

Chemical Analysis Report

SO-DIST-2018-06-26-02

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

Event Description: **Gators & Ditches**
Request ID: **RQ-2018-06-11-35**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Maryann Dugan

For additional information please contact
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Certified by: Colin Wright, Program Administrator

Date Certified: 24-JUL-2018 13:37



NON-CONFORMANCE REPORT INCLUDED

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

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.

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.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- 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 and/or the analysis did not meet established quality control criteria.
- 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).

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.

Sample Location: ClevelandCemeteryDitch

Collection Date/Time: 06/25/2018 10:10

Field ID: G3SD0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003308	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P347535	
	EPA 300.0 Rev. 2.1	Sulfate	85		mg SO4/L	P347792	
	SM 2320 B-97	Total Alkalinity	174		mg CaCO3/L	P347808	
	SM 2540 C-97	TDS	1.16E+03		mg/L	P347910	
	SM 2540 D-97	TSS	3	I	mg/L	P347905	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P347812	
2003310	EPA 350.1 Rev. 2.0	Ammonia-N	0.054		mg N/L	P347940	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P348026	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347684	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P347837	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P347986	
2003312	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P347567	
2003324	EPA 200.7 Rev. 4.4	Iron	300		ug/L	P347583	
		Zinc	5.0	U	ug/L	P347583	
	EPA 200.8 Rev. 5.4	Arsenic	2.52		ug/L	P347583	
		Cadmium	0.020	U	ug/L	P347583	
		Chromium	0.73	I	ug/L	P347583	
		Copper	1.02		ug/L	P347583	
		Lead	0.13	I	ug/L	P347583	
		Nickel	0.49	I	ug/L	P347583	
		Silver	0.010	U	ug/L	P347583	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: TrailerParkCanal@Mouth

Collection Date/Time: 06/25/2018 12:50

Field ID: G3SD0072

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003309	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P347535	
	EPA 300.0 Rev. 2.1	Sulfate	1.1E+03		mg SO4/L	P347792	
	SM 2320 B-97	Total Alkalinity	89		mg CaCO3/L	P347809	
	SM 2540 C-97	TDS	1.31E+04		mg/L	P347911	
	SM 2540 D-97	TSS	4	I	mg/L	P347907	
	SM 4500 F-C-97	Fluoride	0.65		mg F/L	P348058	
2003311	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P347765	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P348070	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.053		mg N/L	P347926	
	EPA 365.1 Rev. 2.0	Total-P	0.40		mg P/L	P347748	MS
	SM 5310 B-00	Organic Carbon	15		mg C/L	P348329	
2003313	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.34		mg P/L	P347568	
2003325	EPA 200.7 Rev. 4.4	Iron	200	I	ug/L	P347854	
	EPA 200.8 Rev. 5.4	Arsenic	2.25		ug/L	P347854	
		Cadmium	0.060	U	ug/L	P347854	
		Chromium	1.2	U	ug/L	P347854	
		Copper	0.60	U	ug/L	P347854	
		Lead	0.15	U	ug/L	P347854	
		Nickel	0.60	U	ug/L	P347854	
		Silver	0.030	U	ug/L	P347854	
		Zinc	3.0	U	ug/L	P347854	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: The sample required dilution due to matrix interference.

EPA 200.8 Rev. 5.4: The sample required dilution due to matrix interference.

Sample Location: Woodmere Creek@Heron Rd

Collection Date/Time: 06/25/2018 11:35

Field ID: G2SD0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003322	EPA 8321B	2,4-D	0.032		ug/L	P347238	
		Sucralose**	1.2		ug/L	P347494	
		Bentazon	0.014		ug/L	P347238	
		MCP	0.016		ug/L	P347238	
		Triclopyr**	0.0040	U	ug/L	P347238	
		Imidacloprid	0.020		ug/L	P347238	
		Diuron	0.0020	U	ug/L	P347238	
		Pyraclostrobin**	0.0020	U	ug/L	P347238	
		Primidone**	0.0054	I	ug/L	P347238	
		Linuron	0.0040	U	ug/L	P347238	
		Acetaminophen**	0.0080	U	ug/L	P347238	
		Fenuron	0.016	U	ug/L	P347238	
		Imazapyr**	0.41		ug/L	P347238	
		Carbamazepine**	0.011		ug/L	P347238	
		Fluridone**	0.0027		ug/L	P347238	
		Hydrocodone**	8.0E-04	U	ug/L	P347238	

