

Chemical Analysis Report

CEN-DIST-2018-09-07-02

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

Event Description: **Florida / Dot / Kasey / Fairhope**
Request ID: **RQ-2018-09-03-62**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-SEP-2018 11:46

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

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: Lake Dot @ Center

Collection Date/Time: 09/06/2018 09:48

Field ID: G2CE0067

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2023092	EPA 8321B	2,4-D	0.019		ug/L	P351258	
		Sucralose**	0.081		ug/L	P351269	
		Bentazon	0.086	J	ug/L	P351258	RPD
		MCP	0.0054	I	ug/L	P351258	
		Triclopyr**	0.0040	U	ug/L	P351258	
		Imidacloprid	0.028		ug/L	P351258	
		Diuron	0.035		ug/L	P351258	
		Pyraclostrobin**	0.0020	U	ug/L	P351258	
		Primidone**	0.0040	U	ug/L	P351258	
		Linuron	0.0040	U	ug/L	P351258	
		Acetaminophen**	0.016	I	ug/L	P351258	
		Fenuron	0.016	U	ug/L	P351258	
		Imazapyr**	0.0040	U	ug/L	P351258	
		Carbamazepine**	8.0E-04	U	ug/L	P351258	
		Fluridone**	0.0014	I	ug/L	P351258	
		Hydrocodone**	8.0E-04	U	ug/L	P351258	
		Naproxen**	0.0080	U	ug/L	P351258	
		Ibuprofen**	0.020	U	ug/L	P351258	
		Acesulfame K**	0.10	U	ug/L	P351269	MS

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the narrative for an explanation of QC Codes.

Sample Location: Lake Florida @ Center of Lake

Collection Date/Time: 09/06/2018 11:22

Field ID: G2CE0150

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2023083	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P351324	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P351861	
		Sulfate	3.1		mg SO4/L	P351865	
	SM 2120 B	Color (true)	73		PCU	P351299	
	SM 2320 B-97	Total Alkalinity	52		mg CaCO3/L	P351534	
	SM 2540 C-97	TDS	108	A	mg/L	P351796	
	SM 2540 D-97	TSS	5	IA	mg/L	P351729	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P351537	
2023084	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P351606	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P351484	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351586	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P351397	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P352043	
2023085	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351303	

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: P351324

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351861

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351865

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351606

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351484

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351586

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351397

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351303

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

Reference Method: EPA 8321B
Batch ID: P351258

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: P351258

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: P351269

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

Reference Method: SM 2120 B
Batch ID: P351299

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P351534

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

Reference Method: SM 2540 C-97
Batch ID: P351796

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351729

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351537

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: P352043

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: P351861

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351865

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351606

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351484

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351586

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351397

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351303

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

Reference Method: EPA 8321B
Batch ID: P351258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.7	97.3	P/P	40 - 150
Acetaminophen	134	135	P/P	30 - 150
Bentazon	96.3	148	P/P	30 - 150
Carbamazepine	87.3	90.0	P/P	40 - 150
Diuron	81.2	91.2	P/P	40 - 150
Fenuron	95.2	115	P/P	40 - 150
Fluridone	103	114	P/P	40 - 150
Hydrocodone	105	113	P/P	40 - 150
Ibuprofen	81.5	95.1	P/P	40 - 150
Imazapyr	75.7	80.1	P/P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P351258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	94.4	100	P/P	40 - 160
Linuron	71.7	72.9	P/P	40 - 150
MCPP	91.4	116	P/P	40 - 150
Naproxen	102	93.2	P/P	40 - 150
Primidone	80.8	95.6	P/P	40 - 150
Pyraclostrobin	78.6	91.2	P/P	40 - 150
Triclopyr	98.2	118	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	74.1		P	40 - 150
Sucralose	92.1		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P351299

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.7		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P351534

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

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P352043

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: P351861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022932	Chloride	104		P	90 - 110
2023016	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351865

