

Chemical Analysis Report

NE-DIST-2023-09-13-01

Florida DEP Laboratory
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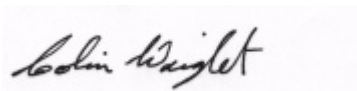
Event Description: **St. Augustine 2023**
Request ID: **RQ-2023-09-11-38**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 03-OCT-2023 12:07

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: MOULTRIE CR AT US 1

Collection Date/Time: 09/12/2023 09:20

Field ID: 27010055

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436669	EPA 200.7 Rev. 4.4	Calcium	341		mg/L	P435143	
		Iron	440		ug/L	P435143	
		Magnesium	1.04E+03		mg/L	P435143	
		Potassium	314		mg/L	P435143	
		Sodium	8.65E+03		mg/L	P435143	
		Strontium	6.20E+03		ug/L	P435143	
		Tin	150	U	ug/L	P435143	
		Titanium	9.5		ug/L	P435143	
		Vanadium	6.0	U	ug/L	P435143	
		Zinc	18	I	ug/L	P435143	
	EPA 200.8 Rev. 5.4	Aluminum	621		ug/L	P435143	
		Antimony	0.20	U	ug/L	P435143	
		Arsenic	3.07		ug/L	P435143	
		Barium	11.6		ug/L	P435143	
		Beryllium	0.040	U	ug/L	P435143	
		Boron	3.48E+03		ug/L	P435143	
		Cadmium	0.080	U	ug/L	P435143	
		Chromium	4.0	U	ug/L	P435143	
		Cobalt	0.16	I	ug/L	P435143	
		Copper	17.0		ug/L	P435143	
		Lead	0.80	U	ug/L	P435143	
		Manganese	20.9		ug/L	P435143	
		Molybdenum	9.9		ug/L	P435143	
		Nickel	2.0	U	ug/L	P435143	
		Selenium	0.80	U	ug/L	P435143	
		Silver	0.040	U	ug/L	P435143	
		Thallium	0.40	U	ug/L	P435143	
	SM 2340 B-2011	Hardness	5.15E+03		mg/L	P435143	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 09/21/2023.

Sample Location: SAN SEBASTIAN RIVER AT HIDDEN HARBOR MARINA **Collection Date/Time: 09/12/2023 10:05**

Field ID: 27010088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436651	DEP SOP: NU-094-1	Color (true)	22		PCU	P434945	
	EPA 180.1 Rev. 2.0	Turbidity	9.9		NTU	P434941	
	EPA 300.0 Rev. 2.1	Chloride	1.9E+04		mg Cl/L	P435514	
		Sulfate	2.6E+03		mg SO4/L	P435378	
	SM 2320 B-2011	Total Alkalinity	124		mg CaCO3/L	P435062	
	SM 2540 C-2015	TDS	3.19E+04		mg/L	P435390	
	SM 2540 D-2015	TSS	17		mg/L	P435304	
	SM 4500-F- C-2011	Fluoride	1.2		mg F/L	P435066	
2436653	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P435138	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P435549	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.051		mg N/L	P435632	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P435037	
	SM 5310 B-2011	Organic Carbon	5.7		mg C/L	P435499	

Ref. Method and Comment:

SM 2320 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: SAN SEBASTIAN R AT SR 16

Collection Date/Time: 09/12/2023 10:35

Field ID: 27010058

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436652	DEP SOP: NU-094-1	Color (true)	41	A	PCU	P434946	
	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P434941	
	EPA 300.0 Rev. 2.1	Chloride	1.4E+04		mg Cl/L	P435514	
		Sulfate	2.0E+03		mg SO4/L	P435378	
	SM 2320 B-2011	Total Alkalinity	128		mg CaCO3/L	P435062	
	SM 2540 C-2015	TDS	2.44E+04		mg/L	P435390	
	SM 2540 D-2015	TSS	22		mg/L	P435304	
2436654	SM 4500-F- C-2011	Fluoride	0.91		mg F/L	P435066	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.060		mg N/L	P435138	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P435549	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P435632	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P435037	
	SM 5310 B-2011	Organic Carbon	8.5		mg C/L	P435499	

Ref. Method and Comment:

SM 2320 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: RED HOUSE BR AT WOODLAWN RD

