

Chemical Analysis Report

SO-DIST-2016-07-15-02

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

Event Description: **SMP: Yucca Yucca Alligator 2081**

Request ID: **RQ-2016-07-18-30**

Customer: **SO-DIST**

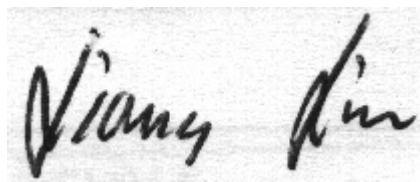
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 08-AUG-2016 15:09

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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 group are included in this report: Nutrients.

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: Yucca Pen Creek @ Burnt Store Rd.

Collection Date/Time: 07/14/2016 11:45

Field ID: YUCCAPEN

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1816560	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P308070	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P308999	
		Sulfate	0.84		mg SO4/L	P308998	
	SM 2120 B	Color (true)	96	A	PCU	P308046	
	SM 2320 B-97	Total Alkalinity	41		mg CaCO3/L	P308750	
	SM 2540 C-97	TDS	98		mg/L	P308631	
	SM 2540 D-97	TSS	3	I	mg/L	P308597	
	SM 4500 F-C-97	Fluoride	0.045	I	mg F/L	P308754	
1816565	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P308514	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P308251	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308801	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P308194	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P308719	
1816570	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308051	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: Yucca Pen Marine @ N. of Old Burnt Store

Collection Date/Time: 07/14/2016 11:25

Field ID: G2SD0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1816561	EPA 180.1 Rev. 2.0	Turbidity	1.0	A	NTU	P308070	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P308999	
		Sulfate	2.8		mg SO4/L	P308998	
	SM 2120 B	Color (true)	110		PCU	P308046	
	SM 2320 B-97	Total Alkalinity	44		mg CaCO3/L	P308750	
	SM 2540 C-97	TDS	142		mg/L	P308631	
	SM 2540 D-97	TSS	3	I	mg/L	P308597	
	SM 4500 F-C-97	Fluoride	0.052	I	mg F/L	P308754	
1816566	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P308514	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.93		mg N/L	P308251	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P308801	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P308195	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P308719	
1816571	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308051	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: 2081 @ Burnt Store Road

Collection Date/Time: 07/14/2016 13:20

Field ID: G2SD0016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1816562	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P308070	

Field ID: G2SD0016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1816562	EPA 300.0 Rev. 2.1	Chloride	38		mg Cl/L	P308999	
		Sulfate	8.1		mg SO4/L	P308998	
	SM 2120 B	Color (true)	83		PCU	P308046	
	SM 2320 B-97	Total Alkalinity	63		mg CaCO3/L	P308751	
	SM 2540 C-97	TDS	167		mg/L	P308631	
	SM 2540 D-97	TSS	4	I	mg/L	P308597	
	SM 4500 F-C-97	Fluoride	0.080	I	mg F/L	P308755	
1816567	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P308515	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P308251	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P308801	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P308195	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P308719	
1816572	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P308051	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Yucca Flatwoods WQ-1

Collection Date/Time: 07/14/2016 12:45

Field ID: CHARHB0094FTM

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1816563	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P308070	
	EPA 300.0 Rev. 2.1	Chloride	1.3E+03		mg Cl/L	P308999	
		Sulfate	170		mg SO4/L	P308998	
	SM 2120 B	Color (true)	110		PCU	P308046	
	SM 2320 B-97	Total Alkalinity	51		mg CaCO3/L	P308751	
	SM 2540 C-97	TDS	2.23E+03		mg/L	P308631	
	SM 2540 D-97	TSS	3	I	mg/L	P308597	
1816568	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P308755	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P308515	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P308251	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P308846	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P308195	
1816573	SM 5310 B-00	Organic Carbon	18		mg C/L	P308719	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P308051	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Yucca Pen Marine @ N. of Old Burnt Store Duplicate

Collection Date/Time: 07/14/2016 11:30

Field ID: G2SD0015-DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1816564	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P308070	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P308999	
		Sulfate	2.8		mg SO4/L	P308998	
	SM 2120 B	Color (true)	110		PCU	P308046	

Field ID: G2SD0015-DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1816564	SM 2320 B-97	Total Alkalinity	44		mg CaCO3/L	P308751	
	SM 2540 C-97	TDS	146	A	mg/L	P308631	
	SM 2540 D-97	TSS	3	I	mg/L	P308597	
	SM 4500 F-C-97	Fluoride	0.054	I	mg F/L	P308755	
1816569	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P308514	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P308251	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P308846	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P308195	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P308719	
1816574	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P308051	

