

Chemical Analysis Report

CEN-DIST-2018-02-06-03

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

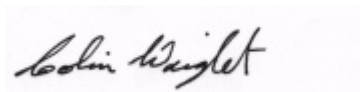
Event Description: **Long Branch / Crane Strand / CS Drain / UnDrain**
Request ID: **RQ-2018-02-05-73**
Customer: **CEN-DIST**
Project ID: **SMP**

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

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Certified by: Colin Wright, Program Administrator

Date Certified: 06-MAR-2018 13:49

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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: Metals, 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: UNNAMED DRAIN @ LAKE LIVE OAK RD.

Collection Date/Time: 02/05/2018 11:42

Field ID: G2CE0168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964933	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P339411	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P339950	
		Sulfate	30		mg SO4/L	P339954	
	SM 2120 B	Color (true)	75		PCU	P339423	
	SM 2320 B-97	Total Alkalinity	136		mg CaCO3/L	P340124	
	SM 2540 C-97	TDS	372		mg/L	P339838	
	SM 2540 D-97	TSS	4	I	mg/L	P339802	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P340138	
1964935	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P339960	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P339564	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P339853	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P339658	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P340090	
1964937	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P339449	
1964980	EPA 200.7 Rev. 4.4	Calcium	40.6		mg/L	P339505	
		Iron	220		ug/L	P339505	
		Magnesium	7.15		mg/L	P339505	
		Potassium	10.6		mg/L	P339505	
		Sodium	87.2		mg/L	P339505	
	EPA 200.8 Rev. 5.4	Zinc	14	I	ug/L	P339505	
		Arsenic	0.79		ug/L	P339505	
		Cadmium	0.020	U	ug/L	P339505	
		Chromium	0.51	I	ug/L	P340191	
		Copper	1.17		ug/L	P339505	
		Lead	0.20	I	ug/L	P339505	
		Nickel	0.74	I	ug/L	P340191	
		Silver	0.010	U	ug/L	P339505	

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: UNNAMED DRAIN @ AVALON PARK BLVD

Collection Date/Time: 02/05/2018 12:10

Field ID: G2CE0169

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964934	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P339411	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P339950	
		Sulfate	32		mg SO4/L	P339954	
	SM 2120 B	Color (true)	78		PCU	P339423	
	SM 2320 B-97	Total Alkalinity	142		mg CaCO3/L	P340124	
	SM 2540 C-97	TDS	415	A	mg/L	P339839	
	SM 2540 D-97	TSS	2	IA	mg/L	P339803	
	SM 4500 F-C-97	Fluoride	0.43		mg F/L	P340138	
1964936	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P339960	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P339564	

Field ID: G2CE0169

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964936	EPA 353.2 Rev. 2.0	NO2NO3-N	0.33		mg N/L	P339853	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P339658	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P340090	
1964938	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P339449	
1964981	EPA 200.7 Rev. 4.4	Calcium	41.0		mg/L	P339505	
		Iron	190		ug/L	P339505	
		Magnesium	7.49		mg/L	P339505	
		Potassium	11.6		mg/L	P339505	
		Sodium	96.0		mg/L	P339505	
		Zinc	16	I	ug/L	P339505	
	EPA 200.8 Rev. 5.4	Arsenic	0.81		ug/L	P339505	
		Cadmium	0.020	U	ug/L	P339505	
		Chromium	0.57	I	ug/L	P340191	
		Copper	0.89		ug/L	P339505	
		Lead	0.13	I	ug/L	P339505	
		Nickel	0.93		ug/L	P340191	
		Silver	0.010	U	ug/L	P339505	

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: CRANE STRAND DRAIN @ 100M US OF UNIVERSITY BLVD