Collection Date/Time: 09/12/2023 11:10

Field ID: 27010061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436668	EPA 8270E	Aldrin	0.70	U	ng/L	P435010	
		Alpha-BHC	0.11	U	ng/L	P435010	
		Alpha-Chlordane	0.21	U	ng/L	P435010	
		PCB-1016	2.1	U	ng/L	P435010	
		Beta-BHC	0.11	U	ng/L	P435010	
		PCB-1221	2.1	U	ng/L	P435010	
		Beta-Cyfluthrin	1.3	U	ng/L	P435010	
		PCB-1232	2.1	U	ng/L	P435010	
		Bifenthrin	0.54	U	ng/L	P435010	
		PCB-1242	2.1	U	ng/L	P435010	
		PCB-1248	2.1	U	ng/L	P435010	
		Chlorothalonil	3.9	U	ng/L	P435010	
		PCB-1254	2.1	U	ng/L	P435010	
		Cis-Nonachlor	0.21	U	ng/L	P435010	
		PCB-1260	2.1	U	ng/L	P435010	
		Cypermethrin	1.6	U	ng/L	P435010	
		Dacthal	0.16	U	ng/L	P435010	
		DDD-p,p'	0.27	U	ng/L	P435010	
		DDE-p,p'	0.21	U	ng/L	P435010	
		DDT-p,p'	0.86	UJ	ng/L	P435010	LCS, MS
		Delta-BHC	0.43	U	ng/L	P435010	
		Deltamethrin	1.3	U	ng/L	P435010	
		Dichlobenil	0.27	U	ng/L	P435010	
		Dicofol	1.3	U	ng/L	P435010	
		Dieldrin	0.43	U	ng/L	P435010	
		Endosulfan I	0.43	U	ng/L	P435010	
		Endosulfan II	0.96	U	ng/L	P435010	
		Endosulfan Sulfate	0.32	U	ng/L	P435010	
		Endrin	0.96	U	ng/L	P435010	
		Endrin Aldehyde	0.80	U	ng/L	P435010	
		Endrin Ketone	0.43	U	ng/L	P435010	
		Esfenvalerate	0.80	U	ng/L	P435010	
		Ethalfuralin	0.16	U	ng/L	P435010	
		Fenpropathrin	0.27	U	ng/L	P435010	
		Gamma-BHC	0.13	U	ng/L	P435010	
		Gamma-Chlordane	0.21	U	ng/L	P435010	
		Heptachlor	0.21	U	ng/L	P435010	
		Heptachlor Epoxide	0.27	U	ng/L	P435010	
		Hexachlorobenzene**	1.1	U	ng/L	P435010	
		Kepone	14	UJ	ng/L	P435010	CCV
		Lambda-Cyhalothrin	0.80	U	ng/L	P435010	
		Methoprene	0.80	U	ng/L	P435010	
		Methoxychlor	0.32	UJ	ng/L	P435010	LCS, MS
		MGK-264	0.21	U	ng/L	P435010	

Field ID: 27010061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436668	EPA 8270E	Mirex	0.37	U	ng/L	P435010	
		Oxychlordane	0.32	U	ng/L	P435010	
		Permethrin	1.7	U	ng/L	P435010	
		Phenothrin	0.96	U	ng/L	P435010	
		Piperonyl Butoxide	0.16	U	ng/L	P435010	
		Prallethrin	2.1	U	ng/L	P435010	
		Tau-Fluvalinate	0.27	U	ng/L	P435010	
		Tetramethrin	0.80	U	ng/L	P435010	
		Trans-Nonachlor	0.21	U	ng/L	P435010	
		Triclosan Methyl	0.16	U	ng/L	P435010	
		Trifluralin	0.21	U	ng/L	P435010	
	EPA 8276	Chlordane	2.1	U	ng/L	P435010	
		Toxaphene	16	U	ng/L	P435010	

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: P434945

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P434946

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434941

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P435143

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
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: P435143

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435378

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435514

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435138

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435549

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435632

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435037

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

Reference Method: EPA 8270E
Batch ID: P435010

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: P435010

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'	0.80	U	ng/L
DDT-p,p'	0.80	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	0.90	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.90	U	ng/L
Endrin	0.90	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	14	U	ng/L
Kepone	14	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: P435010

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: P435010

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: P435062

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

Reference Method: SM 2540 C-2015
Batch ID: P435390

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P435304

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P435066

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P435499

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: P434945

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P434946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434941

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P435143

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	80 - 120
Iron	105		P	80 - 120
Magnesium	102		P	80 - 120
Potassium	101		P	80 - 120
Sodium	101		P	80 - 120
Strontium	103		P	80 - 120
Tin	105		P	80 - 120
Titanium	103		P	80 - 120
Vanadium	104		P	80 - 120
Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P435143

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.8		P	85 - 115
Antimony	98.8		P	85 - 115
Arsenic	99.2		P	85 - 115
Barium	102		P	85 - 115
Beryllium	91.1		P	85 - 115
Boron	104		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	99.9		P	85 - 115
Cobalt	97.8		P	85 - 115
Copper	96.1		P	85 - 115
Lead	95.0		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	99.6		P	85 - 115
Nickel	96.7		P	85 - 115
Selenium	99.2		P	85 - 115
Silver	112		P	85 - 115
Thallium	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435514

