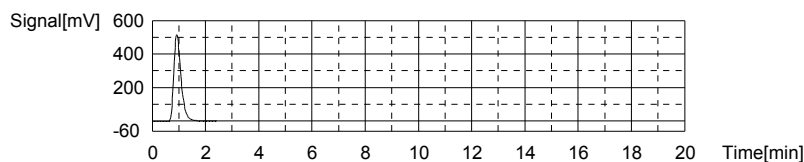
Mean Area 1448
Mean Conc. 38.19mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	974.9	31.42mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 06:46:22 PM

Mean Area 974.9
Mean Conc. 31.42mg/L



Sample

Sample Name: L09040690-09
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.519mg/L TC:70.78mg/L IC:68.26mg/L

Kearna Roberts

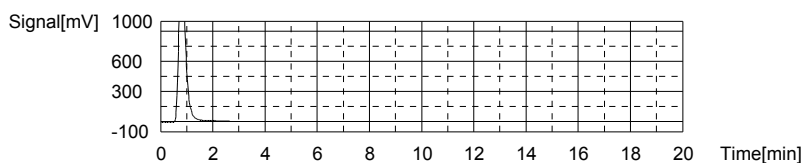
Approved: May 09, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2677	70.78mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 06:55:17 PM

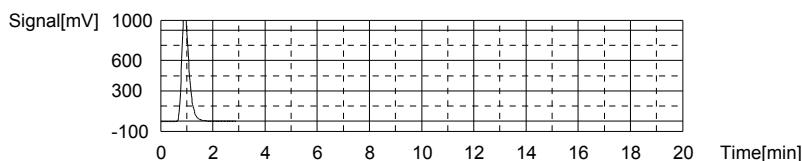
Mean Area 2677
Mean Conc. 70.78mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2106	68.26mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 07:01:47 PM

Mean Area 2106
Mean Conc. 68.26mg/L



Sample

Sample Name: L09040690-11 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

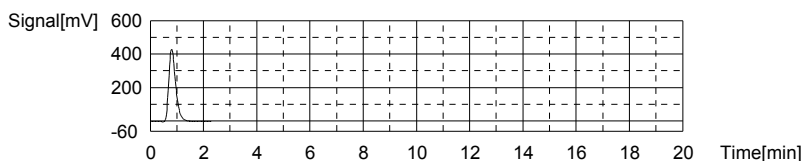
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.660mg/L TC:20.61mg/L IC:17.95mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	785.3	20.61mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 07:09:30 PM

Mean Area 785.3
Mean Conc. 20.61mg/L



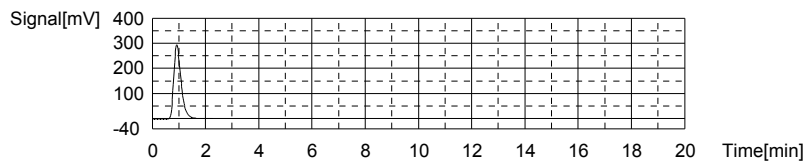
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	561.4	17.95mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 07:15:03 PM

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Approved: May 09, 2009

Mean Area 561.4
Mean Conc. 17.95mg/L



Sample

Sample Name: L09040690-13
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

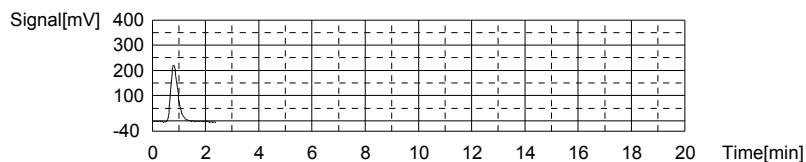
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.966mg/L TC:11.06mg/L IC:9.092mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	425.1	11.06mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	5/5/04/2009 07:22:51 PM

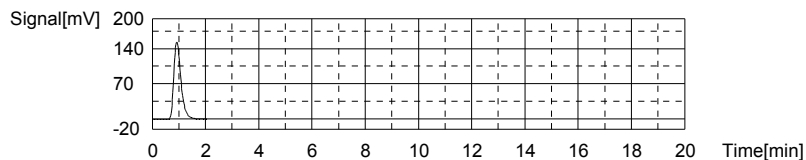
Mean Area 425.1
Mean Conc. 11.06mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	289.4	9.092mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	5/5/04/2009 07:28:02 PM

Mean Area 289.4
Mean Conc. 9.092mg/L



Sample

Sample Name: L09040698-02 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.34mg/L TC:62.35mg/L IC:35.01mg/L

Heanna Roberts

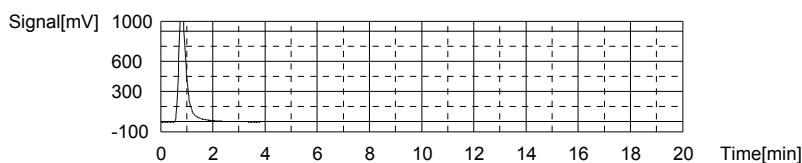
Approved: May 09, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2359	62.35mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 07:37:15 PM

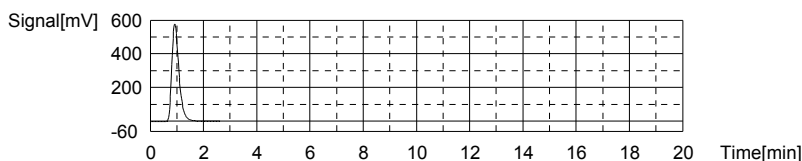
Mean Area 2359
Mean Conc. 62.35mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1085	35.01mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 07:43:18 PM

Mean Area 1085
Mean Conc. 35.01mg/L



Sample

Sample Name: L09040698-05 (10)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

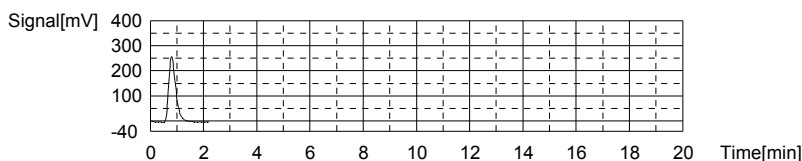
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.911mg/L TC:12.67mg/L IC:10.76mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	486.0	12.67mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 07:50:57 PM

Mean Area 486.0
Mean Conc. 12.67mg/L

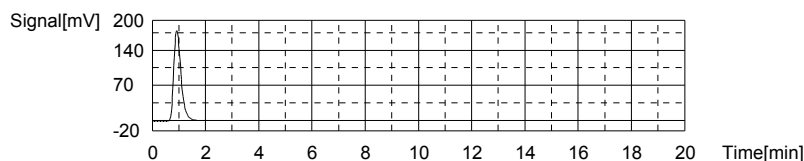


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	340.7	10.76mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 07:56:09 PM

Approved: May 09, 2009

Mean Area 340.7
Mean Conc. 10.76mg/L



Sample

Sample Name: L09040690-06 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

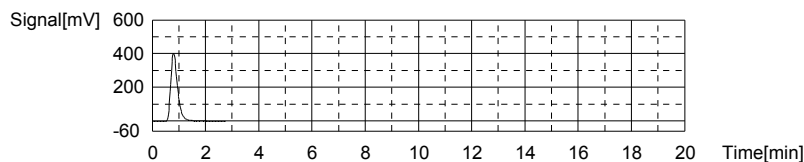
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.991mg/L TC:19.29mg/L IC:16.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	735.3	19.29mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 08:04:20 PM

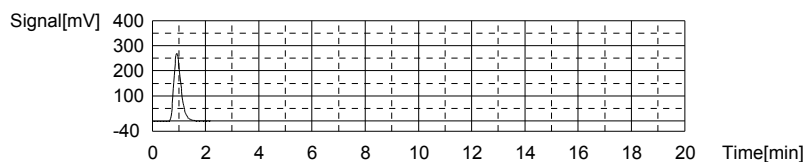
Mean Area 735.3
Mean Conc. 19.29mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	510.5	16.29mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 08:09:40 PM

Mean Area 510.5
Mean Conc. 16.29mg/L



Sample

Sample Name: L09040736-02
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.234mg/L TC:67.20mg/L IC:60.97mg/L

Kearna Roberts

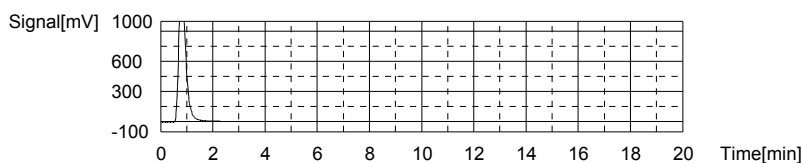
Approved: May 09, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2542	67.20mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 08:18:44 PM

