Chemical Analysis Report

SE-DIST-2019-02-07-01

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

Event Description: **SMP- Miami Perimeter**
Request ID: **RQ-2019-02-04-66**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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2199 South Rock Road
Fort Pierce, FL 34945
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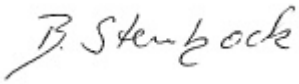
Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 05-MAR-2019 17:00



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: 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: CORAL GABLES CANAL @ SW 72nd **Collection Date/Time: 02/06/2019 11:55**

Field ID: G4SE0098 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060780	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P358527	
	EPA 300.0 Rev. 2.1	Chloride	39		mg Cl/L	P359384	
		Sulfate	7.0		mg SO4/L	P359385	
	SM 2120 B	Color (true)	21		PCU	P358545	
	SM 2320 B-97	Total Alkalinity	185		mg CaCO3/L	P359099	
	SM 2540 C-97	TDS	288		mg/L	P358884	
	SM 2540 D-97	TSS	2	I	mg/L	P358742	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P359103	
2060781	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P359056	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P358766	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P358854	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P358704	
	SM 5310 B-00	Organic Carbon	7.8		mg C/L	P359405	
2060782	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P358539	
2060810	EPA 8321B	2,4-D	0.0020	U	ug/L	P358573	
		Sucralose**	0.34		ug/L	P358378	
		Bentazon	0.0062		ug/L	P358573	
		MCPP	0.0020	U	ug/L	P358573	
		Triclopyr**	0.0040	U	ug/L	P358573	
		Imidacloprid	0.0044	I	ug/L	P358573	MS
		Diuron	0.0056	I	ug/L	P358573	
		Pyraclostrobin**	0.0020	U	ug/L	P358573	
		Primidone**	0.0040	U	ug/L	P358573	
		Linuron	0.0040	U	ug/L	P358573	
		Acetaminophen**	0.0080	U	ug/L	P358573	
		Fenuron	0.016	U	ug/L	P358573	
		Imazapyr**	0.053		ug/L	P358573	
		Carbamazepine**	0.0065		ug/L	P358573	
		Fluridone**	0.0022	I	ug/L	P358573	
		Hydrocodone**	0.0020	U	ug/L	P358573	
		Naproxen**	0.0080	U	ug/L	P358573	
		Ibuprofen**	0.020	U	ug/L	P358573	
		Glyphosate**	0.10	U	ug/L	P358378	
		AMPA**	0.10	U	ug/L	P358378	
		Endothall**	0.25	U	ug/L	P358378	
		Glufosinate**	0.10	U	ug/L	P358378	
		Acesulfame K**	0.10	U	ug/L	P358378	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 353.2 Rev. 2.0: The result was confirmed on 02/13/2019.
EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: CORAL GABLES CANAL @ SW 72nd **Collection Date/Time: 02/06/2019 12:00**

Field ID: G4SE0098_DUP Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060786	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P358527	
	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P359384	
		Sulfate	7.1		mg SO4/L	P359385	
	SM 2120 B	Color (true)	20		PCU	P358545	
	SM 2320 B-97	Total Alkalinity	185	A	mg CaCO3/L	P359099	
	SM 2540 C-97	TDS	283		mg/L	P358884	
	SM 2540 D-97	TSS	3	I	mg/L	P358742	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P359103	
2060787	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P358908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P358766	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P358854	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P358704	
	SM 5310 B-00	Organic Carbon	8.0		mg C/L	P359405	
2060788	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P358539	
2060812	EPA 8321B	2,4-D	0.0020	U	ug/L	P358573	
		Sucralose**	0.32		ug/L	P358378	
		Bentazon	0.0061		ug/L	P358573	
		MCPP	0.0020	U	ug/L	P358573	
		Triclopyr**	0.0040	U	ug/L	P358573	
		Imidacloprid	0.0051	I	ug/L	P358573	MS
		Diuron	0.0052	I	ug/L	P358573	
		Pyraclostrobin**	0.0020	U	ug/L	P358573	
		Primidone**	0.0040	U	ug/L	P358573	
		Linuron	0.0040	U	ug/L	P358573	
		Acetaminophen**	0.0080	U	ug/L	P358573	
		Fenuron	0.016	U	ug/L	P358573	
		Imazapyr**	0.051		ug/L	P358573	
		Carbamazepine**	0.0066		ug/L	P358573	
		Fluridone**	0.0021	I	ug/L	P358573	
		Hydrocodone**	0.0020	U	ug/L	P358573	
		Naproxen**	0.0080	U	ug/L	P358573	
		Ibuprofen**	0.020	U	ug/L	P358573	
		Glyphosate**	0.10	U	ug/L	P358378	
		AMPA**	0.10	U	ug/L	P358378	
		Endothall**	0.25	U	ug/L	P358378	
		Glufosinate**	0.10	U	ug/L	P358378	
		Acesulfame K**	0.10	U	ug/L	P358378	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 353.2 Rev. 2.0: The result was confirmed on 02/13/2019.
EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: CORAL GABLES CANAL @ SW 72nd **Collection Date/Time: 02/06/2019 12:10**

