

Chemical Analysis Report

NW-DIST-2017-04-27-01

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

Event Description: **ENRA Perdido River WBID 1004D 462A 784 462B,C**
Request ID: **RQ-2017-04-24-14**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 24-MAY-2017 10:50



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 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: BIG LAGOON ICW BRIDGE

Collection Date/Time: 04/26/2017 10:15

Field ID: G5NW0121

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893583	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P324193	
	SM 2320 B-97	Total Alkalinity	86		mg CaCO3/L	P324857	
	SM 2540 D-97	TSS	3	I	mg/L	P324593	
	SM 4500 F-C-97	Fluoride	0.82		mg F/L	P324859	
1893591	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P324260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P324532	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324319	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P324326	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P324948	
1893599	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P324186	

Sample Location: BIG LAGOON STATE PARK (SEAGRASS)

Collection Date/Time: 04/26/2017 10:30

Field ID: G5NW0122

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893584	EPA 180.1 Rev. 2.0	Turbidity	1.4	A	NTU	P324193	
	SM 2320 B-97	Total Alkalinity	89		mg CaCO3/L	P324857	
	SM 2540 D-97	TSS	3	U	mg/L	P324593	
	SM 4500 F-C-97	Fluoride	0.84		mg F/L	P324859	
1893592	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P324260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27	I	mg N/L	P324532	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324319	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P324326	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P324948	
1893600	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324186	

Sample Location: TEE LAKE (CENTER)

Collection Date/Time: 04/26/2017 12:25

Field ID: G5NW0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893585	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P324193	
	SM 2320 B-97	Total Alkalinity	32		mg CaCO3/L	P324857	
	SM 2540 D-97	TSS	14		mg/L	P324592	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P325275	
1893593	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P324260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P324532	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324319	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P324327	
	SM 5310 B-00	Organic Carbon	5.7		mg C/L	P324283	
1893601	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324186	

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: PERDIDO RIVER (ALLIGATOR BAYOU)

Collection Date/Time: 04/26/2017 13:10

Field ID: G5NW0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893586	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P324193	
	SM 2320 B-97	Total Alkalinity	5.5		mg CaCO3/L	P325141	
	SM 2540 D-97	TSS	3	I	mg/L	P324591	
	SM 4500 F-C-97	Fluoride	0.048	I	mg F/L	P324831	
1893594	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P324260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P324532	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.36		mg N/L	P324319	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P324327	
	SM 5310 B-00	Organic Carbon	2.8		mg C/L	P324283	
1893602	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324186	

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: PERDIDO RIVER (MOUTH)

Collection Date/Time: 04/26/2017 12:40

Field ID: G5NW0018

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893587	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P324193	
	SM 2320 B-97	Total Alkalinity	37	A	mg CaCO3/L	P324857	
	SM 2540 D-97	TSS	10		mg/L	P324591	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P324859	
1893595	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P324260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P324290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P324319	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P324327	
	SM 5310 B-00	Organic Carbon	4.7		mg C/L	P324283	
1893603	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324186	

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: PERDIDO RIVER (MOUTH) DUPLICATE

Collection Date/Time: 04/26/2017 12:45

Field ID: G4NW0018DUPLICATE

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893588	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P324193	
	SM 2320 B-97	Total Alkalinity	36		mg CaCO3/L	P324857	
	SM 2540 D-97	TSS	11		mg/L	P324591	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P324859	
1893596	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P324260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P324290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P324319	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P324327	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P324283	
1893604	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324186	

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: PERDIDO RIVER (MOUTH)

Collection Date/Time: 04/26/2017 12:50

Field ID: FIELDBLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893589	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P324193	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P325141	
	SM 2540 D-97	TSS	2	U	mg/L	P324591	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P324831	
1893597	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P324259	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P324286	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324388	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P324347	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P324283	
1893605	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324186	

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: PERDIDO RIVER (MIDDLE)

Collection Date/Time: 04/26/2017 13:45

Field ID: G5NW0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893590	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P324193	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P325141	
	SM 2540 D-97	TSS	4	I	mg/L	P324592	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P324831	
1893598	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P324259	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P324286	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P324388	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P324347	
	SM 5310 B-00	Organic Carbon	3.1		mg C/L	P324283	
1893606	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324185	

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: PERDIDO RIVER (MIDDLE)

