

Chemical Analysis Report

NE-DIST-2018-11-21-01

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

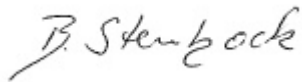
Event Description: **LSJR Downtown Salt Boat**
Request ID: **RQ-2018-11-19-08**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

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

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

Date Certified: 11-DEC-2018 17:19



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: Arlington River at Carlton oaks

Collection Date/Time: 11/20/2018 12:10

Field ID: G2NE1152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043305	EPA 180.1 Rev. 2.0	Turbidity	6.0		NTU	P355040	
	SM 2320 B-97	Total Alkalinity	78		mg CaCO3/L	P355275	
	SM 2540 D-97	TSS	8	I	mg/L	P355464	
	SM 4500 F-C-97	Fluoride	0.34		mg F/L	P355277	
2043309	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P355374	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P355217	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P355145	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P355230	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P355326	
2043313	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P355044	
2043339	EPA 200.7 Rev. 4.4	Iron	340	I	ug/L	P355158	
		Zinc	15	U	ug/L	P355158	
	EPA 200.8 Rev. 5.4	Arsenic	1.97		ug/L	P355158	
		Cadmium	0.060	U	ug/L	P355158	
		Chromium	1.2	U	ug/L	P355158	
		Copper	1.4	I	ug/L	P355158	
		Lead	0.68		ug/L	P355158	
		Nickel	0.60	U	ug/L	P355158	
		Silver	0.030	U	ug/L	P355158	

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: ARLINGTON R CESERY BLVD

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

Field ID: 20030073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043306	EPA 180.1 Rev. 2.0	Turbidity	9.8	A	NTU	P355040	
	SM 2320 B-97	Total Alkalinity	77		mg CaCO3/L	P355275	
	SM 2540 D-97	TSS	18		mg/L	P355464	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P355277	
2043310	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P355374	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P355217	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P355145	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P355230	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P355326	
2043314	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P355044	
2043340	EPA 200.7 Rev. 4.4	Iron	600		ug/L	P355158	
		Zinc	15	U	ug/L	P355158	
	EPA 200.8 Rev. 5.4	Arsenic	2.28		ug/L	P355158	
		Cadmium	0.060	U	ug/L	P355158	
		Chromium	1.2	U	ug/L	P355158	
		Copper	2.0	I	ug/L	P355158	
		Lead	1.52		ug/L	P355158	
		Nickel	0.73	I	ug/L	P355158	
		Silver	0.030	U	ug/L	P355158	

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: LITTLE POTTSBURG CREEK AT ATLANTIC BLVD

Collection Date/Time: 11/20/2018 09:15

Field ID: 20030679

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043307	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P355040	
	SM 2320 B-97	Total Alkalinity	79	A	mg CaCO3/L	P355275	
	SM 2540 D-97	TSS	5	I	mg/L	P355465	
	SM 4500 F-C-97	Fluoride	0.38		mg F/L	P355277	
2043311	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P355374	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P355217	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P355145	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P355230	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P355327	
2043315	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.080		mg P/L	P355044	
2043341	EPA 200.7 Rev. 4.4	Iron	240	I	ug/L	P355158	
		Zinc	15	U	ug/L	P355158	
	EPA 200.8 Rev. 5.4	Arsenic	1.94		ug/L	P355158	
		Cadmium	0.060	U	ug/L	P355158	
		Chromium	1.2	U	ug/L	P355158	
		Copper	1.3	I	ug/L	P355158	
		Lead	0.45	I	ug/L	P355158	
		Nickel	0.60	U	ug/L	P355158	
		Silver	0.030	U	ug/L	P355158	

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: LITTLE POTTSBURG CR @ MOUTH OF W
BRNCH**