Sample Location: Woodmere Creek@Heron Rd

Collection Date/Time: 06/25/2018 11:40

Field ID: G2SD0027_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003323	EPA 8321B	2,4-D	0.032		ug/L	P347238	
		Sucralose**	1.1		ug/L	P347494	
		Bentazon	0.014		ug/L	P347238	
		MCP	0.016		ug/L	P347238	
		Triclopyr**	0.0040	U	ug/L	P347238	
		Imidacloprid	0.021		ug/L	P347238	
		Diuron	0.0020	U	ug/L	P347238	
		Pyraclostrobin**	0.0020	U	ug/L	P347238	
		Primidone**	0.0055	I	ug/L	P347238	
		Linuron	0.0040	U	ug/L	P347238	
		Acetaminophen**	0.0080	U	ug/L	P347238	
		Fenuron	0.016	U	ug/L	P347238	
		Imazapyr**	0.40		ug/L	P347238	
		Carbamazepine**	0.011		ug/L	P347238	
		Fluridone**	0.0027		ug/L	P347238	
		Hydrocodone**	8.0E-04	U	ug/L	P347238	

Non-Conformance Report

NCR ID: 7105

Event(s)

SO-DIST-2018-06-26-02

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: Number of samples received did not match submittal form or RQ. Chemistry and biology samples logged in according to sample containers received, biology overflow samples (SD-SND-ECQ / ENT) logged in according to submittal form.

Resolution: Maryann Dugan was contacted by Amzad Shaik and John Watts, email correspondence attached to sample submittal forms.

Authorized by/Date: Joshua Ayres 7/2/2018

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347535

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347583

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347854

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347583

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347854

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L
Zinc	1.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347792

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347765

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347940

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348026

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348070

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347684

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347926

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347748

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347837

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347567

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347568

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P347238

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P347494

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P347808

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-97
Batch ID: P347809

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P347910

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P347911

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347905

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P347907

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P347812

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P348058

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P347986

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P348329

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347583

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347583

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	94.0		P	85 - 115
Cadmium	98.0		P	85 - 115
Chromium	93.4		P	85 - 115
Copper	91.9		P	85 - 115
Lead	93.3		P	85 - 115
Nickel	94.3		P	85 - 115
Silver	98.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.6		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	89.8		P	85 - 115
Copper	95.0		P	85 - 115
Lead	97.5		P	85 - 115
Nickel	89.1		P	85 - 115
Silver	92.8		P	85 - 115
Zinc	95.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347792

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347940

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348026

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347748

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347568

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

Reference Method: EPA 8321B
Batch ID: P347238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	40 - 150
Acetaminophen	108		P	30 - 150
Bentazon	111		P	30 - 150
Carbamazepine	92.3		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P347238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	85.7		P	40 - 150
Fenuron	106		P	40 - 150
Fluridone	89.0		P	40 - 150
Hydrocodone	101		P	40 - 150
Imazapyr	90.5		P	40 - 150
Imidacloprid	97.2		P	40 - 160
Linuron	63.6		P	40 - 150
MCP	118		P	40 - 150
Primidone	91.4		P	40 - 150
Pyraclostrobin	87.4		P	40 - 150
Triclopyr	113		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	108		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P347808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P347809

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P347812

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P348058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P348329

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

Reference Method: SM 5310 B-00
Batch ID: P348329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003131	Iron	105	102	P/P	80 - 120
2003131	Zinc	105	101	P/P	80 - 120
2003284	Iron	107		P	80 - 120
2003284	Zinc	105		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003325	Iron	98.7	100	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003131	Arsenic	94.8	94.5	P/P	80 - 120
2003131	Cadmium	98.7	96.5	P/P	80 - 120
2003131	Chromium	95.2	94.6	P/P	80 - 120
2003131	Copper	93.7	92.6	P/P	80 - 120
2003131	Lead	95.1	93.4	P/P	80 - 120
2003131	Nickel	94.6	93.0	P/P	80 - 120
2003131	Silver	97.8	96.9	P/P	80 - 120
2003284	Arsenic	96.4		P	80 - 120
2003284	Cadmium	98.3		P	80 - 120
2003284	Chromium	94.0		P	80 - 120
2003284	Copper	90.6		P	80 - 120
2003284	Lead	95.0		P	80 - 120
2003284	Nickel	94.5		P	80 - 120
2003284	Silver	98.2		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003325	Arsenic	113	114	P/P	70 - 130
2003325	Cadmium	105	105	P/P	70 - 130
2003325	Chromium	86.3	88.1	P/P	70 - 130
2003325	Copper	99.7	99.8	P/P	70 - 130
2003325	Lead	112	113	P/P	70 - 130
2003325	Nickel	105	108	P/P	70 - 130
2003325	Silver	95.6	99.0	P/P	70 - 130
2003325	Zinc	101	103	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347792

