

ANALYTICAL REPORT

Eurofins Pittsburgh
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Tel: (412)963-7058

Laboratory Job ID: 180-137177-1
Client Project/Site: Chlordane Isomers

For:
Flowers Chemical Laboratories
PO BOX 150597
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Altamonte Springs, Florida 32715-0597

Attn: Willow King



Authorized for release by:
5/9/2022 2:43:12 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416



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Case Narrative

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Job ID: 180-137177-1

Laboratory: Eurofins Pittsburgh

Narrative

CASE NARRATIVE

Client: Flowers Chemical Laboratories

Project: Chlordane Isomers

Report Number: 180-137177-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 4/26/2022 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.7° C.

The Field Sampler was not listed on the Chain of Custody.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. There is no relinquished by date or time listed on the COC.

PESTICIDES

The continuing calibration verification (CCV) associated with batch 397330 recovered above the upper control limit for 4,4'-DDT on MR-2 column. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCVIS 180-397330/32).

The DCB Decachlorobiphenyl (Surr) surrogate recovery for the following samples was outside acceptance limits (high biased) on the primary column due to matrix interference: 506030 SO1 (180-137177-1). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Elevated reporting limits are provided for the sample 506030 SO3 (180-137177-2) due to insufficient sample provided for preparation/analysis.

GENERAL CHEMISTRY

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Laboratory: Eurofins Pittsburgh

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E871008	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Sediment	Percent Moisture
2540G		Sediment	Percent Solids
EPA 8081B	3541	Sediment	cis-Nonachlor
EPA 8081B	3541	Sediment	oxy-Chlordane

Sample Summary

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-137177-1	506030 SO1	Sediment	04/21/22 13:30	04/26/22 09:30
180-137177-2	506030 SO3	Sediment	04/21/22 13:30	04/26/22 09:30

1

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Method Summary

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Method	Method Description	Protocol	Laboratory
EPA 8081B	Organochlorine Pesticides (GC)	SW846	TAL PIT
2540G	SM 2540G	SM22	TAL PIT
3541	Automated Soxhlet Extraction	SW846	TAL PIT

Protocol References:

SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Client Sample ID: 506030 SO1

Date Collected: 04/21/22 13:30

Date Received: 04/26/22 09:30

Lab Sample ID: 180-137177-1

Matrix: Sediment

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			396901	04/27/22 17:31	NAF	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: 506030 SO1

Date Collected: 04/21/22 13:30

Date Received: 04/26/22 09:30

Lab Sample ID: 180-137177-1

Matrix: Sediment

Percent Solids: 22.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			30.1 g	20.0 mL	397794	05/05/22 13:17	CSC	TAL PIT
Total/NA	Analysis	EPA 8081B		1			397875	05/06/22 16:42	DFE	TAL PIT
Instrument ID: CHGC17										

Client Sample ID: 506030 SO3

Date Collected: 04/21/22 13:30

Date Received: 04/26/22 09:30

Lab Sample ID: 180-137177-2

Matrix: Sediment

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			396901	04/27/22 17:31	NAF	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: 506030 SO3

Date Collected: 04/21/22 13:30

Date Received: 04/26/22 09:30

Lab Sample ID: 180-137177-2

Matrix: Sediment

Percent Solids: 12.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			15.3 g	20.0 mL	396907	04/28/22 00:01	CSC	TAL PIT
Total/NA	Analysis	EPA 8081B		1			397330	05/02/22 21:08	DFE	TAL PIT
Instrument ID: CHGC17										

Laboratory References:

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

CSC = Chayce Cockroft

Batch Type: Analysis

DFE = David Eppinger

NAF = Nicholas Frankos

Client Sample Results

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Client Sample ID: 506030 SO1