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435138

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435549

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435632

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435037

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

Reference Method: EPA 8270E
Batch ID: P435010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	64.0		P	30 - 96.0
Alpha-BHC	92.7		P	70 - 109
Alpha-Chlordane	64.0		P	45 - 107
Beta-BHC	106		P	64 - 138
Beta-Cyfluthrin	69.9		P	17 - 141
Bifenthrin	53.8		P	10 - 113
Chlorothalonil	90.1		P	26 - 180
Cis-Nonachlor	65.1		P	37 - 102
Cypermethrin	80.1		P	20 - 133
Dacthal	80.7		P	69 - 114
DDD-p,p'	103		P	42 - 105
DDE-p,p'	66.7		P	42 - 106
DDT-p,p'	116		F	42 - 107
Delta-BHC	99.9		P	67 - 144
Deltamethrin	46.4		P	15 - 149
Dichlobenil	84.5		P	46 - 117

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P435010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dicofol	74.1		P	34 - 114
Dieldrin	70.5		P	50 - 108
Endosulfan I	69.6		P	55 - 104
Endosulfan II	83.7		P	51 - 111
Endosulfan Sulfate	76.5		P	56 - 121
Endrin	75.3		P	10 - 106
Endrin Aldehyde	70.0		P	34 - 114
Endrin Ketone	99.6		P	63 - 177
Esfenvalerate	85.2		P	29 - 143
Ethalfuralin	72.3		P	46 - 96.0
Fenpropathrin	67.8		P	28 - 115
Gamma-BHC	98.5		P	65 - 121
Gamma-Chlordane	60.0		P	39 - 103
Heptachlor	83.6		P	39 - 94.0
Heptachlor Epoxide	72.2		P	54 - 104
Hexachlorobenzene	60.7		P	36 - 100
Kepone	93.7		P	10 - 225
Lambda-Cyhalothrin	62.4		P	10 - 135
Methoprene	57.4		P	10 - 109
Methoxychlor	113		F	52 - 112
MGK-264	99.2		P	44 - 117
Mirex	52.5		P	20 - 90.0
Oxychlordane	77.5		P	44 - 102
PCB-1016	88.9		P	45 - 107
PCB-1260	103		P	40 - 118
Permethrin	76.6		P	18 - 135
Phenothrin	54.4		P	10 - 102
Piperonyl Butoxide	153		P	28 - 156
Prallethrin	80.9		P	28 - 113
Tau-Fluvalinate	56.6		P	10 - 123
Tetramethrin	95.2		P	18 - 158
Trans-Nonachlor	65.9		P	39 - 104
Triclosan Methyl	83.1		P	54 - 108
Trifluralin	68.6		P	46 - 97.0

Reference Method: EPA 8276

Batch ID: P435010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	76.2		P	52 - 117
Toxaphene	93.6		P	44 - 125

Reference Method: SM 2320 B-2011

Batch ID: P435062

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.3		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P435390

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: P435390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.9		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P435304

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.6		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P435066

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P435499

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P435143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435947	Iron	102	105	P/P	80 - 120
2435947	Strontium	102	103	P/P	80 - 120
2435947	Tin	94.6	103	P/P	80 - 120
2435947	Titanium	103	108	P/P	80 - 120
2435947	Vanadium	104	108	P/P	80 - 120
2435947	Zinc	101	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P435143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435947	Aluminum	102	102	P/P	70 - 130
2435947	Antimony	102	102	P/P	70 - 130
2435947	Arsenic	110	109	P/P	70 - 130
2435947	Barium	104	105	P/P	70 - 130
2435947	Beryllium	97.8	104	P/P	70 - 130
2435947	Boron	99.5	106	P/P	70 - 130
2435947	Cadmium	101	99.5	P/P	70 - 130
2435947	Chromium	93.8	93.8	P/P	70 - 130
2435947	Cobalt	96.4	96.5	P/P	70 - 130
2435947	Copper	96.0	94.9	P/P	70 - 130
2435947	Lead	97.7	99.7	P/P	70 - 130
2435947	Manganese	93.7	93.2	P/P	70 - 130
2435947	Molybdenum	109	110	P/P	70 - 130
2435947	Nickel	94.2	95.4	P/P	70 - 130
2435947	Selenium	106	104	P/P	70 - 130
2435947	Silver	104	105	P/P	70 - 130
2435947	Thallium	105	108	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P435378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436894	Sulfate	93.4		P	90 - 110
2436938	Sulfate	92.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P435514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436917	Chloride	103		P	90 - 110
2436979	Chloride	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P435138

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436560	Ammonia-N	99.0	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P435549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436522	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P435632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436563	NO2NO3-N	99.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P435037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436653	Total-P	100	103	P/P	90 - 110