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003262	Sulfate	102		P	90 - 110
2003448	Sulfate	97.9		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002310	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003281	Ammonia-N	96.3	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003452	Kjeldahl Nitrogen	97.2	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002571	Kjeldahl Nitrogen	97.4	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003294	NO2NO3-N	98.1	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002941	NO2NO3-N	96.7	96.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002938	Total-P	94.1	89.6	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003431	Total-P	97.5	94.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003171	O-Phosphate-P	97.7	97.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003313	O-Phosphate-P	99.2	99.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P347238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003323	2,4-D	109	108	P/P	40 - 150
2003323	Acetaminophen	80.3	82.9	P/P	30 - 150
2003323	Bentazon	39.3	40.8	P/P	30 - 150
2003323	Carbamazepine	62.4	65.7	P/P	40 - 150
2003323	Diuron	59.4	62.2	P/P	40 - 150
2003323	Fenuron	70.3	71.6	P/P	40 - 150
2003323	Fluridone	79.7	77.6	P/P	40 - 150
2003323	Hydrocodone	80.5	80.8	P/P	40 - 150
2003323	Imazapyr	99.3	113	P/P	40 - 150
2003323	Imidacloprid	129	141	P/P	40 - 160
2003323	Linuron	57.2	51.2	P/P	40 - 150
2003323	MCP	128	132	P/P	40 - 150
2003323	Primidone	79.5	74.8	P/P	40 - 150
2003323	Pyraclostrobin	77.7	82.2	P/P	40 - 150
2003323	Triclopyr	117	132	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003557	Sucralose	110	127	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P347812

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003212	Fluoride	96.3	97.4	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P348058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003727	Fluoride	94.8	94.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003263	Organic Carbon	100		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P348329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002566	Organic Carbon	97.6	98.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003262	Turbidity	6.79	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003131	Iron	2.84	Spike	P	0 - 20
2003131	Zinc	3.26	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003325	Iron	1.48	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003131	Arsenic	0.315	Spike	P	0 - 20
2003131	Cadmium	2.20	Spike	P	0 - 20
2003131	Chromium	0.663	Spike	P	0 - 20
2003131	Copper	1.13	Spike	P	0 - 20
2003131	Lead	1.86	Spike	P	0 - 20
2003131	Nickel	1.65	Spike	P	0 - 20
2003131	Silver	0.904	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003325	Arsenic	0.808	Spike	P	0 - 20
2003325	Cadmium	0.520	Spike	P	0 - 20
2003325	Chromium	2.06	Spike	P	0 - 20
2003325	Copper	0.0343	Spike	P	0 - 20
2003325	Lead	0.305	Spike	P	0 - 20
2003325	Nickel	2.40	Spike	P	0 - 20
2003325	Silver	3.49	Spike	P	0 - 20
2003325	Zinc	1.80	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003448	Sulfate	2.69	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002310	Ammonia-N	1.14	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003281	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003452	Kjeldahl Nitrogen	1.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002571	Kjeldahl Nitrogen	0.817	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003294	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002941	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002938	Total-P	4.82	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003431	Total-P	2.33	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003171	O-Phosphate-P	0.335	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003313	O-Phosphate-P	0.150	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P347238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003323	2,4-D	0.495	Spike	P	0 - 30
2003323	Acetaminophen	3.25	Spike	P	0 - 30
2003323	Bentazon	2.66	Spike	P	0 - 30
2003323	Carbamazepine	4.22	Spike	P	0 - 30
2003323	Diuron	4.60	Spike	P	0 - 30
2003323	Fenuron	1.74	Spike	P	0 - 30
2003323	Fluridone	2.55	Spike	P	0 - 30
2003323	Hydrocodone	0.333	Spike	P	0 - 30
2003323	Imazapyr	2.32	Spike	P	0 - 30
2003323	Imidacloprid	7.45	Spike	P	0 - 30
2003323	Linuron	11.1	Spike	P	0 - 30
2003323	MCP	2.77	Spike	P	0 - 30
2003323	Primidone	5.66	Spike	P	0 - 30
2003323	Pyraclostrobin	5.60	Spike	P	0 - 30
2003323	Triclopyr	11.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P347494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003557	Sucralose	13.8	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P347808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003212	Total Alkalinity	0.951	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P347809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003358	Total Alkalinity	0.250	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P347910

