

Chemical Analysis Report

NE-DIST-2018-11-29-02

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

Event Description: **LSJR Downtown**
Request ID: **RQ-2018-11-26-15**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 07-JAN-2019 15:26



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: TROUT RIVER AT RAMALLAH RD

Collection Date/Time: 11/28/2018 10:45

Field ID: 20030752

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044621	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P355352	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P355697	
		Sulfate	10		mg SO4/L	P355699	
		Color (true)	240		PCU	P355391	
	SM 2320 B-97	Total Alkalinity	2.3	I	mg CaCO3/L	P355561	
	SM 2540 C-97	TDS	90		mg/L	P355728	
	SM 2540 D-97	TSS	3	I	mg/L	P355822	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P355564	
2044623	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P355592	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P355403	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.055		mg N/L	P355381	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P355407	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P355515	
2044625	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P355341	
2044651	EPA 200.7 Rev. 4.4	Calcium	5.68		mg/L	P355476	
		Iron	690		ug/L	P355476	
		Magnesium	2.24		mg/L	P355476	
		Potassium	2.5		mg/L	P355476	
		Sodium	11.2		mg/L	P355476	
		Zinc	8.1	I	ug/L	P355476	
	EPA 200.8 Rev. 5.4	Arsenic	0.49		ug/L	P355476	
		Cadmium	0.020	U	ug/L	P355476	
		Chromium	0.57	I	ug/L	P355476	
		Copper	0.63	I	ug/L	P356654	
		Lead	0.70		ug/L	P356234	
		Nickel	0.63	I	ug/L	P355476	
		Silver	0.010	U	ug/L	P355476	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed on 12/28/2018.

Sample Location: TROUT RIVER AT GARDEN ST

Collection Date/Time: 11/28/2018 10:00

Field ID: 20030751

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044622	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P355352	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P355697	
		Sulfate	8.2		mg SO4/L	P355699	
		Color (true)	220		PCU	P355392	
	SM 2320 B-97	Total Alkalinity	8.7		mg CaCO3/L	P355561	
	SM 2540 C-97	TDS	98		mg/L	P355728	
	SM 2540 D-97	TSS	3	I	mg/L	P355822	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P355564	
2044624	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P355592	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P355403	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P355381	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P355407	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P355515	
2044626	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P355341	
2044652	EPA 200.7 Rev. 4.4	Calcium	7.94		mg/L	P355476	
		Iron	640		ug/L	P355476	
		Magnesium	2.14		mg/L	P355476	
		Potassium	2.1		mg/L	P355476	
		Sodium	11.6		mg/L	P355476	
		Zinc	8.2	I	ug/L	P355476	
	EPA 200.8 Rev. 5.4	Arsenic	0.45		ug/L	P355476	
		Cadmium	0.020	U	ug/L	P355476	
		Chromium	0.53	I	ug/L	P355476	
		Copper	0.58	I	ug/L	P356654	
		Lead	0.57		ug/L	P356234	
		Nickel	0.53	I	ug/L	P355476	
		Silver	0.010	U	ug/L	P355476	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: BIG POTTSBURG CR BOWDEN