Collection Date/Time: 11/20/2018 09:35

Field ID: 20030814

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043308	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P355040	
	SM 2320 B-97	Total Alkalinity	80		mg CaCO3/L	P355275	
	SM 2540 D-97	TSS	4	I	mg/L	P355465	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P355277	
2043312	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P355374	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P355217	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P355146	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P355230	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P355326	
2043316	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P355044	
2043342	EPA 200.7 Rev. 4.4	Iron	200	I	ug/L	P355158	
		Zinc	15	U	ug/L	P355158	
	EPA 200.8 Rev. 5.4	Arsenic	2.00		ug/L	P355158	
		Cadmium	0.060	U	ug/L	P355158	
		Chromium	1.2	U	ug/L	P355158	
		Copper	1.3	I	ug/L	P355158	
		Lead	0.40	I	ug/L	P355158	
		Nickel	0.63	I	ug/L	P355158	
		Silver	0.030	U	ug/L	P355158	

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: BIG POTTSBURG CR ATL BLVD

Collection Date/Time: 11/20/2018 11:05

Field ID: 20030072

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043317	EPA 180.1 Rev. 2.0	Turbidity	8.5		NTU	P355040	
	SM 2320 B-97	Total Alkalinity	74		mg CaCO3/L	P355469	
	SM 2540 D-97	TSS	14		mg/L	P355464	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P355474	
2043319	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P355374	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P355217	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P355146	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P355230	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P355326	
2043321	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.055		mg P/L	P355044	
2043337	EPA 8321B	2,4-D	0.038		ug/L	P355009	
		Sucralose**	0.38		ug/L	P355085	
		Bentazon	0.012		ug/L	P355009	
		MCP	0.0025	I	ug/L	P355009	
		Triclopyr**	0.0040	U	ug/L	P355009	
		Imidacloprid	0.025		ug/L	P355009	
		Diuron	0.0069	I	ug/L	P355009	
		Pyraclostrobin**	0.0020	UJ	ug/L	P355009	CCV
		Primidone**	0.0040	U	ug/L	P355009	RPD
		Linuron	0.0040	U	ug/L	P355009	
		Acetaminophen**	0.0080	U	ug/L	P355009	
		Fenuron	0.016	U	ug/L	P355009	
		Imazapyr**	0.13		ug/L	P355009	
		Carbamazepine**	0.0015	I	ug/L	P355009	
		Fluridone**	0.025		ug/L	P355009	
		Hydrocodone**	8.0E-04	U	ug/L	P355009	
		Naproxen**	0.0080	U	ug/L	P355009	RPD
		Ibuprofen**	0.020	U	ug/L	P355009	
		Acesulfame K**	0.14	I	ug/L	P354971	
2043343	EPA 200.7 Rev. 4.4	Iron	360		ug/L	P355105	
		Zinc	8.3	I	ug/L	P355105	
	EPA 200.8 Rev. 5.4	Arsenic	1.65		ug/L	P355105	
		Cadmium	0.020	I	ug/L	P355105	
		Chromium	0.40	U	ug/L	P355105	
		Copper	1.67		ug/L	P355105	
		Lead	1.26		ug/L	P355105	
		Nickel	0.63	I	ug/L	P355105	
		Silver	0.014	I	ug/L	P355105	

Ref. Method and Comment:

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

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Sample Location: BIG POTTSBURG @ 2000M S ATLANTIC BLVD Collection Date/Time: 11/20/2018 10:50