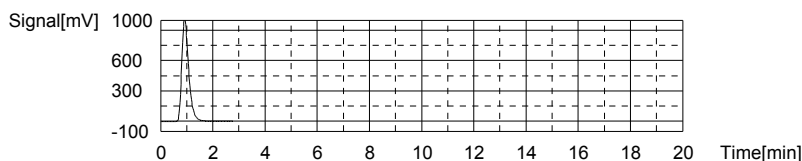
Mean Area 2542
Mean Conc. 67.20mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1882	60.97mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 08:25:03 PM

Mean Area 1882
Mean Conc. 60.97mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

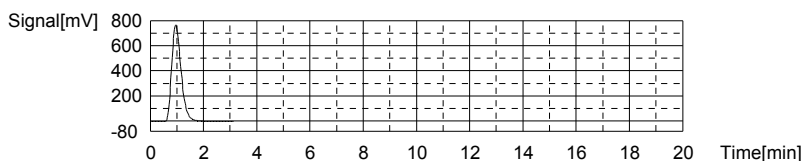
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:50.13mg/L TC:50.23mg/L IC:0.09643mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1902	50.23mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 08:33:36 PM

Mean Area 1902
Mean Conc. 50.23mg/L

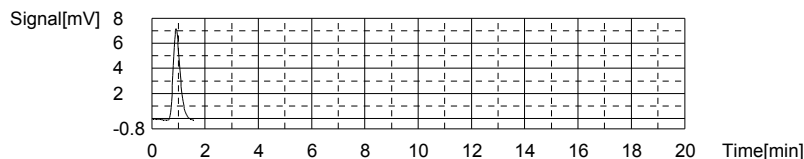


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.22	0.09643mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 08:38:17 PM

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Mean Area 13.22
Mean Conc. 0.09643mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

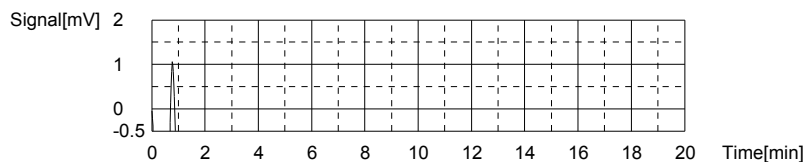
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.02008mg/L TC:-0.02527mg/L IC:-0.04536mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.174	-0.02527mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 08:43:29 PM

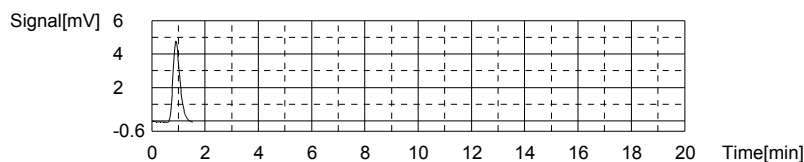
Mean Area 7.174
Mean Conc. -0.02527mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.867	-0.04536mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 08:47:33 PM

Mean Area 8.867
Mean Conc. -0.04536mg/L



Sample

Sample Name: L09040736-03 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.662mg/L TC:13.01mg/L IC:11.34mg/L

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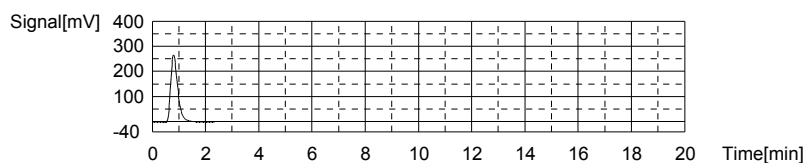
Approved: May 09, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	498.5	13.01mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 08:55:20 PM

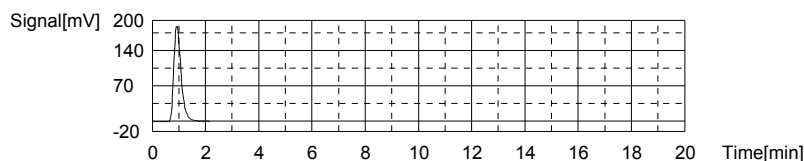
Mean Area 498.5
Mean Conc. 13.01mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	358.5	11.34mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 09:00:34 PM

Mean Area 358.5
Mean Conc. 11.34mg/L



Sample

Sample Name: L09040736-05 (3)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

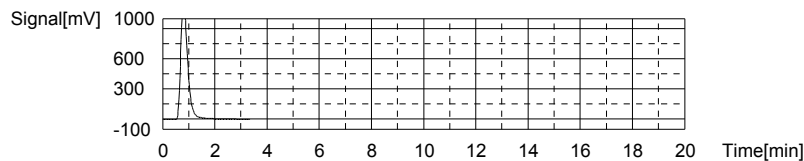
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.837mg/L TC:58.24mg/L IC:52.40mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2204	58.24mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/04/2009 09:09:21 PM

Mean Area 2204
Mean Conc. 58.24mg/L

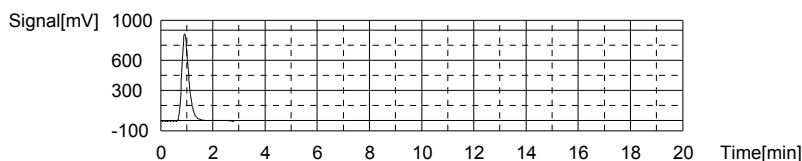


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1619	52.40mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/04/2009 09:15:41 PM

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Mean Area 1619
Mean Conc. 52.40mg/L



Sample

Sample Name: WG301448-01 BLANK
Sample ID: <Untitled>
Origin: TOC-01-13-2009A.met
Status: Completed
Chk. Result:

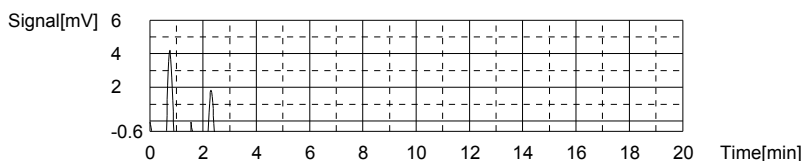
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.03127mg/L TC:0.04160mg/L IC:0.01032mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.43	0.08760mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10	5/5/04/2009 09:20:58 PM
2	7.961	-0.00440mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10	5/5/04/2009 09:24:39 PM

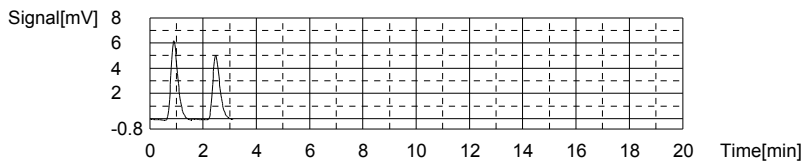
Mean Area 9.695
Mean Conc. 0.04160mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.69	0.04659mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12	5/5/04/2009 09:28:48 PM
2	9.463	-0.02594mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12	5/5/04/2009 09:32:51 PM

Mean Area 10.58
Mean Conc. 0.01032mg/L



Sample

Sample Name: WG301448-02 LCS
Sample ID: <Untitled>
Origin: TOC-01-13-2009A.met
Status: Completed
Chk. Result:

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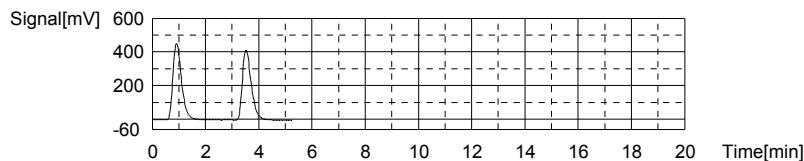
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:26.29mg/L TC:26.19mg/L IC:-0.1072mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1027	27.02mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10	5/05/04/2009 09:40:56 PM
2	964.1	25.35mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10	5/05/04/2009 09:45:50 PM

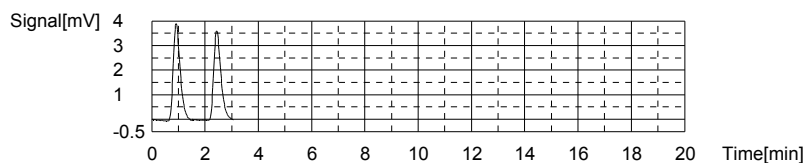
Mean Area 995.5
Mean Conc. 26.19mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.203	-0.09956mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12	5/05/04/2009 09:50:19 PM
2	6.736	-0.1148mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12	5/05/04/2009 09:54:35 PM

