

Chemical Analysis Report

SO-DIST-2019-06-14-02

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

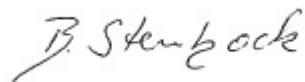
Event Description: **Sara Tidal**
Request ID: **RQ-2019-06-17-20**
Customer: **SO-DIST**
Project ID: **SMP**

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

Date Certified: 05-JUL-2019 16:58



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: Curry(Tidal)@AlbeeFarm

Collection Date/Time: 06/13/2019 11:45

Field ID: G3SD0066

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095753	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P365695	
	EPA 300.0	Bromide	33		mg Br/L	P365919	
	SM 2320 B-97	Total Alkalinity	105		mg CaCO3/L	P366013	
	SM 2540 D-97	TSS	4	I	mg/L	P366206	
	SM 4500 F-C-97	Fluoride	0.73		mg F/L	P366015	
2095755	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P366167	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P366311	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P365945	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P365915	MS
	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P366070	
2095757	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P365698	
2095772	EPA 200.7 Rev. 4.4	Iron	160	I	ug/L	P365961	
		Manganese	20		ug/L	P365961	
		Zinc	15	U	ug/L	P365961	
	EPA 200.8 Rev. 5.4	Aluminum	34	I	ug/L	P365961	
		Antimony	0.20	U	ug/L	P365961	
		Arsenic	3.16		ug/L	P365961	
		Cadmium	0.080	U	ug/L	P365961	
		Chromium	1.6	U	ug/L	P365961	
		Copper	1.6	U	ug/L	P365961	
		Lead	0.80	U	ug/L	P365961	
		Nickel	2.0	U	ug/L	P365961	
		Selenium	0.80	U	ug/L	P365961	
		Silver	0.040	U	ug/L	P365961	
		Thallium	0.40	U	ug/L	P365961	

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: Curry(Tidal)@AlbeeFarm

Collection Date/Time: 06/13/2019 11:55

Field ID: FB_06132019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095754	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P365695	
	EPA 300.0	Bromide	0.013	U	mg Br/L	P365919	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P366363	
	SM 2540 D-97	TSS	2	U	mg/L	P366205	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P366159	
2095756	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P366169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P365947	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P365823	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P365940	
	SM 5310 B-00	Organic Carbon	0.54	I	mg C/L	P366066	
2095758	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P365701	
2095773	EPA 200.7 Rev. 4.4	Iron	30	U	ug/L	P365952	
		Manganese	1.0	U	ug/L	P365952	
		Zinc	5.0	U	ug/L	P365952	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P365952	
		Antimony	0.050	U	ug/L	P365952	
		Arsenic	0.050	U	ug/L	P365952	
		Cadmium	0.020	U	ug/L	P365952	
		Chromium	0.40	U	ug/L	P365952	
		Copper	0.40	U	ug/L	P365952	
		Lead	0.20	U	ug/L	P365952	
		Nickel	0.50	U	ug/L	P365952	
		Selenium	0.20	U	ug/L	P365952	
		Silver	0.010	U	ug/L	P365952	
		Thallium	0.10	U	ug/L	P365952	

Ref. Method and Comment:

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

SM 5310 B-00: The result was confirmed on 06/26/2019.

Sample Location: Alligator @ Jacaranda

Collection Date/Time: 06/13/2019 10:45

Field ID: G2SD0026

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095759	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P365695	
	EPA 300.0 Rev. 2.1	Chloride	1.2E+03		mg Cl/L	P366134	
		Sulfate	240		mg SO4/L	P366136	
	SM 2120 B	Color (true)	74		PCU	P366194	
	SM 2320 B-97	Total Alkalinity	169		mg CaCO3/L	P366363	
	SM 2540 C-97	TDS	2.46E+03		mg/L	P366243	
	SM 2540 D-97	TSS	11		mg/L	P366202	
	SM 4500 F-C-97	Fluoride	0.27		mg F/L	P366159	
2095760	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P366168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P365947	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P366078	
	EPA 365.1 Rev. 2.0	Total-P	0.41		mg P/L	P365940	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P366066	
2095761	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.24		mg P/L	P365701	