Collection Date/Time: 02/05/2018 13:52

Field ID: G2CE0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964925	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P339411	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P339950	
		Sulfate	9.9		mg SO4/L	P339954	
		Color (true)	36	A	PCU	P339423	
	SM 2320 B-97	Total Alkalinity	76		mg CaCO3/L	P340124	
	SM 2540 C-97	TDS	158		mg/L	P339838	
	SM 2540 D-97	TSS	4	I	mg/L	P339802	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P340138	
1964928	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P339960	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P339562	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P339852	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P339607	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P340090	
1964931	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P339449	
1964975	EPA 8321B	2,4-D	0.0091		ug/L	P339489	
		Sucralose**	0.38		ug/L	P339388	
		Bentazon	0.030		ug/L	P339489	MS
		MCP	0.0044	I	ug/L	P339489	MS
		Triclopyr**	0.0040	U	ug/L	P339489	MS
		Imidacloprid	0.016		ug/L	P339489	MS

Field ID: G2CE0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964975	EPA 8321B	Diuron	0.0037	I	ug/L	P339489	
		Primidone**	0.0040	U	ug/L	P339489	
		Linuron	0.0040	U	ug/L	P339489	
		Acetaminophen**	0.044		ug/L	P339489	
		Fenuron	0.0080	U	ug/L	P339489	
		Carbamazepine**	5.0E-04	I	ug/L	P339489	
		Fluridone**	0.023		ug/L	P339489	
1964978	EPA 200.7 Rev. 4.4	Calcium	33.4		mg/L	P339505	
		Iron	280		ug/L	P339505	
		Magnesium	3.05		mg/L	P339505	
		Potassium	2.1		mg/L	P339505	
		Sodium	11.4		mg/L	P339505	
		Zinc	5.0	U	ug/L	P339505	
	EPA 200.8 Rev. 5.4	Arsenic	0.60		ug/L	P339505	
		Cadmium	0.020	U	ug/L	P339505	
		Chromium	0.61	I	ug/L	P340191	
		Copper	1.83		ug/L	P339505	
		Lead	0.33		ug/L	P339505	
		Nickel	0.35	I	ug/L	P340191	
		Silver	0.010	U	ug/L	P339505	

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: CRANE STRAND DRAIN @ 250M NORTH OF UNIVERSITY BLVD

Collection Date/Time: 02/05/2018 14:18

Field ID: G2CE0157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964926	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P339411	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P339950	
		Sulfate	10		mg SO4/L	P339954	
		Color (true)	36		PCU	P339423	
	SM 2320 B-97	Total Alkalinity	76	A	mg CaCO3/L	P340124	
	SM 2540 C-97	TDS	152		mg/L	P339838	
	SM 2540 D-97	TSS	2	I	mg/L	P339802	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P340138	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P339960	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P339564	
1964929	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P339852	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P339607	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P340090	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.055		mg P/L	P339450	
	EPA 8321B	2,4-D	0.010		ug/L	P339489	
1964976		Sucralose**	0.39		ug/L	P339388	
		Bentazon	0.028		ug/L	P339489	MS
		MCP	0.0041	I	ug/L	P339489	MS

Field ID: G2CE0157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964976	EPA 8321B	Triclopyr**	0.0040	U	ug/L	P339489	MS
		Imidacloprid	0.016		ug/L	P339489	MS
		Diuron	0.0036	I	ug/L	P339489	
		Primidone**	0.0040	U	ug/L	P339489	
		Linuron	0.0040	U	ug/L	P339489	
		Acetaminophen**	0.040		ug/L	P339489	
		Fenuron	0.0080	U	ug/L	P339489	
		Carbamazepine**	4.0E-04	I	ug/L	P339489	
		Fluridone**	0.023		ug/L	P339489	
1964979	EPA 200.7 Rev. 4.4	Calcium	33.6		mg/L	P339505	
		Iron	280		ug/L	P339505	
		Magnesium	3.07		mg/L	P339505	
		Potassium	2.1		mg/L	P339505	
		Sodium	11.3		mg/L	P339505	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P339505	
		Arsenic	0.60		ug/L	P339505	
		Cadmium	0.020	U	ug/L	P339505	
		Chromium	0.55	I	ug/L	P340191	
		Copper	1.65		ug/L	P339505	
		Lead	0.26		ug/L	P340191	
		Nickel	0.32	I	ug/L	P340191	
		Silver	0.010	U	ug/L	P339505	

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: P339411

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P339505

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P339505

Component	Result	Code	Units
Arsenic	0.050	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339505

