Columbia Analytical Services™ 1317 S. 13th Avenue, Kelso, WA 98626 360.577.7222 360.636.1068 (fax) www.caslab.com

November 1, 2010 Analytical Report for Service Request No: K1010635

Taeko Minegishi
Environmental Health & Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494

RE: 17314

Dear Taeko:

Enclosed are the results of the samples submitted to our laboratory on September 25, 2010. For your reference, these analyses have been assigned our service request number K1010635.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3281. You may also contact me via Email at MShelton@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Mike Shelton

Mike Shelton
Project Chemist

MS/dlm

100% Recycled Paper

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value that was detected outside the quantitation range.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value that was detected outside the quantitation range.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value that was detected outside the quantitation range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Environmental Health and Engineering, Inc.	**Service Request No.:**	K1010635
Project:	17314	**Date Received:**	9/25/10
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Twenty four water samples were received for analysis at Columbia Analytical Services on 9/25/10. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

Approved by Mike Rich **Date** 11/1/10

Chain of Custody

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 9/24/10

FROM: Environmental Health and Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494-2725

TO: COLUMBIA ANALYTICAL

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

K0010635

In all correspondence regarding this matter, please refer to EH&E Project # 17314

The cost of this analysis will be covered by EH&E Purchase Order # _____

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
115714	WATER	SULFIDE	
115713	↓	↓	
~~115712~~			
115599			
115600			
115597			
115598			

Special instructions:

☒ Standard turn around time ☐ Rush by _____ date/time ☐ Other _____

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient BBAKER @ EHEINC.COM

Each signatory please return one copy of this form to the above address

Relinquished by: _____ of Environmental Health & Engineering, Inc. Date: 9/24/10

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) CAS Date: 9/25/10 0930

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 9/22/10

FROM: Environmental Health and Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494-2725

TO: COLUMBIA ANALYTICAL

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

K1010635

In all correspondence regarding this matter, please refer to EH&E Project # 17314

The cost of this analysis will be covered by EH&E Purchase Order # 17314

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date (Vol.)
115375	WATER	SULFIDE ANALYSIS	250mL
115376			
115395			
115396			
115502			
115503			
115596			
[redacted]			
116112			
116113			
116114			
116115			
116116			
116133			
116134			

Special instructions:

☒ Standard turn around time ☐ Rush by _____ date/time ☐ Other _____

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient bbaker@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: _____ of Environmental Health & Engineering, Inc. Date: 9/23/10

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) CAS Date: 9/25/10 0930

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

all samples Rcvd out of temp. AJull CAS 9/25/10

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 9/23/10

FROM: Environmental Health and Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494-2725

TO: COLUMBIA ANALYTICAL

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

K1010655

In all correspondence regarding this matter, please refer to EH&E Project # 17314

The cost of this analysis will be covered by EH&E Purchase Order # 17314

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/(Vol.)
116151	WATER	SULFIDE ANALYSIS	250 mL
116152	1	1	1

Special instructions:

☒ Standard turn around time ☐ Rush by _____ date/time ☐ Other _____

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient bbakere eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: _____ of Environmental Health & Engineering, Inc. Date: 9/23/10

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: ajuell of (company name) CAS Date: 9/25/10 0930

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

all samples Rcvd out of temp. ajuell CAS 9/25/10

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 24 SEP 14

FROM: Environmental Health and Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494-2725

TO: COLUMBIA ANALYTICAL

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

K1010635

In all correspondence regarding this matter, please refer to EH&E Project # 17314

The cost of this analysis will be covered by EH&E Purchase Order # 17329

For EH & E Data Coordinator - URGENT DATA ☒

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
116169	WATER	SULFIDE ANALYSIS	250 mL
116170	"	"	1

Special instructions:

☒ Standard turn around time ☐ Rush by _____ date/time ☐ Other _____

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☒ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient bbaker@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: Bryan Crossman of Environmental Health & Engineering, Inc. Date: 24SEP14

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) CAS Date: 9/25/14 0930

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC LH

Client / Project: Env. health + Env. Service Request K10 10635

Received: 9/25/10 Opened: 9/25/10 By: AJ

. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*

. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*

. Were custody seals on coolers? NA Y N If yes, how many and where? _____

If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Cooler Temp °C	Temp Blank °C	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
8.4	10.2	289		8735 4427 4350	
-0.3	0.8	291		8735 4427 4707	
3.7	5.8	275		8735 4427 4409	

. Packing material used. *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Sleeves* *Other* _____

