

Chemical Analysis Report

NE-DIST-2018-11-14-02

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

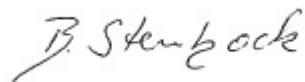
Event Description: **Possum creek SCI**
Request ID: **RQ-2018-11-12-21**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 03-DEC-2018 16:02



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: Possum Cr. 400m Downstream of NW 16th

Collection Date/Time: 11/13/2018 12:00

Field ID: G1NE0930

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2041125	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P354700	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P355178	
		Sulfate	17		mg SO4/L	P355180	
	SM 2120 B	Color (true)	21		PCU	P354679	
	SM 2320 B-97	Total Alkalinity	81		mg CaCO3/L	P354960	
	SM 2540 C-97	TDS	170	A	mg/L	P354855	
	SM 2540 D-97	TSS	3	IA	mg/L	P354868	
	SM 4500 F-C-97	Fluoride	0.38		mg F/L	P354962	
2041126	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P354940	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P354804	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.75		mg N/L	P354821	
	EPA 365.1 Rev. 2.0	Total-P	0.92		mg P/L	P354830	
	SM 5310 B-00	Organic Carbon	3.6		mg C/L	P354837	
2041127	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.82		mg P/L	P354682	
2041145	EPA 8321B	2,4-D	0.0020	U	ug/L	P354661	
		Bentazon	0.0012	I	ug/L	P354661	
		MCP	0.0020	U	ug/L	P354661	
		Triclopyr**	0.0040	U	ug/L	P354661	
		Imidacloprid	0.022		ug/L	P354661	MS
		Diuron	0.0020	U	ug/L	P354661	
		Pyraclostrobin**	0.0020	U	ug/L	P354661	
		Primidone**	0.0040	U	ug/L	P354661	
		Linuron	0.0040	U	ug/L	P354661	
		Acetaminophen**	0.0080	U	ug/L	P354661	
		Fenuron	0.016	U	ug/L	P354661	
		Imazapyr**	0.016		ug/L	P354661	
		Carbamazepine**	8.0E-04	U	ug/L	P354661	
		Fluridone**	0.0040		ug/L	P354661	
		Hydrocodone**	8.0E-04	U	ug/L	P354661	
		Naproxen**	0.0080	U	ug/L	P354661	
		Ibuprofen**	0.020	U	ug/L	P354661	
		Sucralose**	0.21		ug/L	P354685	
		Acesulfame K**	0.10	U	ug/L	P354685	

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.

EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P354700

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355178

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355180

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354940

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354804

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354821

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354830

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354682

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

Reference Method: EPA 8321B
Batch ID: P354661

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P354661

Component	Result	Code	Units
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: EPA 8321B
Batch ID: P354685

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P354679

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P354960

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

Reference Method: SM 2540 C-97
Batch ID: P354855

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P354868

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P354962

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P354837

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: P355178

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P355180

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P354940

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: P354804

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P354821

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P354830

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P354682

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

Reference Method: EPA 8321B
 Batch ID: P354661

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	96.5		P	40 - 150
Acetaminophen	86.8		P	30 - 150
Bentazon	99.3		P	30 - 150
Carbamazepine	71.8		P	40 - 150
Diuron	67.5		P	40 - 150
Fenuron	105		P	40 - 150
Fluridone	99.2		P	40 - 150
Hydrocodone	108		P	40 - 150
Ibuprofen	75.3		P	40 - 150
Imazapyr	80.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P354661

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	102		P	40 - 160
Linuron	64.5		P	40 - 150
MCPP	105		P	40 - 150
Naproxen	93.8		P	40 - 150
Primidone	78.8		P	40 - 150
Pyraclostrobin	58.9		P	40 - 150
Triclopyr	97.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P354685

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	92.2		P	40 - 150
Sucralose	113		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P354679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.1		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P354960

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

Reference Method: SM 4500 F-C-97
Batch ID: P354962

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

Reference Method: SM 5310 B-00
Batch ID: P354837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2039565	Chloride	99.2		P	90 - 110
2041072	Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2039565	Sulfate	97.4		P	90 - 110
2041072	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2041126	Ammonia-N	93.6	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2041126	Kjeldahl Nitrogen	99.1	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354821

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2041106	NO2NO3-N	104	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354682

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2040993	O-Phosphate-P	93.4	94.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P354661

