

Chemical Analysis Report

WQAP-2018-03-21-01

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

Event Description: **Continuous Monitoring BD**
Request ID: **RQ-2018-03-12-68**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3525
Tallahassee, FL 32399-2400
Attn: Curtis Musson

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 06-APR-2018 15:28

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular 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: Craig CR @ Hendricks Ave

Collection Date/Time: 03/20/2018 09:25

Field ID: 20030793

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1976125	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P341951	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P342136	
		Sulfate	36		mg SO4/L	P342140	
	SM 2120 B	Color (true)	64		PCU	P341941	
	SM 2320 B-97	Total Alkalinity	128		mg CaCO3/L	P342404	
	SM 2540 C-97	TDS	236		mg/L	P342545	
	SM 2540 D-97	TSS	3	I	mg/L	P342560	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P342405	MS, RPD
1976126	EPA 350.1 Rev. 2.0	Ammonia-N	0.092		mg N/L	P342302	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P341986	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P341997	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P342036	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P342552	
1976127	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P341968	

Ref. Method and Comment:

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

Sample Location: Craig CR @ Hendricks Ave

Collection Date/Time: 03/20/2018 09:25

Field ID: 20030793

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1976131	EPA 8321B	2,4-D	3.7		ug/L	P341805	
		Sucralose**	0.51		ug/L	P341684	
		Bentazon	0.0067	J	ug/L	P341805	MS
		MCP	0.0020	U	ug/L	P341805	
		Triclopyr**	0.0040	U	ug/L	P341805	
		Imidacloprid	0.034		ug/L	P342060	MS
		Diuron	0.0051	I	ug/L	P342060	
		Pyraclostrobin**	0.0020	U	ug/L	P342060	
		Primidone**	0.0040	U	ug/L	P342060	
		Linuron	0.0040	U	ug/L	P342060	
		Acetaminophen**	0.17		ug/L	P342060	
		Fenuron	0.016	U	ug/L	P342060	
		Imazapyr**	0.033		ug/L	P342060	
		Carbamazepine**	4.0E-04	U	ug/L	P342060	
		Fluridone**	0.0054		ug/L	P342060	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P341951

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342136

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342140

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342302

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341986

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P341997

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342036

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P341968

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

Reference Method: EPA 8321B
Batch ID: P341684

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P341805

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCP	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P342060

Component	Result	Code	Units
Acetaminophen	0.0080	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L

Reference Method: SM 2120 B
Batch ID: P341941

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P342404

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

Reference Method: SM 2540 C-97
Batch ID: P342545

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P342560

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P342405

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: P342552

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: P342136

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342140

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342302

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341986

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P341997

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342036

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P341968

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

Reference Method: EPA 8321B
Batch ID: P341684

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

Reference Method: EPA 8321B
 Batch ID: P341684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	115		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P341805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	80.4		P	40 - 150
Bentazon	74.9		P	30 - 150
MCP	82.0		P	40 - 150
Triclopyr	73.5		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P342060

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	102		P	30 - 150
Carbamazepine	63.9		P	40 - 150
Diuron	62.3		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	56.9		P	40 - 150
Imazapyr	73.3		P	40 - 150
Imidacloprid	95.8		P	40 - 160
Linuron	76.5		P	40 - 150
Primidone	107		P	40 - 150
Pyraclostrobin	67.4		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P342404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	98 - 107

Reference Method: SM 4500 F-C-97
 Batch ID: P342405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P342552