. Were custody papers properly filled out (ink, signed, etc.)? NA Y N

. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N

0. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N

1. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N

2. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N

3. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N

4. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N

5. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
116151	1-500 gn				✓	NAOH	1ml	49175929	AJ	1025
all samples		✓								

Notes, Discrepancies, & Resolutions: Cooler had thick nylon wire tie holding cooler closed

Page 1 of ____

General Chemistry Parameters

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Environmental Health & Engineering, Incorporated
Project Name : NA
Project Number : 17314
Sample Matrix : WATER

Service Request : K1010635
Date Collected : NA
Date Received : 09/25/10

Total Sulfide

Analysis Method SM 4500-S2- D
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
115714	K1010635-001	0.050	0.020	1	09/30/10	ND	
115713	K1010635-002	0.050	0.020	1	09/30/10	ND	
115599	K1010635-003	0.050	0.020	1	09/30/10	ND	
115600	K1010635-004	0.050	0.020	1	09/30/10	0.040	J
115597	K1010635-005	0.050	0.020	1	09/30/10	0.030	J
115598	K1010635-006	0.050	0.020	1	09/30/10	0.030	J
115375	K1010635-007	0.050	0.020	1	09/30/10	ND	
115376	K1010635-008	0.050	0.020	1	09/30/10	ND	
115395	K1010635-009	0.050	0.020	1	09/30/10	ND	
115396	K1010635-010	0.050	0.020	1	09/30/10	ND	
115502	K1010635-011	0.050	0.020	1	09/30/10	ND	
115503	K1010635-012	0.050	0.020	1	09/30/10	ND	
115596	K1010635-013	0.050	0.020	1	09/30/10	ND	
116112	K1010635-014	0.050	0.020	1	09/30/10	ND	
116113	K1010635-015	0.050	0.020	1	09/30/10	ND	
116114	K1010635-016	0.050	0.020	1	09/30/10	ND	
116115	K1010635-017	0.050	0.020	1	09/30/10	ND	
116116	K1010635-018	0.050	0.020	1	09/30/10	ND	
116133	K1010635-019	0.050	0.020	1	09/30/10	ND	
116134	K1010635-020	0.050	0.020	1	09/30/10	ND	
116151	K1010635-021	0.050	0.020	1	09/30/10	ND	
116152	K1010635-022	0.050	0.020	1	09/30/10	ND	
116169	K1010635-023	0.050	0.020	1	09/30/10	ND	
116170	K1010635-024	0.050	0.020	1	09/30/10	ND	
Method Blank	K1010635-MB	0.050	0.020	1	09/30/10	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Environmental Health & Engineering, Incorporated	**Service Request :**	K1010635
Project Name :	NA	**Date Collected :**	NA
Project Number :	17314	**Date Received :**	9/25/2010
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	09/30/10

Duplicate Summary
Inorganic Parameters

Sample Name : 115714
Lab Code : K1010635-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Total Sulfide	SM 4500-S2- D	0.050	ND	ND	ND	-	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Environmental Health & Engineering, Incorporated	**Service Request :**	K1010635
Project Name :	NA	**Date Collected :**	NA
Project Number :	17314	**Date Received :**	9/25/2010
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	09/30/10

Duplicate Summary
Inorganic Parameters

Sample Name : 116152
Lab Code : K1010635-022DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Total Sulfide	SM 4500-S2- D	0.050	ND	ND	ND	-	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Environmental Health & Engineering, Incorporated	**Service Request :**	K1010635
Project Name :	NA	**Date Collected :**	NA
Project Number :	17314	**Date Received :**	9/25/2010
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	09/30/10

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	115714		Units :	mg/L
Lab Code :	K1010635-001MS	K1010635-001DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Total Sulfide	NONE	SM 4500-S2-D	0.050	1.99	1.99	ND	1.54	1.59	77	80	66-133	3	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Environmental Health & Engineering, Incorporated	**Service Request :**	K1010635
Project Name :	NA	**Date Collected :**	NA
Project Number :	17314	**Date Received :**	9/25/2010
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	09/30/10

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	116152		Units :	mg/L
Lab Code :	K1010635-022MS	K1010635-022DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Total Sulfide	NONE	SM 4500-S2-D	0.050	1.99	1.99	ND	2.04	2.04	103	103	66-133	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Environmental Health & Engineering, Incorporated	**Service Request :**	K1010635
Project Name :	NA	**Date Collected :**	NA
Project Number :	17314	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	09/30/10

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K1010635-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Total Sulfide	NONE	SM 4500-S2- D	1.99	1.89	95	89-106	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : Environmental Health & Engineering, Incorporated
Project : NA

