

Chemical Analysis Report

NE-DIST-2017-03-23-02

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

Event Description: **LSJR Downtown Salt**
Request ID: **RQ-2017-03-20-17**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 17-APR-2017 15:43

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

Case Narrative

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

Results for the following analytical groups are included in this report: 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: Goodbys Sanchez

Collection Date/Time: 03/22/2017 09:15

Field ID: G2NE0601032217

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1882598	EPA 180.1 Rev. 2.0	Turbidity	8.3		NTU	P322104	
	SM 2320 B-97	Total Alkalinity	107		mg CaCO3/L	P322479	
	SM 2540 D-97	TSS	8	I	mg/L	P322716	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P322482	
1882602	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P322189	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P322082	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P322374	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P322225	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P322210	
1882606	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P322095	

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: Ortega at Timiquana

Collection Date/Time: 03/22/2017 10:00

Field ID: G2NE082086032217

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1882599	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P322104	
	SM 2320 B-97	Total Alkalinity	78	A	mg CaCO3/L	P322241	
	SM 2540 D-97	TSS	7	I	mg/L	P322716	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P322245	
1882603	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P322189	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P322082	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322648	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P322225	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P322210	
1882607	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P322095	

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: Big Fishw.at Herschell

Collection Date/Time: 03/22/2017 10:35

Field ID: G2NE0146032217

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1882600	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P322104	
	SM 2320 B-97	Total Alkalinity	137		mg CaCO3/L	P322241	
	SM 2540 D-97	TSS	6	I	mg/L	P322716	
	SM 4500 F-C-97	Fluoride	0.34		mg F/L	P322245	
1882604	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P322252	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P322082	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.060		mg N/L	P322648	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P322225	
	SM 5310 B-00	Organic Carbon	9.6		mg C/L	P322210	
1882608	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.064		mg P/L	P322095	

Field ID: G2NE0146032217

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: Big Pottsburg Creek @ Beach Blvd.

Collection Date/Time: 03/22/2017 11:25

Field ID: G2NE0823032217

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1882601	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P322104	
	SM 2320 B-97	Total Alkalinity	105		mg CaCO3/L	P322241	
	SM 2540 D-97	TSS	3	I	mg/L	P322716	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P322482	
1882605	EPA 350.1 Rev. 2.0	Ammonia-N	0.078		mg N/L	P322252	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P322203	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P322290	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P322214	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P322210	
1882609	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.048		mg P/L	P322095	

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: Ortega at Timiquana

Collection Date/Time: 03/22/2017 10:00

Field ID: G2NE082086032217

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1882633	EPA 8321B	Sucralose**	0.69		ug/L	P322051	
	USGS O-2060-01	2,4-D	0.028		ug/L	P322050	
		Diuron	0.0040	U	ug/L	P322050	
		Fenuron	0.0080	U	ug/L	P322050	
		Imidacloprid	0.0040	U	ug/L	P322050	
		Bentazon	0.073		ug/L	P322050	
		Linuron	0.0040	U	ug/L	P322050	
		Acetaminophen**	0.010	U	ug/L	P322050	
		MCP	0.0040	U	ug/L	P322050	
		Carbamazepine**	8.6E-04	I	ug/L	P322050	
		Triclopyr**	0.012	I	ug/L	P322050	
		Primidone**	0.0080	U	ug/L	P322050	
		Fluridone**	0.0023		ug/L	P322050	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P322104

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322189

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322252

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322082

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322203

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322290

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322374

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322648

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322214

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322225

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322095

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

Reference Method: EPA 8321B
Batch ID: P322051

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P322241

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

Reference Method: SM 2320 B-97
Batch ID: P322479

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

Reference Method: SM 2540 D-97
Batch ID: P322716

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P322245

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P322482

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P322210

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

Reference Method: USGS O-2060-01
Batch ID: P322050

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.010	U	ug/L
Bentazon	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P322050

Component	Result	Code	Units
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Triclopyr	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322189

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: P322252

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322082

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322203

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322290

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322374

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322648

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: P322214

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322225

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: P322095

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P322051

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	104		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P322241

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P322479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P322245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.3		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P322482

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P322210

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P322050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.8		P	40 - 140
Acetaminophen	62.0		P	40 - 140
Bentazon	108		P	40 - 140
Carbamazepine	99.2		P	40 - 140
Diuron	70.8		P	40 - 140
Fenuron	90.4		P	40 - 140
Fluridone	81.2		P	40 - 140
Imidacloprid	77.2		P	40 - 160
Linuron	81.2		P	40 - 140
MCP	81.2		P	40 - 140
Primidone	103		P	40 - 140
Triclopyr	108		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882446	Ammonia-N	105	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1883045	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882447	Kjeldahl Nitrogen	96.6	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322203

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882758	Kjeldahl Nitrogen	98.9	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1883328	NO2NO3-N	104	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882448	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882603	NO2NO3-N	97.1	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882701	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882756	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322095

