

Chemical Analysis Report

SO-DIST-2019-04-24-02

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

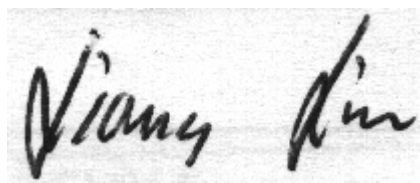
Event Description: **Myakka Streams**
Request ID: **RQ-2019-04-22-17**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 16-MAY-2019 13:57

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: 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 by the Florida Department of Health Environmental Laboratory Certification Program 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: MYAKKA(TIDAL)@ US41

Collection Date/Time: 04/23/2019 09:35

Field ID: G3SD0068

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080428	EPA 8321B	2,4-D	0.0020	U	ug/L	P362672	
		Acesulfame K**	0.10	UJ	ug/L	P362741	SUR
		AMPA**	1.0	U	ug/L	P362741	
		Sucralose**	0.19		ug/L	P362741	
		Acetaminophen**	0.0080	U	ug/L	P362672	
		Endothall**	0.25	UJ	ug/L	P362741	SUR
		Glufosinate**	1.0	U	ug/L	P362741	
		Glyphosate**	1.0	U	ug/L	P362741	
		Bentazon	0.0022	I	ug/L	P362672	
		Carbamazepine**	8.4E-04	I	ug/L	P362672	
		Diuron	0.0020	U	ug/L	P362672	
		Fenuron	0.016	U	ug/L	P362672	
		Fluridone**	0.077		ug/L	P362672	
		Imazapyr**	0.020		ug/L	P362672	
		Hydrocodone**	0.0020	U	ug/L	P362672	
		Ibuprofen**	0.020	U	ug/L	P362672	
		Imidacloprid	0.0090		ug/L	P362672	MS
		Linuron	0.0040	U	ug/L	P362672	
		MCPP	0.0020	U	ug/L	P362672	
		Naproxen**	0.0080	U	ug/L	P362672	
		Primidone**	0.0040	U	ug/L	P362672	
		Pyraclostrobin**	0.0020	U	ug/L	P362672	
		Triclopyr**	0.0040	U	ug/L	P362672	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate. Some MDLs are elevated due to required dilution of sample matrix.

Sample Location: RockCreek@EisenhowerDr

Collection Date/Time: 04/23/2019 10:05

Field ID: G3SD0070

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080405	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P362803	
	EPA 300.0	Bromide	25		mg Br/L	P362934	
	SM 2320 B-97	Total Alkalinity	98		mg CaCO3/L	P363248	
	SM 2540 D-97	TSS	8	I	mg/L	P363415	
	SM 4500 F-C-97	Fluoride	0.69		mg F/L	P363251	
2080406	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P363615	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363155	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P362940	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P362923	
2080407	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P362836	
2080429	EPA 200.7 Rev. 4.4	Iron	330	I	ug/L	P362810	
		Manganese	10	I	ug/L	P363173	
		Zinc	15	U	ug/L	P362810	
	EPA 200.8 Rev. 5.4	Aluminum	230		ug/L	P362810	
		Antimony	0.20	U	ug/L	P362810	
		Arsenic	2.01		ug/L	P363173	
		Cadmium	0.080	U	ug/L	P362810	
		Chromium	4.0	U	ug/L	P362810	
		Copper	1.6	U	ug/L	P362810	
		Lead	0.80	U	ug/L	P362810	
		Nickel	2.0	U	ug/L	P362810	
		Selenium	0.80	U	ug/L	P362810	
		Silver	0.040	U	ug/L	P362810	
		Thallium	0.40	U	ug/L	P362810	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 04/24/2019.

