

Chemical Analysis Report

CEN-DIST-2018-05-03-02

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

Event Description: **Lady / Lorraine / Silver + D&B**

Request ID: **RQ-2018-04-09-45**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

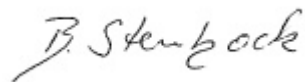
FL Dept. of Environmental Protection
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 22-MAY-2018 17:41



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: 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: LADY LAKE @ CENTER OF NORTH LOBE

Collection Date/Time: 05/02/2018 10:52

Field ID: G4CE0139

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989828	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P344609	
	EPA 300.0 Rev. 2.1	Chloride	9.9	A	mg Cl/L	P344996	
		Sulfate	7.7	A	mg SO4/L	P345000	
	SM 2120 B	Color (true)	17	A	PCU	P344579	
	SM 2320 B-97	Total Alkalinity	1.6	I	mg CaCO3/L	P345083	
	SM 2540 C-97	TDS	82		mg/L	P345217	
	SM 2540 D-97	TSS	2	I	mg/L	P344818	
	SM 4500 F-C-97	Fluoride	0.053	I	mg F/L	P345086	
1989829	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P344952	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P344767	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P344695	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P344807	
	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P345108	
1989830	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P344634	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE LORRAINE @ NE CORNER OF LAKE

Collection Date/Time: 05/02/2018 11:44

Field ID: G1CE0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989831	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P344609	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P344996	
		Sulfate	1.4		mg SO4/L	P345000	
	SM 2120 B	Color (true)	89		PCU	P344579	
	SM 2320 B-97	Total Alkalinity	52		mg CaCO3/L	P345083	
	SM 2540 C-97	TDS	143		mg/L	P345217	
	SM 2540 D-97	TSS	2	U	mg/L	P344818	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P345086	
1989832	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P345110	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P344767	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P344695	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P344807	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P345108	
1989833	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P344634	
1989851	EPA 8321B	2,4-D	0.0063	I	ug/L	P344559	
		Bentazon	8.0E-04	U	ug/L	P344559	
		MCP	0.0020	U	ug/L	P344559	
		Triclopyr**	0.0040	U	ug/L	P344559	
		Imidacloprid	0.0020	U	ug/L	P344559	
		Diuron	0.0020	U	ug/L	P344559	
		Pyraclostrobin**	0.0020	U	ug/L	P344559	
		Primidone**	0.0040	U	ug/L	P344559	

Field ID: G1CE0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989851	EPA 8321B	Linuron	0.0040	U	ug/L	P344559	
		Acetaminophen**	0.0080	U	ug/L	P344559	
		Fenuron	0.016	U	ug/L	P344559	
		Imazapyr**	0.044		ug/L	P344559	
		Carbamazepine**	4.0E-04	U	ug/L	P344559	
		Fluridone**	0.35		ug/L	P344559	
		Hydrocodone**	8.0E-04	U	ug/L	P344559	
		Sucralose**	0.10	U	ug/L	P344561	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: SILVER LAKE @ CENTER

Collection Date/Time: 05/02/2018 12:21

Field ID: G1CE0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989852	EPA 8321B	2,4-D	0.023		ug/L	P344559	
		Bentazon	0.0015	I	ug/L	P344559	
		MCP	0.0020	U	ug/L	P344559	
		Triclopyr**	0.0040	U	ug/L	P344559	
		Imidacloprid	0.0020	U	ug/L	P344559	
		Diuron	0.0020	U	ug/L	P344559	
		Pyraclostrobin**	0.0020	U	ug/L	P344559	
		Primidone**	0.0040	U	ug/L	P344559	
		Linuron	0.0040	U	ug/L	P344559	
		Acetaminophen**	0.0080	U	ug/L	P344559	
		Fenuron	0.016	U	ug/L	P344559	
		Imazapyr**	0.0040	U	ug/L	P344559	
		Carbamazepine**	4.0E-04	U	ug/L	P344559	
		Fluridone**	4.0E-04	U	ug/L	P344559	
		Hydrocodone**	8.0E-04	U	ug/L	P344559	
		Sucralose**	0.15	I	ug/L	P344561	

