

Chemical Analysis Report

NE-DIST-2023-05-09-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **St. Augustine 2023**
Request ID: **RQ-2023-05-08-20**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 02-JUN-2023 10:13

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light pink 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, 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: SAN SEBASTIAN RIVER AT HIDDEN HARBOR MARINA **Collection Date/Time: 05/08/2023 11:45**

Field ID: 27010088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2407776	DEP SOP: NU-094-1	Color (true)	9.2	A	PCU	P429619	
	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P429623	
	EPA 300.0 Rev. 2.1	Chloride	1.7E+04		mg Cl/L	P429717	
		Sulfate	2.5E+03		mg SO4/L	P429720	
	SM 2320 B-2011	Total Alkalinity	123	A	mg CaCO3/L	P430119	
	SM 2540 C-2015	TDS	3.18E+04		mg/L	P430021	
	SM 2540 D-2015	TSS	11	J	mg/L	P429891	
	SM 4500-F- C-2011	Fluoride	1.2		mg F/L	P429888	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P430075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P429702	
2407778	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P430006	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P429770	
	SM 5310 B-2011	Organic Carbon	5.1		mg C/L	P429964	

Ref. Method and Comment:

SM 2540 D-2015: Sample was not analyzed using the protocol for saline matrices. Sample was reanalyzed using the protocol for saline matrices on 05/23/2023. The result was 7 IQ mg/L.

Sample Location: SAN SEBASTIAN R AT SR 16

Collection Date/Time: 05/08/2023 12:10

Field ID: 27010058

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2407777	DEP SOP: NU-094-1	Color (true)	32		PCU	P429619	
	EPA 180.1 Rev. 2.0	Turbidity	9.6		NTU	P429623	
	EPA 300.0 Rev. 2.1	Chloride	1.4E+04		mg Cl/L	P429717	
		Sulfate	2.1E+03		mg SO4/L	P429720	
	SM 2320 B-2011	Total Alkalinity	131		mg CaCO3/L	P430119	
	SM 2540 C-2015	TDS	2.61E+04		mg/L	P430021	
	SM 2540 D-2015	TSS	13		mg/L	P429891	
2407779	SM 4500-F- C-2011	Fluoride	1.0		mg F/L	P429888	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P430075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P429702	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P430006	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P429801	
	SM 5310 B-2011	Organic Carbon	8.9		mg C/L	P429964	

Ref. Method and Comment:

SM 2540 D-2015: Sample was not analyzed using the protocol for saline matrices. The result was confirmed on 05/23/2023 using the protocol for saline matrices.

Sample Location: MOULTRIE CR AT US 1

Collection Date/Time: 05/08/2023 10:50

Field ID: 27010055

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2407787	EPA 200.7 Rev. 4.4	Barium	12	I	ug/L	P430250	
		Calcium	329		mg/L	P430250	
		Iron	330	I	ug/L	P430250	
		Magnesium	971		mg/L	P430250	
		Potassium	300		mg/L	P430250	
		Sodium	7.87E+03		mg/L	P430250	
		Strontium	6.02E+03		ug/L	P430250	
		Tin	300	U	ug/L	P430250	
		Titanium	12		ug/L	P430250	
	EPA 200.8 Rev. 5.4	Vanadium	8.0	U	ug/L	P430250	
		Zinc	20	U	ug/L	P430250	
		Aluminum	527		ug/L	P430250	
		Antimony	0.22	I	ug/L	P430250	
		Arsenic	2.23		ug/L	P430250	
		Beryllium	0.044	I	ug/L	P430250	
		Boron	3.23E+03		ug/L	P430250	
		Cadmium	0.080	U	ug/L	P430250	
		Chromium	4.0	U	ug/L	P430250	
		Cobalt	0.17	I	ug/L	P430250	
	SM 2340 B-2011	Copper	1.8	I	ug/L	P430250	
		Lead	0.80	U	ug/L	P430250	
		Manganese	17.7		ug/L	P430250	
		Molybdenum	10.3		ug/L	P430250	
		Nickel	2.0	U	ug/L	P430250	
		Selenium	0.80	U	ug/L	P430250	
		Silver	0.040	U	ug/L	P430250	
		Thallium	0.40	U	ug/L	P430250	
		Hardness	4.82E+03		mg/L	P430250	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium, sodium and strontium are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: RED HOUSE BR AT WOODLAND RD