Lab Sample ID: 180-137177-1

Date Collected: 04/21/22 13:30

Matrix: Sediment

Date Received: 04/26/22 09:30

Percent Solids: 22.2

Method: EPA 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		3.8	1.2	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
alpha-BHC	ND		3.8	0.92	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
beta-BHC	ND		3.8	0.96	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
delta-BHC	ND		3.8	1.2	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
gamma-BHC (Lindane)	ND		3.8	1.3	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
cis-Chlordane	ND		3.8	0.94	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
trans-Chlordane	ND		3.8	0.87	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
oxy-Chlordane	ND		25	0.33	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
4,4'-DDD	3.4	J	3.8	1.0	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
4,4'-DDE	ND		3.8	0.76	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
4,4'-DDT	ND		3.8	2.7	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Dieldrin	ND		3.8	0.94	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Endosulfan I	ND		3.8	1.0	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Endosulfan II	ND		3.8	0.83	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Endosulfan sulfate	ND		3.8	0.98	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Endrin	ND		3.8	1.5	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Endrin aldehyde	ND		3.8	1.3	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Endrin ketone	ND		3.8	1.3	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Heptachlor	ND		3.8	1.2	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Heptachlor epoxide	ND		3.8	0.96	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Methoxychlor	ND		3.8	1.5	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
Toxaphene	ND		150	100	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
cis-Nonachlor	ND		3.8	0.85	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1
trans-Nonachlor	ND		3.8	0.91	ug/Kg	✱	05/05/22 13:17	05/06/22 16:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	68		40 - 137	05/05/22 13:17	05/06/22 16:42	1
Tetrachloro-m-xylene (Surr)	79		40 - 137	05/05/22 13:17	05/06/22 16:42	1
DCB Decachlorobiphenyl (Surr)	142	S1+	42 - 124	05/05/22 13:17	05/06/22 16:42	1
DCB Decachlorobiphenyl (Surr)	93		42 - 124	05/05/22 13:17	05/06/22 16:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	77.8		0.1	0.1	%			04/27/22 17:31	1
Percent Solids	22.2		0.1	0.1	%			04/27/22 17:31	1

Client Sample ID: 506030 SO3

Lab Sample ID: 180-137177-2

Date Collected: 04/21/22 13:30

Matrix: Sediment

Date Received: 04/26/22 09:30

Percent Solids: 12.0

Method: EPA 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		14	4.2	ug/Kg	✱	04/28/22 00:01	05/02/22 21:08	1
alpha-BHC	ND		14	3.4	ug/Kg	✱	04/28/22 00:01	05/02/22 21:08	1
beta-BHC	ND		14	3.5	ug/Kg	✱	04/28/22 00:01	05/02/22 21:08	1
delta-BHC	ND		14	4.3	ug/Kg	✱	04/28/22 00:01	05/02/22 21:08	1
gamma-BHC (Lindane)	ND		14	4.7	ug/Kg	✱	04/28/22 00:01	05/02/22 21:08	1
cis-Chlordane	ND		14	3.4	ug/Kg	✱	04/28/22 00:01	05/02/22 21:08	1
trans-Chlordane	ND		14	3.2	ug/Kg	✱	04/28/22 00:01	05/02/22 21:08	1
oxy-Chlordane	ND		90	1.2	ug/Kg	✱	04/28/22 00:01	05/02/22 21:08	1

Eurofins Pittsburgh

Client Sample Results

Client: Flowers Chemical Laboratories
 Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Client Sample ID: 506030 SO3