Sample Location: SILVER LAKE @ CENTER

Collection Date/Time: 05/02/2018 12:25

Field ID: G1CE0007_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989853	EPA 8321B	2,4-D	0.028		ug/L	P344559	
		Bentazon	0.0015	I	ug/L	P344559	
		MCP	0.0020	U	ug/L	P344559	
		Triclopyr**	0.0040	U	ug/L	P344559	
		Imidacloprid	0.0020	U	ug/L	P344559	
		Diuron	0.0020	U	ug/L	P344559	
		Pyraclostrobin**	0.0020	U	ug/L	P344559	
		Primidone**	0.0040	U	ug/L	P344559	
		Linuron	0.0040	U	ug/L	P344559	

Field ID: G1CE0007_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989853	EPA 8321B	Acetaminophen**	0.0080	U	ug/L	P344559	
		Fenuron	0.016	U	ug/L	P344559	
		Imazapyr**	0.0040	U	ug/L	P344559	
		Carbamazepine**	4.0E-04	U	ug/L	P344559	
		Fluridone**	4.0E-04	U	ug/L	P344559	
		Hydrocodone**	8.0E-04	U	ug/L	P344559	
		Sucralose**	0.20	I	ug/L	P344561	

Sample Location: FIELD BLANK

Collection Date/Time: 05/02/2018 12:37

Field ID: BLANK_05022018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989854	EPA 8321B	2,4-D	0.0020	U	ug/L	P344559	
		Bentazon	8.0E-04	U	ug/L	P344559	
		MCP	0.0020	U	ug/L	P344559	
		Triclopyr**	0.0040	U	ug/L	P344559	
		Imidacloprid	0.0020	U	ug/L	P344559	
		Diuron	0.0020	U	ug/L	P344559	
		Pyraclostrobin**	0.0020	U	ug/L	P344559	
		Primidone**	0.0040	U	ug/L	P344559	
		Linuron	0.0040	U	ug/L	P344559	
		Acetaminophen**	0.0080	U	ug/L	P344559	
		Fenuron	0.016	U	ug/L	P344559	
		Imazapyr**	0.0040	U	ug/L	P344559	
		Carbamazepine**	4.0E-04	U	ug/L	P344559	
		Fluridone**	4.0E-04	U	ug/L	P344559	
		Hydrocodone**	8.0E-04	U	ug/L	P344559	
		Sucralose**	0.10	U	ug/L	P344561	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P344609

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P344996

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P345000

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P344952

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P345110

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P344767

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P344695

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: P344807

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P344634

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

Reference Method: EPA 8321B
 Batch ID: P344559

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P344561

Component	Result	Code	Units
Sucralose	0.10	U	ug/L

Reference Method: SM 2120 B
Batch ID: P344579

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P345083

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P345217

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P344818

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P345086

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P345108

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344996

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345000

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345000

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344952

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345110

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344767

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344695

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: P344807

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344634

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

Reference Method: EPA 8321B
Batch ID: P344559

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.1		P	40 - 150
Acetaminophen	91.8		P	30 - 150
Bentazon	88.9		P	30 - 150
Carbamazepine	67.1		P	40 - 150
Diuron	71.2		P	40 - 150
Fenuron	99.9		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Imazapyr	86.2		P	40 - 150
Imidacloprid	103		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P344559

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	84.1		P	40 - 150
MCPP	85.0		P	40 - 150
Primidone	83.3		P	40 - 150
Pyraclostrobin	71.1		P	40 - 150
Triclopyr	81.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P344561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	96.6		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P345083

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P345086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P345108

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344996

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989828	Chloride	100		P	90 - 110
1990070	Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989828	Sulfate	99.8		P	90 - 110
1990070	Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344952