Collection Date/Time: 05/08/2023 12:45

Field ID: 27010061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2407786	EPA 8270E	Aldrin	0.67	U	ng/L	P429735	
		Alpha-BHC	0.10	U	ng/L	P429735	
		Alpha-Chlordane	0.20	U	ng/L	P429735	
		PCB-1016	2.0	U	ng/L	P429735	
		Beta-BHC	0.10	U	ng/L	P429735	
		PCB-1221	2.0	U	ng/L	P429735	
		Beta-Cyfluthrin	1.3	U	ng/L	P429735	
		PCB-1232	2.0	U	ng/L	P429735	
		Bifenthrin	0.51	U	ng/L	P429735	
		PCB-1242	2.0	U	ng/L	P429735	
		PCB-1248	2.0	U	ng/L	P429735	
		Chlorothalonil	3.7	U	ng/L	P429735	
		PCB-1254	2.0	U	ng/L	P429735	
		Cis-Nonachlor	0.20	U	ng/L	P429735	
		PCB-1260	2.0	U	ng/L	P429735	
		Cypermethrin	1.5	U	ng/L	P429735	
		Dacthal	0.15	U	ng/L	P429735	RPD
		DDD-p,p'	0.26	U	ng/L	P429735	
		DDE-p,p'	0.20	U	ng/L	P429735	
		DDT-p,p'	0.26	U	ng/L	P429735	
		Delta-BHC	0.41	U	ng/L	P429735	
		Deltamethrin	1.3	U	ng/L	P429735	
		Dichlobenil	0.26	U	ng/L	P429735	
		Dicofol	1.3	U	ng/L	P429735	
		Dieldrin	0.41	U	ng/L	P429735	
		Endosulfan I	0.41	U	ng/L	P429735	
		Endosulfan II	0.41	U	ng/L	P429735	
		Endosulfan Sulfate	0.31	U	ng/L	P429735	
		Endrin	0.41	U	ng/L	P429735	
		Endrin Aldehyde	0.77	U	ng/L	P429735	
		Endrin Ketone	0.41	U	ng/L	P429735	
		Esfenvalerate	0.77	U	ng/L	P429735	
		Ethalfuralin	0.15	U	ng/L	P429735	
		Fenpropathrin	0.26	U	ng/L	P429735	
		Gamma-BHC	0.13	U	ng/L	P429735	
		Gamma-Chlordane	0.20	U	ng/L	P429735	
		Heptachlor	0.20	U	ng/L	P429735	
		Heptachlor Epoxide	0.26	U	ng/L	P429735	
		Hexachlorobenzene**	1.0	U	ng/L	P429735	
		Kepone	5.1	UJ	ng/L	P429735	CCV
		Lambda-Cyhalothrin	0.77	U	ng/L	P429735	
		Methoprene	0.77	U	ng/L	P429735	
		Methoxychlor	0.31	U	ng/L	P429735	
		MGK-264	0.20	U	ng/L	P429735	

Field ID: 27010061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2407786	EPA 8270E	Mirex	0.36	U	ng/L	P429735	
		Oxychlordane	0.31	U	ng/L	P429735	
		Permethrin	1.6	U	ng/L	P429735	
		Phenothrin	0.92	U	ng/L	P429735	
		Piperonyl Butoxide	0.15	U	ng/L	P429735	
		Prallethrin	2.0	U	ng/L	P429735	
		Tau-Fluvalinate	0.26	U	ng/L	P429735	
		Tetramethrin	0.77	U	ng/L	P429735	
		Trans-Nonachlor	0.20	U	ng/L	P429735	
		Triclosan Methyl	0.15	U	ng/L	P429735	
		Trifluralin	0.20	U	ng/L	P429735	
	EPA 8276	Chlordane	2.0	U	ng/L	P429735	
		Toxaphene	15	U	ng/L	P429735	

Ref. Method and Comment:
EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P429619

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429623

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430250

Component	Result	Code	Units
Barium	1.0	U	ug/L
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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430250

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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 Rev. 2.1
Batch ID: P429717

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429720

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430075

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429702

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430006

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429770

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429801

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

Reference Method: EPA 8270E
Batch ID: P429735

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cis-Nonachlor	0.20	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E

Batch ID: P429735

Component	Result	Code	Units
Cypermethrin	1.5	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.25	U	ng/L
DDT-p,p'	0.25	U	ng/L
Delta-BHC	0.40	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.40	U	ng/L
Endrin	0.40	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P429735

Component	Result	Code	Units
Methoprene	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P429735

Component	Result	Code	Units
Chlordane	2.0	U	ng/L
Chlordane	2.0	U	ng/L
Toxaphene	15	U	ng/L
Toxaphene	15	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P430119

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

Reference Method: SM 2540 C-2015
Batch ID: P430021

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P429891

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P429888

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P429964

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P429619

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429623

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	97.0		P	85 - 115
Calcium	97.9		P	85 - 115
Iron	97.8		P	85 - 115
Magnesium	94.8		P	85 - 115
Potassium	97.3		P	85 - 115
Sodium	93.3		P	85 - 115
Strontium	95.4		P	85 - 115
Tin	97.1		P	85 - 115
Titanium	98.2		P	85 - 115
Vanadium	96.6		P	85 - 115
Zinc	94.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.9		P	85 - 115
Antimony	96.3		P	85 - 115
Arsenic	97.6		P	85 - 115
Beryllium	93.6		P	85 - 115
Boron	102		P	85 - 115
Cadmium	97.1		P	85 - 115
Chromium	95.8		P	85 - 115
Cobalt	99.0		P	85 - 115
Copper	96.1		P	85 - 115
Lead	98.6		P	85 - 115
Manganese	94.8		P	85 - 115
Molybdenum	95.9		P	85 - 115
Nickel	96.4		P	85 - 115
Selenium	97.6		P	85 - 115
Silver	100		P	85 - 115
Thallium	97.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429717

