

Chemical Analysis Report

NE-DIST-2019-11-27-02

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

Event Description: **Nassau North makeup**
Request ID: **RQ-2019-11-25-13**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 16-DEC-2019 10:24



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: Creek Draining former Hampton Lake 100m above Rd

Collection Date/Time: 11/26/2019 09:55

Field ID: G4NE0292

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2139630	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P375059	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P375405	
		Sulfate	8.7		mg SO4/L	P375409	
	SM 2120 B	Color (true)	130		PCU	P374981	
	SM 2320 B-97	Total Alkalinity	3.1		mg CaCO3/L	P375319	
	SM 2540 C-97	TDS	71		mg/L	P375552	
	SM 2540 D-97	TSS	2	U	mg/L	P375553	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P375322	
2139632	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P375391	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P375138	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375020	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P375273	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P375086	
2139634	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P374970	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference are unavailable because of high analyte concentration in the QC sample.

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Mills Creek at US 301/US1

Collection Date/Time: 11/26/2019 10:30

Field ID: 19020048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2139627	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P375059	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P375405	
		Sulfate	3.7		mg SO4/L	P375409	
		Color (true)	330		PCU	P374981	
	SM 2320 B-97	Total Alkalinity	3.5		mg CaCO3/L	P375318	
	SM 2540 C-97	TDS	104		mg/L	P375552	
	SM 2540 D-97	TSS	2	I	mg/L	P375553	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P375321	
2139628	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P375391	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P375138	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375020	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P375273	
	SM 5310 B-00	Organic Carbon	35		mg C/L	P375086	
2139629	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P374970	
2139648	EPA 200.7 Rev. 4.4	Barium	20.2		ug/L	P375027	
		Calcium	4.92		mg/L	P375027	
		Iron	1.07E+03		ug/L	P375027	
		Magnesium	1.67		mg/L	P375027	
		Potassium	1.4		mg/L	P375027	
		Sodium	8.2		mg/L	P375027	
		Zinc	6.6	I	ug/L	P375027	
	EPA 200.8 Rev. 5.4	Aluminum	525		ug/L	P375027	
		Antimony	0.050	U	ug/L	P375027	
		Arsenic	0.47		ug/L	P375027	
		Boron**	22.2		ug/L	P375027	
		Cadmium	0.020	U	ug/L	P375027	
		Chromium	0.72	I	ug/L	P375027	
		Copper	0.40	U	ug/L	P375027	
		Lead	0.46		ug/L	P375027	
		Nickel	0.55	I	ug/L	P375027	
		Selenium	0.20	U	ug/L	P375027	
		Silver	0.010	U	ug/L	P375027	
		Thallium	0.10	U	ug/L	P375027	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference are unavailable because of high analyte concentration in the QC sample.

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Lofton Cr @ A1A

Collection Date/Time: 11/26/2019 11:20

Field ID: 19020003

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2139631	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P375059	
	EPA 300.0 Rev. 2.1	Chloride	240		mg Cl/L	P375405	
		Sulfate	41		mg SO4/L	P375409	
		Color (true)	390		PCU	P374981	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P375319	
	SM 2540 C-97	TDS	516		mg/L	P375552	
	SM 2540 D-97	TSS	4	I	mg/L	P375553	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P375322	
2139633	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P375391	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P375223	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P375020	
	EPA 365.1 Rev. 2.0	Total-P	0.094		mg P/L	P375273	
	SM 5310 B-00	Organic Carbon	37		mg C/L	P375086	
2139635	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.062		mg P/L	P374970	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference are unavailable because of high analyte concentration in the QC sample.