Collection Date/Time: 11/28/2018 12:15

Field ID: 20030068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044618	EPA 180.1 Rev. 2.0	Turbidity	3.2	A	NTU	P355352	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P355697	
		Sulfate	24		mg SO4/L	P355699	
	SM 2120 B	Color (true)	92		PCU	P355391	
	SM 2320 B-97	Total Alkalinity	56		mg CaCO3/L	P355560	
	SM 2540 C-97	TDS	153	A	mg/L	P355728	
	SM 2540 D-97	TSS	3	IA	mg/L	P355822	
	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P355563	
2044619	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P355592	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P355403	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P355381	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P355407	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P355515	
2044620	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P355341	
2044634	EPA 8321B	2,4-D	0.0088		ug/L	P355221	
		Bentazon	0.020		ug/L	P355221	
		MCP	0.0026	I	ug/L	P355221	
		Triclopyr**	0.0040	U	ug/L	P355221	
		Imidacloprid	0.033		ug/L	P355221	MS
		Diuron	0.0084		ug/L	P355221	
		Pyraclostrobin**	0.0020	U	ug/L	P355221	
		Primidone**	0.0040	U	ug/L	P355221	
		Linuron	0.0040	U	ug/L	P355221	
		Acetaminophen**	0.0080	U	ug/L	P355221	
		Fenuron	0.016	U	ug/L	P355221	
		Imazapyr**	0.23		ug/L	P355221	
		Carbamazepine**	8.0E-04	U	ug/L	P355221	
		Fluridone**	0.035		ug/L	P355221	
		Hydrocodone**	8.0E-04	U	ug/L	P355221	
		Naproxen**	0.0080	U	ug/L	P355221	
		Ibuprofen**	0.020	U	ug/L	P355221	
		Sucralose**	0.16		ug/L	P355297	
		Acesulfame K**	0.12	I	ug/L	P355297	
2044650	EPA 200.7 Rev. 4.4	Calcium	27.9		mg/L	P355476	
		Iron	480		ug/L	P355476	
		Magnesium	5.61		mg/L	P355476	
		Potassium	1.7		mg/L	P355476	
		Sodium	12.4		mg/L	P355476	
		Zinc	5.0	U	ug/L	P355476	
	EPA 200.8 Rev. 5.4	Arsenic	0.67		ug/L	P355476	
		Cadmium	0.020	U	ug/L	P355476	
		Chromium	0.42	I	ug/L	P356654	
		Copper	1.85		ug/L	P356654	

Field ID: 20030068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044650	EPA 200.8 Rev. 5.4	Lead	0.21		ug/L	P356234	
		Nickel	2.16		ug/L	P355476	
		Silver	0.017	I	ug/L	P355476	

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: NE ROC DI

Collection Date/Time: 11/28/2018 10:20

Field ID: BLANK 11282018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044815	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P355355	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P355698	
		Sulfate	0.20	U	mg SO4/L	P355700	
	SM 2120 B	Color (true)	2.5	U	PCU	P355394	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P355561	
	SM 2540 C-97	TDS	15	U	mg/L	P355725	
	SM 2540 D-97	TSS	2	U	mg/L	P355819	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P355564	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P355543	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P355648	
2044816	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P355546	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P355411	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P355515	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P355342	
	dissolved						

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355352

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355355

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355476

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: P355476

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356234

Component	Result	Code	Units
Lead	0.050	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356654

Component	Result	Code	Units
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355697

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355698

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355698

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355699

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355700

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355543

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355592

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355403

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355648

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355381

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355546

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355407

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355411

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355341

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355342

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

Reference Method: EPA 8321B
Batch ID: P355221

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P355297

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P355391

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P355392

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P355394

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P355560

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2320 B-97
Batch ID: P355561

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P355725

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P355728

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P355819

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P355822

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P355563

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P355564

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P355515

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: P355476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	102		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	98.5		P	85 - 115
Sodium	103		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115
Cadmium	109		P	85 - 115
Chromium	106		P	85 - 115
Nickel	104		P	85 - 115
Silver	107		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	108		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356654

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	106		P	85 - 115
Copper	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355697

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355699

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355700

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355700

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355592

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355403

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355648

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355381

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355546

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355407

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355411

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355341

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355342

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.1		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P355221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	95.0		P	40 - 150
Acetaminophen	105		P	30 - 150
Bentazon	113		P	30 - 150
Carbamazepine	92.0		P	40 - 150
Diuron	74.8		P	40 - 150
Fenuron	95.9		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	91.1		P	40 - 150
Ibuprofen	72.7		P	40 - 150
Imazapyr	105		P	40 - 150
Imidacloprid	101		P	40 - 160
Linuron	71.7		P	40 - 150
MCPP	111		P	40 - 150
Naproxen	88.0		P	40 - 150
Primidone	95.6		P	40 - 150
Pyraclostrobin	56.6		P	40 - 150
Triclopyr	69.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 150
Sucralose	109		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P355391

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

Reference Method: SM 2120 B
Batch ID: P355392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P355394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	105		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P355560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P355561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P355563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P355564