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: Gottfried@DeerCkMobile

Collection Date/Time: 06/13/2019 10:00

Field ID: G2SD0028

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095771	EPA 8321B	2,4-D	0.0070	I	ug/L	P365553	
		Acesulfame K**	0.10	UJ	ug/L	P365716	SUR
		AMPA**	0.10	UJ	ug/L	P365716	SUR
		Sucralose**	0.059		ug/L	P365716	
		Acetaminophen**	0.0080	U	ug/L	P365553	
		Endothall**	0.25	UJ	ug/L	P365716	SUR
		Glufosinate**	0.10	UJ	ug/L	P365716	SUR
		Glyphosate**	0.10	UJ	ug/L	P365716	SUR
		Bentazon	8.0E-04	U	ug/L	P365553	
		Carbamazepine**	8.0E-04	U	ug/L	P365553	
		Diuron	0.0020	U	ug/L	P365553	
		Fenuron	0.016	U	ug/L	P365553	
		Fluridone**	0.0038		ug/L	P365553	
		Imazapyr**	0.045		ug/L	P365553	
		Hydrocodone**	0.0020	U	ug/L	P365553	
		Ibuprofen**	0.020	U	ug/L	P365553	
		Imidacloprid	0.0022	I	ug/L	P365553	MS
		Linuron	0.0040	U	ug/L	P365553	
		MCPP	0.0020	U	ug/L	P365553	
		Naproxen**	0.0080	U	ug/L	P365553	
		Primidone**	0.0040	U	ug/L	P365553	
		Pyraclostrobin**	0.0020	U	ug/L	P365553	
		Triclopyr**	0.0040	U	ug/L	P365553	RPD

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365695

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365952

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365961

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365952

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365961

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.031	I	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0
Batch ID: P365919

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366134

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366136

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366167

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366168

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365947

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366311

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365823

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365945

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366078

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365915

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365940

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365698

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365701

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

Reference Method: EPA 8321B
Batch ID: P365553

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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P365553

Component	Result	Code	Units
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P365716

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

Reference Method: SM 2120 B
Batch ID: P366194

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P366013

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

Reference Method: SM 2320 B-97
Batch ID: P366363

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

Reference Method: SM 2540 C-97
Batch ID: P366243

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366202

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366205

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P366206

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P366015

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P366159

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P366066

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

Reference Method: SM 5310 B-00
Batch ID: P366070

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: P365952

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	103		P	85 - 115
Manganese	99.0		P	85 - 115
Zinc	97.1		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	108		P	85 - 115
Manganese	102		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365952

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.5		P	85 - 115
Antimony	99.6		P	85 - 115
Arsenic	102		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	101		P	85 - 115
Copper	98.7		P	85 - 115
Lead	101		P	85 - 115
Nickel	99.8		P	85 - 115
Selenium	99.7		P	85 - 115
Silver	99.2		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	89.6		P	85 - 115
Antimony	98.1		P	85 - 115
Arsenic	98.6		P	85 - 115
Cadmium	98.0		P	85 - 115
Chromium	101		P	85 - 115
Copper	94.0		P	85 - 115
Lead	97.2		P	85 - 115
Nickel	95.2		P	85 - 115
Selenium	96.3		P	85 - 115
Silver	96.7		P	85 - 115
Thallium	106		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P365919

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366134

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366136

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366167

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366168

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365947

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366311

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365823

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365945

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366078

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: P365915

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: P365940

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: P365698

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	95.5		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P365553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	40 - 150
Acetaminophen	108		P	30 - 150
Bentazon	79.7		P	30 - 150
Carbamazepine	106		P	40 - 150
Diuron	86.3		P	40 - 150
Fenuron	97.2		P	40 - 150
Fluridone	89.1		P	40 - 150
Hydrocodone	99.4		P	40 - 150
Ibuprofen	76.3		P	30 - 150
Imazapyr	92.1		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	67.3		P	40 - 150
MCPP	137		P	40 - 150
Naproxen	80.9		P	40 - 150
Primidone	97.7		P	40 - 150
Pyraclostrobin	77.0		P	30 - 150
Triclopyr	95.8		P	30 - 150