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Egans Creek at N.14th

Collection Date/Time: 11/26/2019 12:00

Field ID: G4NE0290

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2139636	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P375059	
	EPA 300.0	Bromide	66		mg Br/L	P375479	
	SM 2320 B-97	Total Alkalinity	122		mg CaCO3/L	P375174	
	SM 2540 D-97	TSS	26		mg/L	P375554	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P375181	
2139637	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P375393	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P375137	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P375102	
	EPA 365.1 Rev. 2.0	Total-P	0.072		mg P/L	P375272	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P375087	
2139638	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P374971	
2139647	EPA 8321B	2,4-D	0.0020	U	ug/L	P374966	
		Acesulfame K**	0.10	UJ	ug/L	P374996	MS, SUR
		AMPA**	1.0	U	ug/L	P374996	MS
		Sucralose**	0.10	U	ug/L	P374996	MS
		Acetaminophen**	0.0080	U	ug/L	P374966	
		Acetamiprid**	0.0020	U	ug/L	P374966	
		Endothall**	0.25	UJ	ug/L	P374996	SUR
		Glufosinate**	1.0	U	ug/L	P374996	MS
		Glyphosate**	1.0	U	ug/L	P374996	MS
		Afidopyropen**	0.0020	UJ	ug/L	P374966	
		Bentazon	0.0011	I	ug/L	P374966	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P374966	
		Carbamazepine**	8.0E-04	U	ug/L	P374966	
		Clothianidin**	0.0020	U	ug/L	P374966	
		Dinotefuran**	0.0020	U	ug/L	P374966	
		Diuron	0.0020	U	ug/L	P374966	
		Fenuron	0.016	U	ug/L	P374966	
		Fluridone**	8.0E-04	U	ug/L	P374966	
		Imazapyr**	0.012	I	ug/L	P374966	
		Hydrocodone**	0.0020	U	ug/L	P374966	
		Ibuprofen**	0.020	U	ug/L	P374966	
		Imidacloprid	0.0020	U	ug/L	P374966	
		Linuron	0.0040	U	ug/L	P374966	
		Mandestrobin**	0.0020	UJ	ug/L	P374966	
		MCP	0.0020	U	ug/L	P374966	
		Naproxen**	0.0080	U	ug/L	P374966	
		Primidone**	0.0040	U	ug/L	P374966	
		Pyraclostrobin**	0.0020	U	ug/L	P374966	
		Thiamethoxam**	0.0020	U	ug/L	P374966	
		Tolfenpyrad**	0.0020	U	ug/L	P374966	
		Triclopyr**	0.0040	U	ug/L	P374966	

Field ID: G4NE0290

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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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: J - second source check standards for some analytes were not available for analysis.
EPA 8321B: Precision for some analytes is not available due to no recoveries in the duplicate matrix spikes. MDL for some parameters elevated due to matrix interference. Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 8321B: MDL elevated due to matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375059

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375027

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375027

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	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 300.0
Batch ID: P375479

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375405

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375409

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375391

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375393

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375137

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375138

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375223

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375020

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375102

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375272

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375273

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P374970

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P374971

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

Reference Method: EPA 8321B
 Batch ID: P374966

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	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
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
 Batch ID: P374996

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P374981

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P375174

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

Reference Method: SM 2320 B-97
Batch ID: P375318

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

Reference Method: SM 2320 B-97
Batch ID: P375319

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

Reference Method: SM 2540 C-97
Batch ID: P375552

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375553

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375554

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P375181

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P375321

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P375322

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P375086

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

Reference Method: SM 5310 B-00
Batch ID: P375087

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: P375027

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	104		P	85 - 115
Iron	103		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	100		P	85 - 115
Sodium	105		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375027

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	104		P	85 - 115
Boron	105		P	85 - 115
Cadmium	98.9		P	85 - 115
Chromium	104		P	85 - 115
Copper	109		P	85 - 115
Lead	104		P	85 - 115
Nickel	105		P	85 - 115
Selenium	102		P	85 - 115
Silver	106		P	85 - 115
Thallium	109		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P375479

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375405

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375409

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375391

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375393

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375137

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375138

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375223

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375020

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375102

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: P375272

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375273

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: P374970

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374971

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

Reference Method: EPA 8321B
Batch ID: P374966

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	136		P	40 - 160
Acetaminophen	89.9		P	30 - 160
Acetamiprid	90.2		P	40 - 160
Afidopyropen	100		P	40 - 160
Bentazon	88.8		P	30 - 160
Benzovindiflupyr	81.7		P	40 - 160
Carbamazepine	105		P	40 - 160
Clothianidin	106		P	40 - 160
Dinotefuran	97.9		P	40 - 160
Diuron	92.7		P	40 - 160
Fenuron	95.7		P	40 - 160
Fluridone	110		P	40 - 160
Hydrocodone	81.7		P	40 - 160
Ibuprofen	81.7		P	30 - 160
Imazapyr	89.3		P	40 - 160
Imidacloprid	113		P	40 - 160
Linuron	76.0		P	40 - 160
Mandestrobin	104		P	40 - 160
MCPP	145		P	40 - 160
Naproxen	95.2		P	40 - 160
Primidone	79.8		P	40 - 160
Pyraclostrobin	90.0		P	30 - 160
Thiamethoxam	106		P	40 - 160
Tolfenpyrad	57.5		P	40 - 160
Triclopyr	100		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P374996