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355515

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044650	Calcium	94.0		P	80 - 120
2044650	Iron	104		P	80 - 120
2044650	Magnesium	97.8		P	80 - 120
2044650	Potassium	101		P	80 - 120
2044650	Sodium	93.7		P	80 - 120
2044650	Zinc	99.9		P	80 - 120
2045110	Calcium	99.4		P	80 - 120
2045110	Iron	105	103	P/P	80 - 120
2045110	Magnesium	107	102	P/P	80 - 120
2045110	Potassium	103	103	P/P	80 - 120
2045110	Sodium	98.9		P	80 - 120
2045110	Zinc	104	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044650	Arsenic	108		P	80 - 120
2044650	Cadmium	110		P	80 - 120
2044650	Chromium	96.1		P	80 - 120
2044650	Nickel	102		P	80 - 120
2044650	Silver	106		P	80 - 120
2045110	Arsenic	106	107	P/P	80 - 120
2045110	Cadmium	108	108	P/P	80 - 120
2045110	Chromium	106	106	P/P	80 - 120
2045110	Nickel	104	105	P/P	80 - 120
2045110	Silver	106	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044528	Lead	108		P	80 - 120
2044771	Lead	109	109	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044663	Chromium	107		P	80 - 120
2044663	Copper	107		P	80 - 120
2047182	Chromium	105	104	P/P	80 - 120
2047182	Copper	102	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044613	Chloride	96.1		P	90 - 110
2044657	Chloride	96.9		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2045067	Chloride	98.5		P	90 - 110
2045119	Chloride	95.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044613	Sulfate	99.4		P	90 - 110
2044657	Sulfate	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2045067	Sulfate	97.1		P	90 - 110
2045119	Sulfate	96.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2045072	Ammonia-N	97.7	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355592

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044619	Ammonia-N	98.2	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044614	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2045586	Kjeldahl Nitrogen	108	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355381