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2041667	Acetaminophen	96.9	96.8	P/P	30 - 150
2041667	Bentazon	35.7	34.8	P/P	30 - 150
2041667	Carbamazepine	73.3	71.2	P/P	40 - 150
2041667	Diuron	50.2	59.7	P/P	40 - 150
2041667	Fenuron	92.3	89.3	P/P	40 - 150
2041667	Fluridone	97.2	105	P/P	40 - 150
2041667	Hydrocodone	114	130	P/P	40 - 150
2041667	Ibuprofen	72.2	76.4	P/P	40 - 150
2041667	Imazapyr	111	100	P/P	40 - 150
2041667	Imidacloprid	190	180	F/F	40 - 160
2041667	Linuron	61.1	60.0	P/P	40 - 150
2041667	MCP	144	146	P/P	40 - 150
2041667	Naproxen	110	104	P/P	40 - 150
2041667	Primidone	91.7	98.4	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P354661

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2041667	Pyraclostrobin	64.6	56.5	P/P	40 - 150
2041667	Triclopyr	144	134	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P354685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2041076	Acesulfame K	143	140	P/P	40 - 150
2041076	Sucralose	104	107	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P354962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2040905	Fluoride	100	99.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P354837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2040987	Organic Carbon	105	98.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P354700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041092	Turbidity	2.57	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2039565	Chloride	0.173	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2039565	Sulfate	0.855	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041126	Ammonia-N	8.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041126	Kjeldahl Nitrogen	3.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041106	NO2NO3-N	1.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041126	Total-P	0.513	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2040993	O-Phosphate-P	0.959	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P354661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041667	2,4-D	1.90	Spike	P	0 - 30
2041667	Acetaminophen	0.0403	Spike	P	0 - 30
2041667	Bentazon	2.67	Spike	P	0 - 30
2041667	Carbamazepine	2.92	Spike	P	0 - 30
2041667	Diuron	17.2	Spike	P	0 - 30
2041667	Fenuron	3.38	Spike	P	0 - 30
2041667	Fluridone	7.25	Spike	P	0 - 30
2041667	Hydrocodone	13.0	Spike	P	0 - 30
2041667	Ibuprofen	5.66	Spike	P	0 - 30
2041667	Imazapyr	10.1	Spike	P	0 - 30
2041667	Imidacloprid	5.29	Spike	P	0 - 30
2041667	Linuron	1.84	Spike	P	0 - 30
2041667	MCP	1.32	Spike	P	0 - 30
2041667	Naproxen	5.63	Spike	P	0 - 30
2041667	Primidone	7.10	Spike	P	0 - 30
2041667	Pyraclostrobin	13.4	Spike	P	0 - 30
2041667	Triclopyr	7.30	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P354685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041076	Acesulfame K	1.58	Spike	P	0 - 30
2041076	Sucralose	2.73	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P354679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041104	Color (true)	1.48	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P354960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2040905	Total Alkalinity	1.24	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P354855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2041125	TDS	7.62	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P354962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2040905	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P354837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2040987	Organic Carbon	4.21	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: 2041145
Field Sample ID: G1NE0930

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	123	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.3	P	30 - 160
EPA 8321B	Diuron-d6	67.9	P	30 - 160
EPA 8321B	Endothall-d6	99.3	P	40 - 160
EPA 8321B	Ibuprofen-d3	99.6	P	30 - 160
EPA 8321B	Primidone-d5	93.8	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A87755
Included Lab Sample IDs: 2041125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A87756
Included Lab Sample IDs: 2041127

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A87763
Included Lab Sample IDs: 2041125

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

Reference Method: EPA 8321B
Run ID: A87802
Included Lab Sample IDs: 2041145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	78.5	81.7	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A87823
Included Lab Sample IDs: 2041126

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

Reference Method: SM 5310 B-00
Run ID: A87828
Included Lab Sample IDs: 2041126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	95.2	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A87832
Included Lab Sample IDs: 2041145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.8	94.7	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A87853
Included Lab Sample IDs: 2041126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A87856

Included Lab Sample IDs: 2041145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.4	93.9	P/P	50 - 150
Acetaminophen	83.9	94.8	P/P	60 - 160
Bentazon	94.2	89.1	P/P	50 - 160
Carbamazepine	103	105	P/P	60 - 160
Diuron	96.1	99.4	P/P	60 - 150
Fenuron	96.2	97.4	P/P	60 - 150
Fluridone	117	113	P/P	60 - 160
Hydrocodone	119	111	P/P	60 - 150
Ibuprofen	96.2	89.8	P/P	50 - 160
Imazapyr	77.0	94.3	P/P	50 - 150
Imidacloprid	105	106	P/P	60 - 160
Linuron	101	94.3	P/P	60 - 150
MCP	97.3	96.7	P/P	50 - 150
Naproxen	98.6	94.6	P/P	50 - 160
Primidone	102	105	P/P	60 - 160
Pyraclostrobin	94.2	94.5	P/P	60 - 150
Triclopyr	90.2	99.6	P/P	50 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A87871