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003448	TDS	6.36	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P347911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003449	TDS	6.85	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P347812

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003212	Fluoride	0.988	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P348058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003727	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P347986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003263	Organic Carbon	0.0	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P348329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002566	Organic Carbon	0.754	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: 2003322

Field Sample ID: G2SD0027

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	71.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.9	P	30 - 160
EPA 8321B	Diuron-d6	53.2	P	30 - 160
EPA 8321B	Primidone-d5	72.9	P	30 - 160
EPA 8321B	Sucralose-d6	90.9	P	40 - 160

Lab Sample ID: 2003323

Field Sample ID: G2SD0027_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	62.9	P	30 - 160
EPA 8321B	Diuron-d6	57.9	P	30 - 160
EPA 8321B	Primidone-d5	74.0	P	30 - 160
EPA 8321B	Sucralose-d6	82.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84846

Included Lab Sample IDs: 2003308, 2003309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	98.0	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84847

Included Lab Sample IDs: 2003308, 2003309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	98.9	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84855

Included Lab Sample IDs: 2003312, 2003313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.3	P/P	90 - 110
O-Phosphate-P	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84911

Included Lab Sample IDs: 2003310

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A84920

Included Lab Sample IDs: 2003324

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A84928

Included Lab Sample IDs: 2003324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84937

Included Lab Sample IDs: 2003311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A84947

Included Lab Sample IDs: 2003324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	94.1	93.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A84947

Included Lab Sample IDs: 2003324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	94.0	93.5	P/P	90 - 110
Chromium	94.1	93.4	P/P	90 - 110
Lead	94.3	93.8	P/P	90 - 110
Nickel	92.2	91.2	P/P	90 - 110
Silver	95.3	94.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A84959

Included Lab Sample IDs: 2003308, 2003309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	101	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A84959

Included Lab Sample IDs: 2003308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84974

Included Lab Sample IDs: 2003311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.4	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84988

Included Lab Sample IDs: 2003322, 2003323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	113	121	P/P	50 - 150
2,4-D	121	108	P/P	50 - 150
Acetaminophen	119	103	P/P	60 - 160
Acetaminophen	122	119	P/P	60 - 160
Bentazon	140	141	P/P	50 - 150
Bentazon	141	142	P/P	50 - 150
Carbamazepine	106	111	P/P	60 - 160
Carbamazepine	111	99.4	P/P	60 - 160
Diuron	109	111	P/P	60 - 150
Diuron	111	98.1	P/P	60 - 150
Fenuron	104	105	P/P	60 - 150
Fenuron	105	96.6	P/P	60 - 150
Fluridone	102	106	P/P	60 - 160
Fluridone	106	100	P/P	60 - 160
Hydrocodone	105	106	P/P	60 - 150
Hydrocodone	106	97.7	P/P	60 - 150
Imazapyr	92.8	89.1	P/P	50 - 150
Imazapyr	98.7	92.8	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A84988

Included Lab Sample IDs: 2003322, 2003323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	93.3	96.7	P/P	60 - 150
Imidacloprid	94.1	93.3	P/P	60 - 150
Linuron	95.8	80.8	P/P	60 - 150
Linuron	98.6	95.8	P/P	60 - 150
MCPP	118	124	P/P	50 - 150
MCPP	124	116	P/P	50 - 150
Primidone	93.5	96.8	P/P	60 - 150
Primidone	96.8	86.5	P/P	60 - 150
Pyraclostrobin	106	107	P/P	60 - 150
Pyraclostrobin	107	97.6	P/P	60 - 150
Triclopyr	113	117	P/P	50 - 160
Triclopyr	119	113	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84991

Included Lab Sample IDs: 2003310

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A85008

Included Lab Sample IDs: 2003311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A85013

