

Chemical Analysis Report

SO-DIST-2016-04-28-03

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

Event Description: **SMP: Yucca Pen, Yucca Marine, Alligator2074, and Alligator2081**

Request ID: **RQ-2016-04-25-61**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
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Date Certified: 25-MAY-2016 09:56



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: Yucca Pen Creek @ Burnt Store Rd.

Collection Date/Time: 04/27/2016 09:50

Field ID: G2SD04272016-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1793813	EPA 180.1 Rev. 2.0	Turbidity	5.4	A	NTU	P303205	
	EPA 300.0 Rev. 2.1	Chloride	74		mg Cl/L	P303648	
		Sulfate	6.2		mg SO4/L	P303651	
	SM 2120 B	Color (true)	23	A	PCU	P303189	
	SM 2320 B-97	Total Alkalinity	272		mg CaCO3/L	P303816	
	SM 2540 C-97	TDS	491		mg/L	P303911	
	SM 2540 D-97	TSS	23		mg/L	P303788	
	SM 4500 F-C-97	Fluoride	0.099	I	mg F/L	P303821	
1793816	EPA 350.1 Rev. 2.0	Ammonia-N	0.073		mg N/L	P303798	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P304146	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P304004	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P304053	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P304638	
1793819	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P303178	

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

Collection Date/Time: 04/27/2016 09:25

Field ID: G2SD04272016-2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1793822	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P303205	
	SM 2320 B-97	Total Alkalinity	157		mg CaCO3/L	P303817	
	SM 2540 D-97	TSS	3	U	mg/L	P303794	
	SM 4500 F-C-97	Fluoride	0.80		mg F/L	P303822	
1793823	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P303782	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P304112	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P303631	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P303919	
	SM 5310 B-00	Organic Carbon	9.8		mg C/L	P304745	
1793824	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P303179	

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: Field Blank

Collection Date/Time: 04/27/2016 09:55

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1793814	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P303205	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P303648	
		Sulfate	0.20	U	mg SO4/L	P303651	
	SM 2120 B	Color (true)	2.5	U	PCU	P303189	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P303816	
	SM 2540 C-97	TDS	15	U	mg/L	P303908	
	SM 2540 D-97	TSS	2	U	mg/L	P303785	

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1793814	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303821	
1793817	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P303798	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P304146	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P304004	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P304053	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P304638	
1793820	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P303178	

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: 2081 @ Burnt Store Road

Collection Date/Time: 04/27/2016 10:15

Field ID: G2SD04272016-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1793815	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P303205	
	EPA 300.0 Rev. 2.1	Chloride	46		mg Cl/L	P303648	
		Sulfate	16		mg SO4/L	P303651	
	SM 2120 B	Color (true)	67		PCU	P303189	
	SM 2320 B-97	Total Alkalinity	190		mg CaCO3/L	P303816	
	SM 2540 C-97	TDS	318	A	mg/L	P303911	
	SM 2540 D-97	TSS	3	I	mg/L	P303788	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P303821	
1793818	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P303798	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P304146	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P304004	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P304053	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P304638	
1793821	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P303182	
1794072	EPA 200.7 Rev. 4.4	Calcium	80.4		mg/L	P303544	
		Iron	680		ug/L	P303544	
		Magnesium	5.75		mg/L	P303544	
		Potassium	1.7		mg/L	P303544	
		Sodium	27.2		mg/L	P303544	
		Zinc	5.0	U	ug/L	P303544	
	EPA 200.8 Rev. 5.4	Arsenic	1.13		ug/L	P303544	
		Cadmium	0.020	U	ug/L	P303544	
		Chromium	1.11		ug/L	P303544	
		Copper	0.20	I	ug/L	P303544	
		Lead	0.11	I	ug/L	P303544	
		Nickel	0.42		ug/L	P303544	
		Silver	0.0050	U	ug/L	P303544	

Ref. Method and Comment:

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

EPA 200.7 Rev. 4.4: The calcium matrix spike recoveries are 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: P303205