Collection Date/Time: 04/26/2017 13:45

Field ID: G5NW0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893618	EPA 8321B	Sucralose**	0.18		ug/L	P324163	
	USGS O-2060-01	2,4-D	8.0E-04	I	ug/L	P324133	
		Diuron	0.0034		ug/L	P324133	
		Fenuron	0.0040	U	ug/L	P324133	
		Imidacloprid	0.0031	I	ug/L	P324133	MS
		Bentazon	8.0E-04	U	ug/L	P324133	
		Linuron	0.0040	U	ug/L	P324133	
		Acetaminophen**	0.0080	U	ug/L	P324133	
		MCP	8.0E-04	U	ug/L	P324133	
		Carbamazepine**	9.6E-04	I	ug/L	P324133	
		Triclopyr**	0.0040	U	ug/L	P324133	

Field ID: G5NW0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893618	USGS O-2060-01	Primidone**	0.0040	U	ug/L	P324133	
		Fluridone**	4.0E-04	U	ug/L	P324133	

Ref. Method and Comment:
 USGS O-2060-01: Indaziflam = 0.027 I ug/L.

Sample Location: PERDIDO RIVER (ABOVE STYX RIVER)

Collection Date/Time: 04/26/2017 14:00

Field ID: G5NW0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893580	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P324192	
	EPA 300.0 Rev. 2.1	Chloride	44		mg Cl/L	P324870	
		Sulfate	6.2		mg SO4/L	P324874	
	SM 2120 B	Color (true)	32		PCU	P324143	
	SM 2320 B-97	Total Alkalinity	2.3	I	mg CaCO3/L	P325141	
	SM 2540 C-97	TDS	103	A	mg/L	P325072	
	SM 2540 D-97	TSS	3	IA	mg/L	P324862	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P324831	
1893581	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P324259	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P324286	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P324388	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P324488	
	SM 5310 B-00	Organic Carbon	2.8		mg C/L	P324283	
1893582	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324185	

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P324192

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P324193

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P324870

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P324874

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324874

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324259

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324260

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324286

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324290

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324532

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324319

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324388

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324326

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324327

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324347

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324488

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324185

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324186

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

Reference Method: EPA 8321B
Batch ID: P324163

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P324143

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P324857

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

Reference Method: SM 2320 B-97
Batch ID: P325141

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P325072

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324591

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324592

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324593

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324862

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P324831

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P324859

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325275

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P324283

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

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P324948

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

Reference Method: USGS O-2060-01
Batch ID: P324133

Component	Result	Code	Units
2,4-D	8.0E-04	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0040	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	8.0E-04	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324870

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324874

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324259

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324260

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324286

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324290

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324532

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324388

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324326

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324327

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324347

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324488

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324185

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324186

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

Reference Method: EPA 8321B
Batch ID: P324163

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	73.6		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P324857

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P325141

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

Reference Method: SM 4500 F-C-97
Batch ID: P324831

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P324859

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.9		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P325275

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P324283

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

Reference Method: SM 5310 B-00
Batch ID: P324948

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	91.3		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P324133

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	76.3		P	40 - 140
Acetaminophen	105		P	40 - 140
Bentazon	69.5		P	40 - 140
Carbamazepine	121		P	40 - 140
Diuron	127		P	40 - 140
Fenuron	127		P	40 - 140
Fluridone	117		P	40 - 140
Imidacloprid	127		P	40 - 160
Linuron	127		P	40 - 140
MCPP	73.2		P	40 - 140
Primidone	120		P	40 - 140
Triclopyr	71.7		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893679	Chloride	97.5		P	90 - 110
1893698	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893679	Sulfate	94.6		P	90 - 110
1893698	Sulfate	93.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893289	Ammonia-N	105	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893591	Ammonia-N	106	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893635	Kjeldahl Nitrogen	99.5	97.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893595	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893537	Kjeldahl Nitrogen	99.6	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893540	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893466	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P324326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893520	Total-P	94.8	90.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P324327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893595	Total-P	98.9	96.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P324347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893598	Total-P	96.1	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P324488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1894618	Total-P	103	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P324185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893582	O-Phosphate-P	99.4	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P324186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893599	O-Phosphate-P	94.8	95.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P324163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893377	Sucralose	109	114	P/P	40 - 140

Reference Method: SM 4500 F-C-97
 Batch ID: P324831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893545	Fluoride	96.8	96.1	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P324859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893587	Fluoride	97.2	97.8	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P325275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895643	Fluoride	102	102	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P324283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893581	Organic Carbon	103	103	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P324948