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P342136

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976045	Chloride	97.1		P	90 - 110
1976144	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976045	Sulfate	99.5		P	90 - 110
1976144	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1975809	Ammonia-N	97.3	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976115	Kjeldahl Nitrogen	100	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P341997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976054	NO2NO3-N	98.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976115	Total-P	99.4	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P341968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976117	O-Phosphate-P	95.0	96.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P341684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1975318	Sucralose	110	97.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P341805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976131	Bentazon	21.6	20.0	F/F	30 - 150
1976131	MCPP	53.2	52.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P341805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976131	Triclopyr	46.8	42.5	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P342060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976869	Acetaminophen	127	122	P/P	30 - 150
1976869	Carbamazepine	76.4	71.8	P/P	40 - 150
1976869	Diuron	69.4	72.3	P/P	40 - 150
1976869	Fenuron	96.0	86.2	P/P	40 - 150
1976869	Fluridone	58.0	59.2	P/P	40 - 150
1976869	Imazapyr	46.7	57.6	P/P	40 - 150
1976869	Imidacloprid	192	196	F/F	40 - 160
1976869	Linuron	80.5	85.5	P/P	40 - 150
1976869	Primidone	115	111	P/P	40 - 150
1976869	Pyraclostrobin	70.9	70.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P342405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1976044	Fluoride	133	95.9	F/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P342552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1974186	Organic Carbon	106	96.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P341951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976114	Turbidity	2.87	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P342136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976045	Chloride	0.705	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P342140

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976045	Sulfate	1.61	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1975809	Ammonia-N	0.513	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976115	Kjeldahl Nitrogen	0.864	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P341997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976054	NO2NO3-N	1.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976115	Total-P	0.584	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P341968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976117	O-Phosphate-P	1.15	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P341684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1975318	Sucralose	9.71	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P341805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976131	Bentazon	5.65	Spike	P	0 - 30
1976131	MCP	0.734	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P341805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976131	Triclopyr	9.72	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P342060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976869	Acetaminophen	3.77	Spike	P	0 - 30
1976869	Carbamazepine	6.26	Spike	P	0 - 30
1976869	Diuron	4.12	Spike	P	0 - 30
1976869	Fenuron	10.7	Spike	P	0 - 30
1976869	Fluridone	2.03	Spike	P	0 - 30
1976869	Imazapyr	15.2	Spike	P	0 - 30
1976869	Imidacloprid	1.96	Spike	P	0 - 30
1976869	Linuron	6.00	Spike	P	0 - 30
1976869	Primidone	3.27	Spike	P	0 - 30
1976869	Pyraclostrobin	1.21	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P341941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976113	Color (true)	4.80	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P342404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976044	Total Alkalinity	0.0545	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P342545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976114	TDS	2.99	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P342405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976044	Fluoride	25.7	Spike	F	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P342552

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

Reference Method: SM 5310 B-00
Batch ID: P342552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1974186	Organic Carbon	5.62	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: 1976131
Field Sample ID: 20030793

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	100	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.4	P	30 - 160
EPA 8321B	Diuron-d6	66.4	P	30 - 160
EPA 8321B	Primidone-d5	97.8	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A82750
Included Lab Sample IDs: 1976125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	94.5	95.2	P/P	90 - 110
Sulfate	94.9	97.2	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A82761
Included Lab Sample IDs: 1976125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A82763
Included Lab Sample IDs: 1976125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A82774
Included Lab Sample IDs: 1976127

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A82782

Included Lab Sample IDs: 1976126

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82813

Included Lab Sample IDs: 1976126

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A82848

Included Lab Sample IDs: 1976126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	95.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A82866

Included Lab Sample IDs: 1976131

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.9	93.5	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A82884

Included Lab Sample IDs: 1976131

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	105	96.5	P/P	50 - 150
Acetaminophen	104	113	P/P	60 - 150
Bentazon	95.0	99.6	P/P	50 - 150
Carbamazepine	100	111	P/P	60 - 150
Diuron	112	121	P/P	60 - 150
Fenuron	100	99.6	P/P	60 - 150
Fluridone	109	108	P/P	60 - 160
Imazapyr	91.6	80.6	P/P	50 - 150
Imidacloprid	103	97.5	P/P	60 - 150
Linuron	116	118	P/P	60 - 150
MCP	104	110	P/P	50 - 150
Primidone	104	99.1	P/P	60 - 150
Pyraclostrobin	98.5	102	P/P	60 - 150
Triclopyr	103	106	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82889

Included Lab Sample IDs: 1976126

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
 Run ID: A82926
 Included Lab Sample IDs: 1976125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.0	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Run ID: A82926
 Included Lab Sample IDs: 1976125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	97.1	P/P	90 - 110