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

Sample Location: ROCK CREEK @ EISENHOWER DR

Collection Date/Time: 04/23/2019 10:55

Field ID: G3SD0070_DUP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080414	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P362803	
	EPA 300.0	Bromide	25		mg Br/L	P362934	
	SM 2320 B-97	Total Alkalinity	100		mg CaCO3/L	P363248	
	SM 2540 D-97	TSS	7	I	mg/L	P363415	
	SM 4500 F-C-97	Fluoride	0.68		mg F/L	P363251	
2080415	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P363032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P363397	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363155	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P362940	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P362923	
2080416	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P362836	
2080431	EPA 200.7 Rev. 4.4	Iron	290	I	ug/L	P362810	
		Manganese	9.5	I	ug/L	P363173	
		Zinc	15	U	ug/L	P362810	
	EPA 200.8 Rev. 5.4	Aluminum	220		ug/L	P362810	
		Antimony	0.20	U	ug/L	P363173	
		Arsenic	2.04		ug/L	P363173	
		Cadmium	0.080	U	ug/L	P362810	
		Chromium	4.0	U	ug/L	P362810	
		Copper	1.6	U	ug/L	P362810	
		Lead	0.80	U	ug/L	P362810	
		Nickel	2.0	U	ug/L	P362810	
		Selenium	0.80	U	ug/L	P362810	
		Silver	0.040	U	ug/L	P362810	
		Thallium	0.40	U	ug/L	P362810	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 04/24/2019.

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

Sample Location: Apollo Waterway @ Bend

Collection Date/Time: 04/23/2019 10:35

Field ID: G3SD0069

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080408	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P362803	
	EPA 300.0	Bromide	27		mg Br/L	P362934	
	SM 2320 B-97	Total Alkalinity	102		mg CaCO3/L	P363248	
	SM 2540 D-97	TSS	5	I	mg/L	P363415	
	SM 4500 F-C-97	Fluoride	0.71		mg F/L	P363251	
2080409	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P363032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P363615	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363156	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P362940	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P362923	
2080410	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P362836	

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: LittleAlligator@Midway

Collection Date/Time: 04/23/2019 11:35

Field ID: G3SD0071

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080411	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P362803	
	EPA 300.0	Bromide	37		mg Br/L	P362934	
	SM 2320 B-97	Total Alkalinity	133		mg CaCO3/L	P363248	
	SM 2540 D-97	TSS	13		mg/L	P363415	
	SM 4500 F-C-97	Fluoride	0.89		mg F/L	P363251	
2080412	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P363032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P362998	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363156	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P362940	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P362923	
2080413	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P362836	
2080430	EPA 200.7 Rev. 4.4	Iron	150	I	ug/L	P362810	
		Manganese	9.9	I	ug/L	P362810	
		Zinc	15	U	ug/L	P362810	
	EPA 200.8 Rev. 5.4	Aluminum	97		ug/L	P362810	
		Antimony	0.20	U	ug/L	P362810	
		Arsenic	2.09		ug/L	P362810	
		Cadmium	0.080	U	ug/L	P362810	
		Chromium	4.0	U	ug/L	P362810	
		Copper	1.6	U	ug/L	P362810	
		Lead	0.80	U	ug/L	P362810	
		Nickel	2.0	U	ug/L	P362810	
		Selenium	0.80	U	ug/L	P362810	
		Silver	0.040	U	ug/L	P362810	
		Thallium	0.40	U	ug/L	P362810	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362803

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362810

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363173

Component	Result	Code	Units
Manganese	1.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362810

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363173

Component	Result	Code	Units
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L

Reference Method: EPA 300.0
Batch ID: P362934

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363032

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: P362998

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363397

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363615

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363155

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363156

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362940

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362836

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

Reference Method: EPA 8321B
Batch ID: P362672

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	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P362672

Component	Result	Code	Units
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: P362741

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P363248

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

Reference Method: SM 2540 D-97
Batch ID: P363415

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363251

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362923

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: P362810

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	105		P	85 - 115
Manganese	102		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363173

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362810

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.7		P	85 - 115
Antimony	98.4		P	85 - 115
Arsenic	101		P	85 - 115
Cadmium	99.9		P	85 - 115
Chromium	90.5		P	85 - 115
Copper	98.4		P	85 - 115
Lead	91.9		P	85 - 115
Nickel	99.5		P	85 - 115
Selenium	101		P	85 - 115
Silver	95.4		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Antimony	93.2		P	70 - 130
Arsenic	97.0		P	70 - 130

