

Chemical Analysis Report

WTRSHD-MGT-2012-07-09-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Wakulla Storm-Event Sampling**

Request ID: **RQ-2012-07-02-22**

Customer: **WTRSHD-MGT**

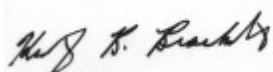
Project ID: **STORM-EVNT**

Send Reports to:
FDEP Ground Water Management Section
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Attn: Gary Maddox

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Certified by: Kathryn Brackett, Environmental Administrator

Date Certified: 23-JUL-2012 12:21



Abbreviations and data remark codes

CERT # - NELAP (National Environmental Laboratory Accreditation Program) Certification Number of the laboratory that performed the analysis.

LCS - Laboratory Control Sample; in the QC Failures column, this notation indicates a batch recovery failure.

MS - Matrix Spike; in the QC Failures column, this notation indicates a batch recovery failure.

RPD - Relative Percent Difference; in the QC Failures column, this notation indicates a batch failure for precision.

CCV - Continuing Calibration Verification; in the QC Failures column, this notation indicates a failure of the calibration verification check sample.

SUR - Surrogate; in the QC Failures column, this notation indicates a recovery failure for the associated surrogate.

RSD - Relative Standard Deviation expressed as a percentage.

SMP - Sample.

** - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.

A - Value reported is the mean of two or more determinations

B - Results based on colony counts outside the acceptable range.

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

J - Estimated value

K - Actual value is known to be less than value given

L - Actual value is known to be greater than value given

N - Presumptive evidence of presence of material.

O - Sampled, but analysis lost or not performed.

Q - Sample held beyond normal holding time.

T - Value reported is less than the criterion of detection.

U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.

V - Analyte was detected in both sample and method blank.

X - Too few individuals to calculate SCI value.

Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate

Z - Colonies were too numerous to count (TNTC).

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example:
1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Precision is reported as relative percent difference unless otherwise noted.

Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published test performance acceptance criteria.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

All sample collection performed by Bureau of Laboratories staff followed the field Standard Operating Procedures adopted by reference in Rule 62-160 FAC unless otherwise noted.

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Results for NELAP accredited tests contained in this report meet the requirements specified by the National Environmental Laboratory Accreditation Conference (NELAC). All samples received were in acceptable condition and met NELAC requirements unless otherwise noted. Results generated in this report pertain to the samples collected and submitted for analysis.

Job: TLH-2012-07-09-07

Job: TLH-2012-07-09-08

Job: TLH-2012-07-09-09

Group: Nutrients

Group: Metals

Group: Pesticides

Sample Location: 67**Collection Date/Time: 07/09/2012 11:42 AM****Field ID: WAKULLA SPRING****Matrix: W-OTHER**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1439687	EPA 180.1 Rev. 2.0	Turbidity	0.40		NTU	P241819	
	EPA 300.0 Rev. 2.1	Chloride	8.6		mg Cl/L	P242040	
		Sulfate	11		mg SO4/L	P242046	
	SM 2120 B	Color (true)	40		PCU	P241808	
	SM 2320 B-97	Alkalinity	136	A	mg CaCO3/L	P241989	
	SM 2540 C-97	TDS	177		mg/L	P242014	
1439688	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P241832	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P241903	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.45		mg N/L	P241999	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P241896	
	SM 5310 B-00	Organic Carbon	4.0	I	mg C/L	P241974	
1439689	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P241816	
1439690	EPA 200.7 Rev. 4.4	Calcium	46.1		mg/L	P241923	
		Magnesium	9.64		mg/L	P241923	
		Potassium	0.65	I	mg/L	P241923	
		Sodium	5.6		mg/L	P241923	
	EPA 200.8 Rev. 5.4	Boron**	15.9		ug/L	P242066	
1439691	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.020	U	ug/L	P241880	MS

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: One of the matrix spike recoveries is unavailable due to high analyte concentration in the QC sample.