Service Request : K1010635
Date Collected : NA
Date Received : NA

Total Sulfide
SM 4500-S2- D
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	9/30/2010	1.99	2.00	101
CCV2 Result	9/30/2010	1.99	2.00	101
CCV3 Result	9/30/2010	1.99	2.00	101
CCV4 Result	9/30/2010	1.99	2.00	101
CCV5 Result	9/30/2010	1.99	2.00	101
CCV6 Result	9/30/2010	1.99	1.99	100
CCV7 Result	9/30/2010	1.99	2.00	101

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : Environmental Health & Engineering, Incorporated
Project : NA

Service Request : K1010635
Date Collected : NA
Date Received : NA

Total Sulfide
SM 4500-S2- D
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	9/30/2010	0.050	ND
CCB2 Result	9/30/2010	0.050	ND
CCB3 Result	9/30/2010	0.050	ND
CCB4 Result	9/30/2010	0.050	ND
CCB5 Result	9/30/2010	0.050	ND
CCB6 Result	9/30/2010	0.050	ND
CCB7 Result	9/30/2010	0.050	ND

Work Request # Original (K10635) K10816 K10824

Tier: III III III

Date Analyzed: 9/30/10

Analyst: CES

Analysis: SM4500 -S^2-D /Sulfide T

Run# 218917

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?		yes/no/NA
2.	Holding times met for all analyses and for all samples?		yes/no/NA
3.	Are calculations correct?		yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)		yes/no/NA
5.	All quality control criteria met?		yes/no/NA
	a.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
	b.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
	c.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
	d.	Are results for methods blanks all ND?	yes/no/NA
	e.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
	f.	Are all exceptions explained?	yes/no/NA
6.	Are all service requests that apply attached?		yes/no/NA
7.	Are all samples labelled correctly?		yes/no/NA
8.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample)		yes/no/NA
9.	Are detection limits and units reported correctly?		yes/no/NA
10.	Are proper Analysis/Extraction stickers included on report?		yes/no/NA
11.	Is the unused space on the benchsheet crossed out?		yes/no/NA
12.	Was analysis turned in by the due date? (n-2) (If not record SR#)		yes/no/NA

COMMENTS:

Final Approved by: BPK Date: 10/14/10

DQREPORT

Analytical Results Summary

Instrument Name: K-UV-VIS-01 **Analyst:** CSETHE **Analysis Lot:** 218917 **Method/Testcode:** SM 4500-S2- D/Sulfide T

ab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
1010635-001	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-002	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-003	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-004	Total Sulfide	N/A		Water	0.04 mg/L	20 mL	0.040 mg/L J	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-005	Total Sulfide	N/A		Water	0.03 mg/L	20 mL	0.030 mg/L J	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-006	Total Sulfide	N/A		Water	0.03 mg/L	20 mL	0.030 mg/L J	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-007	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-008	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-009	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-010	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-011	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-012	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-013	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-014	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-015	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-016	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-017	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-018	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-019	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-020	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-021	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-022	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-023	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010635-024	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
1010816-001	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	I
1010816-002	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	I
1010824-001	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	I
1010824-002	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	I
1010824-003	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	I
1010824-004	Total Sulfide	N/A		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	I
Q1010585-01	Total Sulfide	MB		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050			9/30/10 15:00:00	N	III
Q1010585-02	Total Sulfide	LCS		Water	1.89 mg/L	20 mL	1.89 mg/L	1	0.020	0.050	95		9/30/10 15:00:00	N	III
Q1010585-03	Total Sulfide	CCV		Water	2.00 mg/L	20 mL	2.00 mg/L	1					9/30/10 15:00:00	N	III
Q1010585-04	Total Sulfide	CCV		Water	2.00 mg/L	20 mL	2.00 mg/L	1					9/30/10 15:00:00	N	III
Q1010585-05	Total Sulfide	CCV		Water	2.00 mg/L	20 mL	2.00 mg/L	1					9/30/10 15:00:00	N	III
Q1010585-06	Total Sulfide	CCV		Water	2.00 mg/L	20 mL	2.00 mg/L	1					9/30/10 15:00:00	N	III
Q1010585-07	Total Sulfide	CCV		Water	2.00 mg/L	20 mL	2.00 mg/L	1					9/30/10 15:00:00	N	III
Q1010585-08	Total Sulfide	CCV		Water	1.99 mg/L	20 mL	1.99 mg/L	1					9/30/10 15:00:00	N	III
Q1010585-09	Total Sulfide	CCV		Water	2.00 mg/L	20 mL	2.00 mg/L	1					9/30/10 15:00:00	N	III