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P344952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989710	Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P345110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989832	Ammonia-N	99.3	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P344767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990053	Kjeldahl Nitrogen	95.3	96.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P344695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989829	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P344634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989830	O-Phosphate-P	98.6	98.9	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P344559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989874	2,4-D	116	108	P/P	40 - 150
1989874	Acetaminophen	75.4	75.4	P/P	30 - 150
1989874	Bentazon	58.2	53.7	P/P	30 - 150
1989874	Carbamazepine	49.8	48.5	P/P	40 - 150
1989874	Diuron	52.3	53.8	P/P	40 - 150
1989874	Fenuron	51.7	55.9	P/P	40 - 150
1989874	Fluridone	80.2	87.3	P/P	40 - 150
1989874	Hydrocodone	83.4	85.4	P/P	40 - 150
1989874	Imazapyr	77.4	78.7	P/P	40 - 150
1989874	Imidacloprid	136	137	P/P	40 - 160
1989874	Linuron	81.5	84.7	P/P	40 - 150
1989874	MCP	113	106	P/P	40 - 150
1989874	Primidone	72.9	76.1	P/P	40 - 150
1989874	Pyraclostrobin	73.8	73.8	P/P	40 - 150
1989874	Triclopyr	103	95.1	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P344561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989731	Sucralose	114	99.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P345086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990181	Fluoride	96.6	97.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P345108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989766	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P344609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989764	Turbidity	6.22	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344996

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989828	Chloride	0.949	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989828	Sulfate	0.990	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989710	Ammonia-N	0.0326	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989832	Ammonia-N	0.805	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990053	Kjeldahl Nitrogen	1.07	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989829	NO2NO3-N	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989686	Total-P	0.511	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989830	O-Phosphate-P	0.304	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P344559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989874	2,4-D	5.80	Spike	P	0 - 30
1989874	Acetaminophen	0.0207	Spike	P	0 - 30
1989874	Bentazon	6.68	Spike	P	0 - 30
1989874	Carbamazepine	2.64	Spike	P	0 - 30
1989874	Diuron	1.87	Spike	P	0 - 30
1989874	Fenuron	6.10	Spike	P	0 - 30
1989874	Fluridone	7.88	Spike	P	0 - 30
1989874	Hydrocodone	2.33	Spike	P	0 - 30
1989874	Imazapyr	0.936	Spike	P	0 - 30
1989874	Imidacloprid	0.949	Spike	P	0 - 30
1989874	Linuron	3.88	Spike	P	0 - 30
1989874	MCP	6.70	Spike	P	0 - 30
1989874	Primidone	4.31	Spike	P	0 - 30
1989874	Pyraclostrobin	0.0324	Spike	P	0 - 30
1989874	Triclopyr	7.71	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P344561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989731	Sucralose	12.9	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P344579

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989828	Color (true)	10.5	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P345083

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990181	Total Alkalinity	0.836	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P345217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989923	TDS	0.570	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P345086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990181	Fluoride	0.953	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P345108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989766	Organic Carbon	0.138	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: 1989851
Field Sample ID: G1CE0061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	115	P	30 - 160
EPA 8321B	Acetaminophen-d4	49.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	39.6	P	30 - 160
EPA 8321B	Diuron-d6	47.7	P	30 - 160
EPA 8321B	Primidone-d5	54.2	P	30 - 160
EPA 8321B	Sucralose-d6	68.5	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1989852
Field Sample ID: G1CE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	95.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	36.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	48.7	P	30 - 160
EPA 8321B	Diuron-d6	45.7	P	30 - 160
EPA 8321B	Primidone-d5	51.6	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	40 - 160

Lab Sample ID: 1989853
Field Sample ID: G1CE0007_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	35.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	40.3	P	30 - 160
EPA 8321B	Diuron-d6	46.5	P	30 - 160
EPA 8321B	Primidone-d5	48.1	P	30 - 160
EPA 8321B	Sucralose-d6	94.8	P	40 - 160

Lab Sample ID: 1989854
Field Sample ID: BLANK_05022018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	108	P	30 - 160
EPA 8321B	Diuron-d6	100	P	30 - 160
EPA 8321B	Primidone-d5	91.5	P	30 - 160
EPA 8321B	Sucralose-d6	93.5	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A83634
Included Lab Sample IDs: 1989828, 1989831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.7	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83641
Included Lab Sample IDs: 1989828, 1989831