Mean Area 6.970
Mean Conc. -0.1072mg/L



Sample

Sample Name: WG301448-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-01-13-2009A.met
Status: Completed
Chk. Result:

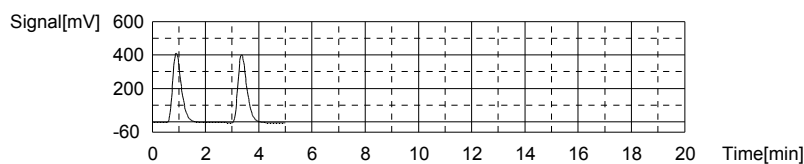
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.97mg/L TC:24.84mg/L IC:-0.1280mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	944.1	24.82mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10	5/05/04/2009 10:02:30 PM
2	945.7	24.87mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10	5/05/04/2009 10:08:20 PM

Mean Area 944.9
Mean Conc. 24.84mg/L

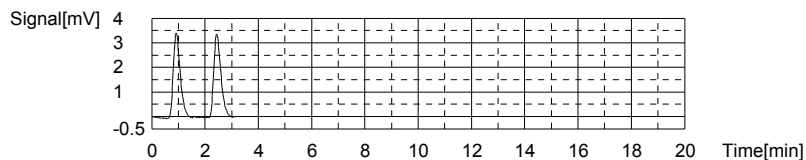


Anal.: IC

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No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.346	-0.1275mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12	05/04/2009 10:12:48 PM
2	6.312	-0.1286mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12	05/04/2009 10:17:04 PM

Mean Area 6.329
Mean Conc. -0.1280mg/L



Sample

Sample Name: L09040730-01 (5)
Sample ID: <Untitled>
Origin: TOC-01-13-2009A.met
Status: Completed
Chk. Result

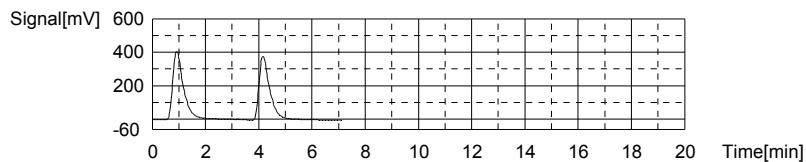
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.01mg/L TC:29.41mg/L IC:1.398mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1154	30.39mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10	05/04/2009 10:25:45 PM
2	1080	28.43mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10	05/04/2009 10:33:08 PM

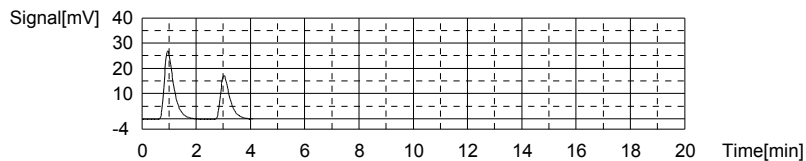
Mean Area 1117
Mean Conc. 29.41mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	64.94	1.781mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12	05/04/2009 10:38:20 PM
2	41.42	1.015mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12	05/04/2009 10:43:16 PM

Mean Area 53.18
Mean Conc. 1.398mg/L



Sample

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Sample Name: WG301448-05 (5) DUP
Sample ID: <Untitled>
Origin: TOC-01-13-2009A.met
Status: Completed
Chk. Result:

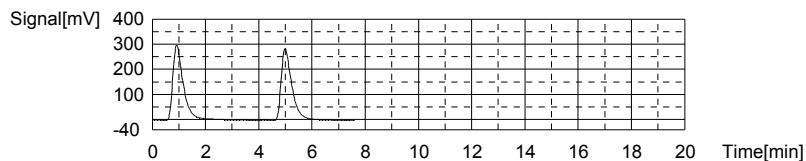
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:20.10mg/L TC:21.71mg/L IC:1.617mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	840.1	22.06mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	5/05/04/2009 10:52:48 PM
2	813.5	21.36mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	5/05/04/2009 10:58:37 PM

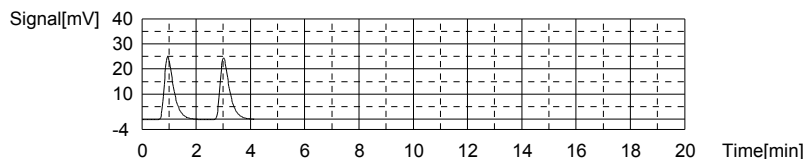
Mean Area 826.8
Mean Conc. 21.71mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	60.19	1.626mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	5/05/04/2009 11:03:47 PM
2	59.60	1.607mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	5/05/04/2009 11:08:48 PM

Mean Area 59.90
Mean Conc. 1.617mg/L



Sample

Sample Name: WG301448-06 (5) MS
Sample ID: <Untitled>
Origin: TOC-01-13-2009A.met
Status: Completed
Chk. Result:

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.60mg/L TC:23.53mg/L IC:0.9306mg/L

1. Det

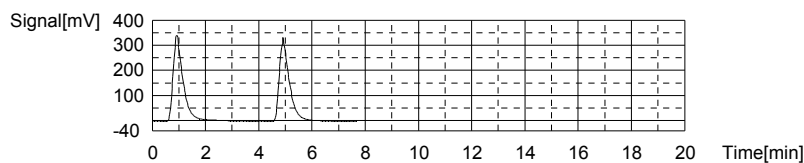
Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	907.2	23.84mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	5/05/04/2009 11:18:15 PM
2	883.4	23.21mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	5/05/04/2009 11:24:18 PM

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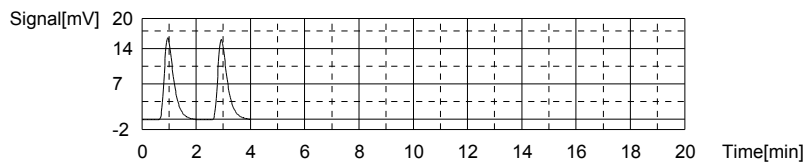
Mean Area 895.3
Mean Conc. 23.53mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	39.05	0.9378mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/04/2009 11:29:23 PM
2	38.61	0.9234mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/04/2009 11:34:16 PM

Mean Area 38.83
Mean Conc. 0.9306mg/L



Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-01-13-2009A.met
Status: Completed
Chk. Result:

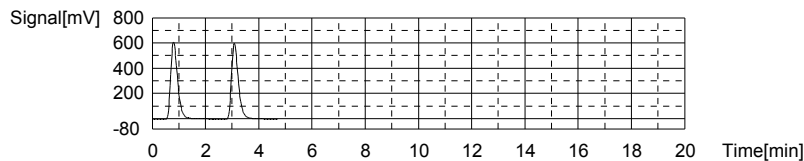
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.06mg/L TC:28.68mg/L IC:15.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1098	28.90mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/04/2009 11:42:01 PM
2	1081	28.45mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/04/2009 11:47:41 PM

Mean Area 1090
Mean Conc. 28.68mg/L



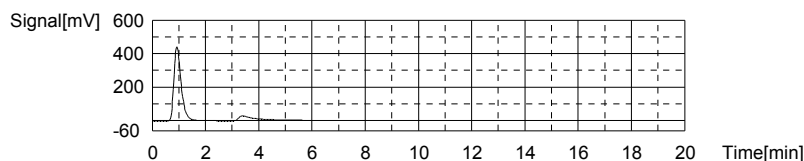
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	840.3	27.04mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/04/2009 11:53:22 PM
2	139.0	4.193mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/04/2009 11:59:55 PM

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Mean Area 489.7
Mean Conc. 15.61mg/L



Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-01-13-2009A.met
Status: Completed
Chk. Result

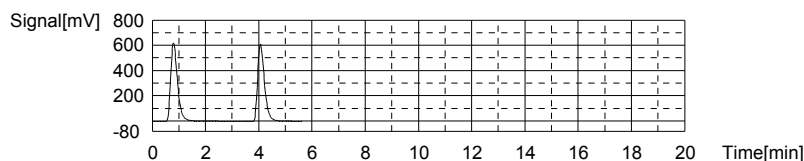
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.52mg/L TC:29.32mg/L IC:15.79mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1129	29.73mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 12:08:38 AM
2	1098	28.90mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 12:13:15 AM

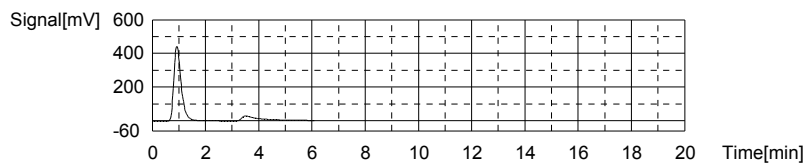
Mean Area 1114
Mean Conc. 29.32mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	847.8	27.28mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 12:19:02 AM
2	142.5	4.307mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 12:25:36 AM