Component	Result	Code	Units
Cadmium	0.020	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340191

Component	Result	Code	Units
Chromium	0.40	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339950

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339954

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339960

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339562

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339564

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339852

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339853

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339607

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339658

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339449

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339450

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

Reference Method: EPA 8321B
Batch ID: P339388

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P339489

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P339423

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P340124

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

Reference Method: SM 2540 C-97
Batch ID: P339838

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P339839

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P339802

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P339803

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P340138

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P340090

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339505

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	105		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	104		P	85 - 115
Sodium	105		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	106		P	85 - 115
Cadmium	104		P	85 - 115
Copper	102		P	85 - 115
Lead	107		P	85 - 115
Silver	91.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340191

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	98.3		P	85 - 115
Lead	100		P	85 - 115
Nickel	99.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339954

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339960

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339564

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339852

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339853

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: P339607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339658

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: P339449

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339450

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

Reference Method: EPA 8321B
Batch ID: P339388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	69.5		P	40 - 150
Acetaminophen	92.2		P	30 - 150
Bentazon	87.1		P	30 - 150
Carbamazepine	85.8		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P339489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	76.3		P	40 - 150
Fenuron	96.9		P	40 - 150
Fluridone	74.6		P	40 - 150
Imidacloprid	83.4		P	40 - 160
Linuron	80.2		P	40 - 150
MCPP	67.6		P	40 - 150
Primidone	105		P	40 - 150
Triclopyr	69.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P340124

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.2		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P340138

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P340090

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964772	Calcium	100		P	80 - 120
1964772	Iron	107		P	80 - 120
1964772	Magnesium	109		P	80 - 120
1964772	Potassium	102		P	80 - 120
1964772	Sodium	103		P	80 - 120
1964772	Zinc	105		P	80 - 120
1964978	Calcium	103		P	80 - 120
1964978	Iron	107	106	P/P	80 - 120
1964978	Magnesium	111	109	P/P	80 - 120
1964978	Potassium	103	103	P/P	80 - 120
1964978	Sodium	105		P	80 - 120
1964978	Zinc	106	108	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339505

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964772	Arsenic	108		P	80 - 120
1964772	Cadmium	104		P	80 - 120
1964772	Copper	105		P	80 - 120
1964772	Lead	108		P	80 - 120
1964772	Silver	90.2		P	80 - 120
1964978	Arsenic	108	108	P/P	80 - 120
1964978	Cadmium	103	108	P/P	80 - 120
1964978	Copper	99.1	99.8	P/P	80 - 120
1964978	Lead	109	110	P/P	80 - 120
1964978	Silver	91.0	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964772	Chromium	98.8		P	80 - 120
1964772	Lead	102		P	80 - 120
1964772	Nickel	97.8		P	80 - 120
1964979	Chromium	99.2	97.9	P/P	80 - 120
1964979	Lead	103	102	P/P	80 - 120
1964979	Nickel	99.1	98.0	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964823	Chloride	103		P	90 - 110
1965134	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964823	Sulfate	106		P	90 - 110
1965134	Sulfate	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339960

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964928	Ammonia-N	96.8	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964824	Kjeldahl Nitrogen	98.6	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339564

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965123	Kjeldahl Nitrogen	91.6	93.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964814	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964935	NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964824	Total-P	96.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339658

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964936	Total-P	98.4	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964818	O-Phosphate-P	98.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964932	O-Phosphate-P	98.6	98.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P339388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964717	Sucralose	100	102	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964945	2,4-D	46.1	49.4	P/P	40 - 150
1964945	Acetaminophen	123	108	P/P	30 - 150
1964945	Bentazon	27.3	29.7	F/F	30 - 150
1964945	Carbamazepine	85.1	84.5	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P339489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964945	Diuron	77.2	74.5	P/P	40 - 150
1964945	Fenuron	85.0	83.1	P/P	40 - 150
1964945	Fluridone	67.3	65.9	P/P	40 - 150
1964945	Imidacloprid	165	146	F/P	40 - 160
1964945	Linuron	79.8	83.0	P/P	40 - 150
1964945	MCP	38.1	40.3	F/P	40 - 150
1964945	Primidone	105	108	P/P	40 - 150
1964945	Triclopyr	39.1	40.4	F/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P340138