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044531	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044802	NO2NO3-N	100	99.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044614	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044760	Total-P	97.2	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044615	O-Phosphate-P	93.6	94.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2045075	O-Phosphate-P	94.3	97.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P355221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043959	2,4-D	92.1	104	P/P	40 - 150
2043959	Acetaminophen	115	114	P/P	30 - 150
2043959	Bentazon	73.3	75.9	P/P	30 - 150
2043959	Carbamazepine	82.0	86.1	P/P	40 - 150
2043959	Diuron	61.3	65.9	P/P	40 - 150
2043959	Fenuron	98.7	104	P/P	40 - 150
2043959	Fluridone	109	119	P/P	40 - 150
2043959	Hydrocodone	65.4	79.8	P/P	40 - 150
2043959	Ibuprofen	67.7	71.1	P/P	40 - 150
2043959	Imazapyr	99.9	103	P/P	40 - 150
2043959	Imidacloprid	168	180	F/F	40 - 160
2043959	Linuron	67.5	73.0	P/P	40 - 150
2043959	MCPP	110	128	P/P	40 - 150
2043959	Naproxen	68.0	69.0	P/P	40 - 150
2043959	Primidone	94.1	101	P/P	40 - 150
2043959	Pyraclostrobin	61.4	69.3	P/P	40 - 150
2043959	Triclopyr	51.7	68.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044792	Acesulfame K	127	122	P/P	40 - 150
2044792	Sucralose	101	120	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P355563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043988	Fluoride	100	99.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044577	Organic Carbon	99.1	94.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044618	Turbidity	14.7	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045067	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045110	Calcium	0.512	Spike	P	0 - 20
2045110	Iron	1.48	Spike	P	0 - 20
2045110	Magnesium	2.31	Spike	P	0 - 20
2045110	Potassium	0.237	Spike	P	0 - 20
2045110	Sodium	0.146	Spike	P	0 - 20
2045110	Zinc	1.22	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045110	Arsenic	1.51	Spike	P	0 - 20
2045110	Cadmium	0.312	Spike	P	0 - 20
2045110	Chromium	0.0723	Spike	P	0 - 20
2045110	Nickel	0.391	Spike	P	0 - 20
2045110	Silver	1.04	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044771	Lead	0.130	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047182	Chromium	0.866	Spike	P	0 - 20
2047182	Copper	0.228	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044613	Chloride	0.103	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045067	Chloride	0.483	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044613	Sulfate	0.893	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045067	Sulfate	1.54	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045072	Ammonia-N	2.42	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044619	Ammonia-N	0.636	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044614	Kjeldahl Nitrogen	0.386	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045586	Kjeldahl Nitrogen	1.01	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044531	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044802	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044614	Total-P	1.75	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044760	Total-P	5.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044615	O-Phosphate-P	1.07	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045075	O-Phosphate-P	2.62	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P355221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043959	2,4-D	10.7	Spike	P	0 - 30
2043959	Acetaminophen	0.693	Spike	P	0 - 30
2043959	Bentazon	3.50	Spike	P	0 - 30
2043959	Carbamazepine	4.83	Spike	P	0 - 30
2043959	Diuron	7.10	Spike	P	0 - 30
2043959	Fenuron	5.25	Spike	P	0 - 30
2043959	Fluridone	8.56	Spike	P	0 - 30
2043959	Hydrocodone	19.8	Spike	P	0 - 30
2043959	Ibuprofen	4.94	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P355221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043959	Imazapyr	2.92	Spike	P	0 - 30
2043959	Imidacloprid	6.95	Spike	P	0 - 30
2043959	Linuron	7.89	Spike	P	0 - 30
2043959	MCP	14.8	Spike	P	0 - 30
2043959	Naproxen	1.41	Spike	P	0 - 30
2043959	Primidone	6.64	Spike	P	0 - 30
2043959	Pyraclostrobin	12.1	Spike	P	0 - 30
2043959	Triclopyr	28.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044792	Acesulfame K	3.84	Spike	P	0 - 30
2044792	Sucralose	15.1	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P355391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044613	Color (true)	2.28	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P355392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044656	Color (true)	0.619	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P355394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044759	Color (true)	0.973	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P355560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043988	Total Alkalinity	0.379	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P355561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044801	Total Alkalinity	0.733	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P355725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043892	TDS	2.18	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P355728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044618	TDS	3.92	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P355563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043988	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P355564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044801	Fluoride	0.469	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P355515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044577	Organic Carbon	2.63	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: 2044634
Field Sample ID: 20030068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	102	P	30 - 160
EPA 8321B	Acetaminophen-d4	126	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.7	P	30 - 160
EPA 8321B	Diuron-d6	76.0	P	30 - 160
EPA 8321B	Endothall-d6	99.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	76.8	P	30 - 160
EPA 8321B	Primidone-d5	88.3	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A88047

Included Lab Sample IDs: 2044620, 2044625, 2044626, 2044817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	98.8	P/P	90 - 110
O-Phosphate-P	99.6	99.3	P/P	90 - 110
O-Phosphate-P	99.9	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A88051

Included Lab Sample IDs: 2044618, 2044621, 2044622, 2044815

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88055

Included Lab Sample IDs: 2044619, 2044623, 2044624

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

Reference Method: SM 2120 B

Run ID: A88059

Included Lab Sample IDs: 2044618, 2044621, 2044622, 2044815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115
Color (true)	103	102	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A88074

Included Lab Sample IDs: 2044634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	72.1	87.0	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A88078

Included Lab Sample IDs: 2044634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	98.8	P/P	50 - 150
Acetaminophen	106	130	P/P	60 - 160
Bentazon	121	133	P/P	50 - 160
Carbamazepine	110	103	P/P	60 - 160
Diuron	99.4	107	P/P	60 - 150
Fenuron	101	97.1	P/P	60 - 150
Fluridone	108	107	P/P	60 - 160
Hydrocodone	99.9	94.8	P/P	60 - 150
Ibuprofen	95.6	76.3	P/P	50 - 160
Imazapyr	102	115	P/P	50 - 150
Imidacloprid	99.7	96.8	P/P	60 - 160
Linuron	96.8	102	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A88078
Included Lab Sample IDs: 2044634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCP	96.8	94.2	P/P	50 - 150
Naproxen	94.6	80.6	P/P	50 - 160
Primidone	93.7	98.4	P/P	60 - 160
Pyraclostrobin	98.9	97.9	P/P	60 - 150
Triclopyr	102	83.9	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A88081
Included Lab Sample IDs: 2044634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	121	107	P/P	60 - 160