Lab Sample ID: 180-137177-2

Date Collected: 04/21/22 13:30

Matrix: Sediment

Date Received: 04/26/22 09:30

Percent Solids: 12.0

Method: EPA 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		14	3.7	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
4,4'-DDE	ND		14	2.8	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
4,4'-DDT	ND		14	9.8	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Dieldrin	ND		14	3.4	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Endosulfan I	ND		14	3.7	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Endosulfan II	ND		14	3.0	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Endosulfan sulfate	ND		14	3.6	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Endrin	ND		14	5.3	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Endrin aldehyde	ND		14	4.9	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Endrin ketone	ND		14	4.9	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Heptachlor	ND		14	4.3	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Heptachlor epoxide	ND		14	3.5	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Methoxychlor	ND		14	5.3	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
Toxaphene	ND		550	370	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
cis-Nonachlor	ND		14	3.1	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1
trans-Nonachlor	ND		14	3.3	ug/Kg	⊛	04/28/22 00:01	05/02/22 21:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	85		40 - 137	04/28/22 00:01	05/02/22 21:08	1
Tetrachloro-m-xylene (Surr)	63		40 - 137	04/28/22 00:01	05/02/22 21:08	1
DCB Decachlorobiphenyl (Surr)	95		42 - 124	04/28/22 00:01	05/02/22 21:08	1
DCB Decachlorobiphenyl (Surr)	74		42 - 124	04/28/22 00:01	05/02/22 21:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	88.0		0.1	0.1	%			04/27/22 17:31	1
Percent Solids	12.0		0.1	0.1	%			04/27/22 17:31	1

QC Sample Results

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Method: EPA 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 180-396907/1-A
Matrix: Sediment
Analysis Batch: 397330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 396907

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.85	0.26	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
alpha-BHC	ND		0.85	0.21	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
beta-BHC	ND		0.85	0.21	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
delta-BHC	ND		0.85	0.26	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
gamma-BHC (Lindane)	ND		0.85	0.29	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
cis-Chlordane	ND		0.85	0.21	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
trans-Chlordane	ND		0.85	0.19	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
oxy-Chlordane	ND		5.5	0.074	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
4,4'-DDD	ND		0.85	0.22	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
4,4'-DDE	ND		0.85	0.17	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
4,4'-DDT	ND		0.85	0.60	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Dieldrin	ND		0.85	0.21	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Endosulfan I	ND		0.85	0.23	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Endosulfan II	ND		0.85	0.18	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Endosulfan sulfate	ND		0.85	0.22	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Endrin	ND		0.85	0.33	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Endrin aldehyde	ND		0.85	0.30	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Endrin ketone	ND		0.85	0.30	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Heptachlor	ND		0.85	0.26	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Heptachlor epoxide	ND		0.85	0.21	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Methoxychlor	ND		0.85	0.33	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
Toxaphene	ND		34	23	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
cis-Nonachlor	ND		0.85	0.19	ug/Kg		04/28/22 00:01	05/02/22 20:04	1
trans-Nonachlor	ND		0.85	0.20	ug/Kg		04/28/22 00:01	05/02/22 20:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Tetrachloro-m-xylene (Surr)</i>	85		40 - 137	04/28/22 00:01	05/02/22 20:04	1
<i>Tetrachloro-m-xylene (Surr)</i>	61		40 - 137	04/28/22 00:01	05/02/22 20:04	1
<i>DCB Decachlorobiphenyl (Surr)</i>	112		42 - 124	04/28/22 00:01	05/02/22 20:04	1
<i>DCB Decachlorobiphenyl (Surr)</i>	87		42 - 124	04/28/22 00:01	05/02/22 20:04	1

Lab Sample ID: LCS 180-396907/2-A
Matrix: Sediment
Analysis Batch: 397330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 396907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aldrin	16.7	14.8		ug/Kg		89	60 - 131
alpha-BHC	16.7	15.5		ug/Kg		93	67 - 125
beta-BHC	16.7	14.6		ug/Kg		88	63 - 123
delta-BHC	16.7	15.0		ug/Kg		90	50 - 134
gamma-BHC (Lindane)	16.7	15.3		ug/Kg		92	69 - 124
cis-Chlordane	16.7	14.7		ug/Kg		88	57 - 120
trans-Chlordane	16.7	13.8		ug/Kg		83	65 - 119
4,4'-DDD	16.7	18.3		ug/Kg		110	64 - 131
4,4'-DDE	16.7	16.1		ug/Kg		97	57 - 132
4,4'-DDT	16.7	10.9		ug/Kg		66	54 - 117
Dieldrin	16.7	16.2		ug/Kg		97	64 - 127
Endosulfan I	16.7	14.6		ug/Kg		87	55 - 131