Ref. Method and Comment:
 SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
 EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P308070

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P308998

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P308999

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P308514

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P308515

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P308251

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308801

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308846

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308194

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308195

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308051

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

Reference Method: SM 2120 B
Batch ID: P308046

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P308750

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

Reference Method: SM 2320 B-97
Batch ID: P308751

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

Reference Method: SM 2540 C-97
Batch ID: P308631

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P308597

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P308754

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P308755

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P308719

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308998

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308999

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308514

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308515

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: P308251

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308801

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308846

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308194

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308195

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308051

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

Reference Method: SM 2320 B-97
Batch ID: P308750

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

Reference Method: SM 2320 B-97
Batch ID: P308751

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

Reference Method: SM 4500 F-C-97
Batch ID: P308754

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P308755

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P308719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308998

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816472	Sulfate	97.4		P	90 - 110
1816533	Sulfate	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816472	Chloride	99.9		P	90 - 110
1816533	Chloride	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816567	Ammonia-N	109	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816474	Kjeldahl Nitrogen	93.9	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816428	NO2NO3-N	99.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308846

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816568	NO2NO3-N	99.2	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308194

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816462	Total-P	97.2	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308195

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816566	Total-P	98.8	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816573	O-Phosphate-P	96.7	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P308754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817651	Fluoride	95.3	97.4	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P308755

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816782	Fluoride	98.3	99.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P308719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816217	Organic Carbon	100	98.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P308070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816561	Turbidity	0.985	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816472	Sulfate	1.33	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816472	Chloride	0.200	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816462	Ammonia-N	0.0345	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816567	Ammonia-N	0.366	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816474	Kjeldahl Nitrogen	3.13	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816428	NO2NO3-N	0.234	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308846

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816568	NO2NO3-N	2.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816462	Total-P	1.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816566	Total-P	1.88	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P308051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816573	O-Phosphate-P	3.36	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P308046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816560	Color (true)	0.311	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P308750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817651	Total Alkalinity	0.666	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P308751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816782	Total Alkalinity	0.368	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P308631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816564	TDS	8.87	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P308754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817651	Fluoride	1.93	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P308755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816782	Fluoride	0.952	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P308719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816217	Organic Carbon	1.92	Spike	P	0 - 20

Quality Assurance Report Precision

* 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 Calibration Verification

Reference Method: SM 2120 B

Run ID: A70582

Included Lab Sample IDs: 1816560, 1816561, 1816562, 1816563, 1816564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.9	98.4	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A70584

Included Lab Sample IDs: 1816570, 1816571, 1816572, 1816573, 1816574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.9	95.7	P/P	90 - 110
O-Phosphate-P	97.3	95.9	P/P	90 - 110
O-Phosphate-P	98.1	97.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A70588

Included Lab Sample IDs: 1816560, 1816561, 1816562, 1816563, 1816564

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70673

Included Lab Sample IDs: 1816565, 1816566, 1816567, 1816568, 1816569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70722

Included Lab Sample IDs: 1816565, 1816566, 1816567, 1816568, 1816569

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70732

Included Lab Sample IDs: 1816565, 1816566, 1816567, 1816568, 1816569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	96.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A70790

Included Lab Sample IDs: 1816565, 1816566, 1816567, 1816568, 1816569

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

Reference Method: SM 2320 B-97

Run ID: A70797

Included Lab Sample IDs: 1816560, 1816561, 1816562, 1816563, 1816564

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
Total Alkalinity	103	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70797