Field ID: FB_02062019 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060783	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P358527	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P359384	
		Sulfate	0.20	U	mg SO4/L	P359385	
	SM 2120 B	Color (true)	2.5	U	PCU	P358545	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P359099	
	SM 2540 C-97	TDS	15	U	mg/L	P358884	
	SM 2540 D-97	TSS	2	U	mg/L	P358742	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P359103	
2060784	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P358908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P358766	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P358854	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P358704	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P359405	
2060785	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P358541	
2060811	EPA 8321B	2,4-D	0.0020	U	ug/L	P358573	
		Sucralose**	0.010	U	ug/L	P358378	
		Bentazon	8.0E-04	U	ug/L	P358573	
		MCPP	0.0020	U	ug/L	P358573	
		Triclopyr**	0.0040	U	ug/L	P358573	
		Imidacloprid	0.0020	U	ug/L	P358573	MS
		Diuron	0.0020	U	ug/L	P358573	
		Pyraclostrobin**	0.0020	U	ug/L	P358573	
		Primidone**	0.0040	U	ug/L	P358573	
		Linuron	0.0040	U	ug/L	P358573	
		Acetaminophen**	0.0080	U	ug/L	P358573	
		Fenuron	0.016	U	ug/L	P358573	
		Imazapyr**	0.0040	U	ug/L	P358573	
		Carbamazepine**	8.0E-04	U	ug/L	P358573	
		Fluridone**	8.0E-04	U	ug/L	P358573	
		Hydrocodone**	0.0020	U	ug/L	P358573	
		Naproxen**	0.0080	U	ug/L	P358573	
		Ibuprofen**	0.020	U	ug/L	P358573	
		Glyphosate**	0.10	U	ug/L	P358378	
		AMPA**	0.10	U	ug/L	P358378	
		Endothall**	0.25	U	ug/L	P358378	
		Glufosinate**	0.10	U	ug/L	P358378	
		Acesulfame K**	0.10	U	ug/L	P358378	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 353.2 Rev. 2.0: The result was confirmed on 02/14/2019.
EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: C-6/ MIAMI CANAL WEST (MR-15 MIAMI-DADE) Collection Date/Time: 02/06/2019 12:50

Field ID: G4SE0094 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060777	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P358527	
	EPA 300.0 Rev. 2.1	Chloride	59		mg Cl/L	P359384	
		Sulfate	2.3		mg SO4/L	P359740	
	SM 2120 B	Color (true)	32		PCU	P358545	
	SM 2320 B-97	Total Alkalinity	214		mg CaCO3/L	P359099	
	SM 2540 C-97	TDS	347	A	mg/L	P358884	
	SM 2540 D-97	TSS	2	UA	mg/L	P358742	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P359103	
2060778	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P358796	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P358764	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P358854	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P358704	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P359405	
2060779	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P358539	

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: CYPRESS @ 441 MARGATE **Collection Date/Time: 02/06/2019 13:40**