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893591	Organic Carbon	90.2	87.7	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P324133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893010	2,4-D	73.2	76.3	P/P	40 - 140
1893010	Acetaminophen	111	96.2	P/P	40 - 140
1893010	Bentazon	75.2	80.4	P/P	40 - 140
1893010	Carbamazepine	101	108	P/P	40 - 140
1893010	Diuron	99.1	103	P/P	40 - 140
1893010	Fenuron	76.0	78.2	P/P	40 - 140
1893010	Fluridone	91.5	92.8	P/P	40 - 140
1893010	Imidacloprid	180	199	F/F	40 - 160
1893010	Linuron	104	111	P/P	40 - 140
1893010	MCP	64.7	70.7	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P324133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893010	Primidone	95.7	109	P/P	40 - 140
1893010	Triclopyr	65.1	69.9	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893475	Turbidity	2.90	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893584	Turbidity	16.3	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893679	Chloride	0.217	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893679	Sulfate	0.428	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893289	Ammonia-N	1.50	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893591	Ammonia-N	1.11	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893635	Kjeldahl Nitrogen	1.70	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893595	Kjeldahl Nitrogen	1.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893537	Kjeldahl Nitrogen	1.78	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893540	NO2NO3-N	0.948	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893466	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893520	Total-P	4.13	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893595	Total-P	2.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893598	Total-P	1.30	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P324488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1894618	Total-P	5.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P324185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893582	O-Phosphate-P	0.901	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P324186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893599	O-Phosphate-P	0.906	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P324163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893377	Sucralose	4.12	Spike	P	0 - 30

Reference Method: SM 2120 B

Batch ID: P324143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893670	Color (true)	4.48	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P324857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893587	Total Alkalinity	0.618	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97

Batch ID: P325141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893545	Total Alkalinity	0.451	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97

Batch ID: P325072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893580	TDS	1.94	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 D-97
Batch ID: P324593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893474	TSS	2.30	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P324831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893545	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P324859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893587	Fluoride	0.483	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P325275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895643	Fluoride	0.480	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P324283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893581	Organic Carbon	0.214	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P324948

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893591	Organic Carbon	2.58	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P324133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893010	2,4-D	4.06	Spike	P	0 - 30
1893010	Acetaminophen	13.8	Spike	P	0 - 30
1893010	Bentazon	6.68	Spike	P	0 - 30
1893010	Carbamazepine	6.76	Spike	P	0 - 30
1893010	Diuron	4.11	Spike	P	0 - 30
1893010	Fenuron	2.85	Spike	P	0 - 30
1893010	Fluridone	1.39	Spike	P	0 - 30
1893010	Imidacloprid	10.1	Spike	P	0 - 30
1893010	Linuron	6.71	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P324133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893010	MCP	8.86	Spike	P	0 - 30
1893010	Primidone	12.6	Spike	P	0 - 30
1893010	Triclopyr	7.05	Spike	P	0 - 30

* 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: 1893618
Field Sample ID: G5NW0034

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	114	P	40 - 150
USGS O-2060-01	2,4-D-d3	72.5	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	85.3	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	118	P	30 - 160
USGS O-2060-01	Diuron-d6	114	P	30 - 150
USGS O-2060-01	Primidone-d5	125	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A76035
Included Lab Sample IDs: 1893580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.2	100	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76048
Included Lab Sample IDs: 1893582, 1893599, 1893600, 1893601, 1893602, 1893603, 1893604, 1893605, 1893606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	97.7	P/P	90 - 110
O-Phosphate-P	97.9	97.9	P/P	90 - 110
O-Phosphate-P	97.9	98.0	P/P	90 - 110
O-Phosphate-P	98.1	97.4	P/P	90 - 110
O-Phosphate-P	98.2	97.9	P/P	90 - 110
O-Phosphate-P	99.0	98.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A76055
Included Lab Sample IDs: 1893580, 1893583, 1893584, 1893585, 1893586, 1893587, 1893588, 1893589, 1893590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76071

Included Lab Sample IDs: 1893581, 1893591, 1893592, 1893593, 1893594, 1893595, 1893596, 1893597, 1893598

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

Reference Method: EPA 8321B

Run ID: A76074

Included Lab Sample IDs: 1893618

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	122	122	P/P	60 - 150

Reference Method: SM 5310 B-00

Run ID: A76081

Included Lab Sample IDs: 1893581, 1893593, 1893594, 1893595, 1893596, 1893597, 1893598

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76094

Included Lab Sample IDs: 1893591, 1893592, 1893593, 1893594, 1893595, 1893596

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110
NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76117

Included Lab Sample IDs: 1893581, 1893597, 1893598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76133

Included Lab Sample IDs: 1893581, 1893597, 1893598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.6	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76141

Included Lab Sample IDs: 1893595, 1893596

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76173

Included Lab Sample IDs: 1893591, 1893592, 1893593, 1893594, 1893595, 1893596

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.2	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76183