Mean Area 495.2
Mean Conc. 15.79mg/L



Sample

Sample Name: CCV
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

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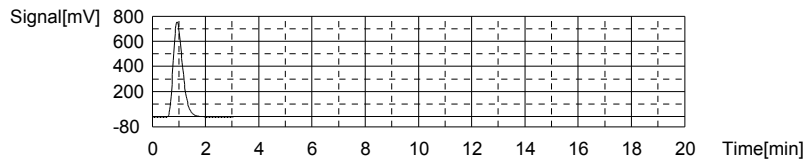
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:49.38mg/L TC:49.27mg/L IC:-0.1064mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1866	49.27mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 12:34:06 AM

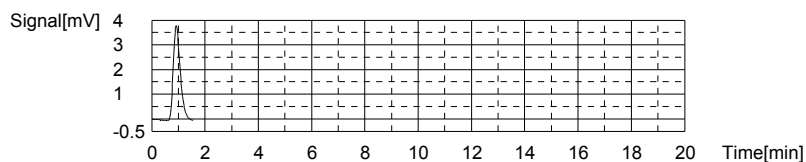
Mean Area 1866
Mean Conc. 49.27mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.994	-0.1064mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 12:38:34 AM

Mean Area 6.994
Mean Conc. -0.1064mg/L



Sample

Sample Name: WG301449-01 BLANK
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

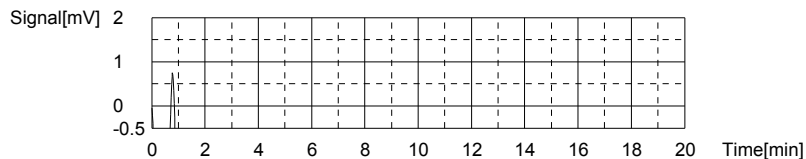
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.02307mg/L TC:-0.04678mg/L IC:-0.06985mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.363	-0.04678mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 12:43:49 AM

Mean Area 6.363
Mean Conc. -0.04678mg/L



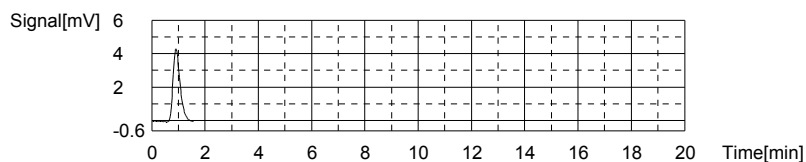
Anal.: IC

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Approved: May 09, 2009

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.115	-0.06985mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 12:47:54 AM

Mean Area 8.115
Mean Conc. -0.06985mg/L



Sample

Sample Name: WG301449-02 LCS
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result:

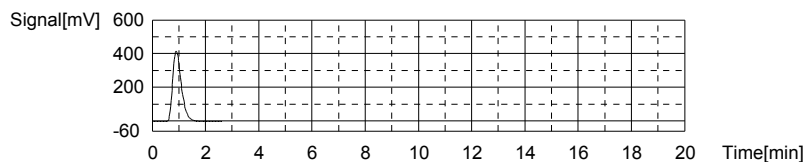
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.38mg/L TC:25.26mg/L IC:-0.1149mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	960.7	25.26mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 12:55:58 AM

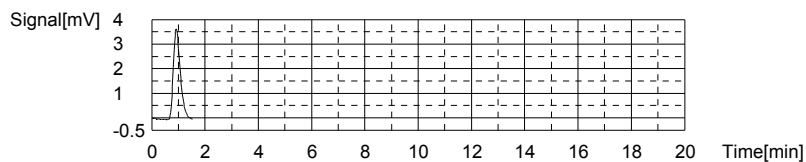
Mean Area 960.7
Mean Conc. 25.26mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.733	-0.1149mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 01:00:27 AM

Mean Area 6.733
Mean Conc. -0.1149mg/L



Sample

Sample Name: WG301449-03 LCSDUP
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result:

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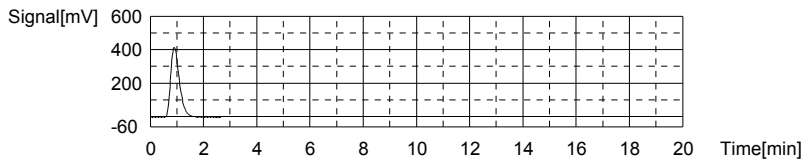
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.37mg/L TC:25.25mg/L IC:-0.1187mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	960.1	25.25mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 01:08:34 AM

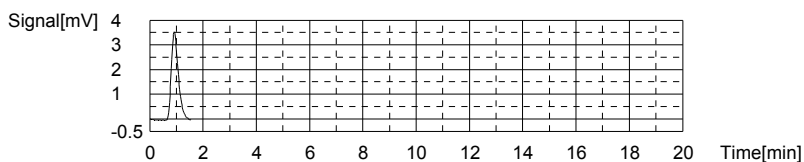
Mean Area 960.1
Mean Conc. 25.25mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.616	-0.1187mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 01:13:04 AM

Mean Area 6.616
Mean Conc. -0.1187mg/L



Sample

Sample Name: L09040727-01 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

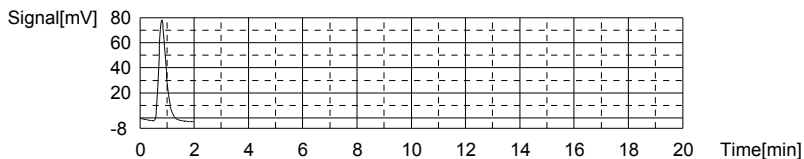
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9243mg/L TC:3.821mg/L IC:2.897mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	152.2	3.821mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 01:20:29 AM

Mean Area 152.2
Mean Conc. 3.821mg/L



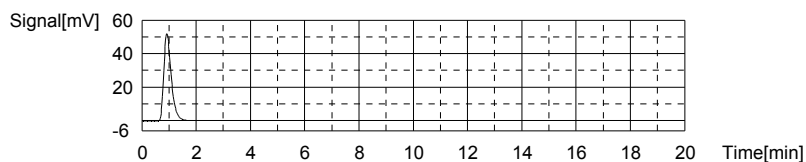
Anal.: IC

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No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	99.19	2.897mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 01:25:21 AM

Mean Area 99.19
Mean Conc. 2.897mg/L



Sample

Sample Name: L09040727-02
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

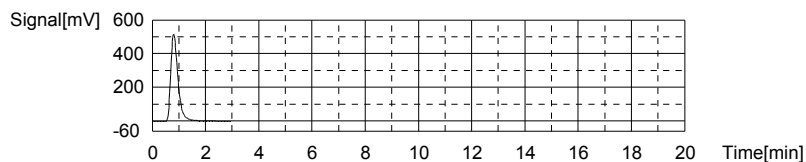
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.723mg/L TC:25.97mg/L IC:21.25mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	987.4	25.97mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 01:33:46 AM

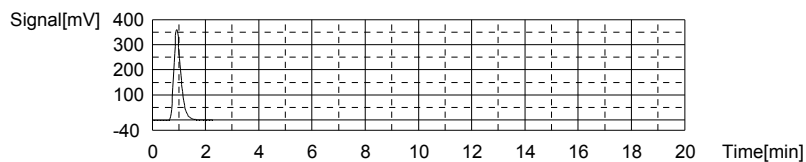
Mean Area 987.4
Mean Conc. 25.97mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	662.6	21.25mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 01:39:13 AM

Mean Area 662.6
Mean Conc. 21.25mg/L



Sample

Sample Name: L09040727-05 (2)
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

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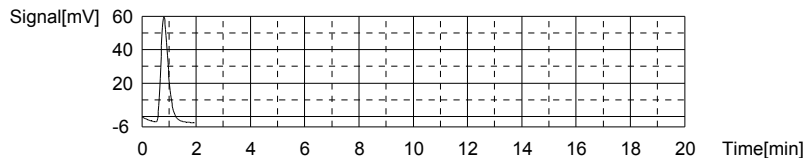
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.176mg/L TC:2.964mg/L IC:1.788mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	119.9	2.964mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 01:46:36 AM