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	81.9		P	40 - 150
AMPA	107		P	40 - 150
Endothall	86.7		P	40 - 150
Glufosinate	114		P	40 - 150
Glyphosate	121		P	40 - 140
Sucralose	106		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P374981

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P375174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P375318

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P375319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P375181

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P375321

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P375322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P375086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P375087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139437	Barium	101	106	P/P	80 - 120
2139437	Calcium	100	106	P/P	80 - 120
2139437	Iron	100	103	P/P	80 - 120
2139437	Magnesium	101	104	P/P	80 - 120
2139437	Potassium	96.1	101	P/P	80 - 120
2139437	Sodium	96.1	104	P/P	80 - 120
2139437	Zinc	103	108	P/P	80 - 120
2139462	Barium	102		P	80 - 120
2139462	Calcium	101		P	80 - 120
2139462	Iron	101		P	80 - 120
2139462	Magnesium	100		P	80 - 120
2139462	Potassium	96.9		P	80 - 120
2139462	Sodium	99.1		P	80 - 120
2139462	Zinc	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139437	Aluminum	97.2	96.3	P/P	80 - 120
2139437	Antimony	99.3	98.4	P/P	80 - 120
2139437	Arsenic	102	100	P/P	80 - 120
2139437	Boron	103	102	P/P	80 - 120
2139437	Cadmium	97.2	96.7	P/P	80 - 120
2139437	Chromium	104	102	P/P	80 - 120
2139437	Copper	101	102	P/P	80 - 120
2139437	Lead	102	101	P/P	80 - 120
2139437	Nickel	101	101	P/P	80 - 120
2139437	Selenium	96.9	95.1	P/P	80 - 120
2139437	Silver	104	105	P/P	80 - 120
2139437	Thallium	106	106	P/P	80 - 120
2139462	Aluminum	98.0		P	80 - 120
2139462	Antimony	102		P	80 - 120
2139462	Arsenic	104		P	80 - 120
2139462	Boron	104		P	80 - 120
2139462	Cadmium	97.6		P	80 - 120
2139462	Chromium	105		P	80 - 120
2139462	Copper	102		P	80 - 120
2139462	Lead	103		P	80 - 120
2139462	Nickel	101		P	80 - 120
2139462	Selenium	95.9		P	80 - 120
2139462	Silver	103		P	80 - 120
2139462	Thallium	109		P	80 - 120

Reference Method: EPA 300.0
Batch ID: P375479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140215	Bromide	99.6	97.9	P/P	90 - 110
2140307	Bromide	91.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139553	Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139384	Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139691	Ammonia-N	99.4	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139637	Ammonia-N	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139580	Kjeldahl Nitrogen	97.0	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375138

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139555	Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375223

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139691	Kjeldahl Nitrogen	99.2	96.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139551	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139603	NO2NO3-N	101	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P375272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139581	Total-P	92.8	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P375273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139594	Total-P	99.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P374970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139552	O-Phosphate-P	97.5	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P374971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139638	O-Phosphate-P	99.2	98.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P374966