Included Lab Sample IDs: 2003310

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A85021

Included Lab Sample IDs: 2003325

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A85023

Included Lab Sample IDs: 2003325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	105	106	P/P	90 - 110
Chromium	97.4	98.1	P/P	90 - 110
Nickel	96.2	97.8	P/P	90 - 110
Silver	99.5	100	P/P	90 - 110
Zinc	100	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A85034
Included Lab Sample IDs: 2003310

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	98.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A85042
Included Lab Sample IDs: 2003324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	99.4	95.8	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A85066
Included Lab Sample IDs: 2003322, 2003323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	114	P/P	60 - 150

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A85068
Included Lab Sample IDs: 2003325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	97.4	P/P	90 - 110
Copper	99.0	96.1	P/P	90 - 110
Lead	101	96.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A85074
Included Lab Sample IDs: 2003309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85090
Included Lab Sample IDs: 2003310

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.3	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85111
Included Lab Sample IDs: 2003311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.0	105	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A85182
Included Lab Sample IDs: 2003311

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

Reference Method: SM 5310 B-00
Run ID: A85182
Included Lab Sample IDs: 2003311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	102	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
EPA 180.1 Rev. 2.0	Turbidity								6.79	
EPA 200.7 Rev. 4.4	Iron	104			105	102	107			2.84
	Iron	103			98.7	100				1.48
	Zinc	104			105	101	105			3.26
EPA 200.8 Rev. 5.4	Arsenic	94.0			96.4	94.8	94.5			0.315
	Arsenic	98.6			113	114				0.808
	Cadmium	98.0			98.7	96.5	98.3			2.20
	Cadmium	100			105	105				0.520
	Chromium	93.4			95.2	94.6	94.0			0.663
	Chromium	89.8			86.3	88.1				2.06
	Copper	91.9			93.7	92.6	90.6			1.13
	Copper	95.0			99.7	99.8				0.0343
	Lead	93.3			95.1	93.4	95.0			1.86
	Lead	97.5			112	113				0.305
	Nickel	94.3			94.6	93.0	94.5			1.65
	Nickel	89.1			105	108				2.40
	Silver	98.3			97.8	96.9	98.2			0.904
	Silver	92.8			95.6	99.0				3.49
	Zinc	95.4			101	103				1.80
EPA 300.0 Rev. 2.1	Sulfate	100			97.9	102			2.69	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0			102	101				1.14
	Ammonia-N	96.9			96.3	98.0				1.66
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107			97.2	94.8				1.48
	Kjeldahl Nitrogen	97.6			97.4	98.6				0.817
EPA 353.2 Rev. 2.0	NO2NO3-N	100			98.1	98.1				0.0
	NO2NO3-N	101			96.7	96.7				0.0
EPA 365.1 Rev. 2.0	Total-P	97.8			94.1	89.6				4.82
	Total-P	94.6			97.5	94.7				2.33
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102			97.7	97.3				0.335
	O-Phosphate-P	101			99.2	99.4				0.150
EPA 8321B	2,4-D	104			109	108				0.495
	Acetaminophen	108			82.9	80.3				3.25
	Bentazon	111			39.3	40.8				2.66
	Carbamazepine	92.3			65.7	62.4				4.22
	Diuron	85.7			62.2	59.4				4.60
	Fenuron	106			71.6	70.3				1.74
	Fluridone	89.0			77.6	79.7				2.55
	Hydrocodone	101			80.8	80.5				0.333
	Imazapyr	90.5			113	99.3				2.32
	Imidacloprid	97.2			141	129				7.45
	Linuron	63.6			51.2	57.2				11.1
	MCPP	118			128	132				2.77
	Primidone	91.4			74.8	79.5				5.66
	Pyraclostrobin	87.4			82.2	77.7				5.60
	Sucralose	108			110	127				13.8
	Triclopyr	113			117	132				11.9
SM 2320 B-97	Total Alkalinity	103							0.951	
	Total Alkalinity	103							0.250	
SM 2540 C-97	TDS								6.36	
	TDS								6.85	
SM 4500 F-C-97	Fluoride	98.2			96.3	97.4				0.988
	Fluoride	98.2			94.8	94.1				0.473
SM 5310 B-00	Organic Carbon	94.4			100					0.0
	Organic Carbon	99.2			97.6	98.6				0.754

