

Chemical Analysis Report

NE-DIST-2016-04-14-01

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

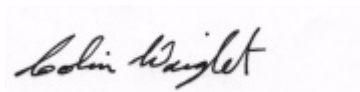
Event Description: **SUWANNEE 4**
Request ID: **RQ-2016-04-11-06**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way
Suite 100
Jacksonville, FL 32256
Attn: Jann Gruentzel

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

Certified by: Colin Wright, Environmental Administrator

Date Certified: 04-MAY-2016 11:35

A handwritten signature in black ink, appearing to read "Colin Wright", is written on a light-colored rectangular 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: Metals and 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: 21020141 Suwannee R @ SR 6

Collection Date/Time: 04/13/2016 12:10

Field ID: 21020141 Suwannee R @ SR 6

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789251	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P302317	
	EPA 300.0 Rev. 2.1	Chloride	5.8		mg Cl/L	P302547	
		Sulfate	0.23	I	mg SO4/L	P302550	
	SM 2120 B	Color (true)	570		PCU	P302289	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P302634	
	SM 2540 C-97	TDS	105		mg/L	P303135	
	SM 2540 D-97	TSS	3	I	mg/L	P302912	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P302637	
1789254	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P303035	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P303028	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302706	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P302790	
	SM 5310 B-00	Organic Carbon	56		mg C/L	P302855	
1789257	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P302276	
1789378	EPA 200.7 Rev. 4.4	Calcium	1.47		mg/L	P302444	
		Iron	960		ug/L	P302444	
		Magnesium	1.01		mg/L	P302444	
		Potassium	0.30	U	mg/L	P302444	
		Sodium	4.0		mg/L	P302444	
		Zinc	5.0	U	ug/L	P302444	
	EPA 200.8 Rev. 5.4	Arsenic	0.47		ug/L	P302444	
		Cadmium	0.020	U	ug/L	P302444	
		Chromium	0.78		ug/L	P302444	
		Copper	0.29	I	ug/L	P302444	
		Lead	0.63		ug/L	P302444	
		Nickel	0.81		ug/L	P302444	
		Silver	0.0050	U	ug/L	P302444	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 04/30/2016.

Sample Location: 21010020 Suwannee R @ Cone Br

Collection Date/Time: 04/13/2016 10:30

Field ID: 21010020 Suwannee R @ Cone Br

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789252	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P302317	
	EPA 300.0 Rev. 2.1	Chloride	5.9		mg Cl/L	P302547	
		Sulfate	0.81		mg SO4/L	P302550	
	SM 2120 B	Color (true)	570		PCU	P302290	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P302634	
	SM 2540 C-97	TDS	73		mg/L	P303135	
	SM 2540 D-97	TSS	4	I	mg/L	P302912	
	SM 4500 F-C-97	Fluoride	0.062	I	mg F/L	P302637	
1789255	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P303036	

Field ID: 21010020 Suwannee R @ Cone Br

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789255	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P303028	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P302706	
	EPA 365.1 Rev. 2.0	Total-P	0.089		mg P/L	P302790	
	SM 5310 B-00	Organic Carbon	55		mg C/L	P302855	
1789258	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.059		mg P/L	P302276	
1789379	EPA 200.7 Rev. 4.4	Calcium	1.97		mg/L	P302444	
		Iron	950		ug/L	P302444	
		Magnesium	1.23		mg/L	P302444	
		Potassium	0.30	U	mg/L	P302444	
		Sodium	4.4		mg/L	P302444	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P302444	
		Arsenic	0.47		ug/L	P302444	
		Cadmium	0.020	U	ug/L	P302444	
		Chromium	0.79		ug/L	P302444	
		Copper	0.28	I	ug/L	P302444	
		Lead	0.62		ug/L	P302444	
		Nickel	0.83		ug/L	P302444	
		Silver	0.0050	U	ug/L	P302444	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 04/30/2016.