Field ID: G4SE0038 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060774	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P358527	
	EPA 300.0 Rev. 2.1	Chloride	81		mg Cl/L	P359384	
		Sulfate	19		mg SO4/L	P359385	
	SM 2120 B	Color (true)	52	A	PCU	P358545	
	SM 2320 B-97	Total Alkalinity	165		mg CaCO3/L	P359099	
	SM 2540 C-97	TDS	371		mg/L	P358884	
	SM 2540 D-97	TSS	2	U	mg/L	P358742	
	SM 4500 F-C-97	Fluoride	0.35		mg F/L	P359103	
2060775	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P358796	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P358764	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P358853	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P358704	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P359208	
2060776	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P358539	
2060809	EPA 8321B	2,4-D	0.042		ug/L	P358573	
		Sucralose**	0.058		ug/L	P358378	
		Bentazon	0.027		ug/L	P358573	
		MCPP	0.0020	U	ug/L	P358573	
		Triclopyr**	0.0040	U	ug/L	P358573	
		Imidacloprid	0.031		ug/L	P358573	MS
		Diuron	0.0047	I	ug/L	P358573	
		Pyraclostrobin**	0.0020	U	ug/L	P358573	
		Primidone**	0.0040	U	ug/L	P358573	
		Linuron	0.0040	U	ug/L	P358573	
		Acetaminophen**	0.0080	U	ug/L	P358573	
		Fenuron	0.016	U	ug/L	P358573	
		Imazapyr**	0.054		ug/L	P358573	
		Carbamazepine**	8.0E-04	U	ug/L	P358573	
		Fluridone**	0.018		ug/L	P358573	
		Hydrocodone**	0.0020	U	ug/L	P358573	
		Naproxen**	0.0080	U	ug/L	P358573	
		Ibuprofen**	0.020	U	ug/L	P358573	
		Glyphosate**	0.53		ug/L	P358378	
		AMPA**	0.10	U	ug/L	P358378	
		Endothall**	0.25	U	ug/L	P358378	
		Glufosinate**	0.10	U	ug/L	P358378	
		Acesulfame K**	0.10	U	ug/L	P358378	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358527

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359384

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359385

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359740

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358796

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358908

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359056

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358764

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358766

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358853

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358854

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358704

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358539

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358541

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

Reference Method: EPA 8321B
Batch ID: P358378

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: EPA 8321B
Batch ID: P358573

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
Imidacloprid	0.0020	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P358573

Component	Result	Code	Units
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: SM 2120 B
Batch ID: P358545

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359099

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

Reference Method: SM 2540 C-97
Batch ID: P358884

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358742

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359208

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

Reference Method: SM 5310 B-00
Batch ID: P359405

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359384

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359740

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358796

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358908

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359056

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358764

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: P358766

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358853

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358854

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358704

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358539

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358541

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

Reference Method: EPA 8321B
Batch ID: P358378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	91.1		P	40 - 150
Endothall	98.8		P	40 - 150
Glufosinate	71.3		P	40 - 150
Glyphosate	79.3		P	40 - 140
Sucralose	99.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	60.5		P	40 - 150
Acetaminophen	82.2		P	30 - 150
Bentazon	64.9		P	30 - 150
Carbamazepine	85.2		P	40 - 150
Diuron	83.0		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	101		P	40 - 150
Hydrocodone	96.7		P	40 - 150
Ibuprofen	75.9		P	40 - 150
Imazapyr	74.4		P	40 - 150
Imidacloprid	111		P	40 - 150
Linuron	82.4		P	40 - 150
MCPP	79.2		P	40 - 150
Naproxen	70.7		P	40 - 150
Primidone	94.4		P	40 - 150
Pyraclostrobin	78.1		P	40 - 150
Triclopyr	50.5		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P358545

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

Reference Method: SM 2320 B-97
Batch ID: P359099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P359405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060669	Chloride	94.5		P	90 - 110
2060780	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060669	Sulfate	92.6		P	90 - 110
2060780	Sulfate	96.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063358	Sulfate	98.1		P	90 - 110
2063393	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358796

