

Chemical Analysis Report

SE-DIST-2019-06-27-02

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

Event Description: **SMP-Deployment**

Request ID: **RQ-2019-06-17-37**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

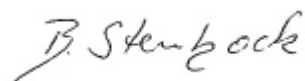
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Date Certified: 15-JUL-2019 17:48



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 Pesticides.

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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Bessey Creek @ Murphy

Collection Date/Time: 06/26/2019 14:30

Field ID: G2SE0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098950	EPA 180.1 Rev. 2.0	Turbidity	5.8	A	NTU	P366418	
	EPA 300.0	Bromide	8.6		mg Br/L	P366634	
	SM 2320 B-97	Total Alkalinity	181		mg CaCO3/L	P366737	RPD
	SM 2540 D-97	TSS	6	I	mg/L	P366569	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P366744	
2098951	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P366550	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P366700	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P366558	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P366521	
2098952	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P366457	
2098962	EPA 200.7 Rev. 4.4	Iron	710		ug/L	P366605	
		Manganese	29.0		ug/L	P366605	
		Zinc	5.0	U	ug/L	P366605	
	EPA 200.8 Rev. 5.4	Aluminum	160	I	ug/L	P366605	
		Antimony	0.20	U	ug/L	P366605	
		Arsenic	4.71		ug/L	P366605	
		Cadmium	0.080	U	ug/L	P366605	
		Chromium	1.6	U	ug/L	P366605	
		Copper	1.6	U	ug/L	P366605	
		Lead	0.80	U	ug/L	P366605	
		Nickel	2.0	U	ug/L	P366605	
		Selenium	2.0	U	ug/L	P366605	
		Silver	0.040	U	ug/L	P366605	
		Thallium	0.40	U	ug/L	P366605	

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: Willoughby Creek

Collection Date/Time: 06/26/2019 15:15

Field ID: G2SE0034

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098953	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P366418	
	EPA 300.0	Bromide	31		mg Br/L	P366634	
	SM 2320 B-97	Total Alkalinity	154		mg CaCO3/L	P366672	
	SM 2540 D-97	TSS	6	I	mg/L	P366851	
	SM 4500 F-C-97	Fluoride	0.61		mg F/L	P366859	
2098954	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P366550	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P366700	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.080		mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P366558	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P366521	
2098955	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P366457	
2098961	EPA 8321B	2,4-D	0.033		ug/L	P366374	
		Acesulfame K**	0.38	IJ	ug/L	P366428	SUR
		AMPA**	1.0	U	ug/L	P366428	
		Sucralose**	1.1		ug/L	P366428	
		Acetaminophen**	0.0080	U	ug/L	P366374	
		Endothall**	0.25	UJ	ug/L	P366428	SUR
		Glufosinate**	1.0	U	ug/L	P366428	
		Glyphosate**	1.0	U	ug/L	P366428	
		Afidopyropen**	0.0020	UJ	ug/L	P366374	
		Bentazon	0.73		ug/L	P366374	
		Carbamazepine**	0.0077		ug/L	P366374	
		Clothianidin**	0.0090	J	ug/L	P366374	
		Dinotefuran**	0.0020	UJ	ug/L	P366374	
		Diuron	0.0097		ug/L	P366374	
		Fenuron	0.016	U	ug/L	P366374	
		Fluridone**	0.017		ug/L	P366374	
		Imazapyr**	0.059		ug/L	P366374	
		Hydrocodone**	0.0020	U	ug/L	P366374	
		Ibuprofen**	0.020	U	ug/L	P366374	
		Imidacloprid	0.049		ug/L	P366374	MS
		Linuron	0.0040	U	ug/L	P366374	
		MCPP	0.0020	U	ug/L	P366374	MS
		Naproxen**	0.0080	U	ug/L	P366374	
		Primidone**	0.0099	I	ug/L	P366374	
		Pyraclostrobin**	0.0020	U	ug/L	P366374	
		Thiamethoxam**	0.0020	UJ	ug/L	P366374	
		Triclopyr**	0.0040	U	ug/L	P366374	
2098963	EPA 200.7 Rev. 4.4	Iron	73	I	ug/L	P366605	
		Manganese	7.1	I	ug/L	P366605	
		Zinc	15	U	ug/L	P366605	
	EPA 200.8 Rev. 5.4	Aluminum	210		ug/L	P366605	
		Antimony	0.20	U	ug/L	P366605	