BPK 10/14/10

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-UV-VIS-01 **Analyst:** CSETHE **Analysis Lot:** 218917 **Method/Testcode:** SM 4500-S2- D/Sulfide T

ab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
Q1010585-10	Total Sulfide	CCB		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.050	0.050			9/30/10 15:00:00	N	III
Q1010585-11	Total Sulfide	CCB		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.050	0.050			9/30/10 15:00:00	N	III
Q1010585-12	Total Sulfide	CCB		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.050	0.050			9/30/10 15:00:00	N	III
Q1010585-13	Total Sulfide	CCB		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.050	0.050			9/30/10 15:00:00	N	III
Q1010585-14	Total Sulfide	CCB		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.050	0.050			9/30/10 15:00:00	N	III
Q1010585-15	Total Sulfide	CCB		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.050	0.050			9/30/10 15:00:00	N	III
Q1010585-16	Total Sulfide	CCB		Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.050	0.050			9/30/10 15:00:00	N	III
Q1010585-17	Total Sulfide	MS	K1010635-001	Water	1.54 mg/L	20 mL	1.54 mg/L	1	0.020	0.050	77		9/30/10 15:00:00	N	III
Q1010585-18	Total Sulfide	DMS	K1010635-001	Water	1.59 mg/L	20 mL	1.59 mg/L	1	0.020	0.050	80	3	9/30/10 15:00:00	N	III
Q1010585-19	Total Sulfide	DUP	K1010635-001	Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050		NC	9/30/10 15:00:00	N	III
Q1010585-20	Total Sulfide	MS	K1010635-022	Water	2.04 mg/L	20 mL	2.04 mg/L	1	0.020	0.050	103		9/30/10 15:00:00	N	III
Q1010585-21	Total Sulfide	DMS	K1010635-022	Water	2.04 mg/L	20 mL	2.04 mg/L	1	0.020	0.050	103	<1	9/30/10 15:00:00	N	III
Q1010585-22	Total Sulfide	DUP	K1010635-022	Water	0.00 mg/L	20 mL	0.050 mg/L U	1	0.020	0.050		NC	9/30/10 15:00:00	N	III

24

BDL 10/14/10

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

COLUMBIA ANALYTICAL SERVICES, INC.

Run # 28917

Work Order #.: k10635 k10824 k10816 Method: SM 4500-S2-D

Analysis: Analysis for Total Sulfide

	STD1	STD 2	STD 3	STD 4	STD 5	STD 6	STD 7				(R) =	0.9990
Conc. (mg/L)	0.0000	0.0498	0.4975	0.9950	1.4925	1.9900	2.4875				Slope =	0.7092
Absorbance	0.0000	0.0325	0.3902	0.7530	1.1218	1.4387	1.7433				Y Int. =	0.0217

Date Prep'd	Sample #	Dil. Factor	Absorb. @ 670 nm	Conc. from Curve (mg/L)	Actual Conc. (mg/L)	Initial Wt./Vol. (g) / (ml)	Final Vol. (ml)	A Tower mg/L (solution)	B Tower mg/L (solution)	A & B mg/L - mg/kg as rec'd	% Solid	mg/kg Dry Wt.
9/30/2010	ICV	1	1.568	2.1801	2.1801	40	40	2.18		2.18		
9/30/2010	ICB	1	0.000	-0.0303	<0.05	40	40	<0.05		<0.05		
9/30/2010	CCB	1	0.000	-0.0303	<0.05	40	40	<0.05		<0.05		
9/30/2010	CCV	1	1.437	1.9960	1.9960	40	40	2.00		2.00		
9/30/2010	MB	1	0.000	-0.0302	<0.05	20	20	<0.05		<0.05		
9/30/2010	LCS	1	1.365	1.8946	1.8946	20	20	1.89		1.89		
9/30/2010	10635-1	1	0.001	-0.0296	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-1d	1	0.000	-0.0300	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-1ms	1	1.112	1.5375	1.5375	20	20	1.54		1.54		
9/30/2010	10635-1msd	1	1.146	1.5853	1.5853	20	20	1.59		1.59		
9/30/2010	10635-2	1	0.001	-0.0295	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-3	1	0.010	-0.0165	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-4	1	0.047	0.0350	<0.05	20	20	<0.05		0.04 J		
9/30/2010	10635-5	1	0.040	0.0255	<0.05	20	20	<0.05		0.03 J		
9/30/2010	CCV2	1	1.439	1.9988	1.9988	40	40	2.00		2.00		
9/30/2010	CCB2	1	0.000	-0.0302	<0.05	40	40	<0.05		<0.05		
9/30/2010	10635-6	1	0.043	0.0302	<0.05	20	20	<0.05		0.03 J		
9/30/2010	10635-7	1	0.002	-0.0285	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-8	1	0.002	-0.0285	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-9	1	0.000	-0.0300	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-10	1	0.001	-0.0295	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-11	1	0.002	-0.0277	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-12	1	0.002	-0.0279	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-13	1	0.000	-0.0305	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-14	1	0.001	-0.0295	<0.05	20	20	<0.05		<0.02		