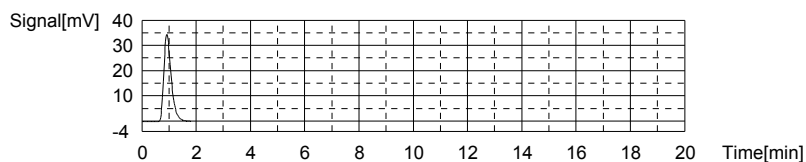
Mean Area 119.9
Mean Conc. 2.964mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	65.16	1.788mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 01:51:24 AM

Mean Area 65.16
Mean Conc. 1.788mg/L



Sample

Sample Name: L09040727-07 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

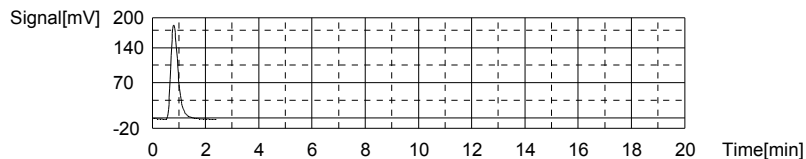
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.315mg/L TC:9.502mg/L IC:7.187mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	366.4	9.502mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 01:59:15 AM

Mean Area 366.4
Mean Conc. 9.502mg/L



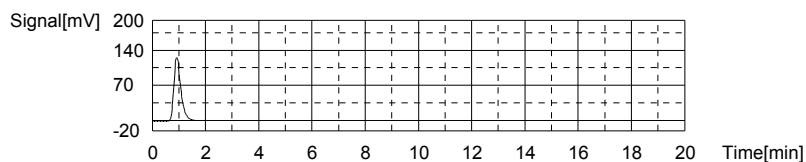
Anal.: IC

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No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	230.9	7.187mg/L	500uL		1	TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 02:04:18 AM

Mean Area 230.9
Mean Conc. 7.187mg/L



Sample

Sample Name: L09040727-09 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

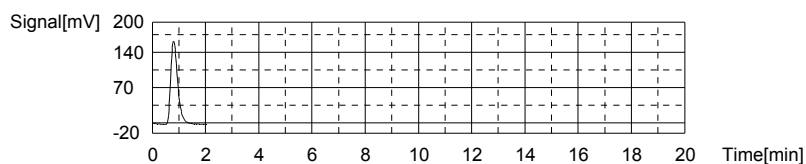
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.639mg/L TC:7.842mg/L IC:6.203mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	303.8	7.842mg/L	500uL		1	TICCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 02:11:49 AM

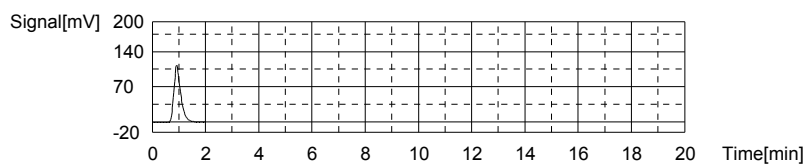
Mean Area 303.8
Mean Conc. 7.842mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	200.7	6.203mg/L	500uL		1	TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 02:16:55 AM

Mean Area 200.7
Mean Conc. 6.203mg/L



Sample

Sample Name: L09050031-02
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

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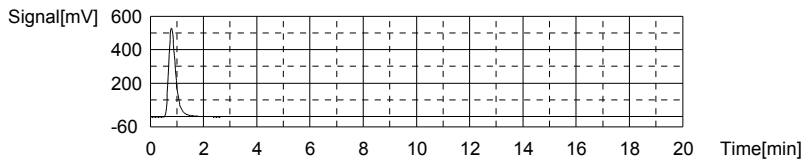
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.962mg/L TC:26.41mg/L IC:23.45mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1004	26.41mg/L	500uL		1	TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 02:25:01 AM

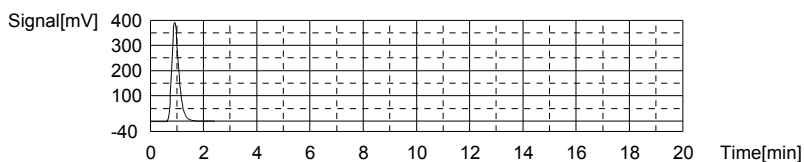
Mean Area 1004
Mean Conc. 26.41mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	730.2	23.45mg/L	500uL		1	TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 02:30:43 AM

Mean Area 730.2
Mean Conc. 23.45mg/L



Sample

Sample Name: L09050031-07
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

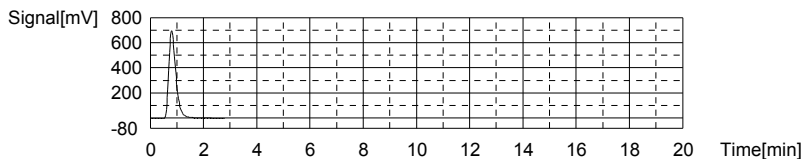
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.650mg/L TC:34.66mg/L IC:30.01mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1315	34.66mg/L	500uL		1	TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 02:38:58 AM

Mean Area 1315
Mean Conc. 34.66mg/L



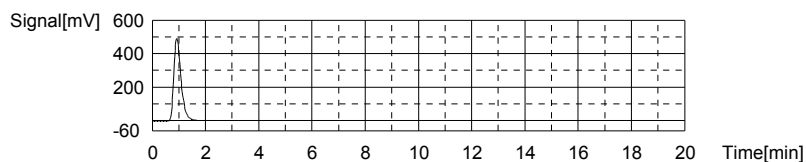
Anal.: IC

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No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	931.6	30.01mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 02:44:41 AM

Mean Area 931.6
Mean Conc. 30.01mg/L



Sample

Sample Name: L09050031-10
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

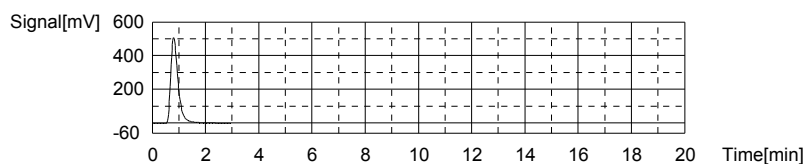
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.906mg/L TC:26.05mg/L IC:22.15mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	990.5	26.05mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 02:53:05 AM

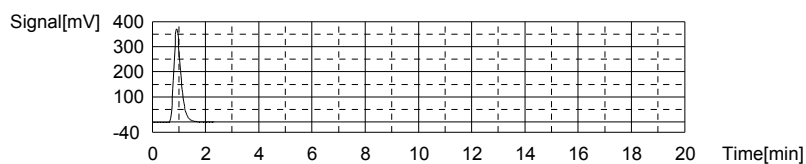
Mean Area 990.5
Mean Conc. 26.05mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	690.2	22.15mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 02:58:41 AM

Mean Area 690.2
Mean Conc. 22.15mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

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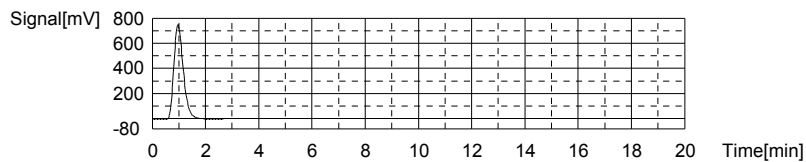
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:48.39mg/L TC:48.37mg/L IC:-0.02197mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1832	48.37mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 03:06:49 AM

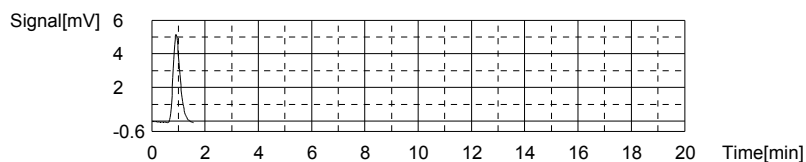
Mean Area 1832
Mean Conc. 48.37mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.585	-0.02197mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 03:11:21 AM

Mean Area 9.585
Mean Conc. -0.02197mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

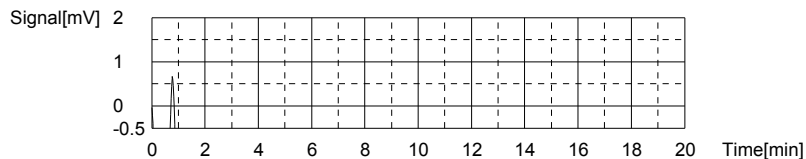
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.02299mg/L TC:-0.03989mg/L IC:-0.06288mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.623	-0.03989mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 03:16:36 AM