Field ID: 20030816

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043318	EPA 180.1 Rev. 2.0	Turbidity	6.9		NTU	P355040	
	SM 2320 B-97	Total Alkalinity	71		mg CaCO3/L	P355469	
	SM 2540 D-97	TSS	10		mg/L	P355464	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P355474	
2043320	EPA 350.1 Rev. 2.0	Ammonia-N	0.050		mg N/L	P355303	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P355215	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P355329	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P355084	
	SM 5310 B-00	Organic Carbon	9.7		mg C/L	P355326	
2043322	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P355043	
2043338	EPA 8321B	2,4-D	0.052		ug/L	P355009	
		Sucralose**	0.22		ug/L	P355085	
		Bentazon	0.013		ug/L	P355009	
		MCP	0.0034	I	ug/L	P355009	
		Triclopyr**	0.0040	U	ug/L	P355009	
		Imidacloprid	0.028		ug/L	P355009	
		Diuron	0.0073	I	ug/L	P355009	
		Pyraclostrobin**	0.0020	UJ	ug/L	P355009	CCV
		Primidone**	0.0040	U	ug/L	P355009	RPD
		Linuron	0.0040	U	ug/L	P355009	
		Acetaminophen**	0.0080	U	ug/L	P355009	
		Fenuron	0.016	U	ug/L	P355009	
		Imazapyr**	0.17		ug/L	P355009	
		Carbamazepine**	0.0012	I	ug/L	P355009	
		Fluridone**	0.034		ug/L	P355009	
		Hydrocodone**	8.0E-04	U	ug/L	P355009	
		Naproxen**	0.0080	U	ug/L	P355009	RPD
		Ibuprofen**	0.020	U	ug/L	P355009	
		Acesulfame K**	0.19	I	ug/L	P354971	
2043344	EPA 200.7 Rev. 4.4	Iron	560		ug/L	P355105	
		Zinc	5.0	U	ug/L	P355105	
	EPA 200.8 Rev. 5.4	Arsenic	1.48		ug/L	P355105	
		Cadmium	0.020	U	ug/L	P355105	
		Chromium	0.76	I	ug/L	P355105	
		Copper	1.89		ug/L	P355105	
		Lead	1.35		ug/L	P355105	
		Nickel	0.92		ug/L	P355105	
		Silver	0.010	U	ug/L	P355105	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355040

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355105

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355158

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355105

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	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: P355158

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355303

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355374

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355215

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355217

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355145

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355146

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355329

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355230

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355043

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355044

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P354971

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P355009

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
MCP	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: P355085

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P355275

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

Reference Method: SM 2320 B-97
Batch ID: P355469

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

Reference Method: SM 2540 D-97
Batch ID: P355464

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P355465

Component	Result	Code	Units
-----------	--------	------	-------

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P355465

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P355277

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P355474

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P355326

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

Reference Method: SM 5310 B-00
Batch ID: P355327

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: P355105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115
Zinc	99.8		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	102		P	85 - 115
Zinc	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355105

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115
Cadmium	106		P	85 - 115
Chromium	105		P	85 - 115
Copper	101		P	85 - 115
Lead	101		P	85 - 115
Nickel	101		P	85 - 115
Silver	99.3		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355303

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355374

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355215

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355217

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355145

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: P355146

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355329

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

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: P355230

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355043

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355044

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

Reference Method: EPA 8321B
Batch ID: P354971

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	94.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P355009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	85.1		P	40 - 150
Acetaminophen	114		P	30 - 150
Bentazon	72.6		P	30 - 150
Carbamazepine	80.4		P	40 - 150
Diuron	69.6		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	98.6		P	40 - 150
Ibuprofen	78.4		P	40 - 150
Imazapyr	77.8		P	40 - 150
Imidacloprid	108		P	40 - 160
Linuron	76.9		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	91.5		P	40 - 150
Primidone	80.0		P	40 - 150
Pyraclostrobin	71.7		P	40 - 150
Triclopyr	72.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355085

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.8		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P355275

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

Reference Method: SM 2320 B-97
Batch ID: P355469

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

Reference Method: SM 4500 F-C-97
Batch ID: P355277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P355474

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P355326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P355327

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043083	Iron	97.4	98.1	P/P	80 - 120
2043083	Zinc	96.2	96.3	P/P	80 - 120
2043420	Iron	100		P	80 - 120
2043420	Zinc	94.7		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043231	Iron	100	101	P/P	70 - 130
2043231	Zinc	101	103	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043083	Arsenic	115	115	P/P	80 - 120
2043083	Cadmium	103	102	P/P	80 - 120
2043083	Chromium	84.4	82.9	P/P	80 - 120
2043083	Copper	97.0	96.5	P/P	80 - 120
2043083	Lead	107	105	P/P	80 - 120
2043083	Nickel	92.4	91.8	P/P	80 - 120
2043083	Silver	96.8	93.6	P/P	80 - 120
2043420	Arsenic	107		P	80 - 120
2043420	Cadmium	108		P	80 - 120
2043420	Chromium	102		P	80 - 120
2043420	Copper	100		P	80 - 120
2043420	Lead	102		P	80 - 120
2043420	Nickel	99.4		P	80 - 120
2043420	Silver	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043231	Arsenic	113	113	P/P	80 - 120
2043231	Cadmium	99.5	102	P/P	80 - 120
2043231	Chromium	88.7	87.3	P/P	80 - 120
2043231	Copper	102	101	P/P	80 - 120
2043231	Lead	110	110	P/P	80 - 120
2043231	Nickel	105	105	P/P	80 - 120
2043231	Silver	91.1	92.0	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043244	Ammonia-N	93.1	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043309	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043735	Kjeldahl Nitrogen	97.8	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355145

