Chemical Analysis Report

NW-DIST-2017-08-01-02

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

Event Description: **TMDL Bioassessment**
Request ID: **RQ-2017-05-22-30**
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

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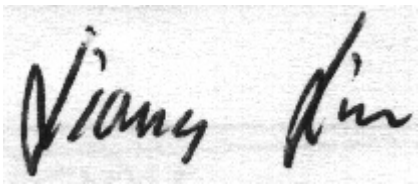
Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-AUG-2017 14:06



Case Narrative

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

Results for the following analytical groups are included in this report: Metals, Nutrients and Priority Organic Pollutants.

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: Unnamed Trib to Juniper Creek North Niceville Landfill **Collection Date/Time: 07/31/2017 12:00**

Field ID: G3NW0143 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1917862	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P329515	
	EPA 300.0 Rev. 2.1	Chloride	4.3		mg Cl/L	P329623	
		Sulfate	2.6		mg SO4/L	P329621	
	SM 2120 B	Color (true)	63	A	PCU	P329499	
	SM 2320 B-97	Total Alkalinity	10		mg CaCO3/L	P329761	
	SM 2540 C-97	TDS	41		mg/L	P329918	
	SM 2540 D-97	TSS	3	I	mg/L	P330147	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P329765	
1917863	EPA 350.1 Rev. 2.0	Ammonia-N	0.43		mg N/L	P329574	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P329814	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.093		mg N/L	P329519	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P329558	
	SM 5310 B-00	Organic Carbon	2.0		mg C/L	P329794	
1917864	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P329486	

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: Unnamed Trib to Juniper Creek North Niceville Landfill **Collection Date/Time: 07/31/2017 12:00**

Field ID: G3NW0143 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1917877	EPA 1631E	Mercury	1.4		ng/L	P329758	
1917878	EPA 200.7 Rev. 4.4	Iron	3.90E+03		ug/L	P329580	
	EPA 200.8 Rev. 5.4	Arsenic	0.43		ug/L	P329580	
1917880	EPA 8260C	Benzene	0.20	U	ug/L	P329600	
		Trichloroethene	0.20	U	ug/L	P329600	
		Vinyl chloride	0.20	U	ug/L	P329600	

Sample Location: Unnamed Trib to Juniper Creek North Niceville Landfill **Collection Date/Time: 07/31/2017 12:00**

Field ID: G3NW0143 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1917881	EPA 8260C	Benzene	0.20	U	ug/L	P329600	
		Trichloroethene	0.20	U	ug/L	P329600	
		Vinyl chloride	0.20	U	ug/L	P329600	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 1631E
Batch ID: P329758

Component	Result	Code	Units
Mercury	0.10	U	ng/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P329515

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P329580

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P329580

Component	Result	Code	Units
Arsenic	0.050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329621

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329623

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329574

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329814

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329519

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329558

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: P329486

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

Reference Method: EPA 8260C
Batch ID: P329600

Component	Result	Code	Units
Benzene	0.20	U	ug/L
Benzene	0.20	U	ug/L
Trichloroethene	0.20	U	ug/L
Trichloroethene	0.20	U	ug/L
Vinyl chloride	0.20	U	ug/L
Vinyl chloride	0.20	U	ug/L

Reference Method: SM 2120 B
Batch ID: P329499

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P329761

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

Reference Method: SM 2540 C-97
Batch ID: P329918

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P330147

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P329765

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P329794

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 1631E
Batch ID: P329758

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mercury	98.4		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P329580

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	107		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P329580

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329621

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329574

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: P329814

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329519

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329558

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329486

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

Reference Method: EPA 8260C
Batch ID: P329600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzene	111	106	P/P	70 - 130
Trichloroethene	106	103	P/P	70 - 130
Vinyl chloride	100	96.0	P/P	60 - 140

Reference Method: SM 2320 B-97
Batch ID: P329761

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

Reference Method: SM 4500 F-C-97
Batch ID: P329765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P329794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 1631E
Batch ID: P329758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917877	Mercury	101	107	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P329580

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1918094	Iron	107	106	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P329580