Reference Method: EPA 8270E

Batch ID: P435010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435942	Aldrin	58.6	60.7	P/P	24 - 81.0
2435942	Alpha-BHC	91.0	81.6	P/P	65 - 110
2435942	Alpha-Chlordane	69.8	66.0	P/P	43 - 119
2435942	Beta-BHC	134	138	P/P	54 - 165
2435942	Beta-Cyfluthrin	92.8	83.7	P/P	27 - 165
2435942	Bifenthrin	82.0	76.3	P/P	17 - 117
2435942	Chlorothalonil	143	147	P/P	10 - 255
2435942	Cis-Nonachlor	68.6	63.1	P/P	34 - 98.0
2435942	Cypermethrin	115	87.8	P/P	25 - 143
2435942	Dacthal	74.6	71.0	P/P	55 - 139
2435942	DDD-p,p'	104	102	P/P	30 - 109
2435942	DDE-p,p'	67.2	67.5	P/P	35 - 106
2435942	DDT-p,p'	171	156	F/F	41 - 101
2435942	Delta-BHC	115	115	P/P	58 - 165
2435942	Deltamethrin	59.9	46.6	P/P	10 - 194
2435942	Dichlobenil	53.2	63.3	P/P	22 - 114
2435942	Dicofol	79.9	83.3	P/P	17 - 133
2435942	Dieldrin	70.1	71.2	P/P	45 - 129
2435942	Endosulfan I	81.0	76.9	P/P	49 - 104
2435942	Endosulfan II	93.0	88.7	P/P	37 - 117
2435942	Endosulfan Sulfate	79.7	70.4	P/P	38 - 128
2435942	Endrin	78.3	78.9	P/P	35 - 116
2435942	Endrin Aldehyde	44.0	55.1	P/P	19 - 108
2435942	Endrin Ketone	87.1	81.8	P/P	44 - 134
2435942	Esfenvalerate	115	94.2	P/P	27 - 176
2435942	Ethalfuralin	66.7	63.0	P/P	49 - 100
2435942	Fenpropathrin	82.0	76.1	P/P	34 - 117
2435942	Gamma-BHC	113	106	P/P	59 - 129
2435942	Gamma-Chlordane	63.4	67.5	P/P	33 - 107
2435942	Heptachlor	81.2	89.1	P/P	37 - 94.0
2435942	Heptachlor Epoxide	67.1	73.5	P/P	38 - 118
2435942	Hexachlorobenzene	55.6	57.7	P/P	35 - 97.0
2435942	Kepone	76.5	77.4	P/P	10 - 221
2435942	Lambda-Cyhalothrin	93.2	86.7	P/P	23 - 190

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P435010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435942	Methoprene	80.1	91.5	P/P	21 - 109
2435942	Methoxychlor	119	104	F/P	46 - 118
2435942	MGK-264	111	104	P/P	39 - 122
2435942	Mirex	59.5	55.1	P/P	25 - 90.0
2435942	Oxychlordane	86.5	83.4	P/P	42 - 100
2435942	Permethrin	97.4	90.6	P/P	33 - 181
2435942	Phenothrin	76.8	77.7	P/P	12 - 125
2435942	Piperonyl Butoxide	145	136	P/P	10 - 178
2435942	Prallethrin	92.4	91.3	P/P	24 - 122
2435942	Tau-Fluvalinate	98.4	73.2	P/P	13 - 151
2435942	Tetramethrin	100	77.8	P/P	16 - 172
2435942	Trans-Nonachlor	71.9	62.2	P/P	39 - 100
2435942	Triclosan Methyl	85.7	83.0	P/P	43 - 110
2435942	Trifluralin	65.9	64.1	P/P	45 - 94.0
2436668	PCB-1016	86.4	88.4	P/P	45 - 107
2436668	PCB-1260	87.1	84.9	P/P	40 - 112

Reference Method: EPA 8276
Batch ID: P435010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436668	Chlordane	78.9	73.7	P/P	43 - 123
2436668	Toxaphene	111	101	P/P	27 - 156

Reference Method: SM 4500-F- C-2011
Batch ID: P435066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434151	Fluoride	102	103	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P435499