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2042959	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043312	NO2NO3-N	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043284	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043394	Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043735	Total-P	95.3	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043389	O-Phosphate-P	96.8	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043219	O-Phosphate-P	97.0	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P354971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2042005	Acesulfame K	137	131	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043262	2,4-D	107	120	P/P	40 - 150
2043262	Acetaminophen	130	130	P/P	30 - 150
2043262	Bentazon	53.3	62.0	P/P	30 - 150
2043262	Carbamazepine	79.7	81.3	P/P	40 - 150
2043262	Diuron	61.7	64.9	P/P	40 - 150
2043262	Fenuron	81.5	84.7	P/P	40 - 150
2043262	Fluridone	105	102	P/P	40 - 150
2043262	Hydrocodone	84.1	85.3	P/P	40 - 150
2043262	Ibuprofen	72.3	66.9	P/P	40 - 150
2043262	Imidacloprid	125	128	P/P	40 - 160
2043262	Linuron	67.2	68.2	P/P	40 - 150
2043262	MCP	134	129	P/P	40 - 150
2043262	Naproxen	86.6	59.7	P/P	40 - 150
2043262	Primidone	79.8	131	P/P	40 - 150
2043262	Pyraclostrobin	54.7	53.1	P/P	40 - 150
2043262	Triclopyr	79.2	78.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2042005	Sucralose	85.2	101	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P355277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043307	Fluoride	99.5	99.5	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P355474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043543	Fluoride	98.8	99.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043289	Organic Carbon	97.4	94.1	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P355327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043216	Organic Carbon	94.8	94.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043306	Turbidity	0.812	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043083	Iron	0.634	Spike	P	0 - 20
2043083	Zinc	0.0857	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043231	Iron	0.519	Spike	P	0 - 20
2043231	Zinc	2.41	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043083	Arsenic	0.360	Spike	P	0 - 20
2043083	Cadmium	1.66	Spike	P	0 - 20
2043083	Chromium	1.84	Spike	P	0 - 20
2043083	Copper	0.537	Spike	P	0 - 20
2043083	Lead	1.71	Spike	P	0 - 20
2043083	Nickel	0.611	Spike	P	0 - 20
2043083	Silver	3.41	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043231	Arsenic	0.230	Spike	P	0 - 20
2043231	Cadmium	2.09	Spike	P	0 - 20
2043231	Chromium	1.56	Spike	P	0 - 20
2043231	Copper	0.612	Spike	P	0 - 20
2043231	Lead	0.542	Spike	P	0 - 20
2043231	Nickel	0.241	Spike	P	0 - 20
2043231	Silver	0.902	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043244	Ammonia-N	4.95	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043309	Ammonia-N	0.799	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043284	Kjeldahl Nitrogen	0.989	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043735	Kjeldahl Nitrogen	5.67	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2042959	NO2NO3-N	0.396	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043312	NO2NO3-N	0.698	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043284	NO2NO3-N	0.274	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043394	Total-P	1.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043735	Total-P	1.03	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043389	O-Phosphate-P	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043219	O-Phosphate-P	3.64	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P354971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2042005	Acesulfame K	4.13	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043262	2,4-D	11.0	Spike	P	0 - 30
2043262	Acetaminophen	0.135	Spike	P	0 - 30
2043262	Bentazon	15.2	Spike	P	0 - 30
2043262	Carbamazepine	1.96	Spike	P	0 - 30
2043262	Diuron	5.07	Spike	P	0 - 30
2043262	Fenuron	3.92	Spike	P	0 - 30
2043262	Fluridone	2.98	Spike	P	0 - 30
2043262	Hydrocodone	1.37	Spike	P	0 - 30
2043262	Ibuprofen	7.79	Spike	P	0 - 30
2043262	Imazapyr	20.5	Spike	P	0 - 30
2043262	Imidacloprid	2.12	Spike	P	0 - 30
2043262	Linuron	1.51	Spike	P	0 - 30
2043262	MCPP	4.01	Spike	P	0 - 30
2043262	Naproxen	36.8	Spike	F	0 - 30
2043262	Primidone	48.9	Spike	F	0 - 30
2043262	Pyraclostrobin	2.97	Spike	P	0 - 30
2043262	Triclopyr	1.20	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2042005	Sucralose	16.6	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P355275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
--------------------------	-----------	-----------	-------------------	-----------	----------------