EPA 300.0 Rev. 2.1: Sulfate: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

DEP SOP: LC-001-2 (based on EPA 8321B): MDL elevated due to matrix interference.

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)**Batch ID: P241880**

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0**Batch ID: P241819**

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4**Batch ID: P241923**

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P242066

Component	Result	Code	Units
Boron	2.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P242040

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P242046

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P241832

Component	Result	Code	Units
Ammonia-N	0.010	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P241903

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P241999

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P241896

Component	Result	Code	Units
Total-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P241816

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2120 B

Batch ID: P241808

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97

Batch ID: P241989

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97

Batch ID: P242014

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 5310 B-00

Batch ID: P241974

Component	Result	Code	Units
Organic Carbon	1.0	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P241880

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	50.0	54.0	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P241923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	80 - 120
Magnesium	109		P	80 - 120
Potassium	104		P	80 - 120
Sodium	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P242066

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Boron	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P242040

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P242046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P241832

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P241903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P241999

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P241896

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P241816

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	108		P	90 - 110

Reference Method: SM 2320 B-97

Batch ID: P241989

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Alkalinity	98.3		P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P241974

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P241880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1439523	Sucralose	35.3	33.4	F/F	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P241923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P241923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1439690	Calcium	101		P	80 - 120
1439690	Magnesium	103		P	80 - 120
1439690	Potassium	103		P	80 - 120
1439690	Sodium	101		P	80 - 120
1440059	Calcium	103		P	80 - 120
1440059	Magnesium	106	109	P/P	80 - 120
1440059	Potassium	104	103	P/P	80 - 120
1440059	Sodium	100	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P242066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1439690	Boron	104		P	80 - 120
1440059	Boron	102	105	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P242040

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1439563	Chloride	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P241832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1439519	Ammonia-N	92.0	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P241903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1439700	Kjeldahl Nitrogen	102	92.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P241999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1440123	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P241896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1439699	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P241816

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1439869	O-Phosphate-P	95.4	96.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00

Batch ID: P241974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1439888	Organic Carbon	93.4	93.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P241880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439523	Sucralose	12.9	Spike	P	0 - 30
LFB	Sucralose	7.69	LCS	P	0 - 30

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P241819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439697	Turbidity	3.19	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P241923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1440059	Calcium	0.597	Sample	P	0 - 20
1440059	Magnesium	1.61	Sample	P	0 - 20
1440059	Potassium	1.40	Spike	P	0 - 20
1440059	Sodium	0.649	Sample	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P242066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1440059	Boron	2.24	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P242040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439530	Chloride	0.519	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P242046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439530	Sulfate	0.882	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P241832

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439519	Ammonia-N	2.59	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P241903

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439700	Kjeldahl Nitrogen	5.88	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P241999

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1440123	NO2NO3-N	0.651	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P241896

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439699	Total-P	1.67	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P241816

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439869	O-Phosphate-P	0.737	Spike	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P241808

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439697	Color (true)	1.63	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P241989

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439687	Alkalinity	1.27	Sample	P	0 - 20
1440087	Alkalinity	10.8	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P242014

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1440296	TDS	1.49	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 5310 B-00

Batch ID: P241974

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1439888	Organic Carbon	0.161	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1439691

Field Sample ID: WAKULLA SPRING

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	42.0	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A45993

Included Lab Sample IDs: 1439687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A45994

Included Lab Sample IDs: 1439689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.8	97.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A45995

Included Lab Sample IDs: 1439687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A46001

Included Lab Sample IDs: 1439688

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	104	P/P	90 - 110

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Run ID: A46016

Included Lab Sample IDs: 1439691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Run ID: A46016

Included Lab Sample IDs: 1439691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	91.6	98.8	P/P	70 - 140

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A46025

Included Lab Sample IDs: 1439688

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.4	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A46026