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060714	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358908

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060319	Ammonia-N	90.4	95.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060781	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060675	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060859	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060714	NO2NO3-N	100	98.8	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060778	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060787	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060644	O-Phosphate-P	96.7	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060877	O-Phosphate-P	95.8	97.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P358378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2059643	Acesulfame K	113	116	P/P	40 - 150
2059643	AMPA	140	144	P/P	40 - 150
2059643	Endothall	109	114	P/P	40 - 150
2059643	Glufosinate	70.4	68.9	P/P	40 - 150
2059643	Glyphosate	77.3	78.3	P/P	40 - 140
2059643	Sucralose	94.4	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061239	2,4-D	70.1	65.3	P/P	40 - 150
2061239	Acetaminophen	118	116	P/P	30 - 150
2061239	Bentazon	36.7	36.3	P/P	30 - 150
2061239	Carbamazepine	71.9	74.9	P/P	40 - 150
2061239	Diuron	62.4	66.4	P/P	40 - 150
2061239	Fenuron	83.3	80.6	P/P	40 - 150
2061239	Fluridone	80.8	87.0	P/P	40 - 150
2061239	Hydrocodone	78.8	79.7	P/P	40 - 150
2061239	Ibuprofen	87.9	87.0	P/P	40 - 150
2061239	Imidacloprid	184	167	F/F	40 - 150
2061239	Linuron	66.6	70.5	P/P	40 - 150
2061239	MCPP	88.5	79.5	P/P	40 - 150
2061239	Naproxen	51.7	50.3	P/P	40 - 150
2061239	Primidone	109	102	P/P	40 - 150
2061239	Pyraclostrobin	78.7	76.3	P/P	40 - 150
2061239	Triclopyr	47.4	40.6	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060786	Fluoride	97.0	97.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060579	Organic Carbon	104		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P359405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060778	Organic Carbon	97.0	98.7	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061032	Turbidity	15.2	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060669	Chloride	0.937	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060669	Sulfate	0.968	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063358	Sulfate	1.11	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358796

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060714	Ammonia-N	0.894	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060319	Ammonia-N	4.20	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060781	Ammonia-N	0.658	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060675	Kjeldahl Nitrogen	1.45	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060859	Kjeldahl Nitrogen	1.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060714	NO2NO3-N	1.14	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060778	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060787	Total-P	0.429	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060644	O-Phosphate-P	0.824	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060877	O-Phosphate-P	1.37	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P358378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2059643	Acesulfame K	2.45	Spike	P	0 - 30
2059643	AMPA	2.99	Spike	P	0 - 30
2059643	Endothall	4.98	Spike	P	0 - 30
2059643	Glufosinate	2.15	Spike	P	0 - 30
2059643	Glyphosate	1.27	Spike	P	0 - 30
2059643	Sucralose	8.45	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P358573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061239	2,4-D	4.88	Spike	P	0 - 30
2061239	Acetaminophen	2.21	Spike	P	0 - 30
2061239	Bentazon	0.308	Spike	P	0 - 30
2061239	Carbamazepine	3.99	Spike	P	0 - 30
2061239	Diuron	5.81	Spike	P	0 - 30
2061239	Fenuron	3.35	Spike	P	0 - 30
2061239	Fluridone	3.32	Spike	P	0 - 30
2061239	Hydrocodone	1.14	Spike	P	0 - 30
2061239	Ibuprofen	1.12	Spike	P	0 - 30
2061239	Imazapyr	24.4	Spike	P	0 - 30
2061239	Imidacloprid	7.98	Spike	P	0 - 30
2061239	Linuron	5.72	Spike	P	0 - 30
2061239	MCPP	10.6	Spike	P	0 - 30
2061239	Naproxen	2.75	Spike	P	0 - 30
2061239	Primidone	6.24	Spike	P	0 - 30
2061239	Pyraclostrobin	3.10	Spike	P	0 - 30
2061239	Triclopyr	15.6	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P358545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060774	Color (true)	1.14	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P359099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060786	Total Alkalinity	0.489	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P358884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060777	TDS	0.576	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060786	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P359208