Reference Method: EPA 8321B
Batch ID: P365716

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

Reference Method: EPA 8321B
Batch ID: P365716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	103		P	40 - 150
Endothall	95.4		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	107		P	40 - 140
Sucralose	108		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P366194

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P366013

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

Reference Method: SM 2320 B-97
Batch ID: P366363

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

Reference Method: SM 4500 F-C-97
Batch ID: P366015

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P366159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P366066

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

Reference Method: SM 5310 B-00
Batch ID: P366070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096404	Iron	98.6	101	P/P	80 - 120
2096404	Manganese	96.8	97.5	P/P	80 - 120
2096404	Zinc	95.9	96.2	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365961

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096633	Iron	103	101	P/P	70 - 130
2096633	Manganese	95.3	94.5	P/P	70 - 130
2096633	Zinc	103	101	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096404	Aluminum	98.3	97.4	P/P	80 - 120
2096404	Antimony	103	104	P/P	80 - 120
2096404	Arsenic	107	106	P/P	80 - 120
2096404	Cadmium	103	105	P/P	80 - 120
2096404	Chromium	99.8	99.2	P/P	80 - 120
2096404	Copper	97.5	97.0	P/P	80 - 120
2096404	Lead	102	102	P/P	80 - 120
2096404	Nickel	99.0	98.9	P/P	80 - 120
2096404	Selenium	92.6	92.6	P/P	80 - 120
2096404	Silver	99.9	99.7	P/P	80 - 120
2096404	Thallium	103	106	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365961

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096633	Aluminum	94.8	96.2	P/P	70 - 130
2096633	Antimony	99.2	100	P/P	70 - 130
2096633	Arsenic	107	108	P/P	70 - 130
2096633	Cadmium	98.8	96.6	P/P	70 - 130
2096633	Chromium	90.8	90.3	P/P	70 - 130
2096633	Copper	97.9	98.7	P/P	70 - 130
2096633	Lead	99.0	99.4	P/P	70 - 130
2096633	Nickel	97.5	99.1	P/P	70 - 130
2096633	Selenium	101	104	P/P	70 - 130
2096633	Silver	91.3	93.4	P/P	70 - 130
2096633	Thallium	106	105	P/P	70 - 130

Reference Method: EPA 300.0
Batch ID: P365919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095753	Bromide	96.4	96.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366134

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095743	Chloride	97.1		P	90 - 110
2096055	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095743	Sulfate	97.6		P	90 - 110
2096055	Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095629	Ammonia-N	110	109	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096164	Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095733	Ammonia-N	99.4	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096016	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095718	Kjeldahl Nitrogen	109	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095673	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365945

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095792	NO2NO3-N	101	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P366078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094893	NO2NO3-N	99.1	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P365915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095631	Total-P	89.6	92.1	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P365940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096016	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P365698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095540	O-Phosphate-P	93.6	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P365701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095748	O-Phosphate-P	94.6	95.9	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P365553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095117	2,4-D	102	111	P/P	40 - 150
2095117	Acetaminophen	98.7	89.9	P/P	30 - 150
2095117	Bentazon	67.4	55.3	P/P	30 - 150
2095117	Carbamazepine	101	90.9	P/P	40 - 150
2095117	Diuron	79.2	74.5	P/P	40 - 150
2095117	Fenuron	95.5	91.9	P/P	40 - 150
2095117	Fluridone	88.3	88.0	P/P	40 - 150
2095117	Hydrocodone	120	104	P/P	40 - 150
2095117	Ibuprofen	72.6	64.3	P/P	30 - 150
2095117	Imazapyr	117	115	P/P	40 - 150
2095117	Imidacloprid	178	167	F/F	40 - 150
2095117	Linuron	66.4	61.2	P/P	40 - 150
2095117	MCPP	127	126	P/P	40 - 150
2095117	Naproxen	78.1	76.4	P/P	40 - 150
2095117	Primidone	80.0	79.6	P/P	40 - 150
2095117	Pyraclostrobin	83.3	78.0	P/P	30 - 150
2095117	Triclopyr	64.3	92.1	P/P	30 - 150