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964926	Fluoride	95.7	95.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P340090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964906	Organic Carbon	102	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964909	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964978	Calcium	0.104	Spike	P	0 - 20
1964978	Iron	1.22	Spike	P	0 - 20
1964978	Magnesium	1.12	Spike	P	0 - 20
1964978	Potassium	0.178	Spike	P	0 - 20
1964978	Sodium	0.365	Spike	P	0 - 20
1964978	Zinc	2.35	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964978	Arsenic	0.595	Spike	P	0 - 20
1964978	Cadmium	4.50	Spike	P	0 - 20
1964978	Copper	0.665	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964978	Lead	0.718	Spike	P	0 - 20
1964978	Silver	10.5	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964979	Chromium	1.26	Spike	P	0 - 20
1964979	Lead	1.23	Spike	P	0 - 20
1964979	Nickel	1.17	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964823	Chloride	0.604	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964823	Sulfate	0.194	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964928	Ammonia-N	0.418	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964824	Kjeldahl Nitrogen	1.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965123	Kjeldahl Nitrogen	1.31	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964814	NO2NO3-N	0.269	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964935	NO2NO3-N	0.197	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964824	Total-P	3.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964936	Total-P	2.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964818	O-Phosphate-P	0.978	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964932	O-Phosphate-P	0.130	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P339388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964717	Sucralose	1.33	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P339489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964945	2,4-D	7.05	Spike	P	0 - 30
1964945	Acetaminophen	12.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P339489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964945	Bentazon	6.75	Spike	P	0 - 30
1964945	Carbamazepine	0.653	Spike	P	0 - 30
1964945	Diuron	2.39	Spike	P	0 - 30
1964945	Fenuron	2.26	Spike	P	0 - 30
1964945	Fluridone	2.11	Spike	P	0 - 30
1964945	Imidacloprid	11.4	Spike	P	0 - 30
1964945	Linuron	3.93	Spike	P	0 - 30
1964945	MCPP	5.65	Spike	P	0 - 30
1964945	Primidone	3.58	Spike	P	0 - 30
1964945	Triclopyr	3.31	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P339423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964925	Color (true)	3.73	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P340124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964926	Total Alkalinity	0.822	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P339838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964813	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P339839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964934	TDS	5.30	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P340138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964926	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P340090

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: P340090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964906	Organic Carbon	0.0608	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: 1964975
Field Sample ID: G2CE0077

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	44.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	134	P	30 - 160
EPA 8321B	Carbamazepine-d10	107	P	30 - 160
EPA 8321B	Diuron-d6	95.8	P	30 - 160
EPA 8321B	Primidone-d5	138	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	40 - 160

Lab Sample ID: 1964976
Field Sample ID: G2CE0157

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	40.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.3	P	30 - 160
EPA 8321B	Diuron-d6	82.7	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81879
Included Lab Sample IDs: 1964925, 1964926, 1964933, 1964934

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

Reference Method: SM 2120 B
Run ID: A81881
Included Lab Sample IDs: 1964925, 1964926, 1964933, 1964934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.7	99.3	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A81897

Included Lab Sample IDs: 1964931, 1964932, 1964937, 1964938

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	99.5	99.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A81938

Included Lab Sample IDs: 1964978, 1964979, 1964980, 1964981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	105	106	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110
Copper	103	104	P/P	90 - 110
Lead	107	107	P/P	90 - 110
Silver	100	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A81944

Included Lab Sample IDs: 1964978, 1964979, 1964980, 1964981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.5	99.7	P/P	90 - 110
Iron	99.2	99.3	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	100	100	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Zinc	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81947

Included Lab Sample IDs: 1964928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A81950

Included Lab Sample IDs: 1964975, 1964976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	103	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81959

Included Lab Sample IDs: 1964929, 1964935, 1964936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81982

Included Lab Sample IDs: 1964928, 1964929, 1964935, 1964936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	99.0	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A82003