Field ID: G2SE0034

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098963	EPA 200.8 Rev. 5.4	Arsenic	2.48		ug/L	P366605	
		Cadmium	0.080	U	ug/L	P366605	
		Chromium	1.6	U	ug/L	P366605	
		Copper	1.6	U	ug/L	P366605	
		Lead	0.80	U	ug/L	P366605	
		Nickel	2.0	U	ug/L	P366605	
		Selenium	2.0	U	ug/L	P366605	
		Silver	0.040	U	ug/L	P366605	
		Thallium	0.40	U	ug/L	P366605	

Ref. Method and Comment:
EPA 8321B: J- Estimation is due to method validation that is still in progress. Second source was not analyzed.
EPA 8321B: MDL for some parameters elevated due to matrix interference. Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366418

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366605

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366605

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0
Batch ID: P366634

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366550

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366700

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366597

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366558

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366457

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

Reference Method: EPA 8321B
Batch ID: P366374

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P366428

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P366672

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P366737

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

Reference Method: SM 2540 D-97
Batch ID: P366569

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366851

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P366744

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P366859

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P366521

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: P366605

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	105		P	80 - 120
Manganese	102		P	80 - 120
Zinc	99.4		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366605

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.8		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	104		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	106		P	85 - 115
Copper	99.3		P	85 - 115
Lead	99.8		P	85 - 115
Nickel	100		P	85 - 115
Selenium	100		P	85 - 115
Silver	98.0		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P366634

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366550

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366700

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366597

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366558

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366457

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

Reference Method: EPA 8321B
Batch ID: P366374

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	133		P	40 - 150
Acetaminophen	88.6		P	30 - 150
Afidopyropen	73.1		P	40 - 150
Bentazon	103		P	30 - 150
Carbamazepine	98.0		P	40 - 150
Clothianidin	93.5		P	40 - 150
Dinotefuran	96.2		P	40 - 150
Diuron	94.1		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	94.6		P	40 - 150
Hydrocodone	100		P	40 - 150
Ibuprofen	54.2		P	30 - 150
Imazapyr	101		P	40 - 150
Imidacloprid	93.9		P	40 - 150
Linuron	73.1		P	40 - 150
MCPP	131		P	40 - 150
Naproxen	107		P	40 - 150
Primidone	93.8		P	40 - 150
Pyraclostrobin	83.5		P	30 - 150
Thiamethoxam	99.4		P	40 - 150
Triclopyr	115		P	30 - 150

Reference Method: EPA 8321B
Batch ID: P366428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	148		P	40 - 150
AMPA	83.9		P	40 - 150
Endothall	94.0		P	40 - 150
Glufosinate	83.2		P	40 - 150
Glyphosate	81.0		P	40 - 140
Sucralose	109		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P366672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P366737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P366744