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83654
Included Lab Sample IDs: 1989830, 1989833

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A83654

Included Lab Sample IDs: 1989830, 1989833

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	98.8	P/P	90 - 110
O-Phosphate-P	99.6	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A83674

Included Lab Sample IDs: 1989829, 1989832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A83732

Included Lab Sample IDs: 1989828, 1989831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	102	P/P	90 - 110
Sulfate	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83751

Included Lab Sample IDs: 1989829, 1989832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.9	94.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A83769

Included Lab Sample IDs: 1989851, 1989852, 1989853, 1989854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	96.1	P/P	50 - 150
Bentazon	109	111	P/P	50 - 160
MCP	109	107	P/P	50 - 150
Triclopyr	101	98.2	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83773

Included Lab Sample IDs: 1989829

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83795

Included Lab Sample IDs: 1989829, 1989832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A83814

Included Lab Sample IDs: 1989828, 1989831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83814

Included Lab Sample IDs: 1989828, 1989831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A83819

Included Lab Sample IDs: 1989829, 1989832

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83820

Included Lab Sample IDs: 1989832

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

Reference Method: EPA 8321B

Run ID: A83883

Included Lab Sample IDs: 1989851, 1989852, 1989853, 1989854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	134	141	P/P	60 - 150
Acetaminophen	136	134	P/P	60 - 150
Carbamazepine	113	132	P/P	60 - 150
Carbamazepine	132	123	P/P	60 - 150
Diuron	123	133	P/P	60 - 150
Diuron	133	128	P/P	60 - 150
Fenuron	114	119	P/P	60 - 150
Fenuron	119	109	P/P	60 - 150
Fluridone	125	138	P/P	60 - 160
Fluridone	138	122	P/P	60 - 160
Hydrocodone	123	130	P/P	60 - 150
Hydrocodone	130	124	P/P	60 - 150
Imazapyr	104	105	P/P	50 - 150
Imazapyr	112	104	P/P	50 - 150
Imidacloprid	110	97.4	P/P	60 - 150
Imidacloprid	115	110	P/P	60 - 150
Linuron	106	116	P/P	60 - 150
Linuron	116	107	P/P	60 - 150
Primidone	101	99.4	P/P	60 - 150
Primidone	99.4	93.6	P/P	60 - 150
Pyraclostrobin	105	108	P/P	60 - 150
Pyraclostrobin	108	103	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A83902

Included Lab Sample IDs: 1989851, 1989852, 1989853, 1989854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	109	157	P/P	60 - 160

* 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				6.22	
EPA 300.0 Rev. 2.1	Chloride	99.6	100 98.4		0.949	
	Sulfate	97.5	99.8 98.1		0.990	
EPA 350.1 Rev. 2.0	Ammonia-N	107	104 104			0.0326
	Ammonia-N	101	99.3 100			0.805
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.0	95.3 96.7			1.07
EPA 353.2 Rev. 2.0	NO2NO3-N	101	100 102			1.49
EPA 365.1 Rev. 2.0	Total-P	104				0.511
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.6 98.9			0.304
EPA 8321B	2,4-D	81.1	116 108			5.80
	Acetaminophen	91.8	75.4 75.4			0.0207
	Bentazon	88.9	58.2 53.7			6.68
	Carbamazepine	67.1	49.8 48.5			2.64
	Diuron	71.2	52.3 53.8			1.87
	Fenuron	99.9	51.7 55.9			6.10
	Fluridone	102	80.2 87.3			7.88
	Hydrocodone	98.2	83.4 85.4			2.33
	Imazapyr	86.2	77.4 78.7			0.936
	Imidacloprid	103	136 137			0.949
	Linuron	84.1	81.5 84.7			3.88
	MCP	85.0	113 106			6.70
	Primidone	83.3	72.9 76.1			4.31
	Pyraclostrobin	71.1	73.8 73.8			0.0324
	Sucralose	96.6	114 99.2			12.9
	Triclopyr	81.9	103 95.1			7.71
SM 2120 B	Color (true)				10.5	
SM 2320 B-97	Total Alkalinity	101			0.836	
SM 2540 C-97	TDS				0.570	
SM 4500 F-C-97	Fluoride	96.2	96.6 97.7			0.953
SM 5310 B-00	Organic Carbon	101	100 101			0.138