Reference Method: EPA 300.0
Batch ID: P362934

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363032

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362998

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P363397

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P363615

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P363155

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P363156

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P362940

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P362836

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

Reference Method: EPA 8321B
 Batch ID: P362672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.3		P	40 - 150
Acetaminophen	94.9		P	30 - 150
Bentazon	87.5		P	30 - 150
Carbamazepine	98.4		P	40 - 150
Diuron	88.9		P	40 - 150
Fenuron	114		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	107		P	40 - 150
Ibuprofen	64.7		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	106		P	40 - 150
Linuron	78.2		P	40 - 150
MCPP	81.4		P	40 - 150
Naproxen	80.1		P	40 - 150
Primidone	63.3		P	40 - 150
Pyraclostrobin	69.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P362672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Triclopyr	51.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362741

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	131		P	40 - 150
Endothall	107		P	40 - 150
Glufosinate	125		P	40 - 150
Glyphosate	121		P	40 - 140
Sucralose	95.3		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P363248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362923

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079824	Iron	104		P	70 - 130
2079824	Manganese	96.5		P	70 - 130
2079824	Zinc	102		P	70 - 130
2080086	Iron	104	105	P/P	80 - 120
2080086	Manganese	97.6	97.9	P/P	80 - 120
2080086	Zinc	100	100	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080892	Manganese	95.0	95.9	P/P	80 - 120
2081091	Manganese	95.0		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079824	Aluminum	94.9		P	70 - 130
2079824	Antimony	101		P	70 - 130
2079824	Arsenic	109		P	70 - 130
2079824	Cadmium	96.9		P	70 - 130
2079824	Chromium	88.5		P	70 - 130
2079824	Copper	95.5		P	70 - 130
2079824	Lead	96.8		P	70 - 130
2079824	Nickel	99.4		P	70 - 130
2079824	Selenium	103		P	70 - 130
2079824	Silver	90.3		P	70 - 130
2079824	Thallium	106		P	70 - 130
2080086	Aluminum	96.6	94.5	P/P	70 - 130
2080086	Antimony	105	103	P/P	70 - 130
2080086	Arsenic	112	110	P/P	70 - 130
2080086	Cadmium	101	97.9	P/P	70 - 130
2080086	Chromium	88.6	91.4	P/P	70 - 130
2080086	Copper	97.0	96.3	P/P	70 - 130
2080086	Lead	98.0	97.2	P/P	70 - 130
2080086	Nickel	98.9	97.0	P/P	70 - 130
2080086	Selenium	103	104	P/P	70 - 130
2080086	Silver	90.0	89.1	P/P	70 - 130
2080086	Thallium	106	106	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080892	Antimony	101	95.2	P/P	70 - 130
2080892	Arsenic	109	104	P/P	70 - 130
2081091	Antimony	96.4		P	70 - 130
2081091	Arsenic	102		P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P362934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080373	Bromide	101	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080020	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362998

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080415	Kjeldahl Nitrogen	107	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081934	Kjeldahl Nitrogen	103	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080104	Kjeldahl Nitrogen	98.1	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080020	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080409	NO2NO3-N	98.2	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080412	Total-P	96.5	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362836