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429720

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430075

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429702

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430006

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429770

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: P429801

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

Reference Method: EPA 8270E
Batch ID: P429735

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	47.4		P	10 - 92.0
Alpha-BHC	84.0		P	75 - 107
Alpha-Chlordane	67.8		P	50 - 108
Beta-BHC	93.9		P	36 - 138
Beta-Cyfluthrin	59.9		P	20 - 161
Bifenthrin	41.6		P	10 - 119
Chlorothalonil	78.2		P	26 - 186
Cis-Nonachlor	62.2		P	42 - 119
Cypermethrin	67.3		P	22 - 150
Dacthal	100		P	72 - 119
DDD-p,p'	62.9		P	45 - 107
DDE-p,p'	65.5		P	48 - 106
DDT-p,p'	61.8		P	48 - 110
Delta-BHC	92.1		P	54 - 140
Deltamethrin	76.8		P	22 - 189
Dichlobenil	89.3		P	36 - 117

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P429735

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dicofol	72.7		P	46 - 155
Dieldrin	69.1		P	54 - 110
Endosulfan I	64.9		P	59 - 105
Endosulfan II	69.1		P	51 - 118
Endosulfan Sulfate	66.2		P	57 - 121
Endrin	66.3		P	10 - 120
Endrin Aldehyde	61.8		P	34 - 118
Endrin Ketone	95.1		P	69 - 177
Esfenvalerate	56.4		P	23 - 168
Ethalfuralin	63.2		P	49 - 99.0
Fenpropathrin	70.2		P	34 - 117
Gamma-BHC	91.0		P	72 - 117
Gamma-Chlordane	66.1		P	43 - 106
Heptachlor	59.0		P	41 - 98.0
Heptachlor Epoxide	82.8		P	57 - 106
Hexachlorobenzene	60.8		P	36 - 99.0
Kepone	71.9		P	16 - 215
Lambda-Cyhalothrin	53.2		P	21 - 177
Methoprene	40.3		P	10 - 119
Methoxychlor	83.4		P	60 - 112
MGK-264	88.1		P	26 - 122
Mirex	40.0		P	10 - 169
Oxychlordane	69.5		P	43 - 105
PCB-1016	69.6		P	48 - 112
PCB-1260	60.4		P	44 - 118
Permethrin	59.6		P	24 - 148
Phenothrin	39.9		P	10 - 106
Piperonyl Butoxide	79.4		P	10 - 139
Prallethrin	60.6		P	17 - 109
Tau-Fluvalinate	48.4		P	13 - 131
Tetramethrin	89.2		P	10 - 132
Trans-Nonachlor	63.4		P	44 - 106
Triclosan Methyl	71.5		P	59 - 109
Trifluralin	64.5		P	44 - 101

Reference Method: EPA 8276

Batch ID: P429735

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	64.9		P	61 - 116
Toxaphene	67.3		P	48 - 124

Reference Method: SM 2320 B-2011

Batch ID: P430119

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.0		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P430021

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

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P430021

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

Reference Method: SM 2540 D-2015
Batch ID: P429891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	97.4		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P429888

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P429964

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: P430250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2410517	Barium	94.4	93.7	P/P	80 - 120
2410517	Iron	95.7	96.4	P/P	80 - 120
2410517	Tin	94.6	96.2	P/P	80 - 120
2410517	Titanium	95.8	103	P/P	80 - 120
2410517	Vanadium	96.8	95.2	P/P	80 - 120
2410517	Zinc	91.2	90.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2410517	Aluminum	105	109	P/P	70 - 130
2410517	Antimony	102	102	P/P	70 - 130
2410517	Arsenic	105	106	P/P	70 - 130
2410517	Beryllium	107	104	P/P	70 - 130
2410517	Cadmium	94.8	93.4	P/P	70 - 130
2410517	Chromium	95.7	95.0	P/P	70 - 130
2410517	Cobalt	89.4	90.2	P/P	70 - 130
2410517	Copper	90.2	90.1	P/P	70 - 130
2410517	Lead	105	105	P/P	70 - 130
2410517	Manganese	83.5	83.5	P/P	70 - 130
2410517	Molybdenum	108	109	P/P	70 - 130
2410517	Nickel	90.3	90.3	P/P	70 - 130
2410517	Selenium	101	102	P/P	70 - 130
2410517	Silver	91.5	91.9	P/P	70 - 130
2410517	Thallium	99.1	102	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407573	Chloride	96.6		P	90 - 110
2407660	Chloride	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407573	Sulfate	97.7		P	90 - 110
2407660	Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407779	Ammonia-N	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407851	Kjeldahl Nitrogen	100	99.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407485	NO2NO3-N	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429770