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

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P359208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060579	Organic Carbon	0.0713	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P359405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060778	Organic Carbon	1.09	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report
Surrogates

Lab Sample ID: 2060809
Field Sample ID: G4SE0038

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	89.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.1	P	30 - 160
EPA 8321B	Diuron-d6	64.2	P	30 - 160
EPA 8321B	Endothall-d6	136	P	40 - 160
EPA 8321B	Endothall-d6	136	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	42.7	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	42.7	P	40 - 160
EPA 8321B	Ibuprofen-d3	95.9	P	30 - 160
EPA 8321B	Primidone-d5	69.9	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	40 - 160
EPA 8321B	Sucralose-d6	110	P	40 - 160

Lab Sample ID: 2060810
Field Sample ID: G4SE0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	114	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.7	P	30 - 160
EPA 8321B	Diuron-d6	70.6	P	30 - 160
EPA 8321B	Endothall-d6	116	P	40 - 160
EPA 8321B	Endothall-d6	116	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	41.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	41.5	P	40 - 160
EPA 8321B	Ibuprofen-d3	90.4	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	40 - 160
EPA 8321B	Sucralose-d6	107	P	40 - 160

Lab Sample ID: 2060811
Field Sample ID: FB_02062019

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	64.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.7	P	30 - 160
EPA 8321B	Diuron-d6	76.9	P	30 - 160
EPA 8321B	Endothall-d6	113	P	40 - 160
EPA 8321B	Endothall-d6	113	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	52.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	52.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	75.9	P	30 - 160
EPA 8321B	Primidone-d5	96.1	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	40 - 160
EPA 8321B	Sucralose-d6	108	P	40 - 160

Lab Sample ID: 2060812
Field Sample ID: G4SE0098_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	81.2	P	30 - 160

Quality Assurance Report
Surrogates

Lab Sample ID: 2060812
Field Sample ID: G4SE0098_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	71.2	P	30 - 160
EPA 8321B	Diuron-d6	66.8	P	30 - 160
EPA 8321B	Endothall-d6	111	P	40 - 160
EPA 8321B	Endothall-d6	111	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	42.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	42.3	P	40 - 160
EPA 8321B	Ibuprofen-d3	81.4	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	97.9	P	40 - 160
EPA 8321B	Sucralose-d6	97.9	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A89266
Included Lab Sample IDs: 2060774, 2060777, 2060780, 2060783, 2060786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A89268
Included Lab Sample IDs: 2060776, 2060779, 2060782, 2060785, 2060788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	98.1	P/P	90 - 110
O-Phosphate-P	98.7	97.9	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A89269
Included Lab Sample IDs: 2060774, 2060777, 2060780, 2060783, 2060786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	100	P/P	90 - 115

Reference Method: EPA 8321B
Run ID: A89271
Included Lab Sample IDs: 2060809, 2060810, 2060811, 2060812

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	124	124	P/P	60 - 160
Endothall	99.2	104	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89308
Included Lab Sample IDs: 2060809, 2060810, 2060811, 2060812

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	120	124	P/P	60 - 160
Glufosinate	78.2	79.1	P/P	60 - 160
Glyphosate	94.4	87.8	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A89366
Included Lab Sample IDs: 2060775, 2060778, 2060781, 2060784, 2060787

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A89374
Included Lab Sample IDs: 2060775, 2060778

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A89395
Included Lab Sample IDs: 2060775, 2060778, 2060781, 2060784, 2060787

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: A89404
Included Lab Sample IDs: 2060775, 2060778, 2060781, 2060784, 2060787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	96.4	P/P	90 - 110
Kjeldahl Nitrogen	96.4	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A89413
Included Lab Sample IDs: 2060784, 2060787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A89461
Included Lab Sample IDs: 2060809, 2060810, 2060811, 2060812

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	90.0	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A89467
Included Lab Sample IDs: 2060781