CCV =2ml*39.8mg/l/40ml=1.99mg/l %REC = 101 101 101 101 101 100 101

LCS =1ml*39.8mg/l/20ml = 1.99mg/L %REC = 95 94

ICV = 2.25ml*39.8mg/L/40ml = 2.24mg/L %REC = 97 97

MS+MSD = 1ml*39.8mg/L/20mL = 1.99mg/L %REC = 77 80 103 103

10635-1/1d X=ND RPD-- 10635-22/22d X=ND RPD--

STD ID# S2/2-2-K CONC. = 3980mg/L

			DATE	TIME
Distilled by:	N/A	Date Distilled:	N/A	
Analyzed By:	CES	Date Analyzed:	9-30-10	1500
Reviewed By:	BM	Date Reviewed:	10/14/10	

COLUMBIA ANALYTICAL SERVICES, INC.

Work Order #.: k10635 k10824 k10816 Method: SM 4500-S2-D

Analysis: Analysis for Total Sulfide

	STD1	STD 2	STD 3	STD 4	STD 5	STD 6	STD 7				(R) =	0.9990
Conc. (mg/L)	0.0000	0.0498	0.4975	0.9950	1.4925	1.9900	2.4875				Slope =	0.7092
Absorbance	0.0000	0.0325	0.3902	0.7530	1.1218	1.4387	1.7433				Y Int. =	0.0217

Date Prep'd	Sample #	Dil. Factor	Absorb. @ 670 nm	Conc. from Curve (mg/L)	Actual Conc. (mg/L)	Initial Wt./Vol. (g) / (ml)	Final Vol. (ml)	A Tower mg/L (solution)	B Tower mg/L (solution)	A & B mg/L - mg/kg as rec'd	% Solid	mg/kg Dry Wt.
9/30/2010	10635-15	1	0.000	-0.0303	<0.05	20	**20**	<0.05		<0.02		
9/30/2010	CCV3	1	1.439	1.9988	1.9988	40	**40**	2.00		2.00		
9/30/2010	CCB3	1	0.000	-0.0306	<0.05	40	40	<0.05		<0.05		
9/30/2010	10635-16	1	0.000	-0.0300	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-17	1	0.000	-0.0300	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-18	1	0.001	-0.0298	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-19	1	0.014	-0.0113	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-20	1	0.016	-0.0078	<0.05	20	20	<0.05		<0.02		
9/30/2010	MB2	1	0.000	-0.0306	<0.05	20	20	<0.05		<0.05		
9/30/2010	LCS2	1	1.356	1.8815	1.8815	20	20	1.88		1.88		
9/30/2010	10635-21	1	0.002	-0.0282	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-22	1	0.008	-0.0199	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-22d	1	0.008	-0.0196	<0.05	20	20	<0.05		<0.02		
9/30/2010	CCV4	1	1.438	1.9975	1.9975	40	40	2.00		2.00		
9/30/2010	CCB4	1	0.001	-0.0298	<0.05	40	40	<0.05		<0.05		
9/30/2010	10635-22ms	1	1.466	2.0364	2.0364	20	20	2.04		2.04		
9/30/2010	0635-22ms	1	1.465	2.0352	2.0352	20	20	2.04		2.04		
9/30/2010	10635-23	1	0.001	-0.0298	<0.05	20	20	<0.05		<0.02		
9/30/2010	10635-24	1	0.001	-0.0288	<0.05	20	20	<0.05		<0.02		
9/30/2010	CCV5	1	1.441	2.0013	2.0013	40	40	2.00		2.00		
9/30/2010	CCB5	1	0.001	-0.0298	<0.05	40	40	<0.05		<0.05		
9/30/2010	ICV2	1	1.562	2.1715	2.1715	40	40	2.17		2.17		
9/30/2010	ICB2	1	0.000	-0.0305	<0.05	40	40	<0.05		<0.05		
9/30/2010	CCB6	1	0.000	-0.0306	<0.05	40	40	<0.05		<0.05		
9/30/2010	CCV6	1	1.436	1.9939	1.9939	40	40	1.99		1.99		

Distilled by:	MA	Date Distilled:	MA
Analyzed By:	CES	Date Analyzed:	9-30-10 1500
Reviewed By:	BDK	Date Reviewed:	cel 10/4/10

COLUMBIA ANALYTICAL SERVICES, INC.