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407586	Total-P	91.4	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408209	Total-P	94.0	93.2	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P429735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407610	PCB-1016	72.9	70.5	P/P	46 - 111
2407610	PCB-1260	65.0	64.8	P/P	45 - 114
2407741	Aldrin	45.4	42.9	P/P	20 - 82.0
2407741	Alpha-BHC	80.6	80.4	P/P	71 - 109
2407741	Alpha-Chlordane	57.8	64.0	P/P	42 - 106
2407741	Beta-BHC	96.2	91.5	P/P	69 - 180
2407741	Beta-Cyfluthrin	77.1	80.0	P/P	18 - 175
2407741	Bifenthrin	58.7	61.9	P/P	21 - 128
2407741	Chlorothalonil	82.1	84.8	P/P	10 - 300
2407741	Cis-Nonachlor	52.6	52.3	P/P	34 - 106
2407741	Cypermethrin	79.2	76.9	P/P	22 - 158
2407741	Dacthal	98.5	74.7	P/P	54 - 116
2407741	DDD-p,p'	52.9	56.0	P/P	34 - 107
2407741	DDE-p,p'	53.4	56.6	P/P	33 - 110
2407741	DDT-p,p'	59.5	59.4	P/P	50 - 122
2407741	Delta-BHC	90.7	90.8	P/P	77 - 193
2407741	Deltamethrin	91.2	99.0	P/P	10 - 195
2407741	Dichlobenil	77.0	76.5	P/P	25 - 113
2407741	Dicofol	72.9	68.9	P/P	38 - 247
2407741	Dieldrin	56.3	57.9	P/P	45 - 118
2407741	Endosulfan I	55.5	59.6	P/P	51 - 106
2407741	Endosulfan II	59.3	61.6	P/P	37 - 122
2407741	Endosulfan Sulfate	54.9	60.1	P/P	43 - 132
2407741	Endrin	58.5	59.4	P/P	29 - 101
2407741	Endrin Aldehyde	59.3	52.9	P/P	19 - 110
2407741	Endrin Ketone	73.4	94.1	P/P	60 - 140
2407741	Esfenvalerate	72.6	77.8	P/P	26 - 199
2407741	Ethalfuralin	61.0	64.1	P/P	45 - 99.0
2407741	Fenpropathrin	92.1	83.0	P/P	35 - 120
2407741	Gamma-BHC	91.2	87.5	P/P	63 - 128
2407741	Gamma-Chlordane	57.1	59.1	P/P	40 - 104
2407741	Heptachlor	54.1	56.5	P/P	36 - 97.0
2407741	Heptachlor Epoxide	81.9	73.5	P/P	49 - 184
2407741	Hexachlorobenzene	58.0	58.5	P/P	39 - 96.0

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P429735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407741	Kepone	87.9	84.0	P/P	10 - 217
2407741	Lambda-Cyhalothrin	74.7	75.9	P/P	21 - 193
2407741	Methoprene	52.4	64.1	P/P	20 - 106
2407741	Methoxychlor	89.4	82.7	P/P	53 - 118
2407741	MGK-264	91.7	88.9	P/P	40 - 118
2407741	Mirex	41.0	43.0	P/P	26 - 92.0
2407741	Oxychlordane	68.1	67.3	P/P	44 - 99.0
2407741	Permethrin	69.4	72.0	P/P	33 - 182
2407741	Phenothrin	61.8	60.8	P/P	10 - 129
2407741	Piperonyl Butoxide	63.9	66.0	P/P	10 - 211
2407741	Prallethrin	60.1	62.9	P/P	24 - 113
2407741	Tau-Fluvalinate	69.3	74.5	P/P	14 - 149
2407741	Tetramethrin	101	94.3	P/P	17 - 151
2407741	Trans-Nonachlor	58.6	57.3	P/P	42 - 102
2407741	Triclosan Methyl	58.4	63.6	P/P	48 - 108
2407741	Trifluralin	62.3	63.9	P/P	47 - 96.0

Reference Method: EPA 8276

Batch ID: P429735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407610	Chlordane	75.9	75.0	P/P	53 - 126
2407610	Toxaphene	86.0	85.7	P/P	56 - 211

Reference Method: SM 4500-F- C-2011

Batch ID: P429888

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405381	Fluoride	104	105	P/P	94 - 106