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1918094	Arsenic	110	109	P/P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917851	Sulfate	95.3		P	90 - 110
1917999	Sulfate	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917851	Chloride	93.0		P	90 - 110
1917999	Chloride	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917738	Ammonia-N	100	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917856	Kjeldahl Nitrogen	91.1	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329519

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917852	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917819	Total-P	100	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917860	O-Phosphate-P	98.8	99.0	P/P	90 - 110

Reference Method: EPA 8260C
Batch ID: P329600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917888	Benzene	105	107	P/P	70 - 130
1917888	Trichloroethene	98.4	98.9	P/P	70 - 130
1917888	Vinyl chloride	98.0	101	P/P	60 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P329765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P329765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1918058	Fluoride	99.2	99.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P329794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917819	Organic Carbon	96.3	96.3	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 1631E
Batch ID: P329758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917877	Mercury	4.02	Spike	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P329515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917847	Turbidity	3.79	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P329580

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1918094	Iron	0.106	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P329580

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1918094	Arsenic	0.692	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917999	Sulfate	5.15	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917999	Chloride	0.0647	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917738	Ammonia-N	1.78	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917856	Kjeldahl Nitrogen	11.2	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917852	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917819	Total-P	3.03	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917860	O-Phosphate-P	0.202	Spike	P	0 - 20

Reference Method: EPA 8260C
Batch ID: P329600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917888	Benzene	2.13	Spike	P	0 - 30
1917888	Trichloroethene	0.456	Spike	P	0 - 30
1917888	Vinyl chloride	3.26	Spike	P	0 - 30
LFB	Benzene	4.61	LCS	P	0 - 30
LFB	Trichloroethene	3.26	LCS	P	0 - 30
LFB	Vinyl chloride	4.38	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: SM 2120 B
Batch ID: P329499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917862	Color (true)	1.75	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P329761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1918058	Total Alkalinity	0.0506	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P329918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1918066	TDS	8.04	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P329765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1918058	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P329794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917819	Organic Carbon	0.0	Spike	P	0 - 20

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

Quality Assurance Report
Surrogates

Lab Sample ID: 1917880
Field Sample ID: G3NW0143

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260C	1,2-Dichloroethane-d4	108	P	70 - 130
EPA 8260C	1,4-Dichlorobenzene-d4	104	P	70 - 130
EPA 8260C	Dibromofluoromethane	105	P	70 - 130
EPA 8260C	Toluene-d8	92.6	P	70 - 130

Lab Sample ID: 1917881
Field Sample ID: G3NW0143

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260C	1,2-Dichloroethane-d4	105	P	70 - 130

Quality Assurance Report
Surrogates

Lab Sample ID: 1917881
Field Sample ID: G3NW0143

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8260C	1,4-Dichlorobenzene-d4	104	P	70 - 130
EPA 8260C	Dibromofluoromethane	98.0	P	70 - 130
EPA 8260C	Toluene-d8	90.2	P	70 - 130

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A78088
Included Lab Sample IDs: 1917864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	98.1	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A78090
Included Lab Sample IDs: 1917862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A78097
Included Lab Sample IDs: 1917862

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A78098
Included Lab Sample IDs: 1917863

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A78129
Included Lab Sample IDs: 1917863

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

Reference Method: EPA 8260C
Run ID: A78154
Included Lab Sample IDs: 1917880, 1917881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzene	111		P	80 - 120
Trichloroethene	107		P	80 - 120
Vinyl chloride	99.9		P	70 - 130

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A78155
Included Lab Sample IDs: 1917863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A78163
Included Lab Sample IDs: 1917862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	94.9	P/P	90 - 110
Sulfate	98.8	97.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A78175
Included Lab Sample IDs: 1917878

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A78178
Included Lab Sample IDs: 1917878

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

Reference Method: SM 2320 B-97
Run ID: A78219
Included Lab Sample IDs: 1917862

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

Reference Method: SM 4500 F-C-97
Run ID: A78219
Included Lab Sample IDs: 1917862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	97.6	P/P	90 - 110