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2003308, 2003309
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2003324, 2003325
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2003324, 2003325
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2003308, 2003309
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2003310, 2003311
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2003310, 2003311
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2003310, 2003311
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2003310, 2003311
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2003312, 2003313
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2003322, 2003323
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2003322, 2003323
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2003308, 2003309
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2003308, 2003309
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2003308, 2003309
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2003308, 2003309
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2003310, 2003311

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	06/26/2018			06/26/2018 16:09	William L. Brown IV	2003308, 2003309
EPA 200.7 Rev. 4.4	06/26/2018	06/27/2018 14:40	Elliott D. Healy	06/28/2018 16:36	Betina Topolski	2003324
	06/26/2018	06/27/2018 14:40	Elliott D. Healy	06/29/2018 10:55	Betina Topolski	2003324
	06/26/2018	07/02/2018 17:35	Elliott D. Healy	07/03/2018 19:42	Betina Topolski	2003325
EPA 200.8 Rev. 5.4	06/26/2018	06/27/2018 14:40	Elliott D. Healy	06/29/2018 19:42	Robert K Palmer	2003324
	06/26/2018	06/27/2018 14:40	Elliott D. Healy	07/05/2018 14:20	Robert K Palmer	2003324
	06/26/2018	07/02/2018 17:35	Elliott D. Healy	07/03/2018 20:18	Allison Taylor	2003325
	06/26/2018	07/02/2018 17:35	Elliott D. Healy	07/06/2018 19:59	Allison Taylor	2003325
EPA 300.0 Rev. 2.1	06/26/2018			06/28/2018 19:12	Lipi Saha	2003308
	06/26/2018			06/28/2018 19:24	Lipi Saha	2003309
EPA 350.1 Rev. 2.0	06/26/2018			06/29/2018 12:16	Julia Storbeck	2003311
	06/26/2018			07/03/2018 14:23	Julia Storbeck	2003310
EPA 351.2 Rev. 2.0	06/26/2018	07/06/2018 14:45	Adrian Shelby	07/09/2018 14:41	Joseph Suarez	2003310
	06/26/2018	07/09/2018 12:47	Tanya Welborn	07/10/2018 10:50	Joseph Suarez	2003311
EPA 353.2 Rev. 2.0	06/26/2018			06/28/2018 12:59	Lauren Bottorf	2003310
	06/26/2018			07/03/2018 13:53	Lauren Bottorf	2003311
EPA 365.1 Rev. 2.0	06/26/2018	06/29/2018 11:10	Sima Feizi	07/02/2018 09:24	Beverly Y. Sanders	2003311
	06/26/2018	07/02/2018 12:00	Sima Feizi	07/03/2018 09:26	Beverly Y. Sanders	2003310
EPA 365.1 Rev. 2.0 dissolved	06/26/2018			06/26/2018 14:48	Megan Treadwell	2003313
	06/26/2018			06/26/2018 15:18	Megan Treadwell	2003312
EPA 8321B	06/26/2018	06/27/2018 08:30	Hoor Shaik	07/02/2018 11:00	Juyoung Kim	2003323
	06/26/2018	06/27/2018 08:30	Hoor Shaik	07/02/2018 18:34	Juyoung Kim	2003322
	06/26/2018	06/27/2018 08:30	Hoor Shaik	07/02/2018 22:36	Juyoung Kim	2003323
	06/26/2018	06/27/2018 08:30	Hoor Shaik	07/03/2018 06:05	Juyoung Kim	2003322
	06/26/2018	07/02/2018 13:00	Mohammad Ghaffari	07/05/2018 20:35	Mohammad Ghaffari	2003322
	06/26/2018	07/02/2018 13:00	Mohammad Ghaffari	07/05/2018 20:54	Mohammad Ghaffari	2003323
SM 2320 B-97	06/26/2018			07/01/2018 02:55	Dale L. Simmons	2003308
	06/26/2018			07/01/2018 06:22	Dale L. Simmons	2003309
SM 2540 C-97	06/26/2018			06/28/2018 15:21	Yijie Li	2003308, 2003309
SM 2540 D-97	06/26/2018			06/28/2018 15:21	Yijie Li	2003308, 2003309
SM 4500 F-C-97	06/26/2018			07/01/2018 02:55	Dale L. Simmons	2003308
	06/26/2018			07/03/2018 15:03	Dale L. Simmons	2003309
SM 5310 B-00	06/26/2018			07/03/2018 12:41	Megan Treadwell	2003310
	06/26/2018			07/12/2018 05:33	Megan Treadwell	2003311