Reference Method: EPA 8321B
 Batch ID: P365716

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

Reference Method: EPA 8321B
Batch ID: P365716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095117	Acesulfame K	108	112	P/P	40 - 150
2095117	AMPA	72.3	74.4	P/P	40 - 150
2095117	Endothall	60.8	60.2	P/P	40 - 150
2095117	Glufosinate	95.4	94.9	P/P	40 - 150
2095117	Glyphosate	98.1	98.3	P/P	40 - 140
2095117	Sucralose	101	114	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P366015

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095623	Fluoride	92.6	93.3	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P366159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095730	Fluoride	98.0	98.0	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095732	Organic Carbon	93.6	92.5	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P366070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096215	Organic Carbon	95.5	94.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095744	Turbidity	2.26	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096404	Iron	2.21	Spike	P	0 - 20
2096404	Manganese	0.633	Spike	P	0 - 20
2096404	Zinc	0.283	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096633	Iron	1.59	Spike	P	0 - 20
2096633	Manganese	0.654	Spike	P	0 - 20
2096633	Zinc	1.81	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096404	Aluminum	1.00	Spike	P	0 - 20
2096404	Antimony	0.563	Spike	P	0 - 20
2096404	Arsenic	0.363	Spike	P	0 - 20
2096404	Cadmium	2.09	Spike	P	0 - 20
2096404	Chromium	0.664	Spike	P	0 - 20
2096404	Copper	0.606	Spike	P	0 - 20
2096404	Lead	0.291	Spike	P	0 - 20
2096404	Nickel	0.124	Spike	P	0 - 20
2096404	Selenium	0.0538	Spike	P	0 - 20
2096404	Silver	0.209	Spike	P	0 - 20
2096404	Thallium	2.88	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096633	Aluminum	1.29	Spike	P	0 - 20
2096633	Antimony	1.25	Spike	P	0 - 20
2096633	Arsenic	0.903	Spike	P	0 - 20
2096633	Cadmium	2.30	Spike	P	0 - 20
2096633	Chromium	0.574	Spike	P	0 - 20
2096633	Copper	0.802	Spike	P	0 - 20
2096633	Lead	0.309	Spike	P	0 - 20
2096633	Nickel	1.54	Spike	P	0 - 20
2096633	Selenium	2.74	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096633	Silver	2.26	Spike	P	0 - 20
2096633	Thallium	0.359	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P365919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095753	Bromide	0.0371	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366134