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080228	O-Phosphate-P	96.4	98.4	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P362672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079939	2,4-D	73.8	77.8	P/P	40 - 150
2079939	Acetaminophen	102	114	P/P	30 - 150
2079939	Bentazon	69.3	74.6	P/P	30 - 150
2079939	Carbamazepine	92.9	98.8	P/P	40 - 150
2079939	Diuron	68.7	68.0	P/P	40 - 150
2079939	Fenuron	121	142	P/P	40 - 150
2079939	Fluridone	137	147	P/P	40 - 150
2079939	Hydrocodone	94.6	102	P/P	40 - 150
2079939	Ibuprofen	55.1	66.7	P/P	40 - 150
2079939	Imazapyr	75.8	101	P/P	40 - 150
2079939	Imidacloprid	143	155	P/F	40 - 150
2079939	Linuron	61.6	59.2	P/P	40 - 150
2079939	MCP	75.3	89.0	P/P	40 - 150
2079939	Naproxen	48.7	55.6	P/P	40 - 150
2079939	Primidone	88.5	81.7	P/P	40 - 150
2079939	Pyraclostrobin	75.5	81.7	P/P	40 - 150
2079939	Triclopyr	43.4	46.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080156	Acesulfame K	102	79.1	P/P	40 - 150
2080156	AMPA	61.2	66.5	P/P	40 - 150
2080156	Endothall	87.0	114	P/P	40 - 150
2080156	Glufosinate	95.6	97.2	P/P	40 - 150
2080156	Glyphosate	124	123	P/P	40 - 140
2080156	Sucralose	103	105	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P363251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081066	Fluoride	97.2	97.2	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079986	Organic Carbon	103	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080367	Turbidity	0.306	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080086	Iron	0.149	Spike	P	0 - 20
2080086	Manganese	0.321	Spike	P	0 - 20
2080086	Zinc	0.0135	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080892	Manganese	0.905	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080086	Aluminum	2.06	Spike	P	0 - 20
2080086	Antimony	1.42	Spike	P	0 - 20
2080086	Arsenic	1.09	Spike	P	0 - 20
2080086	Cadmium	2.65	Spike	P	0 - 20
2080086	Chromium	3.10	Spike	P	0 - 20
2080086	Copper	0.732	Spike	P	0 - 20
2080086	Lead	0.799	Spike	P	0 - 20
2080086	Nickel	1.92	Spike	P	0 - 20
2080086	Selenium	1.48	Spike	P	0 - 20
2080086	Silver	1.02	Spike	P	0 - 20
2080086	Thallium	0.296	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080892	Antimony	6.16	Spike	P	0 - 20
2080892	Arsenic	4.62	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P362934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080373	Bromide	1.58	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080020	Ammonia-N	1.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080415	Kjeldahl Nitrogen	1.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081934	Kjeldahl Nitrogen	5.17	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080104	Kjeldahl Nitrogen	2.55	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080020	NO2NO3-N	0.943	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080409	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080412	Total-P	0.307	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080228	O-Phosphate-P	1.67	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P362672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079939	2,4-D	5.20	Spike	P	0 - 30
2079939	Acetaminophen	11.2	Spike	P	0 - 30
2079939	Bentazon	7.39	Spike	P	0 - 30
2079939	Carbamazepine	6.15	Spike	P	0 - 30
2079939	Diuron	0.993	Spike	P	0 - 30
2079939	Fenuron	16.2	Spike	P	0 - 30
2079939	Fluridone	7.34	Spike	P	0 - 30
2079939	Hydrocodone	7.27	Spike	P	0 - 30
2079939	Ibuprofen	18.0	Spike	P	0 - 30
2079939	Imazapyr	26.6	Spike	P	0 - 30
2079939	Imidacloprid	8.02	Spike	P	0 - 30
2079939	Linuron	3.96	Spike	P	0 - 30
2079939	MCP	16.6	Spike	P	0 - 30
2079939	Naproxen	13.3	Spike	P	0 - 30
2079939	Primidone	7.98	Spike	P	0 - 30
2079939	Pyraclostrobin	7.90	Spike	P	0 - 30
2079939	Triclopyr	7.05	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P362741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080156	Acesulfame K	25.0	Spike	P	0 - 30
2080156	AMPA	2.96	Spike	P	0 - 30
2080156	Endothall	26.8	Spike	P	0 - 30
2080156	Glufosinate	1.60	Spike	P	0 - 30
2080156	Glyphosate	0.186	Spike	P	0 - 30
2080156	Sucralose	2.19	Spike	P	0 - 30

Reference Method: SM 2320 B-97
 Batch ID: P363248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081066	Total Alkalinity	0.908	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-97
 Batch ID: P363251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081066	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P362923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079986	Organic Carbon	0.890	Spike	P	0 - 20

Quality Assurance Report

Precision

* 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: 2080428

Field Sample ID: G3SD0068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	78.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.1	P	30 - 160
EPA 8321B	Diuron-d6	64.8	P	30 - 160
EPA 8321B	Endothall-d6	231	F	30 - 160
EPA 8321B	Endothall-d6	231	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	115	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	115	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.2	P	30 - 160
EPA 8321B	Primidone-d5	77.2	P	30 - 160
EPA 8321B	Sucralose-d6	97.6	P	30 - 160
EPA 8321B	Sucralose-d6	97.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0

Run ID: A90903

Included Lab Sample IDs: 2080405, 2080408, 2080411, 2080414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	99.0	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90974

Included Lab Sample IDs: 2080405, 2080408, 2080411, 2080414

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90987

Included Lab Sample IDs: 2080407, 2080410, 2080413, 2080416

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.8	95.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90991

Included Lab Sample IDs: 2080428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.4	96.6	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A91009