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P366859

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P366521

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099531	Iron	101		P	70 - 130
2099531	Manganese	92.9		P	70 - 130
2099531	Zinc	98.2		P	70 - 130
2099533	Iron	99.1	105	P/P	70 - 130
2099533	Manganese	95.5	96.9	P/P	70 - 130
2099533	Zinc	101	101	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099531	Aluminum	107		P	70 - 130
2099531	Antimony	99.1		P	80 - 120
2099531	Arsenic	103		P	80 - 120
2099531	Cadmium	88.5		P	80 - 120
2099531	Chromium	85.8		P	80 - 120
2099531	Copper	94.3		P	80 - 120
2099531	Lead	105		P	80 - 120
2099531	Nickel	100		P	80 - 120
2099531	Selenium	92.1		P	70 - 130
2099531	Silver	87.6		P	80 - 120
2099531	Thallium	105		P	80 - 120
2099533	Aluminum	109	107	P/P	70 - 130
2099533	Antimony	104	102	P/P	80 - 120
2099533	Arsenic	109	108	P/P	80 - 120
2099533	Cadmium	92.2	92.1	P/P	80 - 120
2099533	Chromium	90.0	87.8	P/P	80 - 120
2099533	Copper	88.3	86.3	P/P	80 - 120
2099533	Lead	106	104	P/P	80 - 120
2099533	Nickel	102	100	P/P	80 - 120
2099533	Selenium	98.9	97.7	P/P	70 - 130
2099533	Silver	91.1	90.3	P/P	80 - 120
2099533	Thallium	106	105	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P366634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097263	Bromide	96.6	97.5	P/P	90 - 110
2098522	Bromide	94.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098774	Ammonia-N	108	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098979	Kjeldahl Nitrogen	92.7	94.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098951	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098951	Total-P	98.8	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098982	O-Phosphate-P	96.2	97.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P366374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098828	2,4-D	128	136	P/P	40 - 150
2098828	Acetaminophen	96.5	90.8	P/P	30 - 150
2098828	Afidopyropen	64.1	85.7	P/P	40 - 150
2098828	Bentazon	30.6	41.1	P/P	30 - 150
2098828	Carbamazepine	79.7	86.5	P/P	40 - 150
2098828	Clothianidin	83.4	98.7	P/P	40 - 150
2098828	Dinotefuran	111	118	P/P	40 - 150
2098828	Diuron	78.1	88.7	P/P	40 - 150
2098828	Fenuron	72.3	71.6	P/P	40 - 150
2098828	Fluridone	56.0	72.7	P/P	40 - 150
2098828	Hydrocodone	93.3	79.0	P/P	40 - 150
2098828	Ibuprofen	61.1	77.7	P/P	30 - 150
2098828	Imazapyr	63.7	89.5	P/P	40 - 150
2098828	Imidacloprid	148	168	P/F	40 - 150
2098828	Linuron	66.0	76.7	P/P	40 - 150
2098828	MCP	172	183	F/F	40 - 150
2098828	Naproxen	103	120	P/P	40 - 150
2098828	Primidone	89.6	101	P/P	40 - 150
2098828	Pyraclostrobin	74.2	82.1	P/P	30 - 150
2098828	Thiamethoxam	122	141	P/P	40 - 150
2098828	Triclopyr	142	143	P/P	30 - 150

Reference Method: EPA 8321B
Batch ID: P366428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098570	Acesulfame K	148	138	P/P	40 - 150
2098570	AMPA	75.8	78.0	P/P	40 - 150
2098570	Endothall	95.6	94.9	P/P	40 - 150
2098570	Glufosinate	85.6	81.4	P/P	40 - 150
2098570	Glyphosate	76.0	79.3	P/P	40 - 140
2098570	Sucralose	101	105	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P366744

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098934	Fluoride	98.1	98.1	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P366859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099567	Fluoride	98.1	98.1	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098980	Organic Carbon	94.1	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098950	Turbidity	3.28	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099533	Iron	5.43	Spike	P	0 - 20
2099533	Manganese	1.32	Spike	P	0 - 20
2099533	Zinc	0.679	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099533	Aluminum	1.43	Spike	P	0 - 20
2099533	Antimony	1.99	Spike	P	0 - 20
2099533	Arsenic	1.25	Spike	P	0 - 20
2099533	Cadmium	0.116	Spike	P	0 - 20
2099533	Chromium	2.51	Spike	P	0 - 20
2099533	Copper	2.07	Spike	P	0 - 20
2099533	Lead	2.10	Spike	P	0 - 20
2099533	Nickel	1.70	Spike	P	0 - 20
2099533	Selenium	1.26	Spike	P	0 - 20
2099533	Silver	0.917	Spike	P	0 - 20
2099533	Thallium	0.762	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P366634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097263	Bromide	0.904	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098774	Ammonia-N	0.295	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098979	Kjeldahl Nitrogen	1.46	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098951	NO2NO3-N	0.421	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098951	Total-P	0.391	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098982	O-Phosphate-P	1.44	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P366374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098828	2,4-D	4.94	Spike	P	0 - 30
2098828	Acetaminophen	6.10	Spike	P	0 - 30
2098828	Afidopyropen	28.7	Spike	P	0 - 30
2098828	Bentazon	7.49	Spike	P	0 - 30
2098828	Carbamazepine	7.65	Spike	P	0 - 30
2098828	Clothianidin	13.1	Spike	P	0 - 30
2098828	Dinotefuran	5.24	Spike	P	0 - 30
2098828	Diuron	10.9	Spike	P	0 - 30
2098828	Fenuron	1.10	Spike	P	0 - 30
2098828	Fluridone	7.30	Spike	P	0 - 30
2098828	Hydrocodone	16.5	Spike	P	0 - 30
2098828	Ibuprofen	23.8	Spike	P	0 - 30
2098828	Imazapyr	12.5	Spike	P	0 - 30
2098828	Imidacloprid	7.82	Spike	P	0 - 30
2098828	Linuron	15.0	Spike	P	0 - 30
2098828	MCP	6.34	Spike	P	0 - 30
2098828	Naproxen	15.4	Spike	P	0 - 30
2098828	Primidone	12.4	Spike	P	0 - 30
2098828	Pyraclostrobin	10.1	Spike	P	0 - 30
2098828	Thiamethoxam	13.1	Spike	P	0 - 30
2098828	Triclopyr	1.13	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P366428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098570	Acesulfame K	6.79	Spike	P	0 - 30
2098570	AMPA	2.88	Spike	P	0 - 30
2098570	Endothall	0.764	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P366428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098570	Glufosinate	5.01	Spike	P	0 - 30
2098570	Glyphosate	4.26	Spike	P	0 - 30
2098570	Sucralose	4.55	Spike	P	0 - 30