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2437166	Organic Carbon	89.6	90.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P434945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436598	Color (true)	2.99	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P434946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436652	Color (true)	1.50	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436596	Turbidity	6.99	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P435143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435947	Calcium	3.10	Spike	P	0 - 20
2435947	Iron	2.04	Spike	P	0 - 20
2435947	Magnesium	2.98	Spike	P	0 - 20
2435947	Potassium	1.81	Spike	P	0 - 20
2435947	Sodium	1.59	Spike	P	0 - 20
2435947	Strontium	0.661	Spike	P	0 - 20
2435947	Tin	8.40	Spike	P	0 - 20
2435947	Titanium	4.34	Spike	P	0 - 20
2435947	Vanadium	3.32	Spike	P	0 - 20
2435947	Zinc	2.29	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P435143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435947	Aluminum	0.577	Spike	P	0 - 20
2435947	Antimony	0.296	Spike	P	0 - 20
2435947	Arsenic	0.987	Spike	P	0 - 20
2435947	Barium	0.384	Spike	P	0 - 20
2435947	Beryllium	6.15	Spike	P	0 - 20
2435947	Boron	1.47	Spike	P	0 - 20
2435947	Cadmium	0.993	Spike	P	0 - 20
2435947	Chromium	0.0448	Spike	P	0 - 20
2435947	Cobalt	0.0554	Spike	P	0 - 20
2435947	Copper	1.18	Spike	P	0 - 20
2435947	Lead	2.00	Spike	P	0 - 20
2435947	Manganese	0.503	Spike	P	0 - 20
2435947	Molybdenum	0.287	Spike	P	0 - 20
2435947	Nickel	1.21	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P435143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435947	Selenium	2.14	Spike	P	0 - 20
2435947	Silver	0.775	Spike	P	0 - 20
2435947	Thallium	2.50	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436894	Sulfate	2.55	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436917	Chloride	2.47	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436560	Ammonia-N	1.50	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436522	Kjeldahl Nitrogen	1.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436563	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436653	Total-P	2.42	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P435010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P435010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435942	Aldrin	3.55	Spike	P	0 - 41
2435942	Alpha-BHC	10.9	Spike	P	0 - 25
2435942	Alpha-Chlordane	5.58	Spike	P	0 - 32
2435942	Beta-BHC	2.66	Spike	P	0 - 33
2435942	Beta-Cyfluthrin	10.4	Spike	P	0 - 43
2435942	Bifenthrin	7.19	Spike	P	0 - 52
2435942	Chlorothalonil	2.55	Spike	P	0 - 82
2435942	Cis-Nonachlor	8.47	Spike	P	0 - 33
2435942	Cypermethrin	27.2	Spike	P	0 - 51
2435942	Dacthal	4.92	Spike	P	0 - 27
2435942	DDD-p,p'	2.35	Spike	P	0 - 39
2435942	DDE-p,p'	0.434	Spike	P	0 - 31
2435942	DDT-p,p'	9.15	Spike	P	0 - 29
2435942	Delta-BHC	0.491	Spike	P	0 - 35
2435942	Deltamethrin	25.0	Spike	P	0 - 100
2435942	Dichlobenil	17.3	Spike	P	0 - 40
2435942	Dicofol	4.25	Spike	P	0 - 37
2435942	Dieldrin	1.57	Spike	P	0 - 27
2435942	Endosulfan I	5.20	Spike	P	0 - 23
2435942	Endosulfan II	4.79	Spike	P	0 - 34
2435942	Endosulfan Sulfate	12.4	Spike	P	0 - 36
2435942	Endrin	0.733	Spike	P	0 - 45
2435942	Endrin Aldehyde	22.4	Spike	P	0 - 76
2435942	Endrin Ketone	6.31	Spike	P	0 - 43
2435942	Esfenvalerate	20.0	Spike	P	0 - 51
2435942	Ethalfuralin	5.75	Spike	P	0 - 22
2435942	Fenpropathrin	7.49	Spike	P	0 - 49
2435942	Gamma-BHC	6.28	Spike	P	0 - 28
2435942	Gamma-Chlordane	6.28	Spike	P	0 - 40
2435942	Heptachlor	9.23	Spike	P	0 - 29
2435942	Heptachlor Epoxide	9.10	Spike	P	0 - 33
2435942	Hexachlorobenzene	3.56	Spike	P	0 - 36
2435942	Kepone	1.06	Spike	P	0 - 85
2435942	Lambda-Cyhalothrin	7.28	Spike	P	0 - 55
2435942	Methoprene	13.3	Spike	P	0 - 53
2435942	Methoxychlor	13.5	Spike	P	0 - 50
2435942	MGK-264	6.29	Spike	P	0 - 43
2435942	Mirex	7.58	Spike	P	0 - 40
2435942	Oxychlordane	3.65	Spike	P	0 - 31
2435942	Permethrin	7.18	Spike	P	0 - 50
2435942	Phenothrin	1.19	Spike	P	0 - 58
2435942	Piperonyl Butoxide	5.11	Spike	P	0 - 100
2435942	Prallethrin	1.22	Spike	P	0 - 39
2435942	Tau-Fluvalinate	29.3	Spike	P	0 - 54
2435942	Tetramethrin	25.3	Spike	P	0 - 51
2435942	Trans-Nonachlor	14.5	Spike	P	0 - 39
2435942	Triclosan Methyl	3.16	Spike	P	0 - 31
2435942	Trifluralin	2.78	Spike	P	0 - 22
2436668	PCB-1016	2.31	Spike	P	0 - 25
2436668	PCB-1260	2.58	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P435010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436668	Chlordane	6.86	Spike	P	0 - 28
2436668	Toxaphene	9.97	Spike	P	0 - 27

Reference Method: SM 2540 C-2015
Batch ID: P435390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436917	TDS	5.85	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P435304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436558	TSS	5.71	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P435066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434151	Fluoride	0.473	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P435499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2437166	Organic Carbon	0.452	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2436668
Field Sample ID: 27010061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	64.6	P	37 - 129
EPA 8270E	Decachlorobiphenyl	98.1	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	58.2	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	77.1	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	67.6	P	28 - 102
EPA 8276	PCNB	115	P	49 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121509