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303544

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: P303544

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: P303648

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303651

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303782

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303798

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304112

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304146

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303631

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304004

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303919

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304053

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303178

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303179

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303182

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: P303189

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P303816

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

Reference Method: SM 2320 B-97
Batch ID: P303817

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

Reference Method: SM 2540 C-97
Batch ID: P303908

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P303911

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303785

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303788

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303794

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P303821

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P303822

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P304638

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

Reference Method: SM 5310 B-00
Batch ID: P304745

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: P303544

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	105		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	102		P	85 - 115
Sodium	103		P	85 - 115
Zinc	97.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P303544

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	99.6		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	99.7		P	85 - 115
Copper	97.6		P	85 - 115
Lead	98.7		P	85 - 115
Nickel	99.2		P	85 - 115
Silver	95.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303648

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303782

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: P303798

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: P304112

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304146

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303631

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: P304004

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: P303919

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304053

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303178

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303179

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303182

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

Reference Method: SM 2320 B-97
Batch ID: P303816

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P303817

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P303821

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P303822

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P304638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P304745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303544

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794072	Iron	108	105	P/P	80 - 120
1794072	Magnesium	106		P	80 - 120
1794072	Potassium	105	98.5	P/P	80 - 120
1794072	Sodium	104		P	80 - 120
1794072	Zinc	102	100	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P303544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794072	Arsenic	103	102	P/P	80 - 120
1794072	Cadmium	101	101	P/P	80 - 120
1794072	Chromium	101	99.6	P/P	80 - 120
1794072	Copper	96.5	96.2	P/P	80 - 120
1794072	Lead	101	100	P/P	80 - 120
1794072	Nickel	98.7	98.5	P/P	80 - 120
1794072	Silver	96.5	96.6	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793758	Chloride	99.1		P	90 - 110
1793763	Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793758	Sulfate	95.3		P	90 - 110
1793763	Sulfate	94.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793683	Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793771	Ammonia-N	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304112

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792618	Kjeldahl Nitrogen	95.5	98.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793816	Kjeldahl Nitrogen	99.4	95.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793823	NO2NO3-N	98.3	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793775	NO2NO3-N	94.2	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793674	Total-P	93.7	93.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793773	Total-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793782	O-Phosphate-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793841	O-Phosphate-P	98.4	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303182

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793853	O-Phosphate-P	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P303821

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793851	Fluoride	95.9	95.4	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P303822

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793834	Fluoride	97.5	98.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P304638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793776	Organic Carbon	98.1	97.2	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P304745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793683	Organic Carbon	91.4	92.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793813	Turbidity	2.60	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794072	Calcium	3.87	Spike	P	0 - 20
1794072	Iron	2.19	Spike	P	0 - 20
1794072	Magnesium	2.72	Spike	P	0 - 20
1794072	Potassium	4.20	Spike	P	0 - 20
1794072	Sodium	5.33	Spike	P	0 - 20
1794072	Zinc	1.58	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P303544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794072	Arsenic	1.38	Spike	P	0 - 20
1794072	Cadmium	0.337	Spike	P	0 - 20
1794072	Chromium	1.00	Spike	P	0 - 20
1794072	Copper	0.226	Spike	P	0 - 20
1794072	Lead	0.905	Spike	P	0 - 20
1794072	Nickel	0.122	Spike	P	0 - 20
1794072	Silver	0.103	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793758	Chloride	0.105	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793758	Sulfate	0.219	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793683	Ammonia-N	1.61	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793771	Ammonia-N	2.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304112

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792618	Kjeldahl Nitrogen	2.38	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793816	Kjeldahl Nitrogen	2.36	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793823	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793775	NO2NO3-N	3.94	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793674	Total-P	0.0255	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793773	Total-P	0.458	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793782	O-Phosphate-P	0.595	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793841	O-Phosphate-P	0.954	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793853	O-Phosphate-P	0.368	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P303189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793813	Color (true)	1.62	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P303816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793851	Total Alkalinity	0.0379	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P303817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793834	Total Alkalinity	0.401	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P303908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793602	TDS	1.35	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P303911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793815	TDS	5.34	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P303821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793851	Fluoride	0.490	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P303822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793834	Fluoride	0.483	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P304638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793776	Organic Carbon	0.662	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P304745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793683	Organic Carbon	1.04	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: A69156
Included Lab Sample IDs: 1793819, 1793820, 1793821, 1793824