Reference Method: SM 5310 B-2011

Batch ID: P429964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409134	Organic Carbon	94.7	93.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P429619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407776	Color (true)	13.2	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407639	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2410517	Barium	0.704	Spike	P	0 - 20
2410517	Calcium	1.04	Spike	P	0 - 20
2410517	Iron	0.705	Spike	P	0 - 20
2410517	Magnesium	0.556	Spike	P	0 - 20
2410517	Potassium	0.582	Spike	P	0 - 20
2410517	Sodium	0.229	Spike	P	0 - 20
2410517	Strontium	1.23	Spike	P	0 - 20
2410517	Tin	1.71	Spike	P	0 - 20
2410517	Titanium	6.48	Spike	P	0 - 20
2410517	Vanadium	1.65	Spike	P	0 - 20
2410517	Zinc	0.326	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2410517	Aluminum	3.62	Spike	P	0 - 20
2410517	Antimony	0.128	Spike	P	0 - 20
2410517	Arsenic	0.365	Spike	P	0 - 20
2410517	Beryllium	2.28	Spike	P	0 - 20
2410517	Boron	4.52	Spike	P	0 - 20
2410517	Cadmium	1.54	Spike	P	0 - 20
2410517	Chromium	0.724	Spike	P	0 - 20
2410517	Cobalt	0.869	Spike	P	0 - 20
2410517	Copper	0.0794	Spike	P	0 - 20
2410517	Lead	0.478	Spike	P	0 - 20
2410517	Manganese	0.0420	Spike	P	0 - 20
2410517	Molybdenum	0.380	Spike	P	0 - 20
2410517	Nickel	0.0363	Spike	P	0 - 20
2410517	Selenium	0.841	Spike	P	0 - 20
2410517	Silver	0.400	Spike	P	0 - 20
2410517	Thallium	2.89	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407573	Chloride	0.365	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407573	Sulfate	0.542	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407779	Ammonia-N	2.06	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407851	Kjeldahl Nitrogen	0.923	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407485	NO2NO3-N	1.86	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407586	Total-P	3.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408209	Total-P	0.792	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P429735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407610	PCB-1016	3.33	Spike	P	0 - 32
2407610	PCB-1260	0.387	Spike	P	0 - 31

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P429735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407741	Aldrin	5.76	Spike	P	0 - 41
2407741	Alpha-BHC	0.212	Spike	P	0 - 25
2407741	Alpha-Chlordane	10.2	Spike	P	0 - 33
2407741	Beta-BHC	5.01	Spike	P	0 - 36
2407741	Beta-Cyfluthrin	3.70	Spike	P	0 - 42
2407741	Bifenthrin	5.19	Spike	P	0 - 53
2407741	Chlorothalonil	3.23	Spike	P	0 - 71
2407741	Cis-Nonachlor	0.575	Spike	P	0 - 29
2407741	Cypermethrin	2.90	Spike	P	0 - 40
2407741	Dacthal	27.4	Spike	F	0 - 26
2407741	DDD-p,p'	5.84	Spike	P	0 - 39
2407741	DDE-p,p'	5.73	Spike	P	0 - 33
2407741	DDT-p,p'	0.297	Spike	P	0 - 40
2407741	Delta-BHC	0.168	Spike	P	0 - 37
2407741	Deltamethrin	8.12	Spike	P	0 - 100
2407741	Dichlobenil	0.666	Spike	P	0 - 40
2407741	Dicofol	5.70	Spike	P	0 - 31
2407741	Dieldrin	2.81	Spike	P	0 - 27
2407741	Endosulfan I	7.12	Spike	P	0 - 23
2407741	Endosulfan II	3.84	Spike	P	0 - 28
2407741	Endosulfan Sulfate	9.15	Spike	P	0 - 38
2407741	Endrin	1.52	Spike	P	0 - 63
2407741	Endrin Aldehyde	11.3	Spike	P	0 - 60
2407741	Endrin Ketone	24.7	Spike	P	0 - 37
2407741	Esfenvalerate	6.91	Spike	P	0 - 52
2407741	Ethalfuralin	4.82	Spike	P	0 - 23
2407741	Fenpropathrin	10.3	Spike	P	0 - 32
2407741	Gamma-BHC	4.15	Spike	P	0 - 17
2407741	Gamma-Chlordane	3.56	Spike	P	0 - 40
2407741	Heptachlor	4.25	Spike	P	0 - 29
2407741	Heptachlor Epoxide	10.9	Spike	P	0 - 25
2407741	Hexachlorobenzene	0.821	Spike	P	0 - 36
2407741	Kepone	4.58	Spike	P	0 - 93
2407741	Lambda-Cyhalothrin	1.58	Spike	P	0 - 55
2407741	Methoprene	20.2	Spike	P	0 - 53
2407741	Methoxychlor	7.83	Spike	P	0 - 29
2407741	MGK-264	3.15	Spike	P	0 - 35
2407741	Mirex	4.83	Spike	P	0 - 46
2407741	Oxychlordane	1.16	Spike	P	0 - 29
2407741	Permethrin	3.61	Spike	P	0 - 44
2407741	Phenothrin	1.53	Spike	P	0 - 56
2407741	Piperonyl Butoxide	2.81	Spike	P	0 - 100
2407741	Prallethrin	4.64	Spike	P	0 - 42
2407741	Tau-Fluvalinate	7.22	Spike	P	0 - 54
2407741	Tetramethrin	6.69	Spike	P	0 - 51
2407741	Trans-Nonachlor	2.19	Spike	P	0 - 37
2407741	Triclosan Methyl	8.57	Spike	P	0 - 31
2407741	Trifluralin	2.49	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P429735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407610	Chlordane	1.24	Spike	P	0 - 25
2407610	Toxaphene	0.401	Spike	P	0 - 26

Reference Method: SM 2320 B-2011
Batch ID: P430119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2407776	Total Alkalinity	0.414	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P430021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405966	TDS	2.66	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P429891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405966	TSS	8.45	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P429888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405381	Fluoride	0.531	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P429964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409134	Organic Carbon	1.12	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2407786
Field Sample ID: 27010061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	80.0	P	29 - 130
EPA 8270E	Decachlorobiphenyl	59.2	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	73.2	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	78.7	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	68.1	P	30 - 101
EPA 8276	PCNB	116	P	48 - 121