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

Reference Method: SM 2320 B-97
Run ID: A89482
Included Lab Sample IDs: 2060774, 2060777, 2060780, 2060783, 2060786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A89482
Included Lab Sample IDs: 2060774, 2060777, 2060780, 2060783, 2060786

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A89502
Included Lab Sample IDs: 2060809, 2060810, 2060811, 2060812

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	69.5	80.2	P/P	50 - 150
Acetaminophen	115	111	P/P	60 - 160
Bentazon	83.7	74.6	P/P	50 - 160
Carbamazepine	99.4	98.4	P/P	60 - 150
Diuron	97.4	89.5	P/P	60 - 150
Fenuron	100	97.0	P/P	60 - 150
Fluridone	98.2	104	P/P	60 - 160
Hydrocodone	110	98.7	P/P	60 - 150
Ibuprofen	71.3	82.8	P/P	50 - 160
Imazapyr	79.3	63.5	P/P	50 - 150
Imidacloprid	108	93.7	P/P	60 - 150
Linuron	96.1	104	P/P	60 - 150
MCPP	83.5	87.0	P/P	50 - 150
Naproxen	102	93.1	P/P	50 - 160
Primidone	106	91.5	P/P	60 - 150
Pyraclostrobin	115	111	P/P	60 - 150
Triclopyr	79.0	82.1	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A89517
Included Lab Sample IDs: 2060774, 2060777, 2060780, 2060783, 2060786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.8	95.9	P/P	90 - 110
Chloride	95.9	96.8	P/P	90 - 110
Sulfate	95.7	96.4	P/P	90 - 110
Sulfate	95.7	95.7	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A89523
Included Lab Sample IDs: 2060775

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.0	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A89598
Included Lab Sample IDs: 2060778, 2060781, 2060784, 2060787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.8	93.2	P/P	90 - 110
Organic Carbon	93.2	93.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A89674
Included Lab Sample IDs: 2060777

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

Quality Assurance Report
Calibration Verification

* 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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					15.2	
EPA 300.0 Rev. 2.1	Chloride	93.3	94.5	97.8		0.937	
	Sulfate	93.1	92.6	96.3		0.968	
	Sulfate	101	98.1	101		1.11	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	101			0.894
	Ammonia-N	98.3	90.4	95.3			4.20
	Ammonia-N	100	101	102			0.658
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	107	104			1.45
	Kjeldahl Nitrogen	101	104	106			1.76
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	100	98.8			1.14
	NO2NO3-N	100	99.5	99.5			0.0
EPA 365.1 Rev. 2.0	Total-P	108	104	105			0.429
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.7	97.5			0.824
	O-Phosphate-P	101	95.8	97.3			1.37
EPA 8321B	2,4-D	60.5	65.3	70.1			4.88
	Acesulfame K	113	113	116			2.45
	Acetaminophen	82.2	116	118			2.21
	AMPA	91.1	140	144			2.99
	Bentazon	64.9	36.3	36.7			0.308
	Carbamazepine	85.2	74.9	71.9			3.99
	Diuron	83.0	66.4	62.4			5.81
	Endothall	98.8	109	114			4.98
	Fenuron	101	80.6	83.3			3.35
	Fluridone	101	87.0	80.8			3.32
	Glufosinate	71.3	70.4	68.9			2.15
	Glyphosate	79.3	77.3	78.3			1.27
	Hydrocodone	96.7	79.7	78.8			1.14
	Ibuprofen	75.9	87.0	87.9			1.12
	Imazapyr	74.4					24.4
	Imidacloprid	111	167	184			7.98
	Linuron	82.4	70.5	66.6			5.72
	MCPP	79.2	79.5	88.5			10.6
	Naproxen	70.7	50.3	51.7			2.75
	Primidone	94.4	102	109			6.24
	Pyraclostrobin	78.1	76.3	78.7			3.10
	Sucralose	99.4	94.4	103			8.45
	Triclopyr	50.5	40.6	47.4			15.6
SM 2120 B	Color (true)	103				1.14	
SM 2320 B-97	Total Alkalinity	104				0.489	
SM 2540 C-97	TDS					0.576	
SM 4500 F-C-97	Fluoride	98.2	97.0	97.0			0.0
SM 5310 B-00	Organic Carbon	97.1	104				0.0713
	Organic Carbon	95.2	97.0	98.7			1.09