Included Lab Sample IDs: 2041126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	97.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A87886

Included Lab Sample IDs: 2041125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A87886

Included Lab Sample IDs: 2041125

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A87890

Included Lab Sample IDs: 2041126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	98.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A87993

Included Lab Sample IDs: 2041125

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A87993

Included Lab Sample IDs: 2041125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	102	103	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		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				2.57	
EPA 300.0 Rev. 2.1	Chloride	103	99.2	99.1	0.173	
	Sulfate	103	97.4	101	0.855	
EPA 350.1 Rev. 2.0	Ammonia-N	101	93.6	103		8.11
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	99.1	103		3.15
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	104	101		1.77
EPA 365.1 Rev. 2.0	Total-P	99.4				0.513
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	93.4	94.3		0.959
EPA 8321B	2,4-D	96.5				1.90
	Acesulfame K	92.2	143	140		1.58
	Acetaminophen	86.8	96.8	96.9		0.0403
	Bentazon	99.3	35.7	34.8		2.67
	Carbamazepine	71.8	71.2	73.3		2.92
	Diuron	67.5	59.7	50.2		17.2
	Fenuron	105	89.3	92.3		3.38
	Fluridone	99.2	105	97.2		7.25
	Hydrocodone	108	130	114		13.0
	Ibuprofen	75.3	72.2	76.4		5.66
	Imazapyr	80.9	111	100		10.1
	Imidacloprid	102	180	190		5.29
	Linuron	64.5	60.0	61.1		1.84
	MCP	105	144	146		1.32
	Naproxen	93.8	110	104		5.63
	Primidone	78.8	98.4	91.7		7.10
	Pyraclostrobin	58.9	56.5	64.6		13.4
	Sucralose	113	104	107		2.73
	Triclopyr	97.2	144	134		7.30
SM 2120 B	Color (true)	99.1			1.48	
SM 2320 B-97	Total Alkalinity	101			1.24	
SM 2540 C-97	TDS				7.62	
SM 4500 F-C-97	Fluoride	97.7	100	99.5		0.473
SM 5310 B-00	Organic Carbon	97.1	105	98.4		4.21

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2041125
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2041125
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2041125
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2041126
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2041126
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2041126
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2041126
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2041127
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2041145
SM 2120 B / E31780	True Color measured at 450 nm	2041125
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2041125

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2041125
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2041125
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2041125
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2041126

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	11/14/2018			11/14/2018 15:20	Megan Treadwell	2041125
EPA 300.0 Rev. 2.1	11/14/2018			11/28/2018 01:05	Lipi Saha	2041125
EPA 350.1 Rev. 2.0	11/14/2018			11/15/2018 12:30	Ping Hua	2041126
EPA 351.2 Rev. 2.0	11/14/2018	11/16/2018 11:30	Adrian Shelby	11/20/2018 10:06	Joseph Suarez	2041126
EPA 353.2 Rev. 2.0	11/14/2018			11/16/2018 11:52	Beverly Y. Sanders	2041126
EPA 365.1 Rev. 2.0	11/14/2018	11/16/2018 12:50	Sima Feizi	11/19/2018 10:18	Beverly Y. Sanders	2041126
EPA 365.1 Rev. 2.0 dissolved	11/14/2018			11/14/2018 16:53	Jhamieka S. Greenwood	2041127
EPA 8321B	11/14/2018	11/15/2018 08:00	Rebecca Ware	11/15/2018 15:12	Rebecca Ware	2041145
	11/14/2018	11/15/2018 08:00	Rebecca Ware	11/16/2018 17:57	Rebecca Ware	2041145
	11/14/2018	11/16/2018 10:00	Hoor Shaik	11/17/2018 11:44	Juyoung Kim	2041145
	11/14/2018	11/16/2018 10:00	Hoor Shaik	11/18/2018 05:02	Juyoung Kim	2041145
SM 2120 B	11/14/2018			11/14/2018 16:38	Chelsea Hernandez	2041125
SM 2320 B-97	11/14/2018			11/16/2018 02:47	Dale L. Simmons	2041125
SM 2540 C-97	11/14/2018			11/15/2018 14:02	Yijie Li	2041125
SM 2540 D-97	11/14/2018			11/15/2018 14:02	Yijie Li	2041125
SM 4500 F-C-97	11/14/2018			11/16/2018 02:47	Dale L. Simmons	2041125
SM 5310 B-00	11/14/2018			11/15/2018 11:52	Megan Treadwell	2041126