

Chemical Analysis Report

NW-DIST-2018-08-22-03

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

Event Description: **SPRING LAKE LVI**
Request ID: **RQ-2018-08-13-34**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 05-SEP-2018 11:34



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: SPRING LAKE CENTER

Collection Date/Time: 08/21/2018 14:00

Field ID: G3NW0164

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018995	EPA 180.1 Rev. 2.0	Turbidity	1.8	A	NTU	P350641	
	EPA 300.0 Rev. 2.1	Chloride	2.4		mg Cl/L	P350845	
		Sulfate	0.33	I	mg SO4/L	P350848	
	SM 2120 B	Color (true)	10		PCU	P350618	
	SM 2320 B-97	Total Alkalinity	2.4	I	mg CaCO3/L	P350793	
	SM 2540 C-97	TDS	18	I	mg/L	P351021	
	SM 2540 D-97	TSS	2	I	mg/L	P351016	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P350796	
2018996	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350839	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P350891	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P350853	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P350901	
	SM 5310 B-00	Organic Carbon	4.4		mg C/L	P350833	
2018997	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350607	
2019001	EPA 8321B	2,4-D	0.0020	U	ug/L	P350552	MS
		Bentazon	8.0E-04	U	ug/L	P350552	
		MCP	0.0020	U	ug/L	P350552	MS
		Triclopyr**	0.0040	U	ug/L	P350552	MS
		Imidacloprid	0.0020	U	ug/L	P350552	
		Diuron	0.0020	U	ug/L	P350552	
		Pyraclostrobin**	0.0020	U	ug/L	P350552	
		Primidone**	0.0040	U	ug/L	P350552	
		Linuron	0.0040	U	ug/L	P350552	
		Acetaminophen**	0.0080	U	ug/L	P350552	
		Fenuron	0.018	I	ug/L	P350552	
		Imazapyr**	0.0040	U	ug/L	P350552	
		Carbamazepine**	8.0E-04	U	ug/L	P350552	
		Fluridone**	4.0E-04	U	ug/L	P350552	
		Hydrocodone**	8.0E-04	U	ug/L	P350552	
		Naproxen**	0.0080	U	ug/L	P350552	
		Ibuprofen**	0.020	U	ug/L	P350552	
		Sucralose**	0.067		ug/L	P350504	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350641

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350845

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350848

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350839

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350891

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350853

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: P350901

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350607

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

Reference Method: EPA 8321B
Batch ID: P350504

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P350552

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	8.0E-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
Ibuprofen	0.020	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
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P350618

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P350793

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

Reference Method: SM 2540 C-97
Batch ID: P351021

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351016

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P350796

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P350833

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P350833

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: P350845

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P350848

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P350839

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: P350891

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P350853

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P350901

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P350607

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

Reference Method: EPA 8321B
 Batch ID: P350504

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	89.4		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P350552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	86.0		P	40 - 150
Acetaminophen	113		P	30 - 150
Bentazon	124		P	30 - 150
Carbamazepine	73.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P350552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	79.4		P	40 - 150
Fenuron	104		P	40 - 150
Fluridone	70.9		P	40 - 150
Hydrocodone	95.7		P	40 - 150
Ibuprofen	99.1		P	40 - 150
Imazapyr	89.1		P	40 - 150
Imidacloprid	104		P	40 - 160
Linuron	58.1		P	40 - 150
MCPP	99.3		P	40 - 150
Naproxen	82.8		P	40 - 150
Primidone	102		P	40 - 150
Pyraclostrobin	61.7		P	40 - 150
Triclopyr	104		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P350618

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P350793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P350796

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350833

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018855	Chloride	94.1		P	90 - 110
2018925	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350848

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018855	Sulfate	98.3		P	90 - 110
2018925	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350839