Reference Method: SM 5310 B-00
Run ID: A88116
Included Lab Sample IDs: 2044619, 2044623, 2044624, 2044816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	95.8	P/P	90 - 110
Organic Carbon	98.0	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A88120
Included Lab Sample IDs: 2044619, 2044623, 2044624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.2	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A88125
Included Lab Sample IDs: 2044619, 2044623, 2044624

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A88126
Included Lab Sample IDs: 2044816

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A88128
Included Lab Sample IDs: 2044816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	99.5	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88130

Included Lab Sample IDs: 2044816

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

Reference Method: SM 2320 B-97

Run ID: A88134

Included Lab Sample IDs: 2044618, 2044621, 2044622, 2044815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.7	P/P	90 - 110
Total Alkalinity	98.7	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88134

Included Lab Sample IDs: 2044618, 2044621, 2044622, 2044815

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88138

Included Lab Sample IDs: 2044650, 2044651, 2044652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.3	100	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	101	100	P/P	90 - 110
Potassium	99.9	99.2	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Zinc	101	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88149

Included Lab Sample IDs: 2044619, 2044623, 2044624

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A88194

Included Lab Sample IDs: 2044618, 2044621, 2044622, 2044815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.6	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	101	100	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88202

Included Lab Sample IDs: 2044816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.0	98.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88217

Included Lab Sample IDs: 2044650, 2044651, 2044652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	102	P/P	90 - 110
Cadmium	103	105	P/P	90 - 110
Chromium	104	105	P/P	90 - 110
Nickel	103	103	P/P	90 - 110
Silver	104	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88421

Included Lab Sample IDs: 2044650, 2044651, 2044652

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88578

Included Lab Sample IDs: 2044650, 2044651, 2044652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	106	104	P/P	90 - 110
Copper	107	104	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						14.7	
	Turbidity						0.0	
EPA 200.7 Rev. 4.4	Calcium	101	94.0	99.4				0.512
	Iron	102	104	105	103			1.48
	Magnesium	104	97.8	107	102			2.31
	Potassium	98.5	101	103	103			0.237
	Sodium	103	93.7	98.9				0.146
	Zinc	100	99.9	104	102			1.22
EPA 200.8 Rev. 5.4	Arsenic	105	108	106	107			1.51
	Cadmium	109	110	108	108			0.312
	Chromium	106	96.1	106	106			0.0723
	Chromium	106	107	105	104			0.866
	Copper	107	107	102	102			0.228
	Lead	108	108	109	109			0.130
	Nickel	104	102	104	105			0.391
	Silver	107	106	106	107			1.04
EPA 300.0 Rev. 2.1	Chloride	99.4	96.1	96.9			0.103	
	Chloride	97.7	98.5	95.9			0.483	
	Sulfate	99.8	99.4	98.1			0.893	
	Sulfate	99.2	97.1	96.4			1.54	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	97.7	100				2.42
	Ammonia-N	96.9	98.2	99.1				0.636
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	102	102				0.386
	Kjeldahl Nitrogen	99.6	108	107				1.01
EPA 353.2 Rev. 2.0	NO2NO3-N	100	101	101				0.0
	NO2NO3-N	98.5	100	99.5				0.501
EPA 365.1 Rev. 2.0	Total-P	104	104	102				1.75
	Total-P	104	97.2	104				5.68
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	93.6	94.9				1.07
	O-Phosphate-P	98.1	94.3	97.0				2.62
EPA 8321B	2,4-D	95.0	92.1	104				10.7
	Acesulfame K	102	127	122				3.84
	Acetaminophen	105	115	114				0.693
	Bentazon	113	73.3	75.9				3.50
	Carbamazepine	92.0	82.0	86.1				4.83
	Diuron	74.8	61.3	65.9				7.10
	Fenuron	95.9	98.7	104				5.25
	Fluridone	102	109	119				8.56
	Hydrocodone	91.1	65.4	79.8				19.8
	Ibuprofen	72.7	67.7	71.1				4.94
	Imazapyr	105	99.9	103				2.92
	Imidacloprid	101	168	180				6.95
	Linuron	71.7	67.5	73.0				7.89
	MCPD	111	110	128				14.8
	Naproxen	88.0	68.0	69.0				1.41
	Primidone	95.6	94.1	101				6.64
	Pyraclostrobin	56.6	61.4	69.3				12.1
	Sucralose	109	101	120				15.1
	Triclopyr	69.9	51.7	68.6				28.1
SM 2120 B	Color (true)	102					2.28	
	Color (true)	103					0.619	
	Color (true)	105					0.973	
SM 2320 B-97	Total Alkalinity	98.7					0.379	
	Total Alkalinity	100					0.733	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2540 C-97	TDS					2.18	
	TDS					3.92	
SM 4500 F-C-97	Fluoride	97.2	100	99.7			0.470
	Fluoride	101					0.469
SM 5310 B-00	Organic Carbon	96.2	99.1	94.2			2.63