Work Order #.: k10635 k10824 k10816 Method: SM 4500-S2-D

Analysis: Analysis for Total Sulfide

	STD1	STD 2	STD 3	STD 4	STD 5	STD 6	STD 7				(R) =	0.9990
Conc. (mg/L)	0.0000	0.0498	0.4975	0.9950	1.4925	1.9900	2.4875				Slope =	0.7092
Absorbance	0.0000	0.0325	0.3902	0.7530	1.1218	1.4387	1.7433				Y Int. =	0.0217

Date Prep'd	Sample #	Dil. Factor	Absorb. @ 670 nm	Conc. from Curve (mg/L)	Actual Conc. (mg/L)	Initial Wt./Vol. (g) / (ml)	Final Vol. (ml)	A Tower mg/L (solution)	B Tower mg/L (solution)	A & B mg/L - mg/kg as rec'd	% Solid	mg/kg Dry Wt.
40451.00	10824-1	1	0.003	-0.0261	<0.05	20	20	<0.05		<0.02		
9/30/2010	10824-2	1	0.003	-0.0258	<0.05	20	**20**	<0.05		<0.02		
9/30/2010	10824-3	1	0.003	-0.0268	<0.05	20	20	<0.05		<0.02		
9/30/2010	10824-4	1	0.002	-0.0275	<0.05	20	20	<0.05		<0.02		
9/30/2010	10816-1	1	0.002	-0.0274	<0.05	20	20	<0.05		<0.02		
9/30/2010	10816-2	1	0.003	-0.0258	<0.05	20	20	<0.05		<0.02		
9/30/2010	CCV7	1	1.438	1.9967	1.9967	40	40	2.00		2.00		
9/30/2010	CCB7	1	0.000	-0.0303	<0.05	40	40	<0.05		<0.05		

Distilled by:	N/A	Date Distilled:	N/A
Analyzed By:	CSS	Date Analyzed:	9-30-10 1500
Reviewed By:	PDR	Date Reviewed:	10/1/10

COLUMBIA ANALYTICAL SERVICES, INC.

Work Order #.: k10635 k10824 k10816 Method: SM 4500-S2-D

Analysis: Analysis for Total Sulfide

Prep Date : 9/30/2010

	STD1	STD 2	STD 3	STD 4	STD 5	STD 6	STD 7
Conc. (mg/L)	0.0000	0.0498	0.4975	0.9950	1.4925	1.9900	2.4875
Absorbance	0.0000	0.0325	0.3902	0.7530	1.1218	1.4387	1.7433

Sample Name Lab Code	Initial Wt./Vol. (g) or (ml)	Dilution Factor	Abs of A tower @ 670 nm	Abs of B tower @ 670 nm	% Solids
ICV	40	1	1.5678		
ICB	40	1	0.0002		
CCB	40	1	0.0002		
CCV	40	1	1.4372		
MB	20	1	0.0003		
LCS	20	1	1.3653		
10635-1	20	1	0.0007		
10635-1d	20	1	0.0004		
10635-1ms	20	1	1.1121		
10635-1msd	20	1	1.1460		
10635-2	20	1	0.0008		
10635-3	20	1	0.0100		
10635-4	20	1	0.0465		
10635-5	20	1	0.0398		
CCV2	20	1	1.4392		
CCB2	20	1	0.0003		
10635-6	20	1	0.0431		
10635-7	20	1	0.0015		
10635-8	20	1	0.0015		
10635-9	20	1	0.0004		
10635-10	20	1	0.0008		
10635-11	20	1	0.0021		
10635-12	20	1	0.0019		
10635-13	20	1	0.0001		
10635-14	20	1	0.0008		
10635-15	20	1	0.0002		
CCV3	20	1	1.4392		
CCB3	20	1	0.0000		
10635-16	20	1	0.0004		
10635-17	20	1	0.0004		
10635-18	20	1	0.0006		
10635-19	20	1	0.0137		
10635-20	20	1	0.0162		
MB2	20	1	0.0000		
LCS2	20	1	1.3560		
10635-21	20	1	0.0017		
10635-22	20	1	0.0076		
10635-22d	20	1	0.0078		