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2060774, 2060777, 2060780, 2060783, 2060786
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2060774, 2060777, 2060780, 2060783, 2060786
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2060774, 2060777, 2060780, 2060783, 2060786

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2060775, 2060778, 2060781, 2060784, 2060787
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2060775, 2060778, 2060781, 2060784, 2060787
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2060775, 2060778, 2060781, 2060784, 2060787
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2060775, 2060778, 2060781, 2060784, 2060787
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2060776, 2060779, 2060782, 2060785, 2060788
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2060809, 2060810, 2060811, 2060812
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2060809, 2060810, 2060811, 2060812
SM 2120 B / E31780	True Color measured at 450 nm	2060774, 2060777, 2060780, 2060783, 2060786
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2060774, 2060777, 2060780, 2060783, 2060786
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2060774, 2060777, 2060780, 2060783, 2060786
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2060774, 2060777, 2060780, 2060783, 2060786
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2060774, 2060777, 2060780, 2060783, 2060786
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2060775, 2060778, 2060781, 2060784, 2060787

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	02/07/2019			02/07/2019 15:33	Adrian Shelby	2060774, 2060777, 2060780, 2060783, 2060786
EPA 300.0 Rev. 2.1	02/07/2019			02/20/2019 23:47	Lipi Saha	2060780
	02/07/2019			02/21/2019 03:29	Lipi Saha	2060774
	02/07/2019			02/21/2019 03:46	Lipi Saha	2060777
	02/07/2019			02/21/2019 04:03	Lipi Saha	2060783
	02/07/2019			02/21/2019 04:20	Lipi Saha	2060786
	02/07/2019			02/28/2019 07:04	Lipi Saha	2060777
EPA 350.1 Rev. 2.0	02/07/2019			02/12/2019 12:46	Ping Hua	2060775
	02/07/2019			02/12/2019 12:48	Ping Hua	2060778
	02/07/2019			02/13/2019 12:11	Ping Hua	2060784
	02/07/2019			02/13/2019 12:18	Ping Hua	2060787
	02/07/2019			02/15/2019 11:46	Ping Hua	2060781
EPA 351.2 Rev. 2.0	02/07/2019	02/12/2019 12:25	Adrian Shelby	02/13/2019 15:32	Joseph Suarez	2060775
	02/07/2019	02/12/2019 12:25	Adrian Shelby	02/13/2019 15:33	Joseph Suarez	2060778
	02/07/2019	02/12/2019 12:25	Adrian Shelby	02/13/2019 15:38	Joseph Suarez	2060781
	02/07/2019	02/12/2019 12:25	Adrian Shelby	02/13/2019 15:40	Joseph Suarez	2060784
	02/07/2019	02/12/2019 12:25	Adrian Shelby	02/13/2019 15:44	Joseph Suarez	2060787
EPA 353.2 Rev. 2.0	02/07/2019			02/13/2019 11:23	Beverly Y. Sanders	2060775
	02/07/2019			02/13/2019 11:30	Beverly Y. Sanders	2060778
	02/07/2019			02/13/2019 11:36	Beverly Y. Sanders	2060781
	02/07/2019			02/13/2019 11:38	Beverly Y. Sanders	2060787
	02/07/2019			02/13/2019 11:39	Beverly Y. Sanders	2060784
EPA 365.1 Rev. 2.0	02/07/2019	02/11/2019 13:40	Sima Feizi	02/12/2019 13:43	Rosalyn Ballman	2060775
	02/07/2019	02/11/2019 13:40	Sima Feizi	02/12/2019 13:44	Rosalyn Ballman	2060778
	02/07/2019	02/11/2019 13:40	Sima Feizi	02/12/2019 13:45	Rosalyn Ballman	2060781
	02/07/2019	02/11/2019 13:40	Sima Feizi	02/12/2019 13:46	Rosalyn Ballman	2060784
	02/07/2019	02/11/2019 13:40	Sima Feizi	02/12/2019 13:47	Rosalyn Ballman	2060787
EPA 365.1 Rev. 2.0 dissolved	02/07/2019			02/07/2019 15:42	Jhamieka S. Greenwood	2060785
	02/07/2019			02/07/2019 15:45	Jhamieka S. Greenwood	2060782
	02/07/2019			02/07/2019 15:46	Jhamieka S. Greenwood	2060788
	02/07/2019			02/07/2019 16:01	Jhamieka S. Greenwood	2060776, 2060779
EPA 8321B	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 03:59	Mohammad Ghaffari	2060809
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 04:13	Mohammad Ghaffari	2060810
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 04:27	Mohammad Ghaffari	2060811
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 04:41	Mohammad Ghaffari	2060812
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 12:16	Mohammad Ghaffari	2060809
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 12:27	Mohammad Ghaffari	2060810
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 12:38	Mohammad Ghaffari	2060811
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 12:48	Mohammad Ghaffari	2060812