Included Lab Sample IDs: 2080429, 2080430, 2080431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	102	P/P	90 - 110
Manganese	102	101	P/P	90 - 110
Zinc	100	99.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91019

Included Lab Sample IDs: 2080429, 2080430, 2080431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	93.3	93.5	P/P	90 - 110
Antimony	100	100	P/P	90 - 110
Arsenic	100	99.8	P/P	90 - 110
Cadmium	97.5	97.2	P/P	90 - 110
Copper	97.9	96.7	P/P	90 - 110
Lead	91.3	90.7	P/P	90 - 110
Nickel	98.6	96.8	P/P	90 - 110
Selenium	99.9	99.7	P/P	90 - 110
Silver	96.0	95.5	P/P	90 - 110
Thallium	96.3	95.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A91035

Included Lab Sample IDs: 2080406, 2080409, 2080412, 2080415

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91070

Included Lab Sample IDs: 2080406, 2080409, 2080412, 2080415

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91075

Included Lab Sample IDs: 2080406, 2080409, 2080412, 2080415

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

Reference Method: EPA 8321B

Run ID: A91087

Included Lab Sample IDs: 2080428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	118	68.6	P/P	60 - 160
Endothall	97.1	90.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A91091

Included Lab Sample IDs: 2080428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	120	118	P/P	60 - 160
Glufosinate	122	129	P/P	60 - 160
Glyphosate	127	134	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91123

Included Lab Sample IDs: 2080406, 2080409, 2080412, 2080415

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91153

Included Lab Sample IDs: 2080412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A91158

Included Lab Sample IDs: 2080405, 2080408, 2080411, 2080414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91158

Included Lab Sample IDs: 2080405, 2080408, 2080411, 2080414

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A91169

Included Lab Sample IDs: 2080429, 2080431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	99.7	99.2	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A91231

Included Lab Sample IDs: 2080428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.4	96.7	P/P	50 - 150
Acetaminophen	135	103	P/P	60 - 160
Bentazon	103	101	P/P	50 - 160
Carbamazepine	113	120	P/P	60 - 150
Diuron	119	116	P/P	60 - 150
Fenuron	107	113	P/P	60 - 150
Fluridone	113	128	P/P	60 - 160
Hydrocodone	113	112	P/P	60 - 150
Ibuprofen	70.6	72.3	P/P	50 - 160
Imazapyr	109	106	P/P	50 - 150
Imidacloprid	112	93.5	P/P	60 - 150
Linuron	79.8	84.7	P/P	60 - 150
MCPP	96.3	79.9	P/P	50 - 150
Naproxen	77.5	95.1	P/P	50 - 160
Primidone	118	109	P/P	60 - 150
Pyraclostrobin	105	107	P/P	60 - 150
Triclopyr	96.9	88.3	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91272

Included Lab Sample IDs: 2080415

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91284

Included Lab Sample IDs: 2080429, 2080430, 2080431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91284

Included Lab Sample IDs: 2080429, 2080430, 2080431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	93.3	93.8	P/P	90 - 110
Arsenic	94.0	92.6	P/P	90 - 110
Chromium	94.8	93.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91333