Reference Method: SM 5310 B-00
 Run ID: A82980
 Included Lab Sample IDs: 1976126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	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		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.87	
EPA 300.0 Rev. 2.1	Chloride	100		97.1	104		0.705	
	Sulfate	103		99.5	105		1.61	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4		97.3	98.0			0.513
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.3		100	99.1			0.864
EPA 353.2 Rev. 2.0	NO2NO3-N	103		98.0	96.5			1.18
EPA 365.1 Rev. 2.0	Total-P	102		99.4	98.8			0.584
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0		95.0	96.1			1.15
EPA 8321B	2,4-D	80.4						
	Acetaminophen	102		127	122			3.77
	Bentazon	74.9		21.6	20.0			5.65
	Carbamazepine	63.9		76.4	71.8			6.26
	Diuron	62.3		69.4	72.3			4.12
	Fenuron	112		96.0	86.2			10.7
	Fluridone	56.9		58.0	59.2			2.03
	Imazapyr	73.3		46.7	57.6			15.2
	Imidacloprid	95.8		192	196			1.96
	Linuron	76.5		80.5	85.5			6.00
	MCP	82.0		53.2	52.8			0.734
	Primidone	107		115	111			3.27
	Pyraclostrobin	67.4		70.9	70.0			1.21
	Sucralose	115		110	97.2			9.71
	Triclopyr	73.5		46.8	42.5			9.72
SM 2120 B	Color (true)						4.80	
SM 2320 B-97	Total Alkalinity	98.9					0.0545	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
					LCS	
SM 2540 C-97	TDS				2.99	
SM 4500 F-C-97	Fluoride	95.3	133	95.9		25.7
SM 5310 B-00	Organic Carbon	100	106	96.3		5.62

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1976125
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1976125
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1976125
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1976126
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1976126
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1976126
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1976126
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1976127
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1976131
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1976131
SM 2120 B / E31780	True Color measured at 450 nm	1976125
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1976125
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1976125
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1976125
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1976125
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1976126

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	03/21/2018			03/21/2018 16:20	DeAsia Armster	1976125
EPA 300.0 Rev. 2.1	03/21/2018			03/23/2018	Julia Storbeck	1976125
EPA 350.1 Rev. 2.0	03/21/2018			03/27/2018	Ping Hua	1976126
EPA 351.2 Rev. 2.0	03/21/2018	03/22/2018	Adrian Shelby	03/23/2018	Joseph Suarez	1976126
EPA 353.2 Rev. 2.0	03/21/2018			03/22/2018	Beverly Y. Sanders	1976126
EPA 365.1 Rev. 2.0	03/21/2018	03/22/2018	Sima Feizi	03/23/2018	Lipi Saha	1976126
EPA 365.1 Rev. 2.0 dissolved	03/21/2018			03/21/2018 16:07	Megan Treadwell	1976127
EPA 8321B	03/21/2018	03/22/2018	Hoor Shaik	03/23/2018	Julie Michelle Frank	1976131
	03/21/2018	03/22/2018	Hoor Shaik	03/24/2018	Julie Michelle Frank	1976131
	03/21/2018	03/22/2018	Hoor Shaik	03/25/2018	Julie Michelle Frank	1976131
	03/21/2018	03/23/2018	Hoor Shaik	03/25/2018	Julie Michelle Frank	1976131
	03/21/2018	03/26/2018	Julie Michelle Frank	03/27/2018	Juyoung Kim	1976131
SM 2120 B	03/21/2018			03/21/2018 16:01	Tanya Welborn	1976125
SM 2320 B-97	03/21/2018			03/28/2018	Dale L. Simmons	1976125
SM 2540 C-97	03/21/2018			03/24/2018	Yijie Li	1976125
SM 2540 D-97	03/21/2018			03/24/2018	Yijie Li	1976125
SM 4500 F-C-97	03/21/2018			03/28/2018	Dale L. Simmons	1976125
SM 5310 B-00	03/21/2018			03/31/2018	Megan Treadwell	1976126