Included Lab Sample IDs: 1964925, 1964926, 1964933, 1964934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110
Chloride	107	103	P/P	90 - 110
Sulfate	103	106	P/P	90 - 110
Sulfate	107	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A82028

Included Lab Sample IDs: 1964928, 1964929, 1964935, 1964936

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82064

Included Lab Sample IDs: 1964928, 1964929, 1964935, 1964936

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

Reference Method: SM 5310 B-00

Run ID: A82117

Included Lab Sample IDs: 1964928, 1964929, 1964935, 1964936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	98.2	P/P	90 - 110
Organic Carbon	99.0	98.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A82122

Included Lab Sample IDs: 1964925, 1964926, 1964933, 1964934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.1	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A82122

Included Lab Sample IDs: 1964925, 1964926, 1964933, 1964934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.1	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A82182

Included Lab Sample IDs: 1964978, 1964979, 1964980, 1964981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	97.1	99.2	P/P	90 - 110
Chromium	99.2	100	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Lead	99.2	100	P/P	90 - 110
Nickel	100	99.4	P/P	90 - 110
Nickel	99.4	100	P/P	90 - 110
Nickel	100	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A82192

Included Lab Sample IDs: 1964975, 1964976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.1	70.2	P/P	50 - 150
Acetaminophen	112	112	P/P	60 - 150
Bentazon	109	95.2	P/P	50 - 150
Carbamazepine	114	111	P/P	60 - 150
Diuron	123	112	P/P	60 - 150
Fenuron	111	115	P/P	60 - 150
Fluridone	99.4	96.1	P/P	60 - 160
Imidacloprid	109	96.8	P/P	60 - 150
Linuron	119	120	P/P	60 - 150
MCP	96.3	77.6	P/P	50 - 150
Primidone	114	107	P/P	60 - 150
Triclopyr	90.4	77.8	P/P	50 - 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				0.0	
EPA 200.7 Rev. 4.4	Calcium	104	100	103		0.104
	Iron	105	107	107	106	1.22
	Magnesium	111	109	111	109	1.12
	Potassium	104	102	103	103	0.178
	Sodium	105	103	105		0.365
	Zinc	102	105	106	108	2.35
EPA 200.8 Rev. 5.4	Arsenic	106	108	108	108	0.595
	Cadmium	104	104	103	108	4.50
	Chromium	98.3	99.2	97.9	98.8	1.26
	Copper	102	105	99.1	99.8	0.665
	Lead	107	108	109	110	0.718
	Lead	100	103	102	102	1.23
	Nickel	99.6	99.1	98.0	97.8	1.17
	Silver	91.4	90.2	91.0	101	10.5

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 300.0 Rev. 2.1	Chloride	93.7	103	104		0.604	
	Sulfate	106	106	106		0.194	
EPA 350.1 Rev. 2.0	Ammonia-N	102	96.8	96.0			0.418
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.9	98.6	96.5			1.49
	Kjeldahl Nitrogen	104	91.6	93.5			1.31
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102	102			0.269
	NO2NO3-N	104	103				0.197
EPA 365.1 Rev. 2.0	Total-P	98.4	96.8	101			3.92
	Total-P	101	98.4	102			2.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4	98.8	101			0.978
	O-Phosphate-P	102	98.6	98.4			0.130
EPA 8321B	2,4-D	69.5	46.1	49.4			7.05
	Acetaminophen	92.2	123	108			12.7
	Bentazon	87.1	27.3	29.7			6.75
	Carbamazepine	85.8	85.1	84.5			0.653
	Diuron	76.3	77.2	74.5			2.39
	Fenuron	96.9	85.0	83.1			2.26
	Fluridone	74.6	67.3	65.9			2.11
	Imidacloprid	83.4	165	146			11.4
	Linuron	80.2	79.8	83.0			3.93
	MCPP	67.6	38.1	40.3			5.65
	Primidone	105	105	108			3.58
	Sucralose	97.0	100	102			1.33
	Triclopyr	69.0	39.1	40.4			3.31
SM 2120 B	Color (true)					3.73	
SM 2320 B-97	Total Alkalinity	98.2				0.822	
SM 2540 C-97	TDS					0.0	
	TDS					5.30	
SM 4500 F-C-97	Fluoride	94.5	95.7	95.1			0.473
SM 5310 B-00	Organic Carbon	101	102	102			0.0608