Sample Location: 21020136 Jerry Br @ SE CR 25A

Collection Date/Time: 04/13/2016 13:55

Field ID: 21020136 Jerry Br @ SE CR 25A

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789245	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P302317	
	EPA 300.0 Rev. 2.1	Chloride	6.2		mg Cl/L	P302547	
		Sulfate	1.8		mg SO4/L	P302550	
		Color (true)	470		PCU	P302289	
	SM 2320 B-97	Total Alkalinity	0.71	I	mg CaCO3/L	P302634	
	SM 2540 C-97	TDS	70		mg/L	P303135	
	SM 2540 D-97	TSS	3	I	mg/L	P302912	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P302637	
1789247	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P303035	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P303028	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P302706	
	EPA 365.1 Rev. 2.0	Total-P	0.48		mg P/L	P302790	
	SM 5310 B-00	Organic Carbon	36		mg C/L	P302855	
1789249	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.38		mg P/L	P302275	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: 21020152 SuwanneeR @ Turner BR

Collection Date/Time: 04/13/2016 11:20

Field ID: 21020152 SuwanneeR @ Turner BR

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789253	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P302317	
	EPA 300.0 Rev. 2.1	Chloride	5.8		mg Cl/L	P302547	
		Sulfate	0.27	I	mg SO4/L	P302550	
	SM 2120 B	Color (true)	600		PCU	P302290	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P302634	
	SM 2540 C-97	TDS	69		mg/L	P303135	
	SM 2540 D-97	TSS	4	I	mg/L	P302912	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P302637	
1789256	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P303036	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P303028	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302706	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P302790	
	SM 5310 B-00	Organic Carbon	56		mg C/L	P302855	
1789259	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P302276	
1789380	EPA 200.7 Rev. 4.4	Calcium	1.46		mg/L	P302444	
		Iron	960		ug/L	P302444	
		Magnesium	1.01		mg/L	P302444	
		Potassium	0.30	U	mg/L	P302444	
		Sodium	3.9		mg/L	P302444	
		Zinc	5.0	U	ug/L	P302444	
	EPA 200.8 Rev. 5.4	Arsenic	0.45		ug/L	P302444	
		Cadmium	0.020	U	ug/L	P302444	
		Chromium	0.78		ug/L	P302444	
		Copper	0.28	I	ug/L	P302444	
		Lead	0.63		ug/L	P302444	
		Nickel	0.80		ug/L	P302444	
		Silver	0.0050	U	ug/L	P302444	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 04/30/2016.

Sample Location: 21010032 Rocky Cr @ Woodpecker

Collection Date/Time: 04/13/2016 11:45

Field ID: 21010032 Rocky Cr @ Woodpecker

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789246	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P302317	
	EPA 300.0 Rev. 2.1	Chloride	4.6		mg Cl/L	P302547	
		Sulfate	0.20	U	mg SO4/L	P302550	
	SM 2120 B	Color (true)	780		PCU	P302289	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P302634	
	SM 2540 C-97	TDS	77		mg/L	P303135	
	SM 2540 D-97	TSS	2	U	mg/L	P302912	
	SM 4500 F-C-97	Fluoride	0.080	I	mg F/L	P302637	
1789248	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P303035	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P303028	

Field ID: 21010032 Rocky Cr @ Woodpecker

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789248	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302765	
	EPA 365.1 Rev. 2.0	Total-P	0.061		mg P/L	P302923	
	SM 5310 B-00	Organic Carbon	73		mg C/L	P302855	
1789250	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P302275	

Ref. Method and Comment:

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

EPA 351.2 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: P302317

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P302444

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P302444

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L
Copper	0.10	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.050	U	ug/L
Silver	0.0050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P302547

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P302550

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303035

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303036

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303028

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302706

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: P302765

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: P302790

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302923

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302275

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302276

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P302289

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P302290

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P302634

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

Reference Method: SM 2540 C-97
Batch ID: P303135

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P302912

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P302637

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P302855

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P302444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	108		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	100		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P302444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	94.9		P	85 - 115
Cadmium	93.4		P	85 - 115
Chromium	95.5		P	85 - 115
Copper	92.5		P	85 - 115
Lead	89.3		P	85 - 115
Nickel	95.3		P	85 - 115
Silver	92.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302547