Reference Method: SM 2320 B-97
 Batch ID: P366672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099566	Total Alkalinity	0.276	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
 Batch ID: P366737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098934	Total Alkalinity	5.55	Sample	F	0 - 2.8

Reference Method: SM 2540 D-97
 Batch ID: P366851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098720	TSS	3.12	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P366744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098934	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P366859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099567	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P366521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098980	Organic Carbon	1.31	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: 2098961
Field Sample ID: G2SE0034

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.4	P	30 - 160
EPA 8321B	Diuron-d6	80.5	P	30 - 160
EPA 8321B	Endothall-d6	778	F	30 - 160
EPA 8321B	Endothall-d6	778	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	37.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	37.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.3	P	30 - 160
EPA 8321B	Primidone-d5	88.6	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92405

Included Lab Sample IDs: 2098950, 2098953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.0	98.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92421

Included Lab Sample IDs: 2098952, 2098955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	97.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A92454

Included Lab Sample IDs: 2098951, 2098954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	91.8	P/P	90 - 110
Organic Carbon	97.1	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92461

Included Lab Sample IDs: 2098951, 2098954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	107	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92496

Included Lab Sample IDs: 2098951, 2098954

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

Reference Method: EPA 8321B

Run ID: A92499

Included Lab Sample IDs: 2098961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	81.1	101	P/P	60 - 160
Glufosinate	75.6	104	P/P	60 - 160
Glyphosate	80.7	104	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A92500

Included Lab Sample IDs: 2098961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	144	136	P/P	60 - 160
Endothall	98.9	101	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92503

Included Lab Sample IDs: 2098951

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	100	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A92511

Included Lab Sample IDs: 2098950, 2098953

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92520

Included Lab Sample IDs: 2098954

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

Reference Method: SM 2320 B-97

Run ID: A92529

Included Lab Sample IDs: 2098953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A92555

Included Lab Sample IDs: 2098961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.1	90.4	P/P	50 - 150
Acetaminophen	93.8	131	P/P	60 - 160
Afidopyropen	94.5	91.5	P/P	50 - 150
Carbamazepine	108	117	P/P	60 - 150
Clothianidin	106	105	P/P	60 - 150
Dinotefuran	122	122	P/P	50 - 150
Diuron	114	118	P/P	60 - 150
Fenuron	115	118	P/P	60 - 150
Fluridone	99.9	104	P/P	60 - 160
Hydrocodone	116	114	P/P	60 - 150
Ibuprofen	92.2	77.3	P/P	50 - 160
Imazapyr	105	102	P/P	50 - 150
Imidacloprid	94.7	97.2	P/P	60 - 150
Linuron	90.3	103	P/P	60 - 150
MCP	84.9	103	P/P	50 - 150
Naproxen	73.7	81.1	P/P	50 - 160
Primidone	100	94.2	P/P	60 - 150
Pyraclostrobin	97.3	96.5	P/P	60 - 150
Thiamethoxam	113	113	P/P	50 - 150
Triclopyr	94.4	97.8	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A92563
Included Lab Sample IDs: 2098950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A92563
Included Lab Sample IDs: 2098950