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139261	2,4-D	107	103	P/P	40 - 160
2139261	Acetaminophen	68.9	80.1	P/P	30 - 160
2139261	Acetamiprid	86.5	88.7	P/P	40 - 160
2139261	Afidopyropen	91.3	95.9	P/P	40 - 160
2139261	Bentazon	48.9	46.4	P/P	30 - 160
2139261	Benzovindiflupyr	79.1	76.7	P/P	40 - 160
2139261	Carbamazepine	81.7	78.1	P/P	40 - 160
2139261	Clothianidin	79.2	71.7	P/P	40 - 160
2139261	Dinotefuran	118	118	P/P	40 - 160
2139261	Diuron	68.7	68.5	P/P	40 - 160
2139261	Fenuron	79.4	77.9	P/P	40 - 160
2139261	Fluridone	101	98.8	P/P	40 - 160
2139261	Hydrocodone	82.5	82.4	P/P	40 - 160
2139261	Ibuprofen	68.0	76.2	P/P	30 - 160
2139261	Imazapyr	74.5	75.7	P/P	40 - 160
2139261	Imidacloprid	155	146	P/P	40 - 160
2139261	Linuron	66.0	64.8	P/P	40 - 160
2139261	Mandestrobin	95.0	92.2	P/P	40 - 160
2139261	MCP	121	118	P/P	40 - 160
2139261	Naproxen	87.0	74.9	P/P	40 - 160
2139261	Primidone	84.1	80.2	P/P	40 - 160
2139261	Pyraclostrobin	85.6	81.3	P/P	30 - 160
2139261	Thiamethoxam	113	110	P/P	40 - 160
2139261	Tolfenpyrad	57.3	54.5	P/P	40 - 160
2139261	Triclopyr	87.5	88.5	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P374996

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139619	Acesulfame K	29.2	37.5	F/F	40 - 150
2139619	AMPA	0.0	0.0	F/F	40 - 150
2139619	Endothall	142	126	P/P	40 - 150
2139619	Glufosinate	0.0	0.0	F/F	40 - 150
2139619	Glyphosate	0.0	0.0	F/F	40 - 140
2139619	Sucralose	24.5	26.0	F/F	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P375181

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136116	Fluoride	97.1	97.8	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P375321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140200	Fluoride	97.6	97.6	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P375322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140216	Fluoride	98.0	98.0	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P375086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139694	Organic Carbon	103	99.7	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P375087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139380	Organic Carbon	99.5	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139602	Turbidity	6.49	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139437	Barium	4.65	Spike	P	0 - 20
2139437	Calcium	3.75	Spike	P	0 - 20
2139437	Iron	2.19	Spike	P	0 - 20
2139437	Magnesium	2.01	Spike	P	0 - 20
2139437	Potassium	3.72	Spike	P	0 - 20
2139437	Sodium	5.10	Spike	P	0 - 20
2139437	Zinc	4.83	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139437	Aluminum	0.864	Spike	P	0 - 20
2139437	Antimony	0.938	Spike	P	0 - 20
2139437	Arsenic	1.76	Spike	P	0 - 20
2139437	Boron	0.466	Spike	P	0 - 20
2139437	Cadmium	0.489	Spike	P	0 - 20
2139437	Chromium	1.72	Spike	P	0 - 20
2139437	Copper	0.752	Spike	P	0 - 20
2139437	Lead	0.785	Spike	P	0 - 20
2139437	Nickel	0.316	Spike	P	0 - 20
2139437	Selenium	1.89	Spike	P	0 - 20
2139437	Silver	0.674	Spike	P	0 - 20
2139437	Thallium	0.138	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P375479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140215	Bromide	1.63	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139384	Sulfate	0.450	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139691	Ammonia-N	2.47	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139637	Ammonia-N	0.373	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139580	Kjeldahl Nitrogen	6.17	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139555	Kjeldahl Nitrogen	2.87	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139691	Kjeldahl Nitrogen	1.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139551	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139603	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139581	Total-P	4.13	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P375273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139594	Total-P	1.45	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P374970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139552	O-Phosphate-P	0.0947	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P374971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139638	O-Phosphate-P	0.368	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P374966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139261	2,4-D	3.88	Spike	P	0 - 30
2139261	Acetaminophen	15.1	Spike	P	0 - 30
2139261	Acetamiprid	2.49	Spike	P	0 - 30
2139261	Afidopyrophen	4.91	Spike	P	0 - 30
2139261	Bentazon	5.30	Spike	P	0 - 30
2139261	Benzovindiflupyr	3.00	Spike	P	0 - 30
2139261	Carbamazepine	4.58	Spike	P	0 - 30
2139261	Clothianidin	9.97	Spike	P	0 - 30
2139261	Dinotefuran	0.169	Spike	P	0 - 30
2139261	Diuron	0.329	Spike	P	0 - 30
2139261	Fenuron	2.02	Spike	P	0 - 30
2139261	Fluridone	1.75	Spike	P	0 - 30
2139261	Hydrocodone	0.121	Spike	P	0 - 30
2139261	Ibuprofen	11.4	Spike	P	0 - 30
2139261	Imazapyr	1.61	Spike	P	0 - 30
2139261	Imidacloprid	5.85	Spike	P	0 - 30
2139261	Linuron	1.85	Spike	P	0 - 30
2139261	Mandestrobin	3.05	Spike	P	0 - 30
2139261	MCPP	2.87	Spike	P	0 - 30
2139261	Naproxen	14.9	Spike	P	0 - 30
2139261	Primidone	4.81	Spike	P	0 - 30
2139261	Pyraclostrobin	5.16	Spike	P	0 - 30
2139261	Thiamethoxam	2.90	Spike	P	0 - 30
2139261	Tolfenpyrad	4.95	Spike	P	0 - 30
2139261	Triclopyr	1.19	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P374996