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302550

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303035

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303036

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: P303028

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302706

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302765

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 365.1 Rev. 2.0
Batch ID: P302790

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302275

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302276

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

Reference Method: SM 2320 B-97
Batch ID: P302634

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P302637

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P302855

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P302444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788959	Calcium	102		P	80 - 120
1788959	Iron	105		P	80 - 120
1788959	Magnesium	103		P	80 - 120
1788959	Potassium	95.7		P	80 - 120
1788959	Sodium	101		P	80 - 120
1788959	Zinc	103		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P302444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789032	Calcium	105		P	80 - 120
1789032	Iron	106	107	P/P	80 - 120
1789032	Magnesium	104		P	80 - 120
1789032	Potassium	104		P	80 - 120
1789032	Sodium	103		P	80 - 120
1789032	Zinc	101	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P302444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788959	Arsenic	97.8		P	80 - 120
1788959	Cadmium	95.6		P	80 - 120
1788959	Chromium	97.0		P	80 - 120
1788959	Copper	91.3		P	80 - 120
1788959	Lead	91.2		P	80 - 120
1788959	Nickel	93.8		P	80 - 120
1788959	Silver	91.9		P	80 - 120
1789032	Arsenic	96.9	97.3	P/P	80 - 120
1789032	Cadmium	95.1	97.6	P/P	80 - 120
1789032	Chromium	95.8	96.3	P/P	80 - 120
1789032	Copper	90.4	89.5	P/P	80 - 120
1789032	Lead	90.8	91.7	P/P	80 - 120
1789032	Nickel	92.4	93.6	P/P	80 - 120
1789032	Silver	92.6	92.3	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P302547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789158	Chloride	101		P	90 - 110
1789219	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P302550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789158	Sulfate	100		P	90 - 110
1789219	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P303035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789168	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P303036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789270	Ammonia-N	101	99.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789167	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789636	NO2NO3-N	96.9	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789168	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789248	Total-P	97.4	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789156	O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789280	O-Phosphate-P	99.4	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P302637

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789022	Fluoride	99.1	97.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P302855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789221	Organic Carbon	104		P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P302317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789220	Turbidity	0.208	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P302444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789032	Calcium	2.14	Spike	P	0 - 20
1789032	Iron	1.18	Spike	P	0 - 20
1789032	Magnesium	1.21	Spike	P	0 - 20
1789032	Potassium	2.44	Spike	P	0 - 20
1789032	Sodium	2.02	Spike	P	0 - 20
1789032	Zinc	0.160	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P302444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789032	Arsenic	0.398	Spike	P	0 - 20
1789032	Cadmium	2.59	Spike	P	0 - 20
1789032	Chromium	0.473	Spike	P	0 - 20
1789032	Copper	0.994	Spike	P	0 - 20
1789032	Lead	0.928	Spike	P	0 - 20
1789032	Nickel	1.26	Spike	P	0 - 20
1789032	Silver	0.261	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789219	Chloride	0.0706	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789219	Sulfate	0.291	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789168	Ammonia-N	0.528	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789270	Ammonia-N	1.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789222	Kjeldahl Nitrogen	0.483	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789167	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789636	NO2NO3-N	1.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789168	Total-P	0.594	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789248	Total-P	2.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789156	O-Phosphate-P	0.159	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789280	O-Phosphate-P	1.22	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P302289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789219	Color (true)	1.64	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P302290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789260	Color (true)	5.94	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P302634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789022	Total Alkalinity	0.787	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P303135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789220	TDS	0.922	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P302637

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789022	Fluoride	0.947	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P302855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789221	Organic Carbon	0.299	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: A68887
Included Lab Sample IDs: 1789249, 1789250, 1789257, 1789258, 1789259

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A68890

Included Lab Sample IDs: 1789245, 1789246, 1789251, 1789252, 1789253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68896

