Chemical Analysis Report

SO-DIST-2016-10-26-01

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

Event Description: **SMP: Shell Joshua Hog Bay**
Request ID: **RQ-2016-10-24-07**
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
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 21-NOV-2016 10:59

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: JOSHUA CR-1.2 MI N OF RT 760 A **Collection Date/Time: 10/25/2016 10:30**

Field ID: G3SD102516-3 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1844587	EPA 180.1 Rev. 2.0	Turbidity	3.4	A	NTU	P313978	
	EPA 300.0 Rev. 2.1	Chloride	50		mg Cl/L	P314988	
		Sulfate	64		mg SO4/L	P314991	
	SM 2120 B	Color (true)	110		PCU	P313991	
	SM 2320 B-97	Total Alkalinity	60		mg CaCO3/L	P314174	
	SM 2540 C-97	TDS	295		mg/L	P314602	
	SM 2540 D-97	TSS	3	I	mg/L	P314500	
	SM 4500 F-C-97	Fluoride	0.32		mg F/L	P314179	
1844590	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P314841	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P315115	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P314238	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P314728	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P314146	
1844593	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P313946	

Sample Location: HOG BAY @ CR 763 **Collection Date/Time: 10/25/2016 09:40**

Field ID: G3SD102516-4 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1844588	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P313978	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P314988	
		Sulfate	130		mg SO4/L	P314991	
	SM 2120 B	Color (true)	78		PCU	P313991	
	SM 2320 B-97	Total Alkalinity	127		mg CaCO3/L	P314174	
	SM 2540 C-97	TDS	538		mg/L	P314602	
	SM 2540 D-97	TSS	8	I	mg/L	P314500	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P314179	
1844591	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P314842	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P315115	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.96		mg N/L	P314238	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P314728	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P314146	
1844594	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.073		mg P/L	P313946	

Sample Location: SHELL CR. @ SR 31 **Collection Date/Time: 10/25/2016 08:45**

Field ID: G3SD102516-5 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1844589	EPA 180.1 Rev. 2.0	Turbidity	18		NTU	P313978	
	EPA 300.0 Rev. 2.1	Chloride	140		mg Cl/L	P314988	
		Sulfate	59		mg SO4/L	P314991	
	SM 2120 B	Color (true)	70		PCU	P313991	
	SM 2320 B-97	Total Alkalinity	214		mg CaCO3/L	P314174	

Field ID: G3SD102516-5 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1844589	SM 2540 C-97	TDS	645	A	mg/L	P314602	
	SM 2540 D-97	TSS	17	A	mg/L	P314500	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P314179	
1844592	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P314842	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P315115	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.057		mg N/L	P314238	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P314728	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P314146	
1844595	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P313946	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P313978

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314988

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314991

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314841

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314842

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P315115

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314238

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314238

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314728

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313946

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

Reference Method: SM 2120 B
Batch ID: P313991

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P314174

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

Reference Method: SM 2540 C-97
Batch ID: P314602

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P314500

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P314179

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P314146

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: P314988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314841

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: P314842

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: P315115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314238

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: P314728

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.3		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P314174

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P314179

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

Reference Method: SM 5310 B-00
Batch ID: P314146

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844617	Chloride	95.2		P	90 - 110
1844622	Chloride	96.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844617	Sulfate	90.8		P	90 - 110
1844622	Sulfate	91.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844400	Ammonia-N	97.4	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314842

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844591	Ammonia-N	101	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P315115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844660	Kjeldahl Nitrogen	108	93.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844526	NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844628	Total-P	98.8	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844634	O-Phosphate-P	97.7	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P314179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844880	Fluoride	97.8	99.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P314146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844519	Organic Carbon	97.0	96.1	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P313978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844587	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844617	Chloride	0.407	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844617	Sulfate	0.212	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844400	Ammonia-N	3.41	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844591	Ammonia-N	1.12	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P315115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844660	Kjeldahl Nitrogen	8.24	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844526	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844628	Total-P	0.844	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844634	O-Phosphate-P	0.183	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P313991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844565	Color (true)	7.77	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P314174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844880	Total Alkalinity	0.134	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P314602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844589	TDS	4.65	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 2540 D-97
Batch ID: P314500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844589	TSS	9.30	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P314179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844880	Fluoride	0.946	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P314146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844519	Organic Carbon	0.731	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A72445
Included Lab Sample IDs: 1844593, 1844594, 1844595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.0	P/P	90 - 110
O-Phosphate-P	99.0	98.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A72457
Included Lab Sample IDs: 1844587, 1844588, 1844589