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139619	Acesulfame K	25.0	Spike	P	0 - 30
2139619	Endothall	11.3	Spike	P	0 - 30
2139619	Sucralose	4.43	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P374981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139553	Color (true)	3.05	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P375174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138659	Total Alkalinity	0.192	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P375318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140200	Total Alkalinity	0.0339	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P375319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140216	Total Alkalinity	0.0597	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P375552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139550	TDS	4.20	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P375181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136116	Fluoride	0.476	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P375321

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

Reference Method: SM 4500 F-C-97
Batch ID: P375321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140200	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P375322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140216	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P375086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139694	Organic Carbon	1.91	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P375087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139380	Organic Carbon	2.19	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2139647
Field Sample ID: G4NE0290

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	144	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.9	P	30 - 160
EPA 8321B	Diuron-d6	81.9	P	30 - 160
EPA 8321B	Endothall-d6	248	F	30 - 160
EPA 8321B	Endothall-d6	248	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	91.4	P	30 - 160
EPA 8321B	Primidone-d5	88.7	P	30 - 160
EPA 8321B	Sucralose-d6	56.2	P	30 - 160
EPA 8321B	Sucralose-d6	56.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96014

Included Lab Sample IDs: 2139629, 2139634, 2139635, 2139638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	92.3	93.2	P/P	90 - 110
O-Phosphate-P	93.2	92.1	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A96017

Included Lab Sample IDs: 2139627, 2139630, 2139631

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	98.7	101	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96040

Included Lab Sample IDs: 2139628, 2139632, 2139633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	105	105	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96047

Included Lab Sample IDs: 2139627, 2139630, 2139631, 2139636

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: SM 5310 B-00

Run ID: A96056

Included Lab Sample IDs: 2139628, 2139632, 2139633, 2139637

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	98.8	P/P	90 - 110
Organic Carbon	97.9	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96069

Included Lab Sample IDs: 2139637

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96081

Included Lab Sample IDs: 2139648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.9	97.1	P/P	90 - 110
Calcium	99.8	99.6	P/P	90 - 110
Iron	99.0	98.8	P/P	90 - 110
Magnesium	99.8	99.1	P/P	90 - 110
Potassium	98.6	98.3	P/P	90 - 110
Sodium	99.0	99.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96081

Included Lab Sample IDs: 2139648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	103	99.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A96084

Included Lab Sample IDs: 2139636

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

Reference Method: SM 4500 F-C-97

Run ID: A96084

Included Lab Sample IDs: 2139636

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96087

Included Lab Sample IDs: 2139627, 2139630, 2139631

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

Reference Method: EPA 8321B

Run ID: A96104

Included Lab Sample IDs: 2139647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.6	106	P/P	50 - 150
Acetaminophen	93.9	85.6	P/P	60 - 160
Acetamiprid	94.3	87.4	P/P	50 - 150
Afidopyropen	92.4	104	P/P	50 - 150
Bentazon	77.2	79.7	P/P	50 - 160
Benzovindiflupyr	102	106	P/P	50 - 150
Carbamazepine	99.1	98.0	P/P	60 - 150
Clothianidin	89.9	89.8	P/P	60 - 150
Dinotefuran	92.1	91.8	P/P	50 - 150
Diuron	103	106	P/P	60 - 150
Fenuron	80.4	86.0	P/P	60 - 150
Fluridone	114	115	P/P	60 - 160
Hydrocodone	90.6	96.2	P/P	60 - 150
Ibuprofen	92.2	83.2	P/P	50 - 160
Imazapyr	105	110	P/P	50 - 150
Imidacloprid	95.5	95.3	P/P	60 - 150
Linuron	91.0	94.1	P/P	60 - 150
Mandestrobin	107	105	P/P	50 - 150
MCPP	108	98.8	P/P	50 - 150
Naproxen	80.9	109	P/P	50 - 160
Primidone	77.2	84.6	P/P	60 - 150
Pyraclostrobin	99.8	102	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A96104