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022932	Sulfate	101		P	90 - 110
2023016	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023020	Ammonia-N	95.1	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023164	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023022	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023165	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023170	O-Phosphate-P	99.3	99.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P351269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023047	Acesulfame K	28.9	30.2	F/F	40 - 150
2023047	Sucralose	112	115	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023223	Fluoride	98.2	98.2	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P352043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023023	Organic Carbon	99.4	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023070	Turbidity	1.29	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022932	Chloride	0.0907	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022932	Sulfate	0.353	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023020	Ammonia-N	3.35	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023164	Kjeldahl Nitrogen	0.530	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023022	NO2NO3-N	0.948	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023165	Total-P	0.359	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023170	O-Phosphate-P	0.302	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P351258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	2,4-D	8.16	LCS	P	0 - 30
LFB	Acetaminophen	1.08	LCS	P	0 - 30
LFB	Bentazon	42.4	LCS	F	0 - 30
LFB	Carbamazepine	3.09	LCS	P	0 - 30
LFB	Diuron	11.6	LCS	P	0 - 30
LFB	Fenuron	18.7	LCS	P	0 - 30
LFB	Fluridone	9.32	LCS	P	0 - 30
LFB	Hydrocodone	7.04	LCS	P	0 - 30
LFB	Ibuprofen	15.4	LCS	P	0 - 30
LFB	Imazapyr	5.56	LCS	P	0 - 30
LFB	Imidacloprid	5.88	LCS	P	0 - 30
LFB	Linuron	1.62	LCS	P	0 - 30
LFB	MCPP	23.4	LCS	P	0 - 30
LFB	Naproxen	9.25	LCS	P	0 - 30
LFB	Primidone	16.8	LCS	P	0 - 30
LFB	Pyraclostrobin	14.8	LCS	P	0 - 30
LFB	Triclopyr	18.4	LCS	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P351269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023047	Acesulfame K	4.38	Spike	P	0 - 30
2023047	Sucralose	2.25	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P351299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023018	Color (true)	0.673	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P351534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023223	Total Alkalinity	1.14	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P351796

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023083	TDS	8.29	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023223	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P352043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023023	Organic Carbon	0.996	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: 2023092

Field Sample ID: G2CE0067

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	116	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.6	P	30 - 160
EPA 8321B	Diuron-d6	72.7	P	30 - 160
EPA 8321B	Endothall-d6	100	P	40 - 160
EPA 8321B	Endothall-d6	100	P	40 - 160
EPA 8321B	Ibuprofen-d3	79.3	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A86351
Included Lab Sample IDs: 2023083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A86353
Included Lab Sample IDs: 2023085

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.1	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A86357
Included Lab Sample IDs: 2023092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	84.5	78.9	P/P	60 - 150

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A86366
Included Lab Sample IDs: 2023083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	104	102	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A86410
Included Lab Sample IDs: 2023092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.3	110	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A86431
Included Lab Sample IDs: 2023092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.4	83.5	P/P	50 - 150
Bentazon	120	110	P/P	50 - 160
Ibuprofen	67.7	86.7	P/P	50 - 160
MCP	61.9	94.3	P/P	50 - 150
Naproxen	66.1	109	P/P	50 - 160
Triclopyr	113	100	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A86437
Included Lab Sample IDs: 2023084

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A86448
Included Lab Sample IDs: 2023083

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A86448
Included Lab Sample IDs: 2023083

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A86460
Included Lab Sample IDs: 2023084

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A86462
Included Lab Sample IDs: 2023084

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A86508
Included Lab Sample IDs: 2023084

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	108	109	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A86566
Included Lab Sample IDs: 2023083

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

Reference Method: SM 5310 B-00
Run ID: A86629
Included Lab Sample IDs: 2023084

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	97.4	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A86633
Included Lab Sample IDs: 2023092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	120	131	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A86633

Included Lab Sample IDs: 2023092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbamazepine	118	137	P/P	60 - 160
Diuron	102	126	P/P	60 - 150
Fenuron	88.7	130	P/P	60 - 150
Fluridone	117	120	P/P	60 - 160
Hydrocodone	107	128	P/P	60 - 150
Imazapyr	112	88.8	P/P	50 - 150
Imidacloprid	79.6	108	P/P	60 - 150
Linuron	97.9	101	P/P	60 - 150
Primidone	104	108	P/P	60 - 150
Pyraclostrobin	101	112	P/P	60 - 150