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095743	Chloride	0.350	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095743	Sulfate	0.331	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095629	Ammonia-N	0.772	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096164	Ammonia-N	0.681	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095733	Ammonia-N	0.116	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096016	Kjeldahl Nitrogen	1.33	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095718	Kjeldahl Nitrogen	2.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095673	NO2NO3-N	0.995	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095792	NO2NO3-N	0.735	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094893	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095631	Total-P	2.64	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096016	Total-P	1.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095540	O-Phosphate-P	0.700	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095748	O-Phosphate-P	1.22	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P365553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095117	2,4-D	7.94	Spike	P	0 - 30
2095117	Acetaminophen	9.39	Spike	P	0 - 30
2095117	Bentazon	18.5	Spike	P	0 - 30
2095117	Carbamazepine	10.3	Spike	P	0 - 30
2095117	Diuron	6.11	Spike	P	0 - 30
2095117	Fenuron	3.85	Spike	P	0 - 30
2095117	Fluridone	0.372	Spike	P	0 - 30
2095117	Hydrocodone	14.3	Spike	P	0 - 30
2095117	Ibuprofen	12.0	Spike	P	0 - 30
2095117	Imazapyr	1.67	Spike	P	0 - 30
2095117	Imidacloprid	6.00	Spike	P	0 - 30
2095117	Linuron	8.10	Spike	P	0 - 30
2095117	MCP	0.876	Spike	P	0 - 30
2095117	Naproxen	2.12	Spike	P	0 - 30
2095117	Primidone	0.591	Spike	P	0 - 30
2095117	Pyraclostrobin	6.51	Spike	P	0 - 30
2095117	Triclopyr	35.5	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P365716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095117	Acesulfame K	3.84	Spike	P	0 - 30
2095117	AMPA	2.80	Spike	P	0 - 30
2095117	Endothall	0.915	Spike	P	0 - 30
2095117	Glufosinate	0.444	Spike	P	0 - 30
2095117	Glyphosate	0.229	Spike	P	0 - 30
2095117	Sucralose	12.7	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P366194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095728	Color (true)	3.27	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P366013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095623	Total Alkalinity	0.00559	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P366363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095730	Total Alkalinity	0.437	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
 Batch ID: P366243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095729	TDS	6.45	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P366015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095623	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P366159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095730	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P366066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095732	Organic Carbon	0.780	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P366070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096215	Organic Carbon	1.05	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: 2095771
Field Sample ID: G2SD0028

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	100	P	30 - 160
EPA 8321B	Acetaminophen-d4	74.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.9	P	30 - 160
EPA 8321B	Diuron-d6	58.7	P	30 - 160
EPA 8321B	Endothall-d6	896	F	30 - 160
EPA 8321B	Endothall-d6	896	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Ibuprofen-d3	56.8	P	30 - 160
EPA 8321B	Primidone-d5	66.2	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92117

Included Lab Sample IDs: 2095753, 2095754, 2095759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92120

Included Lab Sample IDs: 2095757, 2095758, 2095761

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.3	96.2	P/P	90 - 110
O-Phosphate-P	96.7	96.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A92160

Included Lab Sample IDs: 2095771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	105	92.7	P/P	60 - 160
Endothall	97.8	106	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92171

Included Lab Sample IDs: 2095759

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92173

Included Lab Sample IDs: 2095756

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

Reference Method: EPA 8321B

Run ID: A92181

Included Lab Sample IDs: 2095771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	83.2	72.1	P/P	60 - 160
Glufosinate	94.4	85.4	P/P	60 - 160
Glyphosate	94.6	84.3	P/P	60 - 160

Reference Method: EPA 300.0

Run ID: A92189

Included Lab Sample IDs: 2095753, 2095754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	99.0	101	P/P	90 - 110
Bromide	99.5	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92205

Included Lab Sample IDs: 2095755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92229

Included Lab Sample IDs: 2095755, 2095760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	103	P/P	90 - 110
Total-P	104	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92230

Included Lab Sample IDs: 2095753

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

Reference Method: SM 4500 F-C-97

Run ID: A92230

Included Lab Sample IDs: 2095753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92237

Included Lab Sample IDs: 2095760

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: A92251

Included Lab Sample IDs: 2095773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	104	103	P/P	95 - 105
Manganese	102	102	P/P	95 - 105
Zinc	100	101	P/P	95 - 105

Reference Method: SM 5310 B-00

Run ID: A92253

Included Lab Sample IDs: 2095756, 2095760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.7	96.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A92256
Included Lab Sample IDs: 2095755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A92267
Included Lab Sample IDs: 2095756