Mean Area 6.623
Mean Conc. -0.03989mg/L



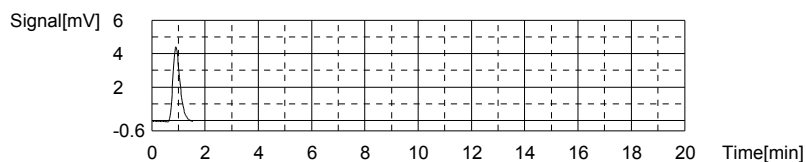
Anal.: IC

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No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.329	-0.06288mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 03:20:38 AM

Mean Area 8.329
Mean Conc. -0.06288mg/L



Sample

Sample Name: L09050033-02
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

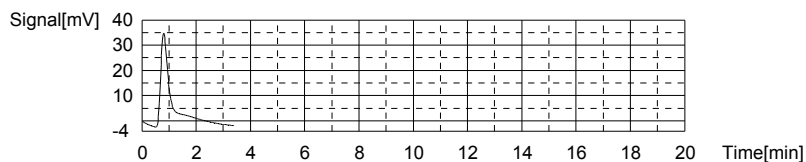
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.247mg/L TC:2.487mg/L IC:1.240mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	101.9	2.487mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 03:29:29 AM

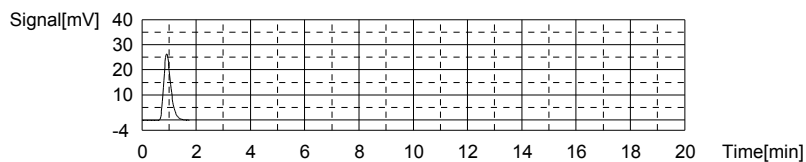
Mean Area 101.9
Mean Conc. 2.487mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	48.32	1.240mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 03:34:11 AM

Mean Area 48.32
Mean Conc. 1.240mg/L



Sample

Sample Name: L0905033-03 (4)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

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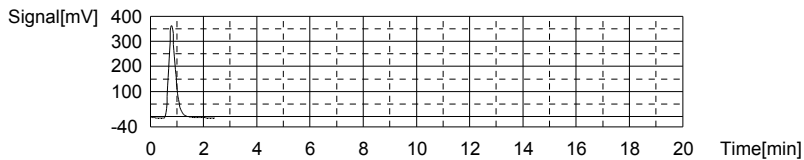
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.398mg/L TC:17.42mg/L IC:10.02mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	664.9	17.42mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 03:42:04 AM

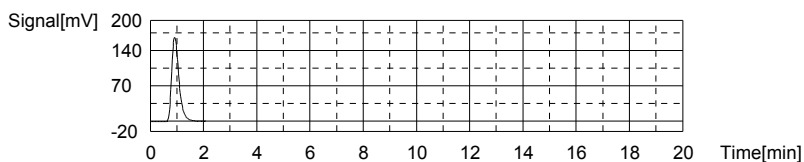
Mean Area 664.9
Mean Conc. 17.42mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	317.9	10.02mg/L	500uL	1		TICURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 03:47:19 AM

Mean Area 317.9
Mean Conc. 10.02mg/L



Sample

Sample Name: L09050033-04
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

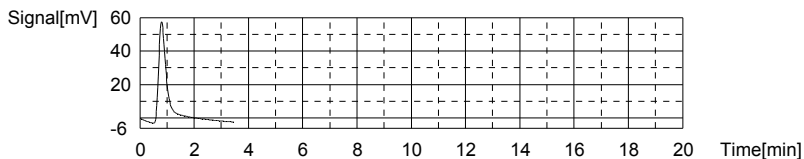
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.459mg/L TC:3.617mg/L IC:2.158mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	144.5	3.617mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 03:56:15 AM

Mean Area 144.5
Mean Conc. 3.617mg/L



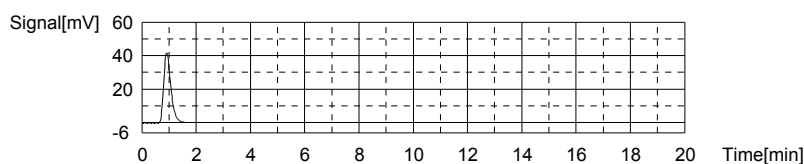
Anal.: IC

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No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.51	2.158mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 04:01:04 AM

Mean Area 76.51
Mean Conc. 2.158mg/L



Sample

Sample Name: L09050033-05 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

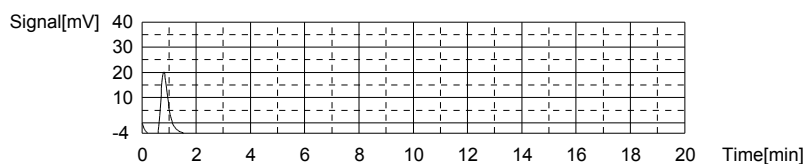
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6598mg/L TC:1.368mg/L IC:0.7085mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	59.72	1.368mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 04:09:09 AM

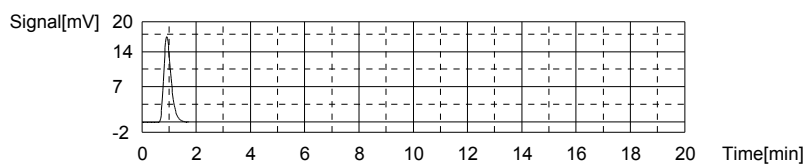
Mean Area 59.72
Mean Conc. 1.368mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	32.01	0.7085mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 04:13:51 AM

Mean Area 32.01
Mean Conc. 0.7085mg/L



Sample

Sample Name: L09050033-06 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Heanna Roberts

Approved: May 09, 2009

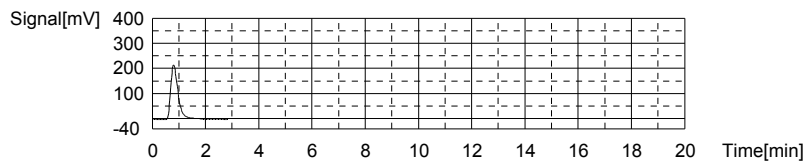
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.153mg/L TC:11.20mg/L IC:9.047mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	430.4	11.20mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 04:22:08 AM

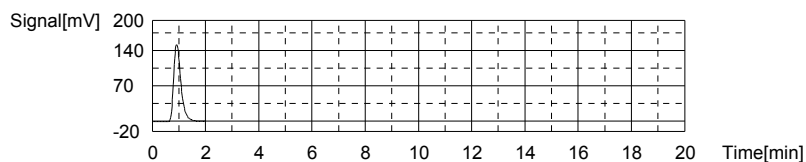
Mean Area 430.4
Mean Conc. 11.20mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	288.0	9.047mg/L	500uL	1		TICURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 04:27:17 AM

Mean Area 288.0
Mean Conc. 9.047mg/L



Sample

Sample Name: L09050033-07
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

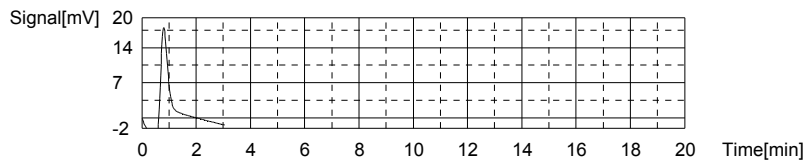
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.025mg/L TC:1.538mg/L IC:0.5130mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	66.12	1.538mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 04:35:47 AM

Mean Area 66.12
Mean Conc. 1.538mg/L

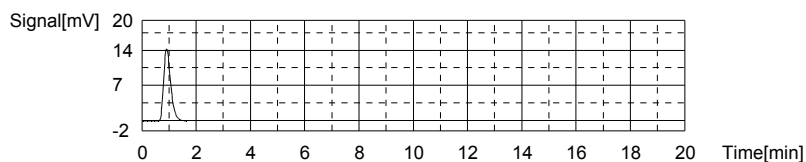


Anal.: IC

Approved: May 09, 2009

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.01	0.5130mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 04:40:24 AM

Mean Area 26.01
Mean Conc. 0.5130mg/L



Sample

Sample Name: WG301449-05 DUP
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

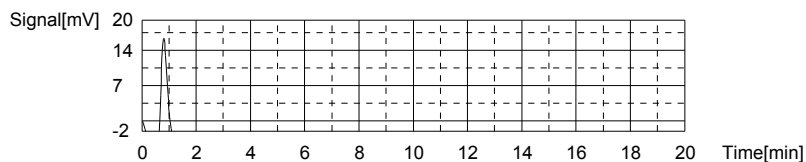
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.2329mg/L TC:0.9525mg/L IC:0.7195mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	44.04	0.9525mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 04:47:25 AM