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882606	O-Phosphate-P	94.6	95.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P322051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882586	Sucralose	109	112	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P322245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882599	Fluoride	95.6	97.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P322482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882688	Fluoride	103	102	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P322210

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882602	Organic Carbon	98.0	99.4	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P322050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1882581	2,4-D	102	94.0	P/P	40 - 140
1882581	Acetaminophen	68.0	86.0	P/P	40 - 140
1882581	Bentazon	111	100	P/P	40 - 140
1882581	Carbamazepine	99.1	91.5	P/P	40 - 140
1882581	Diuron	84.0	75.2	P/P	40 - 140
1882581	Fenuron	89.2	81.6	P/P	40 - 140
1882581	Fluridone	83.6	76.0	P/P	40 - 140
1882581	Imidacloprid	111	89.9	P/P	40 - 160
1882581	Linuron	72.4	68.0	P/P	40 - 140
1882581	MCP	92.4	85.2	P/P	40 - 140
1882581	Primidone	112	97.2	P/P	40 - 140
1882581	Triclopyr	122	102	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P322104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882566	Turbidity	2.45	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P322189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882446	Ammonia-N	1.71	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P322252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1883045	Ammonia-N	0.0994	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P322082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882447	Kjeldahl Nitrogen	0.333	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P322203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882758	Kjeldahl Nitrogen	4.78	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1883328	NO2NO3-N	0.966	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882448	NO2NO3-N	0.601	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882603	NO2NO3-N	1.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882701	Total-P	0.0714	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882756	Total-P	1.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882606	O-Phosphate-P	0.826	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P322051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882586	Sucralose	2.25	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P322241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882599	Total Alkalinity	0.432	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P322479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882688	Total Alkalinity	0.467	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
 Batch ID: P322245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882599	Fluoride	1.42	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
 Batch ID: P322482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882688	Fluoride	0.509	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P322210

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882602	Organic Carbon	0.910	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P322050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1882581	2,4-D	8.55	Spike	P	0 - 30
1882581	Acetaminophen	23.4	Spike	P	0 - 30
1882581	Bentazon	6.95	Spike	P	0 - 30
1882581	Carbamazepine	7.87	Spike	P	0 - 30
1882581	Diuron	11.1	Spike	P	0 - 30
1882581	Fenuron	8.90	Spike	P	0 - 30
1882581	Fluridone	9.52	Spike	P	0 - 30
1882581	Imidacloprid	17.1	Spike	P	0 - 30
1882581	Linuron	6.27	Spike	P	0 - 30
1882581	MCPP	8.11	Spike	P	0 - 30
1882581	Primidone	13.8	Spike	P	0 - 30
1882581	Triclopyr	18.2	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

Quality Assurance Report Surrogates

Lab Sample ID: 1882633
Field Sample ID: G2NE082086032217

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	84.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	100	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	61.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	55.8	P	40 - 160
USGS O-2060-01	Diuron-d6	46.0	P	40 - 150
USGS O-2060-01	Primidone-d5	58.6	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75315
Included Lab Sample IDs: 1882606, 1882607, 1882608, 1882609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.8	97.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A75322
Included Lab Sample IDs: 1882598, 1882599, 1882600, 1882601

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A75351
Included Lab Sample IDs: 1882602, 1882603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A75367
Included Lab Sample IDs: 1882602, 1882603, 1882604, 1882605

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

Reference Method: EPA 8321B
Run ID: A75373
Included Lab Sample IDs: 1882633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.9	82.5	P/P	60 - 150

Reference Method: SM 2320 B-97
Run ID: A75378
Included Lab Sample IDs: 1882599, 1882600, 1882601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A75378

Included Lab Sample IDs: 1882599, 1882600, 1882601

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

Reference Method: SM 4500 F-C-97

Run ID: A75378

Included Lab Sample IDs: 1882599, 1882600

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.0	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75380

Included Lab Sample IDs: 1882604, 1882605

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75386

Included Lab Sample IDs: 1882602, 1882603, 1882604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75389

Included Lab Sample IDs: 1882604, 1882605

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75400

Included Lab Sample IDs: 1882605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75404

Included Lab Sample IDs: 1882605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75429

Included Lab Sample IDs: 1882602

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A75466

Included Lab Sample IDs: 1882598

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

Reference Method: SM 4500 F-C-97

Run ID: A75466

Included Lab Sample IDs: 1882598, 1882601

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75468

Included Lab Sample IDs: 1882602, 1882603

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75520

Included Lab Sample IDs: 1882603, 1882604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A75529

Included Lab Sample IDs: 1882633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	115	118	P/P	50 - 150
Bentazon	83.4	90.8	P/P	50 - 150
MCP	106	111	P/P	50 - 150
Triclopyr	106	106	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A75564