Sample Name Lab Code	Initial Wt./Vol. (g) or (ml)	Dilution Factor	Abs of A tower @ 670 nm	Abs of B tower @ 670 nm	% Solids
CCV4	20	1	1.4383		
CCB4	20	1	0.0006		
10635-22ms	20	1	1.4659		
10635-22msd	20	1	1.4650		
10635-23	20	1	0.0006		
10635-24	20	1	0.0013		
CCV5	20	1	1.4410		
CCB5	20	1	0.0006		
ICV2	20	1	1.5617		
ICB2	20	1	0.0001		
CCB6	20	1	0.0000		
CCV6	20	1	1.4357		
10824-1	20	1	0.0032		
10824-2	20	1	0.0034		
10824-3	20	1	0.0027		
10824-4	20	1	0.0022		
10816-1	20	1	0.0023		
10816-2	20	1	0.0034		
CCV7	20	1	1.4377		
CCB7	20	1	0.0002		

BDR
10/14/10

CALIBRATION

Date: 9/30/2010 Time: 3:25:28 PM
Instrument: PerkinElmer Lambda 25 Serial No: 501S08110503
Method: 9-30-10D
Ordinate mode: Single Wavelength
Baseline: No correction (0.00 0.00)
Analyst: cfs

CES 9-30-10

Wavelength(s)		Sample ID	Concentration		Ord. value	Comment
670.0	0.0	9-30-10D.A01	0.0000	mg/l	0.0000	
670.0	0.0	9-30-10D.A02	0.0498	mg/l	0.0325	
670.0	0.0	9-30-10D.A03	0.4975	mg/l	0.3902	
670.0	0.0	9-30-10D.A04	0.9950	mg/l	0.7530	
670.0	0.0	9-30-10D.A05	1.4925	mg/l	1.1218	
670.0	0.0	9-30-10D.A06	1.9900	mg/l	1.4387	
670.0	0.0	9-30-10D.A07	2.4875	mg/l	1.7433	

Equation: y = 2.171429e-02 + 7.091703e-01 * x

Residual error: 0.033288
Correlation coefficient: 0.999010

BPK
10/4/10

Date : 9/30/2010 Time : 15:48:24

Concentration Results

Date: 9/30/2010 Time: 3:27:34 PM
Instrument: PerkinElmer Lambda 25 Serial No: 501S08110503
Method: 9-30-10D
Ordinate mode: Single Wavelength
Slit: UV/VIS: 1.00 nm
Baseline: No correction (0.00 0.00)
Result Filename: TEMP.RCO
Autozero performed: 9/30/2010 3:25:27 PM
Analyst: cfs