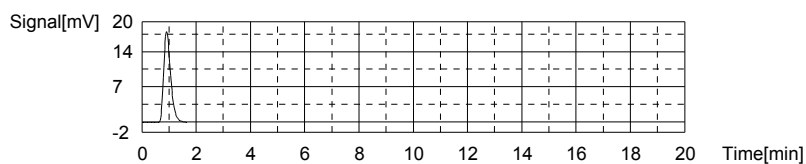
Mean Area 44.04
Mean Conc. 0.9525mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	32.35	0.7195mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 04:52:02 AM

Mean Area 32.35
Mean Conc. 0.7195mg/L



Sample

Sample Name: WG301449-06 MS
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

Heanna Roberts

Approved: May 09, 2009

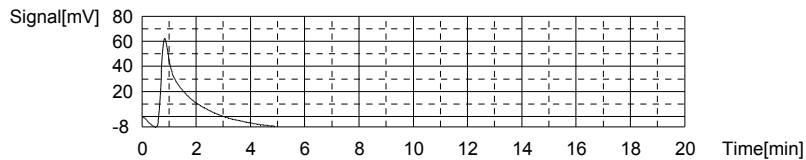
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.985mg/L TC:10.76mg/L IC:1.779mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	414.0	10.76mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 05:02:24 AM

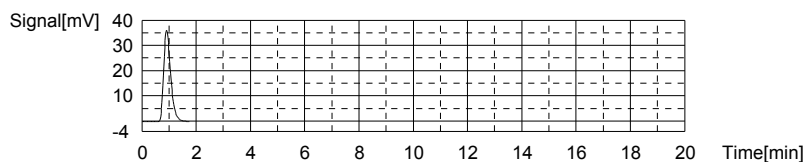
Mean Area 414.0
Mean Conc. 10.76mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	64.87	1.779mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 05:07:05 AM

Mean Area 64.87
Mean Conc. 1.779mg/L



Sample

Sample Name: WG301447-05 DUP
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

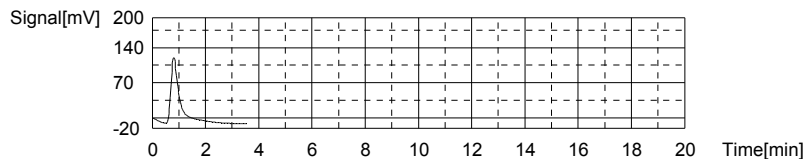
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.250mg/L TC:7.773mg/L IC:4.522mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	301.2	7.773mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 05:16:07 AM

Mean Area 301.2
Mean Conc. 7.773mg/L



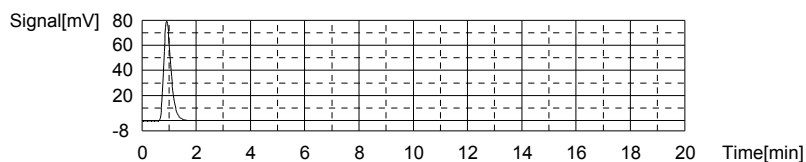
Anal.: IC

Heanna Roberts

Approved: May 09, 2009

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	149.1	4.522mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 05:21:05 AM

Mean Area 149.1
Mean Conc. 4.522mg/L



Sample

Sample Name: WG301447-06 MS
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

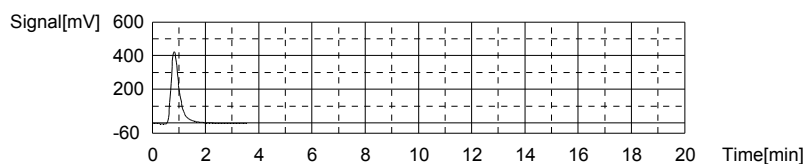
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.51mg/L TC:25.22mg/L IC:11.71mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	959.0	25.22mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 05:30:06 AM

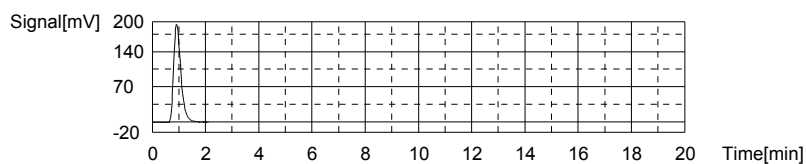
Mean Area 959.0
Mean Conc. 25.22mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	369.7	11.71mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 05:35:21 AM

Mean Area 369.7
Mean Conc. 11.71mg/L



Sample

Sample Name: CCV
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

Kearna Roberts

Approved: May 09, 2009

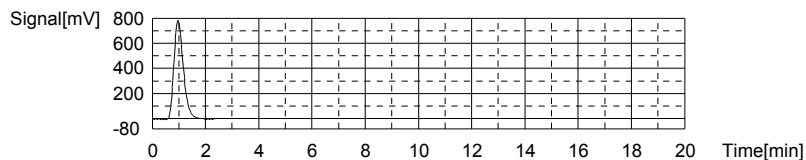
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:50.77mg/L TC:50.71mg/L IC:-0.06607mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1920	50.71mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 05:43:10 AM

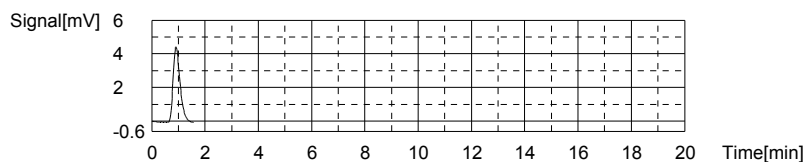
Mean Area 1920
Mean Conc. 50.71mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.231	-0.06607mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 05:47:40 AM

Mean Area 8.231
Mean Conc. -0.06607mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

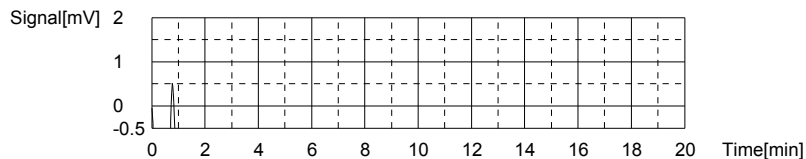
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.01674mg/L TC:-0.05288mg/L IC:-0.06962mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.133	-0.05288mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 05:52:54 AM

Mean Area 6.133
Mean Conc. -0.05288mg/L



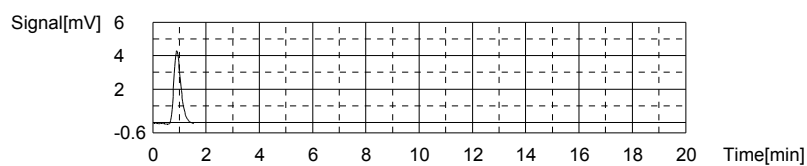
Anal.: IC

Kearna Roberts

Approved: May 09, 2009

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.122	-0.06962mg/L	500uL		1	TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 05:57:00 AM

Mean Area 8.122
Mean Conc. -0.06962mg/L



Heanna Roberts

Approved: May 09, 2009

3.0 Attachments

Microbac Laboratories Inc.
Analyst Listing
May 19, 2009

ADC - ANTHONY D. CANTER	AJF - AMANDA J. FICKIESEN	ALB - ANNIE L. BROWN
AM - ALISON J. MILLER	AML - ANTHONY M. LONG	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS	CAH - CHARLES A. HALL
CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CSH - CHRIS S. HILL	CTB - CHRIS T. BUCINA
DDE - DEBRA D. ELLIOTT	DEL - DON E. LIGHTFRITZ	DEV - DAVID E. VANDENBERG
DGB - DOUGLAS G. BUTCHER	DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH	DR - DEANNA ROBERTS
ECL - ERIC C. LAWSON	EDA - ERIN D. AGEE	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	HAV - HEMA VILASAGAR	HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON	JKT - JANE K. THOMPSON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES	JYH - JI Y. HU
KEB - KATHRYN E. BARNES	KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON
MDC - MICHAEL D. COCHRAN	MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON	NPM - NATHANIEL P. MILLER
PDM - PIERCE D. MORRIS	RAH - ROY A. HALSTEAD	RB - ROBERT BUCHANAN
REK - ROBERT E. KYER	RLK - ROBIN L. KLINGER	RWC - RODNEY W. CAMPBELL
SDH - SHANA D. HINYARD	SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TIP - TAE I. PARRISH	TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WTD - WADE T. DELONG	

May 19, 2009

Qualkey: CLP

<u>Qualifier</u>	<u>Description</u>
E	Estimated concentration due to interference
E	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration.
J	The analyte was positively identified, but the quantitation was below the RL
J,B	Analyte detected in both the method blank and sample above the MDL.
U	Not detected at or above the reporting limit (RL).