Included Lab Sample IDs: 2139647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thiamethoxam	97.3	91.1	P/P	50 - 150
Tolfenpyrad	101	94.7	P/P	60 - 150
Triclopyr	106	98.2	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96111

Included Lab Sample IDs: 2139628, 2139632, 2139637

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	103	P/P	90 - 110
Kjeldahl Nitrogen	104	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96127

Included Lab Sample IDs: 2139647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	121	129	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A96130

Included Lab Sample IDs: 2139647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	61.1	60.4	P/P	60 - 160
Endothall	110	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A96133

Included Lab Sample IDs: 2139647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	121	P/P	60 - 160
Glufosinate	97.6	119	P/P	60 - 160
Glyphosate	112	114	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96140

Included Lab Sample IDs: 2139633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	97.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A96148

Included Lab Sample IDs: 2139627, 2139630, 2139631

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	108	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A96148

Included Lab Sample IDs: 2139627, 2139630, 2139631

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.1	P/P	90 - 110
Fluoride	99.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96170

Included Lab Sample IDs: 2139633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96171

Included Lab Sample IDs: 2139628, 2139632, 2139637

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96173

Included Lab Sample IDs: 2139648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.0	97.4	P/P	90 - 110
Antimony	96.9	97.6	P/P	90 - 110
Boron	104	104	P/P	90 - 110
Cadmium	97.3	98.0	P/P	90 - 110
Chromium	106	106	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Lead	100	101	P/P	90 - 110
Nickel	103	103	P/P	90 - 110
Selenium	101	99.5	P/P	90 - 110
Silver	105	106	P/P	90 - 110
Thallium	96.8	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96177

Included Lab Sample IDs: 2139628, 2139632, 2139633, 2139637

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

Reference Method: EPA 300.0

Run ID: A96206

Included Lab Sample IDs: 2139636

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	103	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96211

Included Lab Sample IDs: 2139648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	102	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						6.49	
EPA 200.7 Rev. 4.4	Barium	104	101	106	102			4.65
	Calcium	104	100	106	101			3.75
	Iron	103	100	103	101			2.19
	Magnesium	105	101	104	100			2.01
	Potassium	100	96.1	101	96.9			3.72
	Sodium	105	96.1	104	99.1			5.10
	Zinc	105	103	108	104			4.83
EPA 200.8 Rev. 5.4	Aluminum	100	97.2	96.3	98.0			0.864
	Antimony	101	99.3	98.4	102			0.938
	Arsenic	104	102	100	104			1.76
	Boron	105	103	102	104			0.466
	Cadmium	98.9	97.2	96.7	97.6			0.489
	Chromium	104	104	102	105			1.72
	Copper	109	101	102	102			0.752
	Lead	104	102	101	103			0.785
	Nickel	105	101	101	101			0.316
	Selenium	102	96.9	95.1	95.9			1.89
	Silver	106	104	105	103			0.674
	Thallium	109	106	106	109			0.138
EPA 300.0	Bromide	101	99.6	97.9	91.4			1.63
EPA 300.0 Rev. 2.1	Chloride	102	99.2					
	Sulfate	101	98.8				0.450	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	99.4	102				2.47
	Ammonia-N	96.4	105	105				0.373
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	97.0	104				6.17
	Kjeldahl Nitrogen	106	104	108				2.87
	Kjeldahl Nitrogen	97.4	99.2	96.7				1.92
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	104				0.0
	NO2NO3-N	101	101	101				0.0
EPA 365.1 Rev. 2.0	Total-P	102	92.8	97.0				4.13
	Total-P	101	99.7	101				1.45
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	97.5	97.6				0.0947
	O-Phosphate-P	106	99.2	98.7				0.368
EPA 8321B	2,4-D	136	107	103				3.88
	Acesulfame K	81.9	29.2	37.5				25.0
	Acetaminophen	89.9	68.9	80.1				15.1
	Acetamiprid	90.2	86.5	88.7				2.49
	Afidopyropen	100	91.3	95.9				4.91
	AMPA	107	0.0	0.0				
	Bentazon	88.8	48.9	46.4				5.30
	Benzovindiflupyr	81.7	79.1	76.7				3.00
	Carbamazepine	105	81.7	78.1				4.58
	Clothianidin	106	79.2	71.7				9.97
	Dinotefuran	97.9	118	118				0.169
	Diuron	92.7	68.7	68.5				0.329
	Endothall	86.7	142	126				11.3
	Fenuron	95.7	79.4	77.9				2.02
	Fluridone	110	101	98.8				1.75
	Glufosinate	114	0.0	0.0				
	Glyphosate	121	0.0	0.0				
	Hydrocodone	81.7	82.5	82.4				0.121
	Ibuprofen	81.7	68.0	76.2				11.4
	Imazapyr	89.3	74.5	75.7				1.61