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A92276
Included Lab Sample IDs: 2095756, 2095760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	98.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A92283
Included Lab Sample IDs: 2095772, 2095773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	90.9	91.9	P/P	90 - 110
Aluminum	97.4	98.1	P/P	90 - 110
Antimony	101	101	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Arsenic	96.9	96.1	P/P	90 - 110
Cadmium	100	100	P/P	90 - 110
Cadmium	97.1	95.1	P/P	90 - 110
Chromium	102	96.1	P/P	90 - 110
Chromium	103	101	P/P	90 - 110
Copper	101	101	P/P	90 - 110
Copper	95.4	94.1	P/P	90 - 110
Lead	102	101	P/P	90 - 110
Lead	97.5	95.6	P/P	90 - 110
Nickel	101	101	P/P	90 - 110
Nickel	95.5	93.9	P/P	90 - 110
Selenium	101	101	P/P	90 - 110
Selenium	96.1	95.7	P/P	90 - 110
Silver	94.0	92.9	P/P	90 - 110
Silver	97.4	98.0	P/P	90 - 110
Thallium	97.9	94.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A92284
Included Lab Sample IDs: 2095772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	102	103	P/P	90 - 110
Manganese	102	103	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A92292

Included Lab Sample IDs: 2095754, 2095759

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92295

Included Lab Sample IDs: 2095755, 2095760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	105	105	P/P	90 - 110
Ammonia-N	107	107	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92297

Included Lab Sample IDs: 2095756

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

Reference Method: SM 2120 B

Run ID: A92306

Included Lab Sample IDs: 2095759

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

Reference Method: EPA 8321B

Run ID: A92342

Included Lab Sample IDs: 2095771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	79.4	77.7	P/P	50 - 150
Acetaminophen	111	85.5	P/P	60 - 160
Bentazon	88.9	68.1	P/P	50 - 160
Carbamazepine	114	107	P/P	60 - 150
Diuron	101	98.3	P/P	60 - 150
Fenuron	86.1	95.0	P/P	60 - 150
Fluridone	95.0	89.0	P/P	60 - 160
Hydrocodone	107	112	P/P	60 - 150
Ibuprofen	77.9	65.1	P/P	50 - 160
Imazapyr	76.4	69.0	P/P	50 - 150
Imidacloprid	93.0	86.5	P/P	60 - 150
Linuron	93.4	83.9	P/P	60 - 150
MCP	84.8	77.2	P/P	50 - 150
Naproxen	89.2	91.8	P/P	50 - 160
Primidone	81.8	74.0	P/P	60 - 150
Pyraclostrobin	87.9	94.1	P/P	60 - 150
Triclopyr	80.1	81.7	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92373

Included Lab Sample IDs: 2095755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	99.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92380

Included Lab Sample IDs: 2095754, 2095759

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

Reference Method: EPA 8321B

Run ID: A92427

Included Lab Sample IDs: 2095771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	108	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92489