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1964925, 1964926, 1964933, 1964934
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1964978, 1964979, 1964980, 1964981
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1964978, 1964979, 1964980, 1964981
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1964925, 1964926, 1964933, 1964934
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1964925, 1964926, 1964933, 1964934
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1964928, 1964929, 1964935, 1964936
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1964928, 1964929, 1964935, 1964936
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1964928, 1964929, 1964935, 1964936
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1964928, 1964929, 1964935, 1964936
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1964931, 1964932, 1964937, 1964938
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1964975, 1964976

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1964975, 1964976
SM 2120 B / E31780	True Color measured at 450 nm	1964925, 1964926, 1964933, 1964934
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1964925, 1964926, 1964933, 1964934
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1964925, 1964926, 1964933, 1964934
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1964925, 1964926, 1964933, 1964934
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1964925, 1964926, 1964933, 1964934
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1964928, 1964929, 1964935, 1964936

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	02/06/2018			02/06/2018 17:02	DeAsia Armster	1964925, 1964926, 1964933, 1964934
EPA 200.7 Rev. 4.4	02/06/2018	02/07/2018	Elliott D. Healy	02/08/2018	Martin Acosta	1964978, 1964979, 1964980, 1964981
EPA 200.8 Rev. 5.4	02/06/2018	02/07/2018	Elliott D. Healy	02/09/2018	Nadine Brooks	1964978, 1964979, 1964980, 1964981
	02/06/2018	02/19/2018	Elliott D. Healy	02/20/2018	Nadine Brooks	1964978, 1964979, 1964980, 1964981
EPA 300.0 Rev. 2.1	02/06/2018			02/14/2018	Julia Storbeck	1964925, 1964926, 1964933, 1964934
EPA 350.1 Rev. 2.0	02/06/2018			02/14/2018	Ping Hua	1964928, 1964929, 1964935, 1964936
EPA 351.2 Rev. 2.0	02/06/2018	02/08/2018	Adrian Shelby	02/09/2018	Joseph Suarez	1964928, 1964929, 1964935, 1964936
EPA 353.2 Rev. 2.0	02/06/2018			02/13/2018	Lauren Bottorf	1964928, 1964929, 1964935, 1964936
EPA 365.1 Rev. 2.0	02/06/2018	02/09/2018	Sima Feizi	02/12/2018	Beverly Y. Sanders	1964928, 1964929, 1964935, 1964936
EPA 365.1 Rev. 2.0 dissolved	02/06/2018			02/06/2018 16:55	Megan Treadwell	1964932
	02/06/2018			02/06/2018 17:45	Megan Treadwell	1964931
	02/06/2018			02/06/2018 17:46	Megan Treadwell	1964937, 1964938
EPA 8321B	02/06/2018	02/06/2018	Juyoung Kim	02/09/2018	Juyoung Kim	1964975, 1964976
	02/06/2018	02/08/2018	Hoor Shaik	02/10/2018	Julie Michelle Frank	1964975, 1964976
SM 2120 B	02/06/2018			02/06/2018 19:01	Tanya Welborn	1964925
	02/06/2018			02/06/2018 19:02	Tanya Welborn	1964926, 1964933
	02/06/2018			02/06/2018 19:03	Tanya Welborn	1964934
SM 2320 B-97	02/06/2018			02/16/2018	Dale L. Simmons	1964925, 1964926, 1964933, 1964934
SM 2540 C-97	02/06/2018			02/09/2018	Yijie Li	1964925, 1964926, 1964933, 1964934
SM 2540 D-97	02/06/2018			02/09/2018	Yijie Li	1964925, 1964926, 1964933, 1964934
SM 4500 F-C-97	02/06/2018			02/16/2018	Dale L. Simmons	1964925, 1964926, 1964933, 1964934
SM 5310 B-00	02/06/2018			02/15/2018	Megan Treadwell	1964928, 1964929, 1964935, 1964936