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Imidacloprid	113	155	146		5.85
	Linuron	76.0	66.0	64.8		1.85
	Mandestrobin	104	95.0	92.2		3.05
	MCPP	145	121	118		2.87
	Naproxen	95.2	87.0	74.9		14.9
	Primidone	79.8	84.1	80.2		4.81
	Pyraclostrobin	90.0	85.6	81.3		5.16
	Sucralose	106	24.5	26.0		4.43
	Thiamethoxam	106	113	110		2.90
	Tolfenpyrad	57.5	57.3	54.5		4.95
	Triclopyr	100	87.5	88.5		1.19
SM 2120 B	Color (true)	100			3.05	
SM 2320 B-97	Total Alkalinity	104			0.192	
	Total Alkalinity	103			0.0339	
	Total Alkalinity	103			0.0597	
SM 2540 C-97	TDS				4.20	
SM 4500 F-C-97	Fluoride	97.1	97.1	97.8		0.476
	Fluoride	96.2	97.6	97.6		0.0
	Fluoride	97.2	98.0	98.0		0.0
SM 5310 B-00	Organic Carbon	105	103	99.7		1.91
	Organic Carbon	105	99.5	102		2.19

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2139627, 2139630, 2139631, 2139636
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2139648
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2139648
EPA 300.0 / E31780	Bromide in aqueous matrices	2139636
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2139627, 2139630, 2139631
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2139627, 2139630, 2139631
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2139628, 2139632, 2139633, 2139637
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2139628, 2139632, 2139633, 2139637
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2139628, 2139632, 2139633, 2139637
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2139628, 2139632, 2139633, 2139637
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2139629, 2139634, 2139635, 2139638
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2139647
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2139647
SM 2120 B / E31780	True Color measured at 450 nm	2139627, 2139630, 2139631
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2139627, 2139630, 2139631, 2139636
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2139627, 2139630, 2139631
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2139627, 2139630, 2139631, 2139636
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2139627, 2139630, 2139631, 2139636
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2139628, 2139632, 2139633, 2139637