Included Lab Sample IDs: 2436651, 2436652

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

Reference Method: DEP SOP: NU-094-1

Run ID: A121511

Included Lab Sample IDs: 2436651, 2436652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	100	P/P	90 - 110
Color (true)	99.9	99.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A121560

Included Lab Sample IDs: 2436651, 2436652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.5	97.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121560

Included Lab Sample IDs: 2436651, 2436652

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121596

Included Lab Sample IDs: 2436654

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121599

Included Lab Sample IDs: 2436653, 2436654

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121626

Included Lab Sample IDs: 2436653

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A121637

Included Lab Sample IDs: 2436669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.4	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A121637

Included Lab Sample IDs: 2436669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	94.5	95.0	P/P	90 - 110
Arsenic	99.6	101	P/P	90 - 110
Barium	98.6	100	P/P	90 - 110
Beryllium	97.2	98.0	P/P	90 - 110
Boron	99.7	100	P/P	90 - 110
Cadmium	101	99.9	P/P	90 - 110
Chromium	98.7	98.8	P/P	90 - 110
Cobalt	98.0	98.6	P/P	90 - 110
Copper	96.8	98.0	P/P	90 - 110
Lead	93.0	92.6	P/P	90 - 110
Manganese	99.7	98.9	P/P	90 - 110
Molybdenum	98.3	99.4	P/P	90 - 110
Nickel	97.1	98.8	P/P	90 - 110
Selenium	100	101	P/P	90 - 110
Silver	100	99.7	P/P	90 - 110
Thallium	98.8	98.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A121676

Included Lab Sample IDs: 2436669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	94.8	93.3	P/P	90 - 110
Iron	94.6	93.5	P/P	90 - 110
Magnesium	94.1	93.3	P/P	90 - 110
Potassium	92.3	92.6	P/P	90 - 110
Sodium	94.5	94.1	P/P	90 - 110
Strontium	99.2	98.5	P/P	90 - 110
Tin	99.5	97.7	P/P	90 - 110
Titanium	97.7	97.6	P/P	90 - 110
Vanadium	98.3	97.6	P/P	90 - 110
Zinc	99.4	99.1	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A121695

Included Lab Sample IDs: 2436668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	100		P	80 - 120
Alpha-BHC	97.7		P	80 - 120
Alpha-Chlordane	84.8		P	80 - 120
Beta-BHC	97.4		P	80 - 120
Beta-Cyfluthrin	106		P	80 - 120
Bifenthrin	110		P	80 - 120
Chlorothalonil	86.9		P	80 - 120
Cis-Nonachlor	114		P	80 - 120
Cypermethrin	110		P	80 - 120
Dacthal	80.1		P	80 - 120
DDD-p,p'	91.4		P	80 - 120
DDE-p,p'	96.2		P	80 - 120
DDT-p,p'	107		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A121695
Included Lab Sample IDs: 2436668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Delta-BHC	85.3		P	80 - 120
Deltamethrin	89.9		P	80 - 120
Dichlobenil	95.8		P	80 - 120
Dieldrin	99.9		P	80 - 120
Endosulfan I	87.4		P	80 - 120
Endosulfan II	109		P	80 - 120
Endosulfan Sulfate	86.0		P	80 - 120
Endrin	94.1		P	80 - 120
Endrin Aldehyde	98.3		P	80 - 120
Endrin Ketone	109		P	80 - 120
Esfenvalerate	94.2		P	80 - 120
Ethalfuralin	83.7		P	80 - 120
Fenpropathrin	97.4		P	80 - 120
Gamma-BHC	104		P	80 - 120
Gamma-Chlordane	83.8		P	80 - 120
Heptachlor	110		P	80 - 120
Heptachlor Epoxide	81.6		P	80 - 120
Hexachlorobenzene	94.8		P	80 - 120
Kepone	72.7*		F	80 - 120
Lambda-Cyhalothrin	98.7		P	80 - 120
Methoprene	98.2		P	80 - 120
Methoxychlor	119		P	80 - 120
MGK-264	103		P	80 - 120
Mirex	97.5		P	80 - 120
Oxychlordane	97.3		P	80 - 120
Permethrin	105		P	80 - 120
Phenothrin	117		P	80 - 120
Piperonyl Butoxide	117		P	80 - 120
Prallethrin	102		P	80 - 120
Tau-Fluvalinate	86.8		P	80 - 120
Tetramethrin	106		P	80 - 120
Trans-Nonachlor	94.9		P	80 - 120
Triclosan Methyl	87.6		P	80 - 120
Trifluralin	100		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A121711
Included Lab Sample IDs: 2436651, 2436652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	98.2	98.9	P/P	90 - 110

Reference Method: EPA 8270E
Run ID: A121719
Included Lab Sample IDs: 2436668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	94.7		P	80 - 120
PCB-1260	93.3		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276

Run ID: A121738

Included Lab Sample IDs: 2436668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	96.8		P	80 - 120
Toxaphene	93.0		P	80 - 120

Reference Method: SM 5310 B-2011

Run ID: A121761

Included Lab Sample IDs: 2436653, 2436654

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	99.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121771