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2044618, 2044621, 2044622, 2044815
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2044650, 2044651, 2044652
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2044650, 2044651, 2044652
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2044618, 2044621, 2044622, 2044815
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2044618, 2044621, 2044622, 2044815
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2044619, 2044623, 2044624, 2044816
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2044619, 2044623, 2044624, 2044816
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2044619, 2044623, 2044624, 2044816
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2044619, 2044623, 2044624, 2044816
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2044620, 2044625, 2044626, 2044817
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2044634
SM 2120 B / E31780	True Color measured at 450 nm	2044618, 2044621, 2044622, 2044815
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2044618, 2044621, 2044622, 2044815
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2044618, 2044621, 2044622, 2044815
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2044618, 2044621, 2044622, 2044815
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2044618, 2044621, 2044622, 2044815
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2044619, 2044623, 2044624, 2044816

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/29/2018			11/29/2018 17:05	Megan Treadwell	2044618, 2044621, 2044622, 2044815
EPA 200.7 Rev. 4.4	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/04/2018 17:30	Betina Topolski	2044650
	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/04/2018 17:48	Betina Topolski	2044651
	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/04/2018 17:55	Betina Topolski	2044652
EPA 200.8 Rev. 5.4	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/07/2018 04:39	Robert K Palmer	2044650
	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/07/2018 04:58	Robert K Palmer	2044651
	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/07/2018 05:07	Robert K Palmer	2044652
	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/28/2018 22:39	Allison Taylor	2044650
	11/29/2018	12/17/2018 13:00	Elliott D. Healy	12/19/2018 03:51	Allison Taylor	2044650
	11/29/2018	12/17/2018 13:00	Elliott D. Healy	12/19/2018 04:01	Allison Taylor	2044651
	11/29/2018	12/17/2018 13:00	Elliott D. Healy	12/19/2018 04:10	Allison Taylor	2044652
	11/29/2018	12/27/2018 16:45	Elliott D. Healy	12/28/2018 22:39	Allison Taylor	2044650
	11/29/2018	12/27/2018 16:45	Elliott D. Healy	12/28/2018 22:48	Allison Taylor	2044651
	11/29/2018	12/27/2018 16:45	Elliott D. Healy	12/28/2018 22:58	Allison Taylor	2044652
EPA 300.0 Rev. 2.1	11/29/2018			12/05/2018 23:34	Lipi Saha	2044618
	11/29/2018			12/05/2018 23:46	Lipi Saha	2044621