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A119047

Included Lab Sample IDs: 2407776, 2407777

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A119049

Included Lab Sample IDs: 2407776, 2407777

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A119070

Included Lab Sample IDs: 2407776, 2407777

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	102	P/P	90 - 110
Sulfate	98.1	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119172

Included Lab Sample IDs: 2407778

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119176

Included Lab Sample IDs: 2407778, 2407779

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	98.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A119179

Included Lab Sample IDs: 2407776, 2407777

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119193

Included Lab Sample IDs: 2407779

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

Reference Method: SM 5310 B-2011

Run ID: A119213

Included Lab Sample IDs: 2407778, 2407779

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	94.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
 Run ID: A119218
 Included Lab Sample IDs: 2407786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	102		P	80 - 120
Alpha-BHC	97.6		P	80 - 120
Alpha-Chlordane	108		P	80 - 120
Beta-BHC	95.9		P	80 - 120
Beta-Cyfluthrin	92.6		P	80 - 120
Bifenthrin	94.3		P	80 - 120
Chlorothalonil	95.8		P	80 - 120
Cis-Nonachlor	98.8		P	80 - 120
Cypermethrin	91.8		P	80 - 120
Dacthal	103		P	80 - 120
DDD-p,p'	94.8		P	80 - 120
DDE-p,p'	99.5		P	80 - 120
Delta-BHC	92.6		P	80 - 120
Deltamethrin	85.2		P	80 - 120
Dichlobenil	98.3		P	80 - 120
Dicofol	97.8		P	80 - 120
Dieldrin	99.2		P	80 - 120
Endosulfan I	103		P	80 - 120
Endosulfan II	101		P	80 - 120
Endosulfan Sulfate	88.1		P	80 - 120
Endrin	102		P	80 - 120
Endrin Aldehyde	98.4		P	80 - 120
Endrin Ketone	90.6		P	80 - 120
Esfenvalerate	91.4		P	80 - 120
Ethalfuralin	104		P	80 - 120
Fenpropathrin	95.1		P	80 - 120
Gamma-BHC	97.2		P	80 - 120
Gamma-Chlordane	102		P	80 - 120
Heptachlor	100		P	80 - 120
Heptachlor Epoxide	104		P	80 - 120
Hexachlorobenzene	102		P	80 - 120
Kepone	71.2*		F	80 - 120
Lambda-Cyhalothrin	93.0		P	80 - 120
Methoprene	96.5		P	80 - 120
Methoxychlor	94.1		P	80 - 120
MGK-264	94.2		P	80 - 120
Mirex	98.2		P	80 - 120
Oxychlordane	101		P	80 - 120
Permethrin	94.2		P	80 - 120
Phenothrin	96.0		P	80 - 120
Piperonyl Butoxide	92.1		P	80 - 120
Prallethrin	97.7		P	80 - 120
Tau-Fluvalinate	88.1		P	80 - 120
Tetramethrin	93.1		P	80 - 120
Trans-Nonachlor	102		P	80 - 120
Triclosan Methyl	109		P	80 - 120
Trifluralin	98.3		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A119230

Included Lab Sample IDs: 2407778, 2407779

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

Reference Method: EPA 8276

Run ID: A119251

Included Lab Sample IDs: 2407786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	98.8		P	80 - 120
Toxaphene	97.2		P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119259

Included Lab Sample IDs: 2407778, 2407779

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.4	96.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A119276

Included Lab Sample IDs: 2407776, 2407777

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.7	100	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A119304

Included Lab Sample IDs: 2407786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	99.6		P	80 - 120
PCB-1260	104		P	80 - 120

Reference Method: EPA 8270E

Run ID: A119319

Included Lab Sample IDs: 2407786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
DDT-p,p'	98.7		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A119358

Included Lab Sample IDs: 2407787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	93.7	94.5	P/P	90 - 110
Calcium	96.7	96.5	P/P	90 - 110
Iron	97.3	97.1	P/P	90 - 110
Magnesium	95.4	95.1	P/P	90 - 110
Potassium	96.8	96.9	P/P	90 - 110
Sodium	92.4	92.5	P/P	90 - 110
Strontium	94.3	95.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A119358

Included Lab Sample IDs: 2407787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tin	94.3	95.9	P/P	90 - 110
Titanium	95.9	96.5	P/P	90 - 110
Vanadium	94.6	95.5	P/P	90 - 110
Zinc	92.1	93.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119393