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018996	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018996	Kjeldahl Nitrogen	95.0	94.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018996	NO2NO3-N	99.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019022	Total-P	98.7	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018997	O-Phosphate-P	97.1	98.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P350504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019172	Sucralose	103	106	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P350552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019699	2,4-D	180	141	F/P	40 - 150
2019699	Acetaminophen	135	138	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P350552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019699	Bentazon	99.7	87.8	P/P	30 - 150
2019699	Carbamazepine	56.2	56.9	P/P	40 - 150
2019699	Diuron	64.4	64.8	P/P	40 - 150
2019699	Fenuron	75.4	76.2	P/P	40 - 150
2019699	Fluridone	58.9	57.5	P/P	40 - 150
2019699	Hydrocodone	84.2	80.4	P/P	40 - 150
2019699	Ibuprofen	96.9	92.2	P/P	40 - 150
2019699	Imazapyr	100	91.1	P/P	40 - 150
2019699	Imidacloprid	158	156	P/P	40 - 160
2019699	Linuron	54.8	57.3	P/P	40 - 150
2019699	MCPP	162	170	F/F	40 - 150
2019699	Naproxen	109	104	P/P	40 - 150
2019699	Primidone	91.9	91.1	P/P	40 - 150
2019699	Pyraclostrobin	71.0	68.6	P/P	40 - 150
2019699	Triclopyr	182	182	F/F	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P350796

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019110	Fluoride	99.6	99.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350833

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018797	Organic Carbon	97.5	97.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018995	Turbidity	2.22	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018855	Chloride	0.0733	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018855	Sulfate	0.0235	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018996	Ammonia-N	0.930	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018996	Kjeldahl Nitrogen	0.573	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018996	NO2NO3-N	2.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019022	Total-P	0.591	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018997	O-Phosphate-P	1.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P350504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019172	Sucralose	2.64	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P350552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019699	2,4-D	16.2	Spike	P	0 - 30
2019699	Acetaminophen	2.32	Spike	P	0 - 30
2019699	Bentazon	12.0	Spike	P	0 - 30
2019699	Carbamazepine	1.29	Spike	P	0 - 30
2019699	Diuron	0.587	Spike	P	0 - 30
2019699	Fenuron	1.09	Spike	P	0 - 30
2019699	Fluridone	1.59	Spike	P	0 - 30
2019699	Hydrocodone	4.54	Spike	P	0 - 30
2019699	Ibuprofen	4.93	Spike	P	0 - 30
2019699	Imazapyr	5.71	Spike	P	0 - 30
2019699	Imidacloprid	1.75	Spike	P	0 - 30
2019699	Linuron	4.50	Spike	P	0 - 30
2019699	MCP	5.31	Spike	P	0 - 30
2019699	Naproxen	4.41	Spike	P	0 - 30
2019699	Primidone	0.918	Spike	P	0 - 30
2019699	Pyraclostrobin	3.38	Spike	P	0 - 30
2019699	Triclopyr	0.0605	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P350618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018925	Color (true)	1.52	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P350793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019110	Total Alkalinity	0.105	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P351021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019013	TDS	4.12	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P350796

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

Reference Method: SM 4500 F-C-97
Batch ID: P350796

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019110	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P350833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018797	Organic Carbon	0.478	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: 2019001

Field Sample ID: G3NW0164

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	112	P	30 - 160
EPA 8321B	Acetaminophen-d4	135	P	30 - 160
EPA 8321B	Carbamazepine-d10	65.2	P	30 - 160
EPA 8321B	Diuron-d6	67.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	73.5	P	30 - 160
EPA 8321B	Primidone-d5	91.5	P	30 - 160
EPA 8321B	Sucralose-d6	94.0	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86049

Included Lab Sample IDs: 2018995

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86064

Included Lab Sample IDs: 2018997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	98.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A86065

Included Lab Sample IDs: 2018995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.5	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86071

Included Lab Sample IDs: 2018995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A86110

Included Lab Sample IDs: 2019001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	77.3	86.8	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A86129

Included Lab Sample IDs: 2018995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86129

Included Lab Sample IDs: 2018995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86134

Included Lab Sample IDs: 2019001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.4	83.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A86134
Included Lab Sample IDs: 2019001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	78.1	85.1	P/P	50 - 160
Ibuprofen	99.1	108	P/P	50 - 160
MCP	94.1	94.4	P/P	50 - 150
Naproxen	81.0	74.5	P/P	50 - 160
Triclopyr	81.1	96.4	P/P	50 - 160

Reference Method: SM 5310 B-00
Run ID: A86150
Included Lab Sample IDs: 2018996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A86153
Included Lab Sample IDs: 2018996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A86155
Included Lab Sample IDs: 2018996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A86195
Included Lab Sample IDs: 2019001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	113	124	P/P	60 - 150
Carbamazepine	99.5	100	P/P	60 - 150
Diuron	122	120	P/P	60 - 150
Fenuron	109	105	P/P	60 - 150
Fluridone	112	107	P/P	60 - 160
Hydrocodone	110	111	P/P	60 - 150
Imazapyr	92.9	100	P/P	50 - 150
Imidacloprid	112	109	P/P	60 - 150
Linuron	111	102	P/P	60 - 150
Primidone	109	113	P/P	60 - 150
Pyraclostrobin	96.5	95.4	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A86206
Included Lab Sample IDs: 2018996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86208