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1989828, 1989831
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1989828, 1989831

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1989828, 1989831
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1989829, 1989832
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1989829, 1989832
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1989829, 1989832
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1989829, 1989832
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1989830, 1989833
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1989851, 1989852, 1989853, 1989854
SM 2120 B / E31780	True Color measured at 450 nm	1989828, 1989831
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1989828, 1989831
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1989828, 1989831
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1989828, 1989831
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1989828, 1989831
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1989829, 1989832

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	05/03/2018			05/03/2018 15:50	William L. Brown IV	1989828, 1989831
EPA 300.0 Rev. 2.1	05/03/2018			05/09/2018 09:22	Lipi Saha	1989828
	05/03/2018			05/09/2018 10:22	Lipi Saha	1989831
EPA 350.1 Rev. 2.0	05/03/2018			05/09/2018 12:03	Ping Hua	1989829
	05/03/2018			05/10/2018 11:12	Ping Hua	1989832
EPA 351.2 Rev. 2.0	05/03/2018	05/07/2018 11:30	Adrian Shelby	05/08/2018 15:15	Joseph Suarez	1989829
	05/03/2018	05/07/2018 11:30	Adrian Shelby	05/08/2018 15:16	Joseph Suarez	1989832
EPA 353.2 Rev. 2.0	05/03/2018			05/04/2018 13:35	Lauren Bottorf	1989829
	05/03/2018			05/04/2018 13:41	Lauren Bottorf	1989832
EPA 365.1 Rev. 2.0	05/03/2018	05/07/2018 13:25	Sima Feizi	05/09/2018 13:39	Beverly Y. Sanders	1989829
	05/03/2018	05/07/2018 13:25	Sima Feizi	05/09/2018 13:40	Beverly Y. Sanders	1989832
EPA 365.1 Rev. 2.0 dissolved	05/03/2018			05/03/2018 14:42	Megan Treadwell	1989830
	05/03/2018			05/03/2018 15:21	Megan Treadwell	1989833
EPA 8321B	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 14:18	Juyoung Kim	1989851
	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 14:36	Juyoung Kim	1989852
	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 14:55	Juyoung Kim	1989853
	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 15:14	Juyoung Kim	1989854
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 02:11	Juyoung Kim	1989851
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 02:46	Juyoung Kim	1989852
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 03:21	Juyoung Kim	1989853
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 03:55	Juyoung Kim	1989854
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 23:04	Juyoung Kim	1989851
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 23:39	Juyoung Kim	1989852
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/10/2018 00:13	Juyoung Kim	1989853
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/10/2018 01:22	Juyoung Kim	1989854
SM 2120 B	05/03/2018			05/03/2018 15:21	Tanya Welborn	1989828
	05/03/2018			05/03/2018 15:22	Tanya Welborn	1989831
SM 2320 B-97	05/03/2018			05/11/2018 06:42	Dale L. Simmons	1989828
	05/03/2018			05/11/2018 06:52	Dale L. Simmons	1989831
SM 2540 C-97	05/03/2018			05/04/2018 15:30	William L. Brown IV	1989828, 1989831
SM 2540 D-97	05/03/2018			05/04/2018 15:30	William L. Brown IV	1989828, 1989831
SM 4500 F-C-97	05/03/2018			05/11/2018 06:42	Dale L. Simmons	1989828
	05/03/2018			05/11/2018 06:52	Dale L. Simmons	1989831
SM 5310 B-00	05/03/2018			05/10/2018 22:49	Julia Storbeck	1989829
	05/03/2018			05/10/2018 23:03	Julia Storbeck	1989832