Included Lab Sample IDs: 2407787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	99.9	P/P	90 - 110
Antimony	97.8	99.9	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Beryllium	99.5	99.7	P/P	90 - 110
Boron	97.4	95.7	P/P	90 - 110
Cadmium	97.7	98.2	P/P	90 - 110
Chromium	98.4	98.7	P/P	90 - 110
Cobalt	100	100	P/P	90 - 110
Copper	97.7	97.3	P/P	90 - 110
Lead	100	100	P/P	90 - 110
Manganese	94.7	94.9	P/P	90 - 110
Molybdenum	98.0	98.1	P/P	90 - 110
Nickel	99.6	99.9	P/P	90 - 110
Selenium	99.8	101	P/P	90 - 110
Silver	100	99.9	P/P	90 - 110
Thallium	103	103	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	MS
						SMP	
DEP SOP: NU-094-1	Color (true)	99.6				13.2	
EPA 180.1 Rev. 2.0	Turbidity	99.3				0.0	
EPA 200.7 Rev. 4.4	Barium	97.0	94.4	93.7			0.704
	Calcium	97.9					1.04
	Iron	97.8	95.7	96.4			0.705
	Magnesium	94.8					0.556
	Potassium	97.3					0.582
	Sodium	93.3					0.229
	Strontium	95.4					1.23
	Tin	97.1	96.2	94.6			1.71
	Titanium	98.2	95.8	103			6.48
	Vanadium	96.6	96.8	95.2			1.65
	Zinc	94.6	90.9	91.2			0.326
EPA 200.8 Rev. 5.4	Aluminum	97.9	105	109			3.62
	Antimony	96.3	102	102			0.128
	Arsenic	97.6	105	106			0.365
	Beryllium	93.6	107	104			2.28
	Boron	102					4.52
	Cadmium	97.1	94.8	93.4			1.54
	Chromium	95.8	95.7	95.0			0.724
	Cobalt	99.0	89.4	90.2			0.869
	Copper	96.1	90.2	90.1			0.0794
	Lead	98.6	105	105			0.478
	Manganese	94.8	83.5	83.5			0.0420
	Molybdenum	95.9	108	109			0.380
	Nickel	96.4	90.3	90.3			0.0363
	Selenium	97.6	101	102			0.841
	Silver	100	91.5	91.9			0.400
	Thallium	97.6	99.1	102			2.89
EPA 300.0 Rev. 2.1	Chloride	99.1	96.6	99.0		0.365	
	Sulfate	98.0	97.7	98.0		0.542	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6	103	100			2.06
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	100	99.1			0.923
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	106			1.86
EPA 365.1 Rev. 2.0	Total-P	99.7	91.4	94.3			3.08
	Total-P	105	94.0	93.2			0.792
EPA 8270E	Aldrin	47.4	45.4	42.9			5.76
	Alpha-BHC	84.0	80.6	80.4			0.212
	Alpha-Chlordane	67.8	57.8	64.0			10.2
	Beta-BHC	93.9	96.2	91.5			5.01
	Beta-Cyfluthrin	59.9	77.1	80.0			3.70
	Bifenthrin	41.6	58.7	61.9			5.19
	Chlorothalonil	78.2	82.1	84.8			3.23
	Cis-Nonachlor	62.2	52.6	52.3			0.575
	Cypermethrin	67.3	79.2	76.9			2.90
	Dacthal	100	98.5	74.7			27.4
	DDD-p,p'	62.9	52.9	56.0			5.84
	DDE-p,p'	65.5	53.4	56.6			5.73
	DDT-p,p'	61.8	59.5	59.4			0.297
	Delta-BHC	92.1	90.7	90.8			0.168
	Deltamethrin	76.8	91.2	99.0			8.12
	Dichlobenil	89.3	77.0	76.5			0.666
	Dicofol	72.7	72.9	68.9			5.70
	Dieldrin	69.1	56.3	57.9			2.81

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
			LCS	SMP	MS	
EPA 8270E	Endosulfan I	64.9	55.5	59.6		7.12
	Endosulfan II	69.1	59.3	61.6		3.84
	Endosulfan Sulfate	66.2	54.9	60.1		9.15
	Endrin	66.3	58.5	59.4		1.52
	Endrin Aldehyde	61.8	59.3	52.9		11.3
	Endrin Ketone	95.1	73.4	94.1		24.7
	Esfenvalerate	56.4	72.6	77.8		6.91
	Ethalfuralin	63.2	61.0	64.1		4.82
	Fenpropathrin	70.2	92.1	83.0		10.3
	Gamma-BHC	91.0	91.2	87.5		4.15
	Gamma-Chlordane	66.1	57.1	59.1		3.56
	Heptachlor	59.0	54.1	56.5		4.25
	Heptachlor Epoxide	82.8	81.9	73.5		10.9
	Hexachlorobenzene	60.8	58.0	58.5		0.821
	Kepone	71.9	87.9	84.0		4.58
	Lambda-Cyhalothrin	53.2	74.7	75.9		1.58
	Methoprene	40.3	52.4	64.1		20.2
	Methoxychlor	83.4	89.4	82.7		7.83
	MGK-264	88.1	91.7	88.9		3.15
	Mirex	40.0	41.0	43.0		4.83
	Oxychlordane	69.5	68.1	67.3		1.16
	PCB-1016	69.6	72.9	70.5		3.33
	PCB-1260	60.4	65.0	64.8		0.387
	Permethrin	59.6	69.4	72.0		3.61
	Phenothrin	39.9	61.8	60.8		1.53
	Piperonyl Butoxide	79.4	63.9	66.0		2.81
	Prallethrin	60.6	60.1	62.9		4.64
	Tau-Fluvalinate	48.4	69.3	74.5		7.22
	Tetramethrin	89.2	101	94.3		6.69
	Trans-Nonachlor	63.4	58.6	57.3		2.19
	Triclosan Methyl	71.5	58.4	63.6		8.57
	Trifluralin	64.5	62.3	63.9		2.49
EPA 8276	Chlordane	64.9	75.9	75.0		1.24
	Toxaphene	67.3	86.0	85.7		0.401
SM 2320 B-2011	Total Alkalinity	99.0			0.414	
SM 2540 C-2015	TDS	103			2.66	
SM 2540 D-2015	TSS	97.4			8.45	
SM 4500-F- C-2011	Fluoride	100	104	105		0.531
SM 5310 B-2011	Organic Carbon	97.0	94.7	93.4		1.12