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	101	P/P	90 - 110
O-Phosphate-P	101	99.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A69156

Included Lab Sample IDs: 1793819, 1793820, 1793821, 1793824

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

Reference Method: SM 2120 B

Run ID: A69157

Included Lab Sample IDs: 1793813, 1793814, 1793815

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69165

Included Lab Sample IDs: 1793813, 1793814, 1793815, 1793822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69217

Included Lab Sample IDs: 1793813, 1793814, 1793815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	102	101	P/P	90 - 110
Sulfate	99.1	99.8	P/P	90 - 110
Sulfate	99.8	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69298

Included Lab Sample IDs: 1793823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A69309

Included Lab Sample IDs: 1794072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	101	P/P	90 - 110
Cadmium	98.8	99.8	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Copper	103	101	P/P	90 - 110
Lead	98.5	99.0	P/P	90 - 110
Nickel	103	101	P/P	90 - 110
Silver	98.3	99.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A69330

Included Lab Sample IDs: 1794072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A69330

Included Lab Sample IDs: 1794072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	101	P/P	90 - 110
Iron	99.5	99.8	P/P	90 - 110
Magnesium	100	101	P/P	90 - 110
Potassium	98.6	99.0	P/P	90 - 110
Sodium	99.2	99.6	P/P	90 - 110
Zinc	98.6	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69333

Included Lab Sample IDs: 1793816, 1793817, 1793818, 1793823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	100	P/P	90 - 110
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A69345

Included Lab Sample IDs: 1793813, 1793814, 1793815, 1793822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	98.9	P/P	90 - 110
Total Alkalinity	102	98.1	P/P	90 - 110
Total Alkalinity	98.1	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69345

Included Lab Sample IDs: 1793813, 1793814, 1793815, 1793822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	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: A69407

Included Lab Sample IDs: 1793816, 1793817, 1793818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69422

Included Lab Sample IDs: 1793823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69432

Included Lab Sample IDs: 1793818

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69459

Included Lab Sample IDs: 1793816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69479

Included Lab Sample IDs: 1793823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69480

Included Lab Sample IDs: 1793817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69486

Included Lab Sample IDs: 1793816, 1793817, 1793818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.6	95.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A69584

Included Lab Sample IDs: 1793816, 1793817, 1793818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.5	98.6	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A69609

Included Lab Sample IDs: 1793823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.4	93.0	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					2.60	
EPA 200.7 Rev. 4.4	Calcium	106					3.87
	Iron	105	108	105			2.19
	Magnesium	104	106				2.72
	Potassium	102	105	98.5			4.20
	Sodium	103	104				5.33
	Zinc	97.8	102	100			1.58
EPA 200.8 Rev. 5.4	Arsenic	99.6	103	102			1.38
	Cadmium	100	101	101			0.337
	Chromium	99.7	101	99.6			1.00
	Copper	97.6	96.5	96.2			0.226
	Lead	98.7	101	100			0.905
	Nickel	99.2	98.7	98.5			0.122
	Silver	95.6	96.5	96.6			0.103
EPA 300.0 Rev. 2.1	Chloride	100	99.1	99.4		0.105	
	Sulfate	96.9	95.3	94.9		0.219	
EPA 350.1 Rev. 2.0	Ammonia-N	100	104	106			1.61
	Ammonia-N	103	100	103			2.46
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8	95.5	98.2			2.38
	Kjeldahl Nitrogen	98.6	99.4	95.9			2.36
EPA 353.2 Rev. 2.0	NO2NO3-N	101	98.3	99.3			1.01
	NO2NO3-N	102	94.2	98.2			3.94
EPA 365.1 Rev. 2.0	Total-P	99.7	93.7	93.7			0.0255
	Total-P	99.2	100	101			0.458
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	101	101			0.595
	O-Phosphate-P	105	98.4	99.6			0.954
	O-Phosphate-P	105	100	101			0.368
SM 2120 B	Color (true)					1.62	
SM 2320 B-97	Total Alkalinity	101				0.0379	
	Total Alkalinity	101				0.401	
SM 2540 C-97	TDS					1.35	
	TDS					5.34	
SM 4500 F-C-97	Fluoride	96.5	95.9	95.4			0.490
	Fluoride	96.5	97.5	98.2			0.483
SM 5310 B-00	Organic Carbon	97.6	98.1	97.2			0.662
	Organic Carbon	97.6	91.4	92.4			1.04