Included Lab Sample IDs: 1893597, 1893598

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76191

Included Lab Sample IDs: 1893581

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76242

Included Lab Sample IDs: 1893580, 1893586, 1893589, 1893590

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

Reference Method: SM 2320 B-97

Run ID: A76258

Included Lab Sample IDs: 1893583, 1893584, 1893585, 1893587, 1893588

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76258

Included Lab Sample IDs: 1893583, 1893584, 1893587, 1893588

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.0	99.0	P/P	90 - 110
Fluoride	98.5	97.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76269

Included Lab Sample IDs: 1893580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.0	P/P	90 - 110
Sulfate	96.4	95.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A76303

Included Lab Sample IDs: 1893591, 1893592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.8	92.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76363

Included Lab Sample IDs: 1893580, 1893586, 1893589, 1893590

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76388

Included Lab Sample IDs: 1893591, 1893592, 1893593, 1893594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.7	93.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76418

Included Lab Sample IDs: 1893585

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

Reference Method: USGS O-2060-01

Run ID: A76477

Included Lab Sample IDs: 1893618

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.0	92.4	P/P	50 - 150
Acetaminophen	106	108	P/P	60 - 150
Bentazon	88.8	86.8	P/P	50 - 150
Carbamazepine	108	93.2	P/P	60 - 150
Diuron	122	118	P/P	60 - 150
Fenuron	107	107	P/P	60 - 150
Fluridone	115	118	P/P	60 - 150
Imidacloprid	104	102	P/P	60 - 150
Linuron	111	103	P/P	60 - 150
MCP	97.2	90.8	P/P	50 - 150
Primidone	96.8	91.6	P/P	60 - 150
Triclopyr	94.8	89.6	P/P	50 - 150

* 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	MS
				LCS	SMP

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.90	
	Turbidity					16.3	
EPA 300.0 Rev. 2.1	Chloride	99.4	97.5	98.0		0.217	
	Sulfate	95.1	94.6	93.9		0.428	
EPA 350.1 Rev. 2.0	Ammonia-N	101	105	104			1.50
	Ammonia-N	105	106	107			1.11
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.2	99.5	97.0			1.70
	Kjeldahl Nitrogen	101	101	102			1.11
	Kjeldahl Nitrogen	99.0	99.6	97.7			1.78
EPA 353.2 Rev. 2.0	NO2NO3-N	106	105	106			0.948
	NO2NO3-N	102	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	97.4	94.8	90.8			4.13
	Total-P	98.0	98.9	96.7			2.18
	Total-P	101	96.1	94.8			1.30
	Total-P	97.4	103	97.2			5.57
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	99.4	100			0.901
	O-Phosphate-P	101	94.8	95.7			0.906
EPA 8321B	Sucralose	73.6	109	114			4.12
SM 2120 B	Color (true)					4.48	
SM 2320 B-97	Total Alkalinity	103				0.618	
	Total Alkalinity	103				0.451	
SM 2540 C-97	TDS					1.94	
SM 2540 D-97	TSS					2.30	
SM 4500 F-C-97	Fluoride	97.0	96.8	96.1			0.477
	Fluoride	94.9	97.2	97.8			0.483
	Fluoride	98.5	102	102			0.480
SM 5310 B-00	Organic Carbon	103	103	103			0.214
	Organic Carbon	91.3	90.2	87.7			2.58
USGS O-2060-01	2,4-D	76.3	73.2	76.3			4.06
	Acetaminophen	105	111	96.2			13.8
	Bentazon	69.5	75.2	80.4			6.68
	Carbamazepine	121	101	108			6.76
	Diuron	127	99.1	103			4.11
	Fenuron	127	76.0	78.2			2.85
	Fluridone	117	91.5	92.8			1.39
	Imidacloprid	127	180	199			10.1
	Linuron	127	104	111			6.71
	MCP	73.2	64.7	70.7			8.86
	Primidone	120	95.7	109			12.6
	Triclopyr	71.7	65.1	69.9			7.05

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1893580, 1893583, 1893584, 1893585, 1893586, 1893587, 1893588, 1893589, 1893590
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1893580
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1893580
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1893581, 1893591, 1893592, 1893593, 1893594, 1893595, 1893596, 1893597, 1893598