Included Lab Sample IDs: 2436651, 2436652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	98.2	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A121781

Included Lab Sample IDs: 2436668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dicofol	94.4		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121809

Included Lab Sample IDs: 2436653, 2436654

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121817

Included Lab Sample IDs: 2436653, 2436654

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	100	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)	101				2.99	
	Color (true)	100				1.50	
EPA 180.1 Rev. 2.0	Turbidity	101				6.99	
EPA 200.7 Rev. 4.4	Calcium	102					3.10
	Iron	105	102	105			2.04
	Magnesium	102					2.98
	Potassium	101					1.81
	Sodium	101					1.59
	Strontium	103	102	103			0.661
	Tin	105	94.6	103			8.40
	Titanium	103	103	108			4.34
	Vanadium	104	104	108			3.32
	Zinc	105	101	103			2.29
EPA 200.8 Rev. 5.4	Aluminum	98.8	102	102			0.577
	Antimony	98.8	102	102			0.296
	Arsenic	99.2	110	109			0.987
	Barium	102	104	105			0.384
	Beryllium	91.1	97.8	104			6.15
	Boron	104	99.5	106			1.47
	Cadmium	103	101	99.5			0.993
	Chromium	99.9	93.8	93.8			0.0448
	Cobalt	97.8	96.4	96.5			0.0554
	Copper	96.1	96.0	94.9			1.18
	Lead	95.0	97.7	99.7			2.00
	Manganese	101	93.7	93.2			0.503
	Molybdenum	99.6	109	110			0.287
	Nickel	96.7	94.2	95.4			1.21
	Selenium	99.2	106	104			2.14
	Silver	112	104	105			0.775
	Thallium	103	105	108			2.50
EPA 300.0 Rev. 2.1	Chloride	101	103	105		2.47	
	Sulfate	94.5	93.4	92.2		2.55	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	99.0	101			1.50
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	104	106			1.83
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.6	100			0.484
EPA 365.1 Rev. 2.0	Total-P	107	100	103			2.42
EPA 8270E	Aldrin	64.0	58.6	60.7			3.55
	Alpha-BHC	92.7	91.0	81.6			10.9
	Alpha-Chlordane	64.0	69.8	66.0			5.58
	Beta-BHC	106	134	138			2.66
	Beta-Cyfluthrin	69.9	92.8	83.7			10.4
	Bifenthrin	53.8	82.0	76.3			7.19
	Chlorothalonil	90.1	143	147			2.55
	Cis-Nonachlor	65.1	68.6	63.1			8.47
	Cypermethrin	80.1	115	87.8			27.2
	Dacthal	80.7	74.6	71.0			4.92
	DDD-p,p'	103	104	102			2.35
	DDE-p,p'	66.7	67.2	67.5			0.434
	DDT-p,p'	116	171	156			9.15
	Delta-BHC	99.9	115	115			0.491
	Deltamethrin	46.4	59.9	46.6			25.0
	Dichlobenil	84.5	53.2	63.3			17.3
	Dicofol	74.1	79.9	83.3			4.25
	Dieldrin	70.5	70.1	71.2			1.57

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8270E	Endosulfan I	69.6	81.0	76.9		5.20
	Endosulfan II	83.7	93.0	88.7		4.79
	Endosulfan Sulfate	76.5	79.7	70.4		12.4
	Endrin	75.3	78.3	78.9		0.733
	Endrin Aldehyde	70.0	44.0	55.1		22.4
	Endrin Ketone	99.6	87.1	81.8		6.31
	Esfenvalerate	85.2	115	94.2		20.0
	Ethalfuralin	72.3	66.7	63.0		5.75
	Fenpropathrin	67.8	82.0	76.1		7.49
	Gamma-BHC	98.5	113	106		6.28
	Gamma-Chlordane	60.0	63.4	67.5		6.28
	Heptachlor	83.6	81.2	89.1		9.23
	Heptachlor Epoxide	72.2	67.1	73.5		9.10
	Hexachlorobenzene	60.7	55.6	57.7		3.56
	Kepone	93.7	76.5	77.4		1.06
	Lambda-Cyhalothrin	62.4	93.2	86.7		7.28
	Methoprene	57.4	80.1	91.5		13.3
	Methoxychlor	113	119	104		13.5
	MGK-264	99.2	111	104		6.29
	Mirex	52.5	59.5	55.1		7.58
	Oxychlordane	77.5	86.5	83.4		3.65
	PCB-1016	88.9	86.4	88.4		2.31
	PCB-1260	103	84.9	87.1		2.58
	Permethrin	76.6	97.4	90.6		7.18
	Phenothrin	54.4	76.8	77.7		1.19
	Piperonyl Butoxide	153	145	136		5.11
	Prallethrin	80.9	92.4	91.3		1.22
	Tau-Fluvalinate	56.6	98.4	73.2		29.3
	Tetramethrin	95.2	100	77.8		25.3
	Trans-Nonachlor	65.9	71.9	62.2		14.5
	Triclosan Methyl	83.1	85.7	83.0		3.16
	Trifluralin	68.6	65.9	64.1		2.78
EPA 8276	Chlordane	76.2	78.9	73.7		6.86
	Toxaphene	93.6	111	101		9.97
SM 2320 B-2011	Total Alkalinity	97.3				
SM 2540 C-2015	TDS	94.9			5.85	
SM 2540 D-2015	TSS	94.6			5.71	
SM 4500-F- C-2011	Fluoride	99.3	102	103		0.473
SM 5310 B-2011	Organic Carbon	98.2	89.6	90.1		0.452