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P355275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043307	Total Alkalinity	0.456	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
 Batch ID: P355469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043543	Total Alkalinity	1.09	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
 Batch ID: P355277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043307	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
 Batch ID: P355474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043543	Fluoride	0.979	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P355326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043289	Organic Carbon	2.29	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P355327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043216	Organic Carbon	0.0467	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: 2043337
Field Sample ID: 20030072

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.6	P	30 - 160
EPA 8321B	Diuron-d6	85.6	P	30 - 160
EPA 8321B	Endothall-d6	88.7	P	40 - 160
EPA 8321B	Endothall-d6	88.7	P	40 - 160
EPA 8321B	Ibuprofen-d3	79.1	P	30 - 160
EPA 8321B	Primidone-d5	57.3	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	40 - 160
EPA 8321B	Sucralose-d6	108	P	40 - 160

Lab Sample ID: 2043338
Field Sample ID: 20030816

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.3	P	30 - 160
EPA 8321B	Diuron-d6	74.0	P	30 - 160
EPA 8321B	Endothall-d6	81.6	P	40 - 160
EPA 8321B	Endothall-d6	81.6	P	40 - 160
EPA 8321B	Ibuprofen-d3	90.0	P	30 - 160
EPA 8321B	Primidone-d5	60.2	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	40 - 160
EPA 8321B	Sucralose-d6	118	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A87930

Included Lab Sample IDs: 2043305, 2043306, 2043307, 2043308, 2043317, 2043318

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A87931

Included Lab Sample IDs: 2043313, 2043314, 2043315, 2043316, 2043321, 2043322

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.9	P/P	90 - 110
O-Phosphate-P	99.4	99.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A87945

Included Lab Sample IDs: 2043337, 2043338

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.4	84.2	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87969

Included Lab Sample IDs: 2043320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A87974

Included Lab Sample IDs: 2043309, 2043310, 2043311, 2043312, 2043319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.0	P/P	90 - 110
NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A88012

Included Lab Sample IDs: 2043337, 2043338

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	115	109	P/P	50 - 150
Acetaminophen	136	115	P/P	60 - 160
Bentazon	116	69.7	P/P	50 - 160
Carbamazepine	116	99.7	P/P	60 - 160
Diuron	93.2	83.9	P/P	60 - 150
Fenuron	119	107	P/P	60 - 150
Fluridone	119	128	P/P	60 - 160
Hydrocodone	103	107	P/P	60 - 150
Ibuprofen	94.5	85.0	P/P	50 - 160
Imazapyr	92.4	86.3	P/P	50 - 150
Imidacloprid	121	94.8	P/P	60 - 160
Linuron	102	101	P/P	60 - 150
MCPP	95.9	95.0	P/P	50 - 150
Naproxen	76.0	84.4	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A88012

Included Lab Sample IDs: 2043337, 2043338

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	118	87.2	P/P	60 - 160
Pyraclostrobin	108	163*	P/F	60 - 150
Triclopyr	97.3	102	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A88023

Included Lab Sample IDs: 2043337, 2043338

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	80.1	92.6	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A88028