Included Lab Sample IDs: 1439688

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A46030

Included Lab Sample IDs: 1439690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	102	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Potassium	101	102	P/P	90 - 110
Sodium	101	101	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A46046

Included Lab Sample IDs: 1439688

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	97.0	P/P	85 - 115

Reference Method: SM 2320 B-97

Run ID: A46052

Included Lab Sample IDs: 1439687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	98.5	98.3	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A46055

Included Lab Sample IDs: 1439688

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	101	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A46068

Included Lab Sample IDs: 1439687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	103	P/P	90 - 110
Sulfate	97.0	99.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A46076

Included Lab Sample IDs: 1439690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	102	99.1	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	
							SMP	MS
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose	50.0	54.0	35.3	33.4	7.69		12.9
EPA 180.1 Rev. 2.0	Turbidity						3.19	
EPA 200.7 Rev. 4.4	Calcium	104		101	103		0.597	
	Magnesium	109		103	106	109	1.61	
	Potassium	104		103	104	103		1.40
	Sodium	105		101	100	102	0.649	
EPA 200.8 Rev. 5.4	Boron	103		104	102	105	2.24	
EPA 300.0 Rev. 2.1	Chloride	101		97.5				0.519
	Sulfate	97.8						0.882
EPA 350.1 Rev. 2.0	Ammonia-N	97.0		92.0	94.7			2.59
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.6		102	92.2			5.88
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103		102	102			0.651
EPA 365.1 Rev. 2.0	Total-P	101		105	103			1.67
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	108		95.4	96.2			0.737
SM 2120 B	Color (true)						1.63	
SM 2320 B-97	Alkalinity	98.3					10.8	1.27
SM 2540 C-97	TDS						1.49	
SM 5310 B-00	Organic Carbon	94.7		93.4	93.6			0.161

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
DEP SOP: LC-001-2 (based on EPA 8321B) / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1439691
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1439687
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1439690

Reference Method Descriptions

Method / NELAC Cert. #	Description	<u>Associated Samples</u>
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1439690
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1439687
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1439687
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1439688
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1439688
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1439688
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1439688
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1439689
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color	1439687
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1439687
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1439687
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1439688

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: LC-001-2 (based on EPA 8321B)	07/09/2012	07/09/2012	Hoor Shaik	07/11/2012	S. M. Reddy	1439691
EPA 180.1 Rev. 2.0	07/09/2012			07/10/2012 17:34	Bryan A. Werth	1439687
EPA 200.7 Rev. 4.4	07/09/2012	07/10/2012	Elliott D. Healy	07/12/2012	Joshua Ayres	1439690
EPA 200.8 Rev. 5.4	07/09/2012	07/10/2012	Elliott D. Healy	07/16/2012	Charles J. Peterson	1439690
EPA 300.0 Rev. 2.1	07/09/2012			07/10/2012	Ping Hua	1439687
EPA 350.1 Rev. 2.0	07/09/2012			07/10/2012	Peter D. Kaus	1439688
EPA 351.2 Rev. 2.0	07/09/2012	07/11/2012	Bryan A. Werth	07/12/2012	Bryan A. Werth	1439688
EPA 353.2 Rev. 2.0	07/09/2012			07/16/2012	Sima Feizi	1439688
EPA 365.1 Rev. 2.0	07/09/2012	07/11/2012	Megan E. Faircloth	07/12/2012	Pallavi R. Gadwal	1439688
EPA 365.1 Rev. 2.0 dissolved	07/09/2012			07/10/2012 15:39	Megan E. Faircloth	1439689
SM 2120 B	07/09/2012			07/10/2012 14:12	Rochelle Y Jackson	1439687
SM 2320 B-97	07/09/2012			07/14/2012	Dale L. Simmons	1439687
SM 2540 C-97	07/09/2012			07/11/2012	Yijie Li	1439687
SM 5310 B-00	07/09/2012			07/13/2012	Rochelle Y Jackson	1439688