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A72462
Included Lab Sample IDs: 1844587, 1844588

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

Reference Method: SM 2120 B
Run ID: A72464
Included Lab Sample IDs: 1844589

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.4	P/P	85 - 115

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A72506
Included Lab Sample IDs: 1844590, 1844591, 1844592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	96.6	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A72515
Included Lab Sample IDs: 1844587, 1844588, 1844589

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	97.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A72515
Included Lab Sample IDs: 1844587, 1844588, 1844589

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A72533
Included Lab Sample IDs: 1844590, 1844591, 1844592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	95.5	94.5	P/P	90 - 110
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A72705
Included Lab Sample IDs: 1844590, 1844591, 1844592

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A72707
Included Lab Sample IDs: 1844590, 1844591, 1844592

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A72715
Included Lab Sample IDs: 1844587, 1844588, 1844589

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	97.4	96.9	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A72832
Included Lab Sample IDs: 1844590, 1844591, 1844592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	108	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.19	
EPA 300.0 Rev. 2.1	Chloride	97.7	95.2	96.7		0.407	
	Sulfate	93.2	90.8	91.7		0.212	
EPA 350.1 Rev. 2.0	Ammonia-N	102	97.4	101			3.41
	Ammonia-N	103	101	105			1.12
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8	108	93.5			8.24
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	98.7	98.8	99.7			0.844
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	97.7	97.9			0.183
SM 2120 B	Color (true)					7.77	
SM 2320 B-97	Total Alkalinity	103				0.134	
SM 2540 C-97	TDS					4.65	
SM 2540 D-97	TSS					9.30	
SM 4500 F-C-97	Fluoride	98.5	97.8	99.2			0.946
SM 5310 B-00	Organic Carbon	98.6	97.0	96.1			0.731

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1844587, 1844588, 1844589
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1844587, 1844588, 1844589
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1844587, 1844588, 1844589
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1844590, 1844591, 1844592
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1844590, 1844591, 1844592
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1844590, 1844591, 1844592
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1844590, 1844591, 1844592
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1844593, 1844594, 1844595
SM 2120 B / E31780	True Color measured at 450 nm	1844587, 1844588, 1844589
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1844587, 1844588, 1844589
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1844587, 1844588, 1844589
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1844587, 1844588, 1844589
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1844587, 1844588, 1844589

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1844590, 1844591, 1844592

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	10/26/2016			10/26/2016 16:58	Sima Feizi	1844587, 1844588, 1844589
EPA 300.0 Rev. 2.1	10/26/2016			11/10/2016	Elisa J Lutz	1844587, 1844588, 1844589
EPA 350.1 Rev. 2.0	10/26/2016			11/08/2016	Sofia Elnemr	1844590, 1844591, 1844592
EPA 351.2 Rev. 2.0	10/26/2016	11/15/2016	Adrian Shelby	11/16/2016	Joseph Suarez	1844590, 1844591, 1844592
EPA 353.2 Rev. 2.0	10/26/2016			10/31/2016	Beverly Y. Sanders	1844590, 1844591, 1844592
EPA 365.1 Rev. 2.0	10/26/2016	11/07/2016	Adrian Shelby	11/08/2016	Lipi Saha	1844590, 1844591, 1844592
EPA 365.1 Rev. 2.0 dissolved	10/26/2016			10/26/2016 15:57	Julia Storbeck	1844593
	10/26/2016			10/26/2016 15:58	Julia Storbeck	1844594
	10/26/2016			10/26/2016 16:03	Julia Storbeck	1844595
SM 2120 B	10/26/2016			10/26/2016 16:20	Julie Michelle Frank	1844587, 1844588
	10/26/2016			10/26/2016 17:50	Julie Michelle Frank	1844589
SM 2320 B-97	10/26/2016			10/29/2016	Dale L. Simmons	1844587, 1844588, 1844589
SM 2540 C-97	10/26/2016			10/28/2016	Yijie Li	1844587, 1844588, 1844589
SM 2540 D-97	10/26/2016			10/28/2016	Yijie Li	1844587, 1844588, 1844589
SM 4500 F-C-97	10/26/2016			10/29/2016	Dale L. Simmons	1844587, 1844588, 1844589
SM 5310 B-00	10/26/2016			10/28/2016	Julie Michelle Frank	1844590, 1844591, 1844592