Included Lab Sample IDs: 2043305, 2043306, 2043307, 2043308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.1	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88028

Included Lab Sample IDs: 2043305, 2043306, 2043307, 2043308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88031

Included Lab Sample IDs: 2043309, 2043310

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88036

Included Lab Sample IDs: 2043309, 2043310, 2043311, 2043312, 2043319, 2043320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	98.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88037

Included Lab Sample IDs: 2043320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.0	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88038

Included Lab Sample IDs: 2043311, 2043312, 2043319

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

Reference Method: SM 5310 B-00

Run ID: A88042

Included Lab Sample IDs: 2043309, 2043310, 2043311, 2043312, 2043319, 2043320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	95.4	P/P	90 - 110
Organic Carbon	96.2	95.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88043

Included Lab Sample IDs: 2043320

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88044

Included Lab Sample IDs: 2043343, 2043344

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	97.0	97.0	P/P	90 - 110
Zinc	99.6	99.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88046

Included Lab Sample IDs: 2043343, 2043344

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	101	P/P	90 - 110
Cadmium	99.9	101	P/P	90 - 110
Chromium	98.8	99.2	P/P	90 - 110
Copper	100	99.2	P/P	90 - 110
Lead	100	100	P/P	90 - 110
Nickel	99.0	98.7	P/P	90 - 110
Silver	99.8	99.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88053

Included Lab Sample IDs: 2043309, 2043310, 2043311, 2043312, 2043319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	99.4	P/P	90 - 110
Ammonia-N	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88057

Included Lab Sample IDs: 2043339, 2043340, 2043341, 2043342

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	99.6	99.1	P/P	90 - 110
Zinc	102	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88076

Included Lab Sample IDs: 2043339, 2043340, 2043341, 2043342

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	103	104	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Copper	102	104	P/P	90 - 110
Lead	103	102	P/P	90 - 110
Nickel	103	104	P/P	90 - 110
Silver	97.2	98.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A88097

Included Lab Sample IDs: 2043317, 2043318

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

Reference Method: SM 4500 F-C-97

Run ID: A88097

Included Lab Sample IDs: 2043317, 2043318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	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								0.812	
EPA 200.7 Rev. 4.4	Iron	104			97.4	98.1	100			0.634
	Iron	102			100	101				0.519
	Zinc	99.8			96.2	96.3	94.7			0.0857
	Zinc	98.4			101	103				2.41
EPA 200.8 Rev. 5.4	Arsenic	109			115	115	107			0.360
	Arsenic	103			113	113				0.230
	Cadmium	105			103	102	108			1.66
	Cadmium	106			99.5	102				2.09
	Chromium	104			84.4	82.9	102			1.84
	Chromium	105			88.7	87.3				1.56
	Copper	105			97.0	96.5	100			0.537
	Copper	101			102	101				0.612
	Lead	104			107	105	102			1.71
	Lead	101			110	110				0.542
	Nickel	105			92.4	91.8	99.4			0.611
	Nickel	101			105	105				0.241
	Silver	104			96.8	93.6	102			3.41
	Silver	99.3			91.1	92.0				0.902
EPA 350.1 Rev. 2.0	Ammonia-N	96.0			93.1	101				4.95
	Ammonia-N	97.9			102	103				0.799
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.5								0.989
	Kjeldahl Nitrogen	99.4			97.8	104				5.67
EPA 353.2 Rev. 2.0	NO2NO3-N	100			100	101				0.396
	NO2NO3-N	102			102					0.698
	NO2NO3-N	100			100	101				0.274
EPA 365.1 Rev. 2.0	Total-P	104			106	104				1.65
	Total-P	98.4			95.3	94.3				1.03
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101			96.8	98.1				1.00
	O-Phosphate-P	102			97.0	101				3.64
EPA 8321B	2,4-D	85.1			107	120				11.0
	Acesulfame K	94.5			137	131				4.13
	Acetaminophen	114			130	130				0.135
	Bentazon	72.6			53.3	62.0				15.2
	Carbamazepine	80.4			79.7	81.3				1.96
	Diuron	69.6			61.7	64.9				5.07
	Fenuron	101			81.5	84.7				3.92
	Fluridone	107			105	102				2.98
	Hydrocodone	98.6			84.1	85.3				1.37
	Ibuprofen	78.4			72.3	66.9				7.79
	Imazapyr	77.8								20.5
	Imidacloprid	108			125	128				2.12
	Linuron	76.9			67.2	68.2				1.51
	MCPP	113			134	129				4.01
	Naproxen	91.5			86.6	59.7				36.8
	Primidone	80.0			79.8	131				48.9
	Pyraclostrobin	71.7			54.7	53.1				2.97
	Sucralose	97.8			85.2	101				16.6
	Triclopyr	72.1			79.2	78.2				1.20
SM 2320 B-97	Total Alkalinity	100							0.456	
	Total Alkalinity	100							1.09	
SM 4500 F-C-97	Fluoride	96.9			99.5	99.5				0.0
	Fluoride	98.9			98.8	99.9				0.979
SM 5310 B-00	Organic Carbon	94.5			97.4	94.1				2.29