	11/29/2018			12/05/2018 23:58	Lipi Saha	2044622
	11/29/2018			12/06/2018 04:59	Lipi Saha	2044815
EPA 350.1 Rev. 2.0	11/29/2018			12/04/2018 11:54	Adrian Shelby	2044816
	11/29/2018			12/04/2018 13:35	Ping Hua	2044619
	11/29/2018			12/04/2018 13:37	Ping Hua	2044623
	11/29/2018			12/04/2018 13:38	Ping Hua	2044624
EPA 351.2 Rev. 2.0	11/29/2018	11/30/2018 12:15	Adrian Shelby	12/04/2018 10:21	Joseph Suarez	2044619
	11/29/2018	11/30/2018 12:15	Adrian Shelby	12/04/2018 10:23	Joseph Suarez	2044623
	11/29/2018	11/30/2018 12:15	Adrian Shelby	12/04/2018 10:24	Joseph Suarez	2044624
	11/29/2018	12/05/2018 11:30	Adrian Shelby	12/06/2018 11:31	Joseph Suarez	2044816
EPA 353.2 Rev. 2.0	11/29/2018			11/30/2018 11:02	Beverly Y. Sanders	2044619
	11/29/2018			11/30/2018 11:03	Beverly Y. Sanders	2044623
	11/29/2018			11/30/2018 11:04	Beverly Y. Sanders	2044624
	11/29/2018			12/04/2018 13:10	Lauren Bottorf	2044816
EPA 365.1 Rev. 2.0	11/29/2018	11/30/2018 13:35	Sima Feizi	12/03/2018 12:49	Beverly Y. Sanders	2044619
	11/29/2018	11/30/2018 13:35	Sima Feizi	12/03/2018 12:50	Beverly Y. Sanders	2044623
	11/29/2018	11/30/2018 13:35	Sima Feizi	12/03/2018 12:51	Beverly Y. Sanders	2044624
	11/29/2018	11/30/2018 13:35	Sima Feizi	12/03/2018 16:47	Beverly Y. Sanders	2044816
EPA 365.1 Rev. 2.0 dissolved	11/29/2018			11/29/2018 17:16	Jhamieka S. Greenwood	2044620
	11/29/2018			11/29/2018 17:19	Jhamieka S. Greenwood	2044625
	11/29/2018			11/29/2018 17:44	Jhamieka S. Greenwood	2044817
	11/29/2018			11/29/2018 17:52	Jhamieka S. Greenwood	2044626
EPA 8321B	11/29/2018	11/29/2018 14:00	Hoor Shaik	12/02/2018 00:09	Juyoung Kim	2044634
	11/29/2018	11/30/2018 15:00	Rebecca Ware	11/30/2018 19:36	Rebecca Ware	2044634

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/29/2018	11/30/2018 15:00	Rebecca Ware	12/01/2018 16:36	Mohammad Ghaffari	2044634
SM 2120 B	11/29/2018			11/29/2018 15:41	Chelsea Hernandez	2044618
	11/29/2018			11/29/2018 16:13	Chelsea Hernandez	2044815
	11/29/2018			11/29/2018 16:15	Chelsea Hernandez	2044621
	11/29/2018			11/29/2018 16:16	Chelsea Hernandez	2044622
SM 2320 B-97	11/29/2018			12/04/2018 09:48	Dale L. Simmons	2044618
	11/29/2018			12/04/2018 11:32	Dale L. Simmons	2044621
	11/29/2018			12/04/2018 11:44	Dale L. Simmons	2044622
	11/29/2018			12/04/2018 12:43	Dale L. Simmons	2044815
SM 2540 C-97	11/29/2018			11/30/2018 16:02	Yijie Li	2044618, 2044621, 2044622, 2044815
SM 2540 D-97	11/29/2018			11/30/2018 16:02	Yijie Li	2044618, 2044621, 2044622, 2044815
SM 4500 F-C-97	11/29/2018			12/04/2018 09:48	Dale L. Simmons	2044618
	11/29/2018			12/04/2018 11:32	Dale L. Simmons	2044621
	11/29/2018			12/04/2018 11:44	Dale L. Simmons	2044622
	11/29/2018			12/04/2018 12:43	Dale L. Simmons	2044815
SM 5310 B-00	11/29/2018			12/03/2018 10:51	Megan Treadwell	2044619
	11/29/2018			12/03/2018 11:06	Megan Treadwell	2044623
	11/29/2018			12/03/2018 11:18	Megan Treadwell	2044624
	11/29/2018			12/04/2018 02:03	Megan Treadwell	2044816