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2407776, 2407777
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2407776, 2407777
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2407787
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2407787
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2407776, 2407777
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2407776, 2407777
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2407778, 2407779
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2407778, 2407779

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2407778, 2407779
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2407778, 2407779
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2407786
EPA 8270E	PCBs in water matrices by GC/MS/MS	2407786
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2407786
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2407776, 2407777
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2407787
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2407776, 2407777
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2407776, 2407777
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2407776, 2407777
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2407778, 2407779

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	05/09/2023			05/09/2023 14:48	Samantha L Bates	2407776
	05/09/2023			05/09/2023 14:49	Samantha L Bates	2407777
EPA 180.1 Rev. 2.0	05/09/2023			05/09/2023 13:27	Chandler E Cox	2407776
	05/09/2023			05/09/2023 13:28	Chandler E Cox	2407777
EPA 200.7 Rev. 4.4	05/09/2023	05/23/2023 11:20	George D Taylor	05/23/2023 19:59	McKinley C Carter	2407787
	05/09/2023	05/23/2023 11:20	George D Taylor	05/23/2023 20:07	McKinley C Carter	2407787
EPA 200.8 Rev. 5.4	05/09/2023	05/23/2023 11:20	George D Taylor	05/25/2023 00:56	Conrad Hartmann	2407787
	05/09/2023	05/23/2023 11:20	George D Taylor	05/25/2023 02:43	Conrad Hartmann	2407787
EPA 300.0 Rev. 2.1	05/09/2023			05/11/2023 08:25	James L Waggeberby	2407776
	05/09/2023			05/11/2023 08:40	James L Waggeberby	2407777
EPA 350.1 Rev. 2.0	05/09/2023			05/18/2023 14:22	Ping Hua	2407779
	05/09/2023			05/18/2023 14:26	Ping Hua	2407778
EPA 351.2 Rev. 2.0	05/09/2023	05/11/2023 12:32	Dana G. Hughes	05/15/2023 15:40	Samantha L Bates	2407778
	05/09/2023	05/11/2023 12:32	Dana G. Hughes	05/15/2023 15:41	Samantha L Bates	2407779
EPA 353.2 Rev. 2.0	05/09/2023			05/16/2023 14:11	Anna M. Plaviak	2407778
	05/09/2023			05/16/2023 14:13	Anna M. Plaviak	2407779
EPA 365.1 Rev. 2.0	05/09/2023	05/11/2023 15:10	Adam P Silver	05/15/2023 14:25	James L Waggeberby	2407778
	05/09/2023	05/12/2023 12:59	Adam P Silver	05/16/2023 13:04	James L Waggeberby	2407779
EPA 8270E	05/09/2023	05/12/2023 09:00	Rasheda Ghaffari	05/16/2023 21:52	Michael Poppell	2407786
	05/09/2023	05/12/2023 09:00	Rasheda Ghaffari	05/17/2023 21:54	Vandana T. Nagar	2407786
	05/09/2023	05/12/2023 09:00	Rasheda Ghaffari	05/18/2023 22:13	Michael Poppell	2407786
EPA 8276	05/09/2023	05/12/2023 09:00	Rasheda Ghaffari	05/18/2023 10:29	Arthur Maknenko	2407786
SM 2320 B-2011	05/09/2023			05/19/2023 10:30	Dale L. Simmons	2407776
	05/09/2023			05/19/2023 11:14	Dale L. Simmons	2407777
SM 2340 B-2011	05/09/2023			05/23/2023 20:07	McKinley C Carter	2407787
SM 2540 C-2015	05/09/2023			05/10/2023 15:30	Yijie Li	2407776, 2407777
SM 2540 D-2015	05/09/2023			05/10/2023 15:30	Yijie Li	2407776, 2407777
SM 4500-F- C-2011	05/09/2023			05/16/2023 01:37	Dale L. Simmons	2407776
	05/09/2023			05/16/2023 01:43	Dale L. Simmons	2407777
SM 5310 B-2011	05/09/2023			05/17/2023 07:05	Elise M. Gillis	2407778
	05/09/2023			05/17/2023 07:23	Elise M. Gillis	2407779