Included Lab Sample IDs: 2095772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	97.0	95.5	P/P	90 - 110
Thallium	98.1	97.6	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						2.26	
EPA 200.7 Rev. 4.4	Iron	103		98.6	101			2.21
	Iron	108		103	101			1.59
	Manganese	99.0		96.8	97.5			0.633
	Manganese	102		95.3	94.5			0.654
	Zinc	97.1		95.9	96.2			0.283
	Zinc	106		103	101			1.81
EPA 200.8 Rev. 5.4	Aluminum	95.5		98.3	97.4			1.00
	Aluminum	89.6		94.8	96.2			1.29
	Antimony	99.6		103	104			0.563
	Antimony	98.1		99.2	100			1.25
	Arsenic	102		107	106			0.363
	Arsenic	98.6		107	108			0.903
	Cadmium	100		103	105			2.09
	Cadmium	98.0		98.8	96.6			2.30
	Chromium	101		99.8	99.2			0.664
	Chromium	101		90.8	90.3			0.574
	Copper	98.7		97.5	97.0			0.606
	Copper	94.0		97.9	98.7			0.802
	Lead	101		102	102			0.291
	Lead	97.2		99.0	99.4			0.309
	Nickel	99.8		99.0	98.9			0.124
	Nickel	95.2		97.5	99.1			1.54
	Selenium	99.7		92.6	92.6			0.0538
	Selenium	96.3		101	104			2.74
	Silver	99.2		99.9	99.7			0.209
	Silver	96.7		91.3	93.4			2.26
	Thallium	100		103	106			2.88
	Thallium	106		106	105			0.359
EPA 300.0	Bromide	100		96.4	96.5			0.0371
EPA 300.0 Rev. 2.1	Chloride	93.7		97.1	98.0		0.350	
	Sulfate	98.2		97.6	97.1		0.331	
EPA 350.1 Rev. 2.0	Ammonia-N	105		110	109			0.772
	Ammonia-N	108		106	105			0.681
	Ammonia-N	102		99.4	99.6			0.116
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		103	104			1.33
	Kjeldahl Nitrogen	104		109	106			2.34
EPA 353.2 Rev. 2.0	NO2NO3-N	102		101	100			0.995
	NO2NO3-N	102		101	102			0.735
	NO2NO3-N	100		99.1	98.6			0.482
EPA 365.1 Rev. 2.0	Total-P	102		89.6	92.1			2.64
	Total-P	101		104	102			1.28
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9		93.6	94.3			0.700
	O-Phosphate-P	95.5		94.6	95.9			1.22
EPA 8321B	2,4-D	115		102	111			7.94
	Acesulfame K	106		108	112			3.84
	Acetaminophen	108		98.7	89.9			9.39
	AMPA	103		72.3	74.4			2.80
	Bentazon	79.7		67.4	55.3			18.5
	Carbamazepine	106		101	90.9			10.3
	Diuron	86.3		79.2	74.5			6.11
	Endothall	95.4		60.8	60.2			0.915
	Fenuron	97.2		95.5	91.9			3.85
	Fluridone	89.1		88.3	88.0			0.372

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Glufosinate	107	95.4	94.9		0.444
	Glyphosate	107	98.1	98.3		0.229
	Hydrocodone	99.4	120	104		14.3
	Ibuprofen	76.3	72.6	64.3		12.0
	Imazapyr	92.1	117	115		1.67
	Imidacloprid	103	178	167		6.00
	Linuron	67.3	66.4	61.2		8.10
	MCP	137	127	126		0.876
	Naproxen	80.9	78.1	76.4		2.12
	Primidone	97.7	80.0	79.6		0.591
	Pyraclostrobin	77.0	83.3	78.0		6.51
	Sucralose	108	114	101		12.7
	Triclopyr	95.8	64.3	92.1		35.5
SM 2120 B	Color (true)	101			3.27	
SM 2320 B-97	Total Alkalinity	103			0.0055	
	Total Alkalinity	104			0.437	
SM 2540 C-97	TDS				6.45	
SM 4500 F-C-97	Fluoride	95.9	92.6	93.3		0.473
	Fluoride	97.6	98.0	98.0		0.0
SM 5310 B-00	Organic Carbon	94.8	93.6	92.5		0.780
	Organic Carbon	96.3	95.5	94.4		1.05

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2095753, 2095754, 2095759
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2095772, 2095773
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2095772, 2095773
EPA 300.0 / E31780	Bromide in aqueous matrices	2095753, 2095754
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2095759
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2095759
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2095755, 2095756, 2095760
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2095755, 2095756, 2095760
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2095755, 2095756, 2095760
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2095755, 2095756, 2095760
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2095757, 2095758, 2095761
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2095771
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2095771
SM 2120 B / E31780	True Color measured at 450 nm	2095759
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2095753, 2095754, 2095759
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2095759
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2095753, 2095754, 2095759
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2095753, 2095754, 2095759
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2095755, 2095756, 2095760