* 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						1.29	
EPA 300.0 Rev. 2.1	Chloride	106		104	103		0.0907	
	Sulfate	105		101	102		0.353	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4		95.1	100			3.35
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		102	102			0.530
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104		105	106			0.948
EPA 365.1 Rev. 2.0	Total-P	101		102	103			0.359
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		99.3	99.6			0.302
EPA 8321B	2,4-D	89.7	97.3			8.16		
	Acesulfame K	74.1		28.9	30.2			4.38
	Acetaminophen	134	135			1.08		
	Bentazon	96.3	148			42.4		
	Carbamazepine	87.3	90.0			3.09		
	Diuron	81.2	91.2			11.6		
	Fenuron	95.2	115			18.7		
	Fluridone	103	114			9.32		
	Hydrocodone	105	113			7.04		
	Ibuprofen	81.5	95.1			15.4		
	Imazapyr	75.7	80.1			5.56		
	Imidacloprid	94.4	100			5.88		
	Linuron	71.7	72.9			1.62		
	MCPP	91.4	116			23.4		
	Naproxen	102	93.2			9.25		
	Primidone	80.8	95.6			16.8		
	Pyraclostrobin	78.6	91.2			14.8		
	Sucralose	92.1		112	115			2.25
	Triclopyr	98.2	118			18.4		
SM 2120 B	Color (true)	98.7					0.673	
SM 2320 B-97	Total Alkalinity	103					1.14	
SM 2540 C-97	TDS						8.29	
SM 4500 F-C-97	Fluoride	99.2		98.2	98.2			0.0
SM 5310 B-00	Organic Carbon	101		99.4	101			0.996

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2023083
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2023083
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2023083
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2023084
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2023084
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2023084
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2023084
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2023085
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2023092
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2023092
SM 2120 B / E31780	True Color measured at 450 nm	2023083

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2023083
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2023083
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2023083
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2023083
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2023084

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	09/07/2018			09/07/2018 16:38	Megan Treadwell	2023083
EPA 300.0 Rev. 2.1	09/07/2018			09/18/2018 11:44	Lipi Saha	2023083
EPA 350.1 Rev. 2.0	09/07/2018			09/12/2018 13:12	Ping Hua	2023084
EPA 351.2 Rev. 2.0	09/07/2018	09/12/2018 10:45	Adrian Shelby	09/14/2018 17:17	Joseph Suarez	2023084
EPA 353.2 Rev. 2.0	09/07/2018			09/13/2018 12:28	Lauren Bottorf	2023084
EPA 365.1 Rev. 2.0	09/07/2018	09/11/2018 12:05	Sima Feizi	09/12/2018 12:17	Beverly Y. Sanders	2023084
EPA 365.1 Rev. 2.0 dissolved	09/07/2018			09/07/2018 16:09	Julia Storbeck	2023085
EPA 8321B	09/07/2018	09/09/2018 16:45	Mohammad Ghaffari	09/10/2018 01:08	Mohammad Ghaffari	2023092
	09/07/2018	09/09/2018 16:45	Mohammad Ghaffari	09/11/2018 13:21	Mohammad Ghaffari	2023092
	09/07/2018	09/10/2018 13:00	Hoor Shaik	09/12/2018 04:25	Juyoung Kim	2023092
	09/07/2018	09/10/2018 13:00	Hoor Shaik	09/21/2018 08:32	Mohammad Ghaffari	2023092
SM 2120 B	09/07/2018			09/07/2018 15:22	DeAsia Armster	2023083
SM 2320 B-97	09/07/2018			09/13/2018 03:55	Dale L. Simmons	2023083
SM 2540 C-97	09/07/2018			09/12/2018 15:16	Yijie Li	2023083
SM 2540 D-97	09/07/2018			09/12/2018 15:16	Yijie Li	2023083
SM 4500 F-C-97	09/07/2018			09/13/2018 03:55	Dale L. Simmons	2023083
SM 5310 B-00	09/07/2018			09/20/2018 04:12	Megan Treadwell	2023084