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	11/27/2019			11/27/2019 15:10	Yen Ta	2139627, 2139630, 2139631, 2139636
EPA 200.7 Rev. 4.4	11/27/2019	12/02/2019 13:30	Elliott D. Healy	12/03/2019 16:40	Betina Topolski	2139648
EPA 200.8 Rev. 5.4	11/27/2019	12/02/2019 13:30	Elliott D. Healy	12/07/2019 06:52	Alexander Thompson	2139648
	11/27/2019	12/02/2019 13:30	Elliott D. Healy	12/10/2019 05:48	Alexander Thompson	2139648
EPA 300.0	11/27/2019			12/10/2019 00:50	Lipi Saha	2139636
EPA 300.0 Rev. 2.1	11/27/2019			12/07/2019 02:33	Jhamieka S. Greenwood	2139627
	11/27/2019			12/07/2019 02:45	Jhamieka S. Greenwood	2139630
	11/27/2019			12/07/2019 02:57	Jhamieka S. Greenwood	2139631
EPA 350.1 Rev. 2.0	11/27/2019			12/04/2019 12:25	Ping Hua	2139628
	11/27/2019			12/04/2019 12:26	Ping Hua	2139632
	11/27/2019			12/04/2019 12:28	Ping Hua	2139633
	11/27/2019			12/04/2019 13:28	Ping Hua	2139637
EPA 351.2 Rev. 2.0	11/27/2019	12/03/2019 12:55	Sima Feizi	12/04/2019 15:30	Jhamieka S. Greenwood	2139637
	11/27/2019	12/03/2019 12:55	Sima Feizi	12/04/2019 15:53	Jhamieka S. Greenwood	2139628
	11/27/2019	12/03/2019 12:55	Sima Feizi	12/04/2019 15:55	Jhamieka S. Greenwood	2139632
	11/27/2019	12/04/2019 12:22	Sima Feizi	12/05/2019 18:23	Jhamieka S. Greenwood	2139633
EPA 353.2 Rev. 2.0	11/27/2019			12/02/2019 11:10	Beverly Y. Sanders	2139628
	11/27/2019			12/02/2019 11:11	Beverly Y. Sanders	2139632
	11/27/2019			12/02/2019 11:12	Beverly Y. Sanders	2139633
	11/27/2019			12/03/2019 10:22	Beverly Y. Sanders	2139637
EPA 365.1 Rev. 2.0	11/27/2019	12/05/2019 17:50	Lipi Saha	12/06/2019 18:54	Julia Storbeck	2139633
	11/27/2019	12/05/2019 17:50	Lipi Saha	12/06/2019 20:56	Julia Storbeck	2139637
	11/27/2019	12/05/2019 17:50	Lipi Saha	12/06/2019 20:59	Julia Storbeck	2139628
	11/27/2019	12/05/2019 17:50	Lipi Saha	12/06/2019 21:00	Julia Storbeck	2139632
EPA 365.1 Rev. 2.0 dissolved	11/27/2019			11/27/2019 15:42	Samantha Davila	2139638
	11/27/2019			11/27/2019 15:51	Samantha Davila	2139629
	11/27/2019			11/27/2019 15:52	Samantha Davila	2139634
	11/27/2019			11/27/2019 15:53	Samantha Davila	2139635
EPA 8321B	11/27/2019	12/02/2019 09:00	Hoor Shaik	12/04/2019 16:47	Juyoung Kim	2139647
	11/27/2019	12/02/2019 09:00	Rebecca Ware	12/02/2019 12:26	Rebecca Ware	2139647
	11/27/2019	12/02/2019 09:00	Rebecca Ware	12/02/2019 16:16	Rebecca Ware	2139647
	11/27/2019	12/02/2019 09:00	Rebecca Ware	12/04/2019 19:26	Rebecca Ware	2139647
SM 2120 B	11/27/2019			11/27/2019 17:16	Julia Storbeck	2139630
	11/27/2019			11/27/2019 17:22	Julia Storbeck	2139627
	11/27/2019			11/27/2019 17:23	Julia Storbeck	2139631
SM 2320 B-97	11/27/2019			12/03/2019 14:01	Dale L. Simmons	2139636
	11/27/2019			12/06/2019 04:11	Dale L. Simmons	2139627
	11/27/2019			12/06/2019 05:57	Dale L. Simmons	2139630
	11/27/2019			12/06/2019 06:08	Dale L. Simmons	2139631
SM 2540 C-97	11/27/2019			12/02/2019 13:01	Yijie Li	2139627, 2139630, 2139631

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-97	11/27/2019			12/02/2019 13:01	Yijie Li	2139627, 2139630, 2139631, 2139636
SM 4500 F-C-97	11/27/2019			12/03/2019 10:55	Dale L. Simmons	2139636
	11/27/2019			12/06/2019 04:11	Dale L. Simmons	2139627
	11/27/2019			12/06/2019 05:57	Dale L. Simmons	2139630
	11/27/2019			12/06/2019 06:08	Dale L. Simmons	2139631
SM 5310 B-00	11/27/2019			12/02/2019 22:47	Lauren Lees	2139628
	11/27/2019			12/02/2019 23:01	Lauren Lees	2139632
	11/27/2019			12/02/2019 23:15	Lauren Lees	2139633
	11/27/2019			12/03/2019 04:18	Lauren Lees	2139637