Included Lab Sample IDs: 1789245, 1789246, 1789251, 1789252, 1789253

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A68939

Included Lab Sample IDs: 1789245, 1789246, 1789251, 1789252, 1789253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.8	P/P	90 - 110
Sulfate	97.9	99.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A68993

Included Lab Sample IDs: 1789245, 1789246, 1789251, 1789252, 1789253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A68993

Included Lab Sample IDs: 1789245, 1789246, 1789251, 1789252, 1789253

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A69000

Included Lab Sample IDs: 1789378, 1789379, 1789380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	102	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	100	100	P/P	90 - 110
Zinc	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69015

Included Lab Sample IDs: 1789247, 1789254, 1789255, 1789256

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69036

Included Lab Sample IDs: 1789248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	98.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A69037

Included Lab Sample IDs: 1789378, 1789379, 1789380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.7	98.5	P/P	90 - 110
Arsenic	99.1	98.7	P/P	90 - 110
Cadmium	99.1	99.2	P/P	90 - 110
Cadmium	99.2	98.8	P/P	90 - 110
Chromium	101	99.9	P/P	90 - 110
Chromium	99.9	101	P/P	90 - 110
Copper	96.6	97.3	P/P	90 - 110
Copper	97.0	96.6	P/P	90 - 110
Lead	94.6	94.7	P/P	90 - 110
Lead	95.2	94.6	P/P	90 - 110
Nickel	97.0	97.7	P/P	90 - 110
Nickel	98.9	97.0	P/P	90 - 110
Silver	94.3	94.6	P/P	90 - 110
Silver	95.0	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69053

Included Lab Sample IDs: 1789247, 1789254, 1789255

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

Reference Method: SM 5310 B-00

Run ID: A69060

Included Lab Sample IDs: 1789247, 1789248, 1789254, 1789255, 1789256

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.2	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69085

Included Lab Sample IDs: 1789256

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69108

Included Lab Sample IDs: 1789248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69122

Included Lab Sample IDs: 1789247, 1789248, 1789254, 1789255, 1789256

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.6	P/P	90 - 110
Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69201

Included Lab Sample IDs: 1789247, 1789248, 1789254, 1789255, 1789256

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.0	102	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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.208	
EPA 200.7 Rev. 4.4	Calcium	103	102	105				2.14
	Iron	108	105	106	107			1.18
	Magnesium	103	103	104				1.21
	Potassium	101	95.7	104				2.44
	Sodium	101	101	103				2.02
	Zinc	100	103	101	101			0.160
EPA 200.8 Rev. 5.4	Arsenic	94.9	97.8	96.9	97.3			0.398
	Cadmium	93.4	95.6	95.1	97.6			2.59
	Chromium	95.5	97.0	95.8	96.3			0.473
	Copper	92.5	91.3	90.4	89.5			0.994
	Lead	89.3	91.2	90.8	91.7			0.928
	Nickel	95.3	93.8	92.4	93.6			1.26
	Silver	92.5	91.9	92.6	92.3			0.261
EPA 300.0 Rev. 2.1	Chloride	102	101	101			0.0706	
	Sulfate	100	100	100			0.291	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101	102				0.528
	Ammonia-N	102	101	99.7				1.39
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105						0.483
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	100				0.0
	NO ₂ NO ₃ -N	102	96.9	98.4				1.54
EPA 365.1 Rev. 2.0	Total-P	108	102	103				0.594
	Total-P	95.0	97.4	95.2				2.02
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.9	100				0.159
	O-Phosphate-P	104	99.4	101				1.22
SM 2120 B	Color (true)						1.64	
	Color (true)						5.94	
SM 2320 B-97	Total Alkalinity	102					0.787	
SM 2540 C-97	TDS						0.922	
SM 4500 F-C-97	Fluoride	95.6	99.1	97.9				0.947
SM 5310 B-00	Organic Carbon	97.8	104					0.299