Included Lab Sample IDs: 1816560, 1816561, 1816562, 1816563, 1816564

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70809

Included Lab Sample IDs: 1816565, 1816566, 1816567

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70824

Included Lab Sample IDs: 1816568, 1816569

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A70885

Included Lab Sample IDs: 1816560, 1816561, 1816562, 1816563, 1816564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	100	P/P	90 - 110
Sulfate	98.7	96.3	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		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				0.985	
EPA 300.0 Rev. 2.1	Chloride	99.0	99.9	98.9	0.200	
	Sulfate	96.3	97.4	97.9	1.33	
EPA 350.1 Rev. 2.0	Ammonia-N	102				0.0345
	Ammonia-N	102	109	109		0.366
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.0	93.9	98.5		3.13
EPA 353.2 Rev. 2.0	NO2NO3-N	101	99.8			0.234
	NO2NO3-N	104	99.2	102		2.87
EPA 365.1 Rev. 2.0	Total-P	100	97.2	99.3		1.68
	Total-P	98.0	98.8	96.9		1.88
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	105	96.7	100		3.36
SM 2120 B	Color (true)				0.311	
SM 2320 B-97	Total Alkalinity	104			0.666	
	Total Alkalinity	103			0.368	
SM 2540 C-97	TDS				8.87	
SM 4500 F-C-97	Fluoride	98.3	95.3	97.4		1.93
	Fluoride	99.3	98.3	99.4		0.952
SM 5310 B-00	Organic Carbon	98.4	100	98.3		1.92

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1816560, 1816561, 1816562, 1816563, 1816564
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1816560, 1816561, 1816562, 1816563, 1816564
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1816560, 1816561, 1816562, 1816563, 1816564
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1816565, 1816566, 1816567, 1816568, 1816569
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1816565, 1816566, 1816567, 1816568, 1816569
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1816565, 1816566, 1816567, 1816568, 1816569
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1816565, 1816566, 1816567, 1816568, 1816569
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1816570, 1816571, 1816572, 1816573, 1816574
SM 2120 B / E31780	True Color measured at 450 nm	1816560, 1816561, 1816562, 1816563, 1816564
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1816560, 1816561, 1816562, 1816563, 1816564
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1816560, 1816561, 1816562, 1816563, 1816564
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1816560, 1816561, 1816562, 1816563, 1816564
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1816560, 1816561, 1816562, 1816563, 1816564
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1816565, 1816566, 1816567, 1816568, 1816569

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	07/15/2016			07/15/2016 14:09	Blanca Fach	1816560, 1816561, 1816562, 1816563, 1816564
EPA 300.0 Rev. 2.1	07/15/2016			08/02/2016	Ping Hua	1816560, 1816561, 1816562, 1816563, 1816564
EPA 350.1 Rev. 2.0	07/15/2016			07/21/2016	Virginia P. Brown	1816565, 1816566, 1816567, 1816568, 1816569
EPA 351.2 Rev. 2.0	07/15/2016	07/20/2016	Sofia Elnemr	07/22/2016	Christopher Armour	1816565, 1816566, 1816567, 1816568, 1816569
EPA 353.2 Rev. 2.0	07/15/2016			07/28/2016	Beverly Y. Sanders	1816565, 1816566, 1816567
	07/15/2016			07/29/2016	Beverly Y. Sanders	1816568, 1816569
EPA 365.1 Rev. 2.0	07/15/2016	07/19/2016	Vijayalakshmi Reddy	07/20/2016	Lipi Saha	1816565, 1816566, 1816567, 1816568, 1816569
EPA 365.1 Rev. 2.0 dissolved	07/15/2016			07/15/2016 15:25	Julia Storbeck	1816573
	07/15/2016			07/15/2016 15:47	Julia Storbeck	1816570
	07/15/2016			07/15/2016 15:48	Julia Storbeck	1816572
	07/15/2016			07/15/2016 15:59	Julia Storbeck	1816571
	07/15/2016			07/15/2016 16:00	Julia Storbeck	1816574
SM 2120 B	07/15/2016			07/15/2016 13:39	Rochelle Y Jackson	1816560, 1816561
	07/15/2016			07/15/2016 13:40	Rochelle Y Jackson	1816562
	07/15/2016			07/15/2016 13:41	Rochelle Y Jackson	1816563
	07/15/2016			07/15/2016 13:42	Rochelle Y Jackson	1816564
SM 2320 B-97	07/15/2016			07/27/2016	Dale L. Simmons	1816560, 1816561, 1816562, 1816563, 1816564
SM 2540 C-97	07/15/2016			07/18/2016	Yijie Li	1816560, 1816561, 1816562, 1816563, 1816564
SM 2540 D-97	07/15/2016			07/18/2016	Yijie Li	1816560, 1816561, 1816562, 1816563, 1816564
SM 4500 F-C-97	07/15/2016			07/27/2016	Dale L. Simmons	1816560, 1816561, 1816562, 1816563, 1816564
SM 5310 B-00	07/15/2016			07/26/2016	Sofia Elnemr	1816565, 1816566, 1816567, 1816568, 1816569