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

Reference Method: EPA 8321B
Run ID: A92569
Included Lab Sample IDs: 2098961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	105	103	P/P	50 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A92582
Included Lab Sample IDs: 2098962, 2098963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	102	P/P	95 - 105
Iron	102	102	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Manganese	103	102	P/P	95 - 105
Zinc	100	100	P/P	90 - 110
Zinc	101	100	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A92586
Included Lab Sample IDs: 2098962, 2098963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	101	101	P/P	90 - 110
Antimony	99.1	101	P/P	90 - 110
Arsenic	102	103	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Cadmium	100	100	P/P	90 - 110
Cadmium	100	99.3	P/P	90 - 110
Chromium	102	98.2	P/P	90 - 110
Chromium	104	102	P/P	90 - 110
Copper	99.4	99.7	P/P	90 - 110
Copper	99.7	99.0	P/P	90 - 110
Lead	98.0	96.4	P/P	90 - 110
Lead	98.4	98.0	P/P	90 - 110
Nickel	99.2	99.7	P/P	90 - 110
Nickel	99.7	100	P/P	90 - 110
Silver	95.3	94.6	P/P	90 - 110
Silver	95.3	95.3	P/P	90 - 110
Thallium	94.1	93.3	P/P	90 - 110
Thallium	95.4	94.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92598

Included Lab Sample IDs: 2098951, 2098954

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

Reference Method: EPA 8321B

Run ID: A92625

Included Lab Sample IDs: 2098961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	98.8	P/P	60 - 160

Reference Method: SM 4500 F-C-97

Run ID: A92633

Included Lab Sample IDs: 2098953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92668

Included Lab Sample IDs: 2098962, 2098963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	102	P/P	90 - 110
Selenium	101	101	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						3.28	
EPA 200.7 Rev. 4.4	Iron	105	101	99.1	105			5.43
	Manganese	102	92.9	95.5	96.9			1.32
	Zinc	99.4	98.2	101	101			0.679
EPA 200.8 Rev. 5.4	Aluminum	99.8	107	109	107			1.43
	Antimony	101	99.1	104	102			1.99
	Arsenic	104	103	109	108			1.25
	Cadmium	102	92.2	92.1	88.5			0.116
	Chromium	106	85.8	90.0	87.8			2.51
	Copper	99.3	94.3	88.3	86.3			2.07
	Lead	99.8	105	106	104			2.10
	Nickel	100	100	102	100			1.70
	Selenium	100	92.1	98.9	97.7			1.26
	Silver	98.0	91.1	90.3	87.6			0.917
	Thallium	102	105	106	105			0.762
EPA 300.0	Bromide	98.2	96.6	97.5	94.4			0.904
EPA 350.1 Rev. 2.0	Ammonia-N	105	108	108				0.295
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	92.7	94.3				1.46
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	101				0.421
EPA 365.1 Rev. 2.0	Total-P	101	98.8	98.4				0.391
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	96.2	97.6				1.44
EPA 8321B	2,4-D	133	128	136				4.94
	Acesulfame K	148	148	138				6.79
	Acetaminophen	88.6	96.5	90.8				6.10
	Afidopyropen	73.1	64.1	85.7				28.7
	AMPA	83.9	75.8	78.0				2.88
	Bentazon	103	30.6	41.1				7.49
	Carbamazepine	98.0	79.7	86.5				7.65
	Clothianidin	93.5	83.4	98.7				13.1
	Dinotefuran	96.2	111	118				5.24
	Diuron	94.1	78.1	88.7				10.9
	Endothall	94.0	95.6	94.9				0.764
	Fenuron	109	72.3	71.6				1.10
	Fluridone	94.6	56.0	72.7				7.30
	Glufosinate	83.2	85.6	81.4				5.01
	Glyphosate	81.0	76.0	79.3				4.26
	Hydrocodone	100	93.3	79.0				16.5
	Ibuprofen	54.2	77.7	61.1				23.8
	Imazapyr	101	63.7	89.5				12.5
	Imidacloprid	93.9	148	168				7.82
	Linuron	73.1	66.0	76.7				15.0
	MCPP	131	172	183				6.34
	Naproxen	107	103	120				15.4
	Primidone	93.8	89.6	101				12.4
	Pyraclostrobin	83.5	74.2	82.1				10.1
	Sucralose	109	101	105				4.55
	Thiamethoxam	99.4	122	141				13.1
	Triclopyr	115	142	143				1.13
SM 2320 B-97	Total Alkalinity	103					0.276	
	Total Alkalinity	104					5.55	
SM 2540 D-97	TSS						3.12	
SM 4500 F-C-97	Fluoride	99.6	98.1	98.1				0.0
	Fluoride	101	98.1	98.1				0.0
SM 5310 B-00	Organic Carbon	97.0	94.1	95.5				1.31