*****Special Notes for Organic Analytes**

1. Acrolein and acrylonitrile by method 624 are semi-quantitative screens only.
2. 1,2-Diphenylhydrazine is unstable and is reported as azobenzene.
3. N-nitrosodiphenylamine cannot be separated from diphenylamine.
4. 3-Methylphenol and 4-Methylphenol are unresolvable compounds.
5. m-Xylene and p-Xylene are unresolvable compounds.
6. The reporting limits for Appendix II/IX compounds by method 8270 are based on EPA estimated PQLs referenced in 40 CFR Part 264, Appendix IX. They are not always achievable for every compound and are matrix dependent.



COC No. A 10481

158 Starlite Drive

Marietta, OH 45750

Microbac

Phone: 740-373-4071

Fax: 740-373-4835

CHAIN-OF-CUSTODY RECORD

[illegible]

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Client: <u>Chem Hill</u>
Workorder Number: <u>B 20416</u>
Date Received: <u>5-10-09</u>
Delivered by: <u>(X) Fedx</u> () UPS () Client () Courier Time: <u>1000</u>
Opened by: <u>ELR</u>
IR Temp Gun: <u>(X) G</u> () H
Logged by: <u>JKT</u> L <u>09050029</u>

Cooler information

Cooler ID	Temp C	Airbill#	COC#	Other
<u>2391</u>	<u>0</u>	<u>868910134987</u>		<u>SH</u>
<u>769</u>	<u>4</u>	<u>868910134976</u>		

Inspection Checklist

	Y	N	NA	Discrepancy ID
Were shipping coolers sealed?	<u>X</u>			
Were custody seals intact?	<u>X</u>			
Were cooler temperatures in range of 0 - 6?	<u>X</u>			
Was ice present?	<u>X</u>			
Were COC's received/ information complete/signed and dated?	<u>X</u>			
Were sample containers and labels intact and match COC?	<u>X</u>			
Were the correct containers and volumes received?	<u>X</u>			
Were correct preservatives used? (water only)	<u>X</u>			
Were pH ranges acceptable? (voa's excluded)	<u>X</u>			
Were VOA samples free of headspace (< 6mm)?	<u>X</u>			
Were samples received within EPA hold times?	<u>X</u>			

Discrepancy/Comments/Other Problems

Distribution

Name of Microbac representative:
Client/Company:
Person Contacted:
Date contacted:

Resolution/other comments:

Internal Chain of Custody Report

Login: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

Samplenum **Container ID** **Products**
L09050029-11 577088 RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

Samplenum **Container ID** **Products**
L09050029-01 577061 S04

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:54	HJR	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

Samplenum **Container ID** **Products**
L09050029-07 577075 S04

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:54	HJR	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

Samplenum **Container ID** **Products**
L09050029-11 577092 FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:55	HJR	JKT
3	STORE	WET	A2	01-MAY-2009 16:12	RLK	TMM

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-15	577103	826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-13	577096	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-01	577063	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	04-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	06-MAY-2009 07:30	JKT	DIH

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-13	577101	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	04-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	06-MAY-2009 07:30	JKT	DIH

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

Samplenum **Container ID** **Products**
L09050029-09 577084 FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:55	HJR	JKT
3	STORE	WET	A2	01-MAY-2009 16:12	RLK	TMM

Samplenum **Container ID** **Products**
L09050029-07 577072 RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

Samplenum **Container ID** **Products**
L09050029-11 577090 ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	06-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

Samplenum **Container ID** **Products**
L09050029-11 577089 827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	EXT	05-MAY-2009 10:00	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

Samplenum **Container ID** **Products**
L09050029-13 577097 827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	EXT	05-MAY-2009 10:00	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Samplenum **Container ID** **Products**
L09050029-01 577057 826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Samplenum **Container ID** **Products**
L09050029-06 577070 AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	DIG	04-MAY-2009 06:23	VC	JKT
3	STORE	DIG	A2	05-MAY-2009 09:45	JKT	REK

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: L09050029**Account:** 2736**Project:** 2736.061**Samples:** 15**Due Date:** 15-MAY-2009

Samplenum **Container ID** **Products**
L09050029-07 577076 FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:55	HJR	JKT
3	STORE	WET	A2	01-MAY-2009 16:12	RLK	TMM

Samplenum **Container ID** **Products**
L09050029-12 577094 AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	DIG	04-MAY-2009 06:23	VC	JKT
3	STORE	DIG	A2	05-MAY-2009 09:46	JKT	REK

Samplenum **Container ID** **Products**
L09050029-13 577095 826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Samplenum **Container ID** **Products**
L09050029-13 577099 S04

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:54	HJR	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-01	577059	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	EXT	05-MAY-2009 09:59	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	STORE	W1	A1	11-MAY-2009 13:44	ERE	ERE

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-09	577081	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	EXT	05-MAY-2009 09:59	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	STORE	W1	A1	11-MAY-2009 13:44	ERE	ERE

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-09	577080	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

Samplenum **Container ID** **Products**
L09050029-07 577077 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	04-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	06-MAY-2009 07:30	JKT	DIH

Samplenum **Container ID** **Products**
L09050029-09 577085 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	04-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	06-MAY-2009 07:30	JKT	DIH

Samplenum **Container ID** **Products**
L09050029-11 577093 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	04-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	06-MAY-2009 07:31	JKT	DIH

Samplenum **Container ID** **Products**
L09050029-01 577060 ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	06-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

Samplenum **Container ID** **Products**
L09050029-05 577068 826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Samplenum **Container ID** **Products**
L09050029-13 577100 FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:55	HJR	JKT
3	STORE	WET	A2	01-MAY-2009 16:12	RLK	TMM

Samplenum **Container ID** **Products**
L09050029-14 577102 AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	DIG	04-MAY-2009 06:23	VC	JKT
3	STORE	DIG	A2	05-MAY-2009 09:46	JKT	REK

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

Samplenum **Container ID** **Products**
L09050029-09 577082 ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	06-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

Samplenum **Container ID** **Products**
L09050029-03 577065 826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Samplenum **Container ID** **Products**
L09050029-04 577067 K-D MG-D MN-D NA-D NI-D PB-AXD SB-MS-D SE-MS-I

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	DIG	04-MAY-2009 06:23	VC	JKT
3	STORE	DIG	A2	05-MAY-2009 09:45	JKT	REK

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-07	577071	826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-08	577078	AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	DIG	04-MAY-2009 06:22	VC	JKT
3	STORE	DIG	A2	05-MAY-2009 09:45	JKT	REK

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-09	577079	826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-09	577083	S04

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:54	HJR	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-03	577066	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	EXT	05-MAY-2009 09:59	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	STORE	W1	A1	11-MAY-2009 13:44	ERE	ERE

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-05	577069	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	EXT	05-MAY-2009 09:59	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	STORE	W1	A1	11-MAY-2009 13:44	ERE	ERE

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-07	577073	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	EXT	05-MAY-2009 09:59	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	STORE	W1	A1	11-MAY-2009 13:44	ERE	ERE

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050029-01	577058	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:14	MRT	JKT

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

Samplenum **Container ID** **Products**
L09050029-07 577074 ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	06-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

Samplenum **Container ID** **Products**
L09050029-13 577098 ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	06-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

Samplenum **Container ID** **Products**
L09050029-01 577062 FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:55	HJR	JKT
3	STORE	WET	A2	01-MAY-2009 16:12	RLK	TMM

Samplenum **Container ID** **Products**
L09050029-02 577064 AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	DIG	04-MAY-2009 06:22	VC	JKT
3	STORE	DIG	A2	05-MAY-2009 09:45	JKT	REK

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: L09050029

Account: 2736

Project: 2736.061

Samples: 15

Due Date: 15-MAY-2009

Samplenum **Container ID** **Products**
L09050029-10 577086 AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	PREP	W1	DIG	04-MAY-2009 06:22	VC	JKT
3	STORE	DIG	A2	05-MAY-2009 09:46	JKT	REK

Samplenum **Container ID** **Products**
L09050029-11 577087 826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	01-MAY-2009 13:51	ERE	
2	ANALYZ	V1	ORG4	01-MAY-2009 14:51	MRT	JKT
3	ANALYZ	ORG4	A2	15-MAY-2009 09:40	JKT	MRT

Samplenum **Container ID** **Products**
L09050029-11 577091 S04

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	01-MAY-2009 13:51	ERE	
2	ANALYZ	W1	WET	01-MAY-2009 13:54	HJR	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

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