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	06/14/2019			06/14/2019 16:39	Adrian Shelby	2095753, 2095754, 2095759
EPA 200.7 Rev. 4.4	06/14/2019	06/19/2019 16:40	Elliott D. Healy	06/20/2019 13:34	Betina Topolski	2095773
	06/14/2019	06/19/2019 16:40	Elliott D. Healy	06/21/2019 14:10	Betina Topolski	2095772
EPA 200.8 Rev. 5.4	06/14/2019	06/19/2019 16:40	Elliott D. Healy	06/22/2019 04:57	Robert K Palmer	2095773
	06/14/2019	06/19/2019 16:40	Elliott D. Healy	06/22/2019 15:35	Robert K Palmer	2095772
	06/14/2019	06/19/2019 16:40	Elliott D. Healy	07/01/2019 20:27	Robert K Palmer	2095772
EPA 300.0	06/14/2019			06/18/2019 13:57	Lipi Saha	2095753
	06/14/2019			06/18/2019 17:39	Lipi Saha	2095754
EPA 300.0 Rev. 2.1	06/14/2019			06/19/2019 14:14	Lipi Saha	2095759
EPA 350.1 Rev. 2.0	06/14/2019			06/21/2019 11:53	Ping Hua	2095756
	06/14/2019			06/21/2019 14:01	Ping Hua	2095755
	06/14/2019			06/21/2019 14:38	Ping Hua	2095760
EPA 351.2 Rev. 2.0	06/14/2019	06/19/2019 10:47	Sima Feizi	06/21/2019 10:28	Joseph Suarez	2095756
	06/14/2019	06/19/2019 10:47	Sima Feizi	06/21/2019 10:30	Joseph Suarez	2095760
	06/14/2019	06/24/2019 12:10	Adrian Shelby	06/26/2019 12:45	Virginia P. Brown	2095755
EPA 353.2 Rev. 2.0	06/14/2019			06/18/2019 11:26	Beverly Y. Sanders	2095756
	06/14/2019			06/19/2019 11:04	Beverly Y. Sanders	2095755
	06/14/2019			06/20/2019 11:45	Beverly Y. Sanders	2095760
EPA 365.1 Rev. 2.0	06/14/2019	06/19/2019 12:35	Sima Feizi	06/20/2019 08:55	Lipi Saha	2095755
	06/14/2019	06/19/2019 12:35	Sima Feizi	06/20/2019 09:59	Lipi Saha	2095760
	06/14/2019	06/19/2019 12:35	Sima Feizi	06/21/2019 10:41	Lipi Saha	2095756
EPA 365.1 Rev. 2.0 dissolved	06/14/2019			06/14/2019 17:24	Jhamieka S. Greenwood	2095761
	06/14/2019			06/14/2019 17:25	Jhamieka S. Greenwood	2095757
	06/14/2019			06/14/2019 17:31	Jhamieka S. Greenwood	2095758
EPA 8321B	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/17/2019 20:22	Rebecca Ware	2095771
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/18/2019 12:36	Rebecca Ware	2095771
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/26/2019 19:34	Rebecca Ware	2095771
	06/14/2019	06/19/2019 09:00	Hoor Shaik	06/20/2019 07:14	Juyoung Kim	2095771
SM 2120 B	06/14/2019			06/14/2019 17:12	Madeline Funaro	2095759
SM 2320 B-97	06/14/2019			06/19/2019 23:39	Dale L. Simmons	2095753
	06/14/2019			06/26/2019 09:41	Dale L. Simmons	2095754
	06/14/2019			06/26/2019 12:28	Dale L. Simmons	2095759
SM 2540 C-97	06/14/2019			06/19/2019 15:22	Yijie Li	2095759
SM 2540 D-97	06/14/2019			06/19/2019 15:22	Yijie Li	2095753, 2095754, 2095759
SM 4500 F-C-97	06/14/2019			06/19/2019 21:38	Dale L. Simmons	2095753
	06/14/2019			06/22/2019 06:18	Dale L. Simmons	2095754
	06/14/2019			06/22/2019 06:57	Dale L. Simmons	2095759
SM 5310 B-00	06/14/2019			06/18/2019 05:42	Madeline Funaro	2095756
	06/14/2019			06/18/2019 05:55	Madeline Funaro	2095760
	06/14/2019			06/20/2019 03:15	Madeline Funaro	2095755