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1793813, 1793814, 1793815, 1793822
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1794072
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1794072
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1793813, 1793814, 1793815
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1793813, 1793814, 1793815
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1793816, 1793817, 1793818, 1793823
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1793816, 1793817, 1793818, 1793823

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1793816, 1793817, 1793818, 1793823
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1793816, 1793817, 1793818, 1793823
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1793819, 1793820, 1793821, 1793824
SM 2120 B / E31780	True Color measured at 450 nm	1793813, 1793814, 1793815
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1793813, 1793814, 1793815, 1793822
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1793813, 1793814, 1793815
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1793813, 1793814, 1793815, 1793822
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1793813, 1793814, 1793815, 1793822
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1793816, 1793817, 1793818, 1793823

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	04/28/2016			04/28/2016 15:12	Sima Feizi	1793813, 1793814, 1793815, 1793822
EPA 200.7 Rev. 4.4	04/28/2016	05/04/2016	Elliott D. Healy	05/06/2016	Joshua Ayres	1794072
EPA 200.8 Rev. 5.4	04/28/2016	05/04/2016	Elliott D. Healy	05/05/2016	Charles J. Peterson	1794072
EPA 300.0 Rev. 2.1	04/28/2016			05/05/2016	Elisa J Lutz	1793813, 1793814, 1793815
EPA 350.1 Rev. 2.0	04/28/2016			05/06/2016	Diana M. Turner	1793816, 1793817, 1793818, 1793823
EPA 351.2 Rev. 2.0	04/28/2016	05/12/2016	Christopher Armour	05/15/2016	Virginia P. Brown	1793823
	04/28/2016	05/12/2016	Christopher Armour	05/16/2016	Christopher Armour	1793816, 1793817, 1793818
EPA 353.2 Rev. 2.0	04/28/2016			05/05/2016	Peter D. Kaus	1793823
	04/28/2016			05/10/2016	Peter D. Kaus	1793816, 1793817, 1793818
EPA 365.1 Rev. 2.0	04/28/2016	05/10/2016	Vijayalakshmi Reddy	05/11/2016	Lipi Saha	1793823
	04/28/2016	05/11/2016	Vijayalakshmi Reddy	05/11/2016	Lipi Saha	1793818
	04/28/2016	05/11/2016	Vijayalakshmi Reddy	05/12/2016	Rochelle Y Jackson	1793816
	04/28/2016	05/11/2016	Vijayalakshmi Reddy	05/13/2016	Rochelle Y Jackson	1793817
EPA 365.1 Rev. 2.0 dissolved	04/28/2016			04/28/2016 14:48	Julia Storbeck	1793820
	04/28/2016			04/28/2016 15:17	Julia Storbeck	1793819
	04/28/2016			04/28/2016 15:20	Julia Storbeck	1793824
	04/28/2016			04/28/2016 16:44	Julia Storbeck	1793821
SM 2120 B	04/28/2016			04/28/2016 14:19	Rochelle Y Jackson	1793813
	04/28/2016			04/28/2016 14:20	Rochelle Y Jackson	1793814, 1793815
SM 2320 B-97	04/28/2016			05/07/2016	Dale L. Simmons	1793813, 1793814, 1793815, 1793822
SM 2540 C-97	04/28/2016			05/03/2016	Yijie Li	1793813, 1793814, 1793815
SM 2540 D-97	04/28/2016			05/03/2016	Yijie Li	1793813, 1793814, 1793815, 1793822
SM 4500 F-C-97	04/28/2016			05/07/2016	Dale L. Simmons	1793813, 1793814, 1793815, 1793822
SM 5310 B-00	04/28/2016			05/19/2016	Diana M. Turner	1793816, 1793817, 1793818
	04/28/2016			05/21/2016	Ping Hua	1793823