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
			LCS		SMP	MS
SM 5310 B-00	Organic Carbon	94.6	94.8	94.9		0.0467

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2043305, 2043306, 2043307, 2043308, 2043317, 2043318
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2043339, 2043340, 2043341, 2043342, 2043343, 2043344
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2043339, 2043340, 2043341, 2043342, 2043343, 2043344
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2043309, 2043310, 2043311, 2043312, 2043319, 2043320
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2043309, 2043310, 2043311, 2043312, 2043319, 2043320
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2043309, 2043310, 2043311, 2043312, 2043319, 2043320
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2043309, 2043310, 2043311, 2043312, 2043319, 2043320
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2043313, 2043314, 2043315, 2043316, 2043321, 2043322
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2043337, 2043338
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2043337, 2043338
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2043305, 2043306, 2043307, 2043308, 2043317, 2043318
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2043305, 2043306, 2043307, 2043308, 2043317, 2043318
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2043305, 2043306, 2043307, 2043308, 2043317, 2043318
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2043309, 2043310, 2043311, 2043312, 2043319, 2043320

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	11/21/2018			11/21/2018 15:37	Megan Treadwell	2043305, 2043306, 2043307, 2043308, 2043317, 2043318
EPA 200.7 Rev. 4.4	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/28/2018 15:35	Betina Topolski	2043343
	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/28/2018 15:45	Betina Topolski	2043344
	11/21/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 11:43	Betina Topolski	2043339
	11/21/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 11:51	Betina Topolski	2043340
	11/21/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 11:56	Betina Topolski	2043341
	11/21/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:04	Betina Topolski	2043342
EPA 200.8 Rev. 5.4	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/29/2018 17:47	Robert K Palmer	2043343
	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/29/2018 17:56	Robert K Palmer	2043344
	11/21/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:08	Allison Taylor	2043340
	11/21/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:18	Allison Taylor	2043339
	11/21/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:28	Allison Taylor	2043341
	11/21/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:37	Allison Taylor	2043342
EPA 350.1 Rev. 2.0	11/21/2018			11/29/2018 10:40	Ping Hua	2043320
	11/21/2018			11/29/2018 13:25	Ping Hua	2043309
	11/21/2018			11/29/2018 13:29	Ping Hua	2043310
	11/21/2018			11/29/2018 13:31	Ping Hua	2043311
	11/21/2018			11/29/2018 13:39	Ping Hua	2043312
	11/21/2018			11/29/2018 13:40	Ping Hua	2043319
EPA 351.2 Rev. 2.0	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 09:39	Joseph Suarez	2043320
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 10:13	Joseph Suarez	2043309
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 10:14	Joseph Suarez	2043310
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 10:16	Joseph Suarez	2043311
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 10:18	Joseph Suarez	2043312
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 10:19	Joseph Suarez	2043319
EPA 353.2 Rev. 2.0	11/21/2018			11/27/2018 13:12	Lauren Bottorf	2043309
	11/21/2018			11/27/2018 13:13	Lauren Bottorf	2043310
	11/21/2018			11/27/2018 13:14	Lauren Bottorf	2043311
	11/21/2018			11/27/2018 13:22	Lauren Bottorf	2043312
	11/21/2018			11/27/2018 13:28	Lauren Bottorf	2043319
	11/21/2018			11/29/2018 12:01	Lauren Bottorf	2043320
EPA 365.1 Rev. 2.0	11/21/2018	11/26/2018 12:15	Sima Feizi	11/27/2018 11:33	Beverly Y. Sanders	2043320
	11/21/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 09:42	Beverly Y. Sanders	2043309
	11/21/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 09:43	Beverly Y. Sanders	2043310
	11/21/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 12:49	Beverly Y. Sanders	2043311
	11/21/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 12:57	Beverly Y. Sanders	2043312
	11/21/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 12:58	Beverly Y. Sanders	2043319
EPA 365.1 Rev. 2.0 dissolved	11/21/2018			11/21/2018 15:41	Jhamieka S. Greenwood	2043322
	11/21/2018			11/21/2018 16:01	Jhamieka S. Greenwood	2043313