Included Lab Sample IDs: 1882633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	122	109	P/P	60 - 150
Carbamazepine	132	138	P/P	60 - 150
Diuron	101	111	P/P	60 - 150
Fenuron	122	124	P/P	60 - 150
Fluridone	104	103	P/P	60 - 150
Imidacloprid	107	104	P/P	60 - 150
Linuron	106	143	P/P	60 - 150
Primidone	123	138	P/P	60 - 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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.45	
EPA 350.1 Rev. 2.0	Ammonia-N	105	105	102			1.71
	Ammonia-N	103	103	103			0.0994
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.1	96.6	96.2			0.333
	Kjeldahl Nitrogen	103	98.9	104			4.78
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	103			0.966
	NO2NO3-N	102	104	104			0.601
	NO2NO3-N	102	97.1	98.6			1.53
EPA 365.1 Rev. 2.0	Total-P	103	104	104			0.0714
	Total-P	101	102	103			1.27
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.8	94.6	95.5			0.826
EPA 8321B	Sucralose	104	109	112			2.25
SM 2320 B-97	Total Alkalinity	104				0.432	
	Total Alkalinity	105				0.467	
SM 4500 F-C-97	Fluoride	94.3	95.6	97.6			1.42
	Fluoride	98.2	103	102			0.509
SM 5310 B-00	Organic Carbon	99.8	98.0	99.4			0.910
USGS O-2060-01	2,4-D	82.8	102	94.0			8.55
	Acetaminophen	62.0	68.0	86.0			23.4
	Bentazon	108	111	100			6.95
	Carbamazepine	99.2	99.1	91.5			7.87
	Diuron	70.8	84.0	75.2			11.1
	Fenuron	90.4	89.2	81.6			8.90
	Fluridone	81.2	83.6	76.0			9.52
	Imidacloprid	77.2	111	89.9			17.1
	Linuron	81.2	72.4	68.0			6.27
	MCPP	81.2	92.4	85.2			8.11
	Primidone	103	112	97.2			13.8
	Triclopyr	108	122	102			18.2

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1882598, 1882599, 1882600, 1882601
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1882602, 1882603, 1882604, 1882605
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1882602, 1882603, 1882604, 1882605
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1882602, 1882603, 1882604, 1882605
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1882602, 1882603, 1882604, 1882605
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1882606, 1882607, 1882608, 1882609
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1882633
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1882598, 1882599, 1882600, 1882601
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1882598, 1882599, 1882600, 1882601
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1882598, 1882599, 1882600, 1882601
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1882602, 1882603, 1882604, 1882605
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1882633
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1882633

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	03/23/2017			03/23/2017 17:09	Sima Feizi	1882598, 1882599, 1882600, 1882601
EPA 350.1 Rev. 2.0	03/23/2017			03/24/2017	Julie Michelle Frank	1882602, 1882603
	03/23/2017			03/27/2017	Julie Michelle Frank	1882604, 1882605
EPA 351.2 Rev. 2.0	03/23/2017	03/24/2017	Adrian Shelby	03/27/2017	Joseph Suarez	1882602, 1882603, 1882604
	03/23/2017	03/27/2017	Adrian Shelby	03/28/2017	Joseph Suarez	1882605
EPA 353.2 Rev. 2.0	03/23/2017			03/28/2017	Beverly Y. Sanders	1882605
	03/23/2017			03/29/2017	Beverly Y. Sanders	1882602
	03/23/2017			04/03/2017	Beverly Y. Sanders	1882603, 1882604
EPA 365.1 Rev. 2.0	03/23/2017	03/27/2017	Vijayalakshmi Reddy	03/28/2017	Christopher Armour	1882604, 1882605
	03/23/2017	03/27/2017	Vijayalakshmi Reddy	03/30/2017	Virginia P. Brown	1882602, 1882603
EPA 365.1 Rev. 2.0 dissolved	03/23/2017			03/23/2017 18:42	Anthony C. Onicha	1882606
	03/23/2017			03/23/2017 18:45	Anthony C. Onicha	1882607
	03/23/2017			03/23/2017 18:46	Anthony C. Onicha	1882608
	03/23/2017			03/23/2017 18:47	Anthony C. Onicha	1882609
EPA 8321B	03/23/2017	03/24/2017	Mohammad Ghaffari	03/25/2017	Mohammad Ghaffari	1882633
SM 2320 B-97	03/23/2017			03/25/2017	Dale L. Simmons	1882599, 1882600, 1882601
	03/23/2017			03/30/2017	Dale L. Simmons	1882598
SM 2540 D-97	03/23/2017			03/28/2017	Yijie Li	1882598, 1882599, 1882600, 1882601
SM 4500 F-C-97	03/23/2017			03/25/2017	Dale L. Simmons	1882599, 1882600
	03/23/2017			03/30/2017	Dale L. Simmons	1882598, 1882601
SM 5310 B-00	03/23/2017			03/24/2017	Julie Michelle Frank	1882602, 1882603, 1882604, 1882605
USGS O-2060-01	03/23/2017	03/27/2017	Hoor Shaik	03/28/2017	Juyoung Kim	1882633
	03/23/2017	03/27/2017	Hoor Shaik	04/01/2017	Juyoung Kim	1882633