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2436651, 2436652
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2436651, 2436652
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2436669
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2436669
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2436651, 2436652
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2436651, 2436652
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2436653, 2436654
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2436653, 2436654

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2436653, 2436654
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2436653, 2436654
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2436668
EPA 8270E	PCBs in water matrices by GC/MS/MS	2436668
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2436668
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2436651, 2436652
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2436669
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2436651, 2436652
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2436651, 2436652
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2436651, 2436652
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2436653, 2436654

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	09/13/2023			09/13/2023 16:31	Alexis Price	2436651
	09/13/2023			09/13/2023 16:36	Alexis Price	2436652
EPA 180.1 Rev. 2.0	09/13/2023			09/13/2023 14:45	Alexis Price	2436651
	09/13/2023			09/13/2023 14:46	Alexis Price	2436652
EPA 200.7 Rev. 4.4	09/13/2023	09/18/2023 13:12	George D Taylor	09/20/2023 18:52	McKinley C Carter	2436669
	09/13/2023	09/18/2023 13:12	George D Taylor	09/20/2023 19:00	McKinley C Carter	2436669
EPA 200.8 Rev. 5.4	09/13/2023	09/18/2023 13:12	George D Taylor	09/19/2023 20:59	Emily M Philpot	2436669
	09/13/2023	09/18/2023 13:12	George D Taylor	09/19/2023 21:27	Emily M Philpot	2436669
EPA 300.0 Rev. 2.1	09/13/2023			09/20/2023 18:01	James L Waggeberby	2436651
	09/13/2023			09/20/2023 18:16	James L Waggeberby	2436652
	09/13/2023			09/25/2023 19:10	James L Waggeberby	2436651
	09/13/2023			09/25/2023 19:25	James L Waggeberby	2436652
EPA 350.1 Rev. 2.0	09/13/2023			09/18/2023 11:49	Ping Hua	2436653
	09/13/2023			09/18/2023 11:50	Ping Hua	2436654
EPA 351.2 Rev. 2.0	09/13/2023	09/27/2023 10:09	Simonne.V. Calhoun	09/28/2023 10:42	Samantha L Bates	2436653
	09/13/2023	09/27/2023 10:09	Simonne.V. Calhoun	09/28/2023 10:44	Samantha L Bates	2436654
EPA 353.2 Rev. 2.0	09/13/2023			09/26/2023 11:43	Anna M. Plaviak	2436653
	09/13/2023			09/26/2023 11:45	Anna M. Plaviak	2436654
EPA 365.1 Rev. 2.0	09/13/2023	09/15/2023 14:15	Adam P Silver	09/18/2023 12:10	Chandler E Cox	2436654
	09/13/2023	09/15/2023 14:15	Adam P Silver	09/19/2023 14:16	James L Waggeberby	2436653
EPA 8270E	09/13/2023	09/18/2023 08:30	Rasheda Ghaffari	09/20/2023 04:11	Julie Wi	2436668
	09/13/2023	09/18/2023 08:30	Rasheda Ghaffari	09/20/2023 21:17	Lipi Saha	2436668
	09/13/2023	09/18/2023 08:30	Rasheda Ghaffari	09/27/2023 00:57	Julie Wi	2436668
EPA 8276	09/13/2023	09/18/2023 08:30	Rasheda Ghaffari	09/22/2023 06:27	Arthur Maknenko	2436668
SM 2320 B-2011	09/13/2023			09/15/2023 00:10	Dale L. Simmons	2436651
	09/13/2023			09/15/2023 00:24	Dale L. Simmons	2436652
SM 2340 B-2011	09/13/2023			09/20/2023 19:00	McKinley C Carter	2436669
SM 2540 C-2015	09/13/2023			09/15/2023 16:01	Yijie Li	2436651, 2436652
SM 2540 D-2015	09/13/2023			09/15/2023 16:01	Yijie Li	2436651, 2436652
SM 4500-F- C-2011	09/13/2023			09/14/2023 21:09	Dale L. Simmons	2436651
	09/13/2023			09/14/2023 21:14	Dale L. Simmons	2436652
SM 5310 B-2011	09/13/2023			09/26/2023 02:14	Elise M. Gillis	2436653
	09/13/2023			09/26/2023 02:36	Elise M. Gillis	2436654