Reference Method: EPA 1631E
Run ID: A78222
Included Lab Sample IDs: 1917877

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mercury	98.2	96.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Run ID: A78233
Included Lab Sample IDs: 1917863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	98.2	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A78295
Included Lab Sample IDs: 1917863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.7	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 1631E	Mercury	98.4		101	107			4.02
EPA 180.1 Rev. 2.0	Turbidity						3.79	
EPA 200.7 Rev. 4.4	Iron	107		107	106			0.106
EPA 200.8 Rev. 5.4	Arsenic	107		110	109			0.692
EPA 300.0 Rev. 2.1	Chloride	98.9		97.9	93.0		0.0647	
	Sulfate	103		99.1	95.3		5.15	
EPA 350.1 Rev. 2.0	Ammonia-N	102		100	97.7			1.78
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.7		91.1	104			11.2
EPA 353.2 Rev. 2.0	NO2NO3-N	103		104	103			0.484
EPA 365.1 Rev. 2.0	Total-P	100		100	96.9			3.03
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.2		98.8	99.0			0.202
EPA 8260C	Benzene	111	106	105	107	4.61		2.13
	Trichloroethene	106	103	98.4	98.9	3.26		0.456
	Vinyl chloride	100	96.0	98.0	101	4.38		3.26
SM 2120 B	Color (true)						1.75	
SM 2320 B-97	Total Alkalinity	103					0.0506	
SM 2540 C-97	TDS						8.04	
SM 4500 F-C-97	Fluoride	95.3		99.2	99.2			0.0
SM 5310 B-00	Organic Carbon	97.2		96.3	96.3			0.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1631E / E31780	Mercury in aqueous samples using cold vapor atomic fluorescence spectroscopy.	1917877
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1917862
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1917878
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1917878
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1917862
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1917862
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1917863
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1917863
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1917863

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1917863
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1917864
EPA 8260C / E31780	Volatile organic pollutants in acid preserved water matrices using GC/MS	1917880, 1917881
SM 2120 B / E31780	True Color measured at 450 nm	1917862
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1917862
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1917862
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1917862
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1917862
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1917863

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1631E	08/01/2017	08/04/2017	Betina Topolski	08/07/2017	Betina Topolski	1917877
EPA 180.1 Rev. 2.0	08/01/2017			08/01/2017 15:58	Blanca Fach	1917862
EPA 200.7 Rev. 4.4	08/01/2017	08/02/2017	Elliott D. Healy	08/03/2017	Betina Topolski	1917878
EPA 200.8 Rev. 5.4	08/01/2017	08/02/2017	Elliott D. Healy	08/03/2017	Nadine Brooks	1917878
EPA 300.0 Rev. 2.1	08/01/2017			08/02/2017	Julia Storbeck	1917862
EPA 350.1 Rev. 2.0	08/01/2017			08/02/2017	Sofia Elnemr	1917863
EPA 351.2 Rev. 2.0	08/01/2017	08/08/2017	Adrian Shelby	08/09/2017	Joseph Suarez	1917863
EPA 353.2 Rev. 2.0	08/01/2017			08/02/2017	Beverly Y. Sanders	1917863
EPA 365.1 Rev. 2.0	08/01/2017	08/02/2017	Sima Feizi	08/03/2017	Lipi Saha	1917863
EPA 365.1 Rev. 2.0 dissolved	08/01/2017			08/01/2017 15:09	Anthony C. Onicha	1917864
EPA 8260C	08/01/2017	08/02/2017	Linda Giardelli	08/02/2017	Linda Giardelli	1917880, 1917881
SM 2120 B	08/01/2017			08/01/2017 16:14	Tanya Welborn	1917862
SM 2320 B-97	08/01/2017			08/05/2017	Dale L. Simmons	1917862
SM 2540 C-97	08/01/2017			08/04/2017	Yijie Li	1917862
SM 2540 D-97	08/01/2017			08/04/2017	Yijie Li	1917862
SM 4500 F-C-97	08/01/2017			08/05/2017	Dale L. Simmons	1917862
SM 5310 B-00	08/01/2017			08/05/2017	Sofia Elnemr	1917863