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1789245, 1789246, 1789251, 1789252, 1789253
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1789378, 1789379, 1789380
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1789378, 1789379, 1789380
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1789245, 1789246, 1789251, 1789252, 1789253
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1789245, 1789246, 1789251, 1789252, 1789253
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1789247, 1789248, 1789254, 1789255, 1789256
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1789247, 1789248, 1789254, 1789255, 1789256
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1789247, 1789248, 1789254, 1789255, 1789256
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1789247, 1789248, 1789254, 1789255, 1789256
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1789249, 1789250, 1789257, 1789258, 1789259
SM 2120 B / E31780	True Color measured at 450 nm	1789245, 1789246, 1789251, 1789252, 1789253
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1789245, 1789246, 1789251, 1789252, 1789253
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1789245, 1789246, 1789251, 1789252, 1789253
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1789245, 1789246, 1789251, 1789252, 1789253
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1789245, 1789246, 1789251, 1789252, 1789253
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1789247, 1789248, 1789254, 1789255, 1789256

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/14/2016			04/14/2016 16:39	Blanca Fach	1789245, 1789246, 1789251, 1789252, 1789253
EPA 200.7 Rev. 4.4	04/14/2016	04/18/2016	Elliott D. Healy	04/20/2016	Joshua Ayres	1789378, 1789379, 1789380
EPA 200.8 Rev. 5.4	04/14/2016	04/18/2016	Elliott D. Healy	04/21/2016	Charles J. Peterson	1789378, 1789379, 1789380
EPA 300.0 Rev. 2.1	04/14/2016			04/20/2016	Julia Storbeck	1789245, 1789246, 1789251, 1789252, 1789253
EPA 350.1 Rev. 2.0	04/14/2016			04/26/2016	Diana M. Turner	1789247, 1789248, 1789254, 1789255, 1789256
EPA 351.2 Rev. 2.0	04/14/2016	04/27/2016	Sofia Elnemr	04/29/2016	Christopher Armour	1789247, 1789248, 1789254, 1789255, 1789256
EPA 353.2 Rev. 2.0	04/14/2016			04/21/2016	Peter D. Kaus	1789247, 1789254, 1789255, 1789256
	04/14/2016			04/22/2016	Peter D. Kaus	1789248
EPA 365.1 Rev. 2.0	04/14/2016	04/22/2016	Lipi Saha	04/22/2016	Lipi Saha	1789247, 1789254, 1789255
	04/14/2016	04/22/2016	Lipi Saha	04/25/2016	Lipi Saha	1789256
	04/14/2016	04/26/2016	Christopher Armour	04/26/2016	Lipi Saha	1789248
EPA 365.1 Rev. 2.0 dissolved	04/14/2016			04/14/2016 14:57	Julia Storbeck	1789250
	04/14/2016			04/14/2016 14:58	Julia Storbeck	1789257
	04/14/2016			04/14/2016 14:59	Julia Storbeck	1789258
	04/14/2016			04/14/2016 15:00	Julia Storbeck	1789259
	04/14/2016			04/14/2016 15:28	Julia Storbeck	1789249
SM 2120 B	04/14/2016			04/14/2016 16:38	Chrisoulla Rakowski	1789245
	04/14/2016			04/14/2016 16:39	Chrisoulla Rakowski	1789246
	04/14/2016			04/14/2016 16:40	Chrisoulla Rakowski	1789251
	04/14/2016			04/14/2016 16:41	Chrisoulla Rakowski	1789252, 1789253
SM 2320 B-97	04/14/2016			04/20/2016	Dale L. Simmons	1789245, 1789246, 1789251, 1789252, 1789253
SM 2540 C-97	04/14/2016			04/18/2016	Sima Feizi	1789245, 1789246, 1789251, 1789252, 1789253
SM 2540 D-97	04/14/2016			04/18/2016	Sima Feizi	1789245, 1789246, 1789251, 1789252, 1789253
SM 4500 F-C-97	04/14/2016			04/20/2016	Dale L. Simmons	1789245, 1789246, 1789251, 1789252, 1789253
SM 5310 B-00	04/14/2016			04/21/2016	Sofia Elnemr	1789247, 1789248, 1789254, 1789255, 1789256