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/15/2019 20:36	Mohammad Ghaffari	2060809
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/15/2019 20:50	Mohammad Ghaffari	2060810
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/15/2019 21:04	Mohammad Ghaffari	2060811
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/15/2019 21:18	Mohammad Ghaffari	2060812
	02/07/2019	02/12/2019 12:00	Hoor Shaik	02/19/2019 22:01	Juyoung Kim	2060809
	02/07/2019	02/12/2019 12:00	Hoor Shaik	02/19/2019 22:36	Juyoung Kim	2060810
	02/07/2019	02/12/2019 12:00	Hoor Shaik	02/19/2019 23:10	Juyoung Kim	2060811
	02/07/2019	02/12/2019 12:00	Hoor Shaik	02/19/2019 23:45	Juyoung Kim	2060812
SM 2120 B	02/07/2019			02/07/2019 17:04	Chelsea Hernandez	2060774
	02/07/2019			02/07/2019 17:05	Chelsea Hernandez	2060777
	02/07/2019			02/07/2019 17:06	Chelsea Hernandez	2060780
	02/07/2019			02/07/2019 17:07	Chelsea Hernandez	2060783, 2060786
SM 2320 B-97	02/07/2019			02/15/2019 02:07	Dale L. Simmons	2060786
	02/07/2019			02/15/2019 04:15	Dale L. Simmons	2060774
	02/07/2019			02/15/2019 05:12	Dale L. Simmons	2060777
	02/07/2019			02/15/2019 05:25	Dale L. Simmons	2060780
	02/07/2019			02/15/2019 05:39	Dale L. Simmons	2060783
SM 2540 C-97	02/07/2019			02/08/2019 17:55	Mariam Hanna	2060774, 2060777, 2060780, 2060783, 2060786
SM 2540 D-97	02/07/2019			02/08/2019 18:20	Mariam Hanna	2060774, 2060777, 2060780, 2060783, 2060786
SM 4500 F-C-97	02/07/2019			02/15/2019 01:56	Dale L. Simmons	2060786
	02/07/2019			02/15/2019 04:15	Dale L. Simmons	2060774
	02/07/2019			02/15/2019 05:12	Dale L. Simmons	2060777
	02/07/2019			02/15/2019 05:25	Dale L. Simmons	2060780
	02/07/2019			02/15/2019 05:39	Dale L. Simmons	2060783
SM 5310 B-00	02/07/2019			02/18/2019 21:38	Chelsea Hernandez	2060775
	02/07/2019			02/22/2019 05:35	Julia Storbeck	2060778
	02/07/2019			02/22/2019 08:36	Julia Storbeck	2060781
	02/07/2019			02/22/2019 08:49	Julia Storbeck	2060784
	02/07/2019			02/22/2019 09:04	Julia Storbeck	2060787