Included Lab Sample IDs: 2018996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.2	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.22	
EPA 300.0 Rev. 2.1	Chloride	103	94.1	101		0.0733	
	Sulfate	102	98.3	101		0.0235	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0	102	101			0.930
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	95.0	94.3			0.573
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	99.5	102			2.48
EPA 365.1 Rev. 2.0	Total-P	98.9	98.7	99.4			0.591
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4	97.1	98.3			1.23
EPA 8321B	2,4-D	86.0	180	141			16.2
	Acetaminophen	113	135	138			2.32
	Bentazon	124	99.7	87.8			12.0
	Carbamazepine	73.5	56.2	56.9			1.29
	Diuron	79.4	64.4	64.8			0.587
	Fenuron	104	75.4	76.2			1.09
	Fluridone	70.9	58.9	57.5			1.59
	Hydrocodone	95.7	84.2	80.4			4.54
	Ibuprofen	99.1	96.9	92.2			4.93
	Imazapyr	89.1	100	91.1			5.71
	Imidacloprid	104	158	156			1.75
	Linuron	58.1	54.8	57.3			4.50
	MCPP	99.3	162	170			5.31
	Naproxen	82.8	109	104			4.41
	Primidone	102	91.9	91.1			0.918
	Pyraclostrobin	61.7	71.0	68.6			3.38
	Sucralose	89.4	103	106			2.64
	Triclopyr	104	182	182			0.0605
SM 2120 B	Color (true)	99.2				1.52	
SM 2320 B-97	Total Alkalinity	105				0.105	
SM 2540 C-97	TDS					4.12	
SM 4500 F-C-97	Fluoride	100	99.6	99.6			0.0
SM 5310 B-00	Organic Carbon	99.8	97.5	97.0			0.478

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2018995
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2018995
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2018995
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2018996
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2018996
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2018996
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2018996
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2018997
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2019001
SM 2120 B / E31780	True Color measured at 450 nm	2018995
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2018995
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2018995

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2018995
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2018995
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2018996

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	08/22/2018			08/22/2018 17:25	Megan Treadwell	2018995
EPA 300.0 Rev. 2.1	08/22/2018			08/24/2018 06:46	Lipi Saha	2018995
EPA 350.1 Rev. 2.0	08/22/2018			08/27/2018 11:07	Ping Hua	2018996
EPA 351.2 Rev. 2.0	08/22/2018	08/29/2018 15:30	Adrian Shelby	08/30/2018 12:18	Joseph Suarez	2018996
EPA 353.2 Rev. 2.0	08/22/2018			08/28/2018 11:41	Lauren Bottorf	2018996
EPA 365.1 Rev. 2.0	08/22/2018	08/29/2018 13:20	Sima Feizi	08/30/2018 11:55	Beverly Y. Sanders	2018996
EPA 365.1 Rev. 2.0 dissolved	08/22/2018			08/22/2018 14:20	Julia Storbeck	2018997
EPA 8321B	08/22/2018	08/23/2018 12:45	Mohammad Ghaffari	08/24/2018 11:51	Mohammad Ghaffari	2019001
	08/22/2018	08/23/2018 13:00	Hoor Shaik	08/26/2018 04:28	Juyoung Kim	2019001
	08/22/2018	08/23/2018 13:00	Hoor Shaik	08/26/2018 10:41	Juyoung Kim	2019001
SM 2120 B	08/22/2018			08/22/2018 16:15	William L. Brown IV	2018995
SM 2320 B-97	08/22/2018			08/25/2018 09:34	Dale L. Simmons	2018995
SM 2540 C-97	08/22/2018			08/24/2018 16:01	Yijie Li	2018995
SM 2540 D-97	08/22/2018			08/24/2018 16:01	Yijie Li	2018995
SM 4500 F-C-97	08/22/2018			08/25/2018 09:34	Dale L. Simmons	2018995
SM 5310 B-00	08/22/2018			08/27/2018 22:19	Megan Treadwell	2018996