Included Lab Sample IDs: 2080406, 2080409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	98.3	P/P	90 - 110
Kjeldahl Nitrogen	102	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						0.306	
EPA 200.7 Rev. 4.4	Iron	105	104	104	105			0.149
	Manganese	102	96.5	97.6	97.9			0.321
	Manganese	100	95.0	95.9	95.0			0.905
	Zinc	102	102	100	100			0.0135
EPA 200.8 Rev. 5.4	Aluminum	95.7	94.9	96.6	94.5			2.06
	Antimony	98.4	101	105	103			1.42
	Antimony	93.2	101	95.2	96.4			6.16
	Arsenic	101	109	112	110			1.09
	Arsenic	97.0	109	104	102			4.62
	Cadmium	99.9	96.9	101	97.9			2.65
	Chromium	90.5	88.6	91.4	88.5			3.10
	Copper	98.4	95.5	97.0	96.3			0.732
	Lead	91.9	96.8	98.0	97.2			0.799
	Nickel	99.5	99.4	98.9	97.0			1.92
	Selenium	101	103	103	104			1.48
	Silver	95.4	90.3	90.0	89.1			1.02
	Thallium	102	106	106	106			0.296
EPA 300.0	Bromide	104	101	99.7				1.58
EPA 350.1 Rev. 2.0	Ammonia-N	101	104	103				1.26
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	107	105				1.48
	Kjeldahl Nitrogen	103	103	97.6				5.17
	Kjeldahl Nitrogen	109	98.1	95.1				2.55
EPA 353.2 Rev. 2.0	NO2NO3-N	101	102	101				0.943
	NO2NO3-N	101	98.2	98.2				0.0
EPA 365.1 Rev. 2.0	Total-P	101	96.5	96.9				0.307
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	96.4	98.4				1.67
EPA 8321B	2,4-D	74.3	73.8	77.8				5.20
	Acesulfame K	104	102	79.1				25.0
	Acetaminophen	94.9	102	114				11.2
	AMPA	131	61.2	66.5				2.96
	Bentazon	87.5	69.3	74.6				7.39
	Carbamazepine	98.4	92.9	98.8				6.15
	Diuron	88.9	68.7	68.0				0.993
	Endothall	107	87.0	114				26.8
	Fenuron	114	121	142				16.2
	Fluridone	107	137	147				7.34
	Glufosinate	125	95.6	97.2				1.60
	Glyphosate	121	124	123				0.186
	Hydrocodone	107	94.6	102				7.27
	Ibuprofen	64.7	55.1	66.7				18.0
	Imazapyr	103	75.8	101				26.6
	Imidacloprid	106	143	155				8.02
	Linuron	78.2	61.6	59.2				3.96
	MCPP	81.4	75.3	89.0				16.6
	Naproxen	80.1	48.7	55.6				13.3
	Primidone	63.3	88.5	81.7				7.98
	Pyraclostrobin	69.5	75.5	81.7				7.90
	Sucralose	95.3	103	105				2.19
	Triclopyr	51.5	43.4	46.5				7.05
SM 2320 B-97	Total Alkalinity	102					0.908	
SM 4500 F-C-97	Fluoride	98.2	97.2	97.2				0.0
SM 5310 B-00	Organic Carbon	106	103	102				0.890

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2080405, 2080408, 2080411, 2080414
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2080429, 2080430, 2080431
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2080429, 2080430, 2080431
EPA 300.0 / E31780	Bromide in aqueous matrices	2080405, 2080408, 2080411, 2080414
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2080406, 2080409, 2080412, 2080415
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2080406, 2080409, 2080412, 2080415
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2080406, 2080409, 2080412, 2080415
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2080406, 2080409, 2080412, 2080415
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2080407, 2080410, 2080413, 2080416
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2080428
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2080428
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2080405, 2080408, 2080411, 2080414
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2080405, 2080408, 2080411, 2080414
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2080405, 2080408, 2080411, 2080414
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2080406, 2080409, 2080412, 2080415