CCS 9-30-10

Wavelength(s)		Sample ID	Ordinate	Factor	Concentration		Sample Info
670.0	0.0	ICV	1.5678	1.0000	2.1802	mg/l	
670.0	0.0	ICB	0.0002	1.0000	-0.030	mg/l	
670.0	0.0	CCB1	0.0002	1.0000	-0.030	mg/l	
670.0	0.0	CCV1	1.4372	1.0000	1.9960	mg/l	
670.0	0.0	MB	0.0003	1.0000	-0.030	mg/l	
670.0	0.0	LCS	1.3653	1.0000	1.8945	mg/l	
670.0	0.0	10635-1	0.0007	1.0000	-0.029	mg/l	
670.0	0.0	10635-1d	0.0004	1.0000	-0.030	mg/l	
670.0	0.0	10635-1s	1.1121	1.0000	1.5376	mg/l	
670.0	0.0	0635-1sd	1.1460	1.0000	1.5854	mg/l	
670.0	0.0	10635-2	0.0008	1.0000	-0.029	mg/l	
670.0	0.0	10635-3	0.0100	1.0000	-0.016	mg/l	
670.0	0.0	10635-4	0.0465	1.0000	0.0350	mg/l	
670.0	0.0	10635-5	0.0398	1.0000	0.0255	mg/l	
670.0	0.0	CCV2	1.4392	1.0000	1.9988	mg/l	
670.0	0.0	CCB2	0.0003	1.0000	-0.030	mg/l	
670.0	0.0	10635-6	0.0431	1.0000	0.0302	mg/l	
670.0	0.0	10635-7	0.0015	1.0000	-0.028	mg/l	
670.0	0.0	10635-8	0.0015	1.0000	-0.028	mg/l	
670.0	0.0	10635-9	0.0004	1.0000	-0.030	mg/l	
670.0	0.0	10635-10	0.0008	1.0000	-0.029	mg/l	
670.0	0.0	10635-11	0.0021	1.0000	-0.027	mg/l	
670.0	0.0	10635-12	0.0019	1.0000	-0.028	mg/l	
670.0	0.0	10635-13	0.0001	1.0000	-0.030	mg/l	
670.0	0.0	10635-14	0.0008	1.0000	-0.029	mg/l	
670.0	0.0	10635-15	0.0002	1.0000	-0.030	mg/l	
670.0	0.0	CCV3	1.4392	1.0000	1.9988	mg/l	
670.0	0.0	CCB3	-0.000	1.0000	-0.031*	mg/l	
670.0	0.0	10635-16	0.0004	1.0000	-0.030	mg/l	
670.0	0.0	10635-17	0.0004	1.0000	-0.030	mg/l	
670.0	0.0	10635-18	0.0006	1.0000	-0.029	mg/l	
670.0	0.0	10635-19	0.0137	1.0000	-0.011	mg/l	
670.0	0.0	10635-20	0.0162	1.0000	-0.007	mg/l	
670.0	0.0	MB2	-0.000	1.0000	-0.030*	mg/l	
670.0	0.0	LCS2	1.3560	1.0000	1.8815	mg/l	
670.0	0.0	10635-21	0.0017	1.0000	-0.028	mg/l	
670.0	0.0	10635-22	0.0076	1.0000	-0.019	mg/l	
670.0	0.0	0635-22d	0.0078	1.0000	-0.019	mg/l	
670.0	0.0	CCV4	1.4383	1.0000	1.9975	mg/l	
670.0	0.0	CCB4	0.0006	1.0000	-0.029	mg/l	
670.0	0.0	0635-22s	1.4659	1.0000	2.0364	mg/l	
670.0	0.0	635-22sd	1.4650	1.0000	2.0352	mg/l	
670.0	0.0	10635-23	0.0006	1.0000	-0.029	mg/l	
670.0	0.0	10635-24	0.0013	1.0000	-0.028	mg/l	
670.0	0.0	CCV5	1.4410	1.0000	2.0013	mg/l	
670.0	0.0	CCB5	0.0006	1.0000	-0.029	mg/l	
~~670.0~~	~~0.0~~		~~0.0005~~	~~1.0000~~	~~-0.029~~	~~mg/l~~	Extra par

PDR 10/14/10

Concentration Results

Date: 9/30/2010 Time: 4:12:34 PM
Instrument: PerkinElmer Lambda 25 Serial No: 501S08110503
Method: 9-30-10E
Ordinate mode: Single wavelength
Slit: UV/VIS: 1.00 nm
Baseline: No correction (0.00 0.00)
Result Filename: TEMP.RCO
Autozero performed: 9/30/2010 4:11:46 PM
Analyst: cfs

① Added ccvi to existing run BK 9/30/10

CES 9-30-10

Wavelength(s)		Sample ID	Ordinate	Factor	Concentration		Sample Info
670.0	0.0	ICV	1.5617	1.0000	2.1715	mg/l	
670.0	0.0	ICB	0.0001	1.0000	-0.030	mg/l	
670.0	0.0	CCB~~1~~6①	-0.000	1.0000	-0.030*	mg/l	
670.0	0.0	CCV~~1~~6①	1.4357	1.0000	1.9939	mg/l	
670.0	0.0	10824-1	0.0032	1.0000	-0.026	mg/l	
670.0	0.0	10824-2	0.0034	1.0000	-0.025	mg/l	
670.0	0.0	10824-3	0.0027	1.0000	-0.026	mg/l	
670.0	0.0	10824-4	0.0022	1.0000	-0.027	mg/l	
670.0	0.0	10816-1	0.0023	1.0000	-0.027	mg/l	
670.0	0.0	10816-2	0.0034	1.0000	-0.025	mg/l	
670.0	0.0	CCV~~2~~7①	1.4377	1.0000	1.9967	mg/l	
670.0	0.0	CCB~~2~~7①	0.0002	1.0000	-0.030	mg/l	
~~670.0~~	~~0.0~~		~~0.0002~~	~~1.0000~~	~~-0.030~~	~~mg/l~~	
670.0	~~0.0~~		~~0.0002~~	~~1.0000~~	~~-0.030~~	~~mg/l~~	Extrapolate

BDK
10/14/10