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1893581, 1893591, 1893592, 1893593, 1893594, 1893595, 1893596, 1893597, 1893598
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1893581, 1893591, 1893592, 1893593, 1893594, 1893595, 1893596, 1893597, 1893598
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1893581, 1893591, 1893592, 1893593, 1893594, 1893595, 1893596, 1893597, 1893598
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1893582, 1893599, 1893600, 1893601, 1893602, 1893603, 1893604, 1893605, 1893606
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1893618
SM 2120 B / E31780	True Color measured at 450 nm	1893580
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1893580, 1893583, 1893584, 1893585, 1893586, 1893587, 1893588, 1893589, 1893590
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1893580
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1893580, 1893583, 1893584, 1893585, 1893586, 1893587, 1893588, 1893589, 1893590
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1893580, 1893583, 1893584, 1893585, 1893586, 1893587, 1893588, 1893589, 1893590
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1893581, 1893591, 1893592, 1893593, 1893594, 1893595, 1893596, 1893597, 1893598
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1893618
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1893618

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/27/2017			04/27/2017 16:59	Sima Feizi	1893580, 1893583, 1893584, 1893585, 1893586, 1893587, 1893588, 1893589, 1893590
EPA 300.0 Rev. 2.1	04/27/2017			05/08/2017	Ping Hua	1893580
EPA 350.1 Rev. 2.0	04/27/2017			04/28/2017	Julie Michelle Frank	1893581, 1893591, 1893592, 1893593, 1893594, 1893595, 1893596, 1893597, 1893598
EPA 351.2 Rev. 2.0	04/27/2017	05/01/2017	Adrian Shelby	05/02/2017	Joseph Suarez	1893581, 1893597, 1893598
	04/27/2017	05/01/2017	Adrian Shelby	05/03/2017	Joseph Suarez	1893595, 1893596
	04/27/2017	05/04/2017	Adrian Shelby	05/09/2017	Joseph Suarez	1893591, 1893592, 1893593, 1893594
EPA 353.2 Rev. 2.0	04/27/2017			05/01/2017	Beverly Y. Sanders	1893591, 1893592, 1893593, 1893594, 1893595, 1893596
	04/27/2017			05/02/2017	Beverly Y. Sanders	1893581, 1893597, 1893598
EPA 365.1 Rev. 2.0	04/27/2017	05/01/2017	Vijayalakshmi Reddy	05/02/2017	Lipi Saha	1893591, 1893592, 1893593, 1893594, 1893595, 1893596
	04/27/2017	05/02/2017	Adrian Shelby	05/04/2017	Lipi Saha	1893597, 1893598
	04/27/2017	05/03/2017	Vijayalakshmi Reddy	05/04/2017	Lipi Saha	1893581
EPA 365.1 Rev. 2.0 dissolved	04/27/2017			04/27/2017 15:49	Anthony C. Onicha	1893582
	04/27/2017			04/27/2017 16:02	Anthony C. Onicha	1893599
	04/27/2017			04/27/2017 16:56	Anthony C. Onicha	1893600
	04/27/2017			04/27/2017 17:06	Anthony C. Onicha	1893601
	04/27/2017			04/27/2017 17:08	Anthony C. Onicha	1893603
	04/27/2017			04/27/2017 17:09	Anthony C. Onicha	1893604
	04/27/2017			04/27/2017 17:14	Anthony C. Onicha	1893605
	04/27/2017			04/27/2017 17:15	Anthony C. Onicha	1893606
	04/27/2017			04/27/2017 17:52	Anthony C. Onicha	1893602
EPA 8321B	04/27/2017	04/29/2017	Mohammad Ghaffari	04/29/2017	Mohammad Ghaffari	1893618
SM 2120 B	04/27/2017			04/27/2017 15:46	Julia Storbeck	1893580
SM 2320 B-97	04/27/2017			05/08/2017	Dale L. Simmons	1893585, 1893587, 1893588
	04/27/2017			05/09/2017	Dale L. Simmons	1893580, 1893583, 1893584, 1893586, 1893589, 1893590
SM 2540 C-97	04/27/2017			05/02/2017	Sima Feizi	1893580
SM 2540 D-97	04/27/2017			05/01/2017	Sima Feizi	1893583, 1893584, 1893585, 1893586, 1893587, 1893588, 1893589, 1893590
	04/27/2017			05/02/2017	Sima Feizi	1893580
SM 4500 F-C-97	04/27/2017			05/06/2017	Dale L. Simmons	1893580, 1893586, 1893589, 1893590
	04/27/2017			05/08/2017	Dale L. Simmons	1893583, 1893584, 1893587, 1893588
	04/27/2017			05/15/2017	Dale L. Simmons	1893585
SM 5310 B-00	04/27/2017			04/29/2017	Julie Michelle Frank	1893581, 1893593, 1893594, 1893595, 1893596, 1893597, 1893598
	04/27/2017			05/09/2017	Christopher Armour	1893591, 1893592
USGS O-2060-01	04/27/2017	04/29/2017	Fe-Val Siddell	05/15/2017	Juyoung Kim	1893618