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0 dissolved	11/21/2018			11/21/2018 16:02	Jhamieka S. Greenwood	2043314
	11/21/2018			11/21/2018 16:03	Jhamieka S. Greenwood	2043315
	11/21/2018			11/21/2018 16:04	Jhamieka S. Greenwood	2043316
	11/21/2018			11/21/2018 16:08	Jhamieka S. Greenwood	2043321
EPA 8321B	11/21/2018	11/21/2018 11:45	Rebecca Ware	11/21/2018 16:16	Rebecca Ware	2043337
	11/21/2018	11/21/2018 11:45	Rebecca Ware	11/21/2018 16:30	Rebecca Ware	2043338
	11/21/2018	11/21/2018 11:45	Rebecca Ware	11/28/2018 13:50	Rebecca Ware	2043337
	11/21/2018	11/21/2018 11:45	Rebecca Ware	11/28/2018 14:03	Rebecca Ware	2043338
	11/21/2018	11/27/2018 08:50	Hoor Shaik	11/29/2018 06:30	Juyoung Kim	2043337
	11/21/2018	11/27/2018 08:50	Hoor Shaik	11/29/2018 06:46	Juyoung Kim	2043338
SM 2320 B-97	11/21/2018			11/29/2018 00:38	Dale L. Simmons	2043307
	11/21/2018			11/29/2018 00:59	Dale L. Simmons	2043305
	11/21/2018			11/29/2018 01:10	Dale L. Simmons	2043306
	11/21/2018			11/29/2018 01:20	Dale L. Simmons	2043308
	11/21/2018			11/30/2018 11:51	Dale L. Simmons	2043318
	11/21/2018			11/30/2018 12:01	Dale L. Simmons	2043317
SM 2540 D-97	11/21/2018			11/26/2018 16:02	Yijie Li	2043305, 2043306, 2043307, 2043308, 2043317, 2043318
SM 4500 F-C-97	11/21/2018			11/28/2018 23:05	Dale L. Simmons	2043307
	11/21/2018			11/28/2018 23:16	Dale L. Simmons	2043305
	11/21/2018			11/28/2018 23:20	Dale L. Simmons	2043306
	11/21/2018			11/28/2018 23:24	Dale L. Simmons	2043308
	11/21/2018			11/30/2018 11:51	Dale L. Simmons	2043318
	11/21/2018			11/30/2018 12:01	Dale L. Simmons	2043317
SM 5310 B-00	11/21/2018			11/28/2018 23:43	Megan Treadwell	2043309
	11/21/2018			11/28/2018 23:56	Megan Treadwell	2043310
	11/21/2018			11/29/2018 00:09	Megan Treadwell	2043312
	11/21/2018			11/29/2018 00:23	Megan Treadwell	2043319
	11/21/2018			11/29/2018 00:36	Megan Treadwell	2043320
	11/21/2018			11/29/2018 05:47	Megan Treadwell	2043311