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2098950, 2098953
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2098962, 2098963
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2098962, 2098963
EPA 300.0 / E31780	Bromide in aqueous matrices	2098950, 2098953
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2098951, 2098954
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2098951, 2098954
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2098951, 2098954
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2098951, 2098954
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2098952, 2098955
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2098961
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2098961
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2098950, 2098953
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2098950, 2098953
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2098950, 2098953
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2098951, 2098954

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	06/27/2019			06/27/2019 16:49	Julia Storbeck	2098950, 2098953
EPA 200.7 Rev. 4.4	06/27/2019	07/02/2019 13:45	Elliott D. Healy	07/05/2019 12:29	Vijayalakshmi Reddy	2098962
	06/27/2019	07/02/2019 13:45	Elliott D. Healy	07/05/2019 12:58	Vijayalakshmi Reddy	2098963
	06/27/2019	07/02/2019 13:45	Elliott D. Healy	07/05/2019 13:06	Vijayalakshmi Reddy	2098963
EPA 200.8 Rev. 5.4	06/27/2019	07/02/2019 13:45	Elliott D. Healy	07/04/2019 06:43	Robert K Palmer	2098962
	06/27/2019	07/02/2019 13:45	Elliott D. Healy	07/04/2019 07:21	Robert K Palmer	2098963
	06/27/2019	07/02/2019 13:45	Elliott D. Healy	07/09/2019 14:19	Robert K Palmer	2098962
	06/27/2019	07/02/2019 13:45	Elliott D. Healy	07/09/2019 14:25	Robert K Palmer	2098963
EPA 300.0	06/27/2019			07/02/2019 05:05	Jhamieka S. Greenwood	2098950
	06/27/2019			07/02/2019 05:22	Jhamieka S. Greenwood	2098953
EPA 350.1 Rev. 2.0	06/27/2019			06/27/2019 14:19	Ping Hua	2098951
	06/27/2019			06/27/2019 14:20	Ping Hua	2098954
EPA 351.2 Rev. 2.0	06/27/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 11:56	Joseph Suarez	2098951
	06/27/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 11:57	Joseph Suarez	2098954
EPA 353.2 Rev. 2.0	06/27/2019			07/02/2019 10:49	Beverly Y. Sanders	2098951
	06/27/2019			07/02/2019 10:55	Beverly Y. Sanders	2098954
EPA 365.1 Rev. 2.0	06/27/2019	07/01/2019 12:00	Lipi Saha	07/02/2019 13:15	Rosalyn Ballman	2098951
	06/27/2019	07/01/2019 12:00	Lipi Saha	07/02/2019 15:59	Rosalyn Ballman	2098954
EPA 365.1 Rev. 2.0 dissolved	06/27/2019			06/27/2019 16:18	Jhamieka S. Greenwood	2098952
	06/27/2019			06/27/2019 16:21	Jhamieka S. Greenwood	2098955
EPA 8321B	06/27/2019	06/28/2019 10:30	Rebecca Ware	06/28/2019 16:49	Rebecca Ware	2098961
	06/27/2019	06/28/2019 10:30	Rebecca Ware	07/01/2019 18:42	Rebecca Ware	2098961
	06/27/2019	06/28/2019 10:30	Rebecca Ware	07/08/2019 18:29	Rebecca Ware	2098961
	06/27/2019	07/01/2019 09:00	Hoor Shaik	07/03/2019 04:24	Juyoung Kim	2098961
	06/27/2019	07/01/2019 09:00	Hoor Shaik	07/04/2019 18:23	Juyoung Kim	2098961
SM 2320 B-97	06/27/2019			07/02/2019 22:06	Dale L. Simmons	2098953
	06/27/2019			07/04/2019 11:40	Dale L. Simmons	2098950
SM 2540 D-97	06/27/2019			06/28/2019 16:45	Rosalyn Ballman	2098950
	06/27/2019			07/01/2019 10:41	Yijie Li	2098953
SM 4500 F-C-97	06/27/2019			07/04/2019 11:40	Dale L. Simmons	2098950
	06/27/2019			07/09/2019 04:59	Dale L. Simmons	2098953
SM 5310 B-00	06/27/2019			06/29/2019 02:56	Madeline Funaro	2098951
	06/27/2019			06/29/2019 03:38	Madeline Funaro	2098954