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	04/24/2019			04/24/2019 16:07	Adrian Shelby	2080405, 2080408, 2080411, 2080414
EPA 200.7 Rev. 4.4	04/24/2019	04/24/2019 17:30	Elliott D. Healy	04/25/2019 18:22	Betina Topolski	2080429
	04/24/2019	04/24/2019 17:30	Elliott D. Healy	04/25/2019 18:32	Betina Topolski	2080430
	04/24/2019	04/24/2019 17:30	Elliott D. Healy	04/25/2019 18:42	Betina Topolski	2080431
	04/24/2019	05/01/2019 16:30	Elliott D. Healy	05/02/2019 13:18	Betina Topolski	2080429
	04/24/2019	05/01/2019 16:30	Elliott D. Healy	05/02/2019 13:27	Betina Topolski	2080431
EPA 200.8 Rev. 5.4	04/24/2019	04/24/2019 17:30	Elliott D. Healy	04/26/2019 09:15	Martin Acosta	2080429
	04/24/2019	04/24/2019 17:30	Elliott D. Healy	04/26/2019 09:25	Martin Acosta	2080430
	04/24/2019	04/24/2019 17:30	Elliott D. Healy	04/26/2019 09:34	Martin Acosta	2080431
	04/24/2019	04/24/2019 17:30	Elliott D. Healy	05/07/2019 17:20	Martin Acosta	2080429
	04/24/2019	04/24/2019 17:30	Elliott D. Healy	05/07/2019 17:29	Martin Acosta	2080430
	04/24/2019	04/24/2019 17:30	Elliott D. Healy	05/07/2019 17:39	Martin Acosta	2080431
	04/24/2019	05/01/2019 16:30	Elliott D. Healy	05/08/2019 07:36	Martin Acosta	2080429
	04/24/2019	05/01/2019 16:30	Elliott D. Healy	05/08/2019 07:46	Martin Acosta	2080431
EPA 300.0	04/24/2019			04/25/2019 20:22	Lipi Saha	2080405
	04/24/2019			04/25/2019 20:39	Lipi Saha	2080408
	04/24/2019			04/25/2019 20:56	Lipi Saha	2080411
	04/24/2019			04/25/2019 21:13	Lipi Saha	2080414
EPA 350.1 Rev. 2.0	04/24/2019			04/26/2019 12:54	Ping Hua	2080409
	04/24/2019			04/26/2019 12:55	Ping Hua	2080412
	04/24/2019			04/26/2019 12:57	Ping Hua	2080406
	04/24/2019			04/26/2019 12:58	Ping Hua	2080415
EPA 351.2 Rev. 2.0	04/24/2019	04/29/2019 17:00	Adrian Shelby	05/02/2019 08:55	Joseph Suarez	2080412
	04/24/2019	05/06/2019 12:50	Jhamieka S. Greenwood	05/07/2019 15:11	Joseph Suarez	2080415
	04/24/2019	05/08/2019 12:15	Adrian Shelby	05/09/2019 11:24	Joseph Suarez	2080406
	04/24/2019	05/08/2019 12:15	Adrian Shelby	05/09/2019 11:28	Joseph Suarez	2080409
EPA 353.2 Rev. 2.0	04/24/2019			05/01/2019 09:52	Beverly Y. Sanders	2080406
	04/24/2019			05/01/2019 09:53	Beverly Y. Sanders	2080415
	04/24/2019			05/01/2019 10:00	Beverly Y. Sanders	2080409
	04/24/2019			05/01/2019 10:06	Beverly Y. Sanders	2080412
EPA 365.1 Rev. 2.0	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 14:17	Rosalyn Ballman	2080412
	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 14:25	Rosalyn Ballman	2080406
	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 14:26	Rosalyn Ballman	2080409
	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 14:27	Rosalyn Ballman	2080415
EPA 365.1 Rev. 2.0 dissolved	04/24/2019			04/24/2019 19:43	Jhamieka S. Greenwood	2080407
	04/24/2019			04/24/2019 19:44	Jhamieka S. Greenwood	2080416
	04/24/2019			04/24/2019 19:45	Jhamieka S. Greenwood	2080410
	04/24/2019			04/24/2019 19:46	Jhamieka S. Greenwood	2080413
EPA 8321B	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 10:22	Rebecca Ware	2080428
	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 23:54	Rebecca Ware	2080428

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/26/2019 21:25	Rebecca Ware	2080428
SM 2320 B-97	04/24/2019	04/29/2019 10:00	Hoor Shaik	05/02/2019 18:30	Juyoung Kim	2080428
	04/24/2019			05/02/2019 08:52	Dale L. Simmons	2080405
	04/24/2019			05/02/2019 09:04	Dale L. Simmons	2080408
	04/24/2019			05/02/2019 09:16	Dale L. Simmons	2080411
	04/24/2019			05/02/2019 09:28	Dale L. Simmons	2080414
SM 2540 D-97	04/24/2019			04/26/2019 14:16	Yijie Li	2080405, 2080408, 2080411, 2080414
SM 4500 F-C-97	04/24/2019			05/02/2019 06:01	Dale L. Simmons	2080405
	04/24/2019			05/02/2019 06:05	Dale L. Simmons	2080408
	04/24/2019			05/02/2019 06:09	Dale L. Simmons	2080411
	04/24/2019			05/02/2019 06:13	Dale L. Simmons	2080414
SM 5310 B-00	04/24/2019			04/26/2019 12:28	Julia Storbeck	2080406
	04/24/2019			04/26/2019 12:40	Julia Storbeck	2080409
	04/24/2019			04/26/2019 12:54	Julia Storbeck	2080412
	04/24/2019			04/26/2019 13:24	Julia Storbeck	2080415