Eurofins Pittsburgh

QC Sample Results

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Method: EPA 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 180-396907/2-A
Matrix: Sediment
Analysis Batch: 397330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 396907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Endosulfan II	16.7	14.1		ug/Kg		85	61 - 130
Endosulfan sulfate	16.7	15.2		ug/Kg		91	57 - 132
Endrin	16.7	15.2		ug/Kg		91	66 - 125
Endrin aldehyde	16.7	16.5		ug/Kg		99	62 - 130
Endrin ketone	16.7	16.7		ug/Kg		100	76 - 120
Heptachlor	16.7	13.5		ug/Kg		81	62 - 133
Heptachlor epoxide	16.7	14.4		ug/Kg		87	30 - 129
Methoxychlor	16.7	10.2		ug/Kg		61	53 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene (Surr)	79		40 - 137
Tetrachloro-m-xylene (Surr)	56		40 - 137
DCB Decachlorobiphenyl (Surr)	104		42 - 124
DCB Decachlorobiphenyl (Surr)	83		42 - 124

Lab Sample ID: LCSD 180-396907/3-A
Matrix: Sediment
Analysis Batch: 397330

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 396907

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Aldrin	16.7	17.2		ug/Kg		103	60 - 131	15	40
alpha-BHC	16.7	18.4		ug/Kg		110	67 - 125	17	40
beta-BHC	16.7	18.0		ug/Kg		108	63 - 123	21	40
delta-BHC	16.7	18.1		ug/Kg		109	50 - 134	18	40
gamma-BHC (Lindane)	16.7	17.8		ug/Kg		107	69 - 124	15	40
cis-Chlordane	16.7	16.8		ug/Kg		101	57 - 120	13	40
trans-Chlordane	16.7	16.4		ug/Kg		98	65 - 119	17	40
4,4'-DDD	16.7	21.2		ug/Kg		127	64 - 131	15	40
4,4'-DDE	16.7	19.1		ug/Kg		115	57 - 132	17	40
4,4'-DDT	16.7	12.7		ug/Kg		76	54 - 117	15	40
Dieldrin	16.7	18.3		ug/Kg		110	64 - 127	13	40
Endosulfan I	16.7	16.5		ug/Kg		99	55 - 131	12	40
Endosulfan II	16.7	16.1		ug/Kg		96	61 - 130	13	40
Endosulfan sulfate	16.7	17.9		ug/Kg		107	57 - 132	16	40
Endrin	16.7	16.2		ug/Kg		97	66 - 125	6	40
Endrin aldehyde	16.7	18.2		ug/Kg		109	62 - 130	10	40
Endrin ketone	16.7	18.9		ug/Kg		113	76 - 120	12	40
Heptachlor	16.7	15.6		ug/Kg		94	62 - 133	15	40
Heptachlor epoxide	16.7	17.0		ug/Kg		102	30 - 129	16	40
Methoxychlor	16.7	11.5		ug/Kg		69	53 - 129	12	40

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene (Surr)	94		40 - 137
Tetrachloro-m-xylene (Surr)	67		40 - 137
DCB Decachlorobiphenyl (Surr)	119		42 - 124
DCB Decachlorobiphenyl (Surr)	98		42 - 124

Eurofins Pittsburgh

QC Sample Results

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Method: EPA 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 180-397794/1-A
Matrix: Sediment
Analysis Batch: 397875

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 397794

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aldrin	ND		0.85	0.26	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
alpha-BHC	ND		0.85	0.21	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
beta-BHC	ND		0.85	0.21	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
delta-BHC	ND		0.85	0.26	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
gamma-BHC (Lindane)	ND		0.85	0.29	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
cis-Chlordane	ND		0.85	0.21	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
trans-Chlordane	ND		0.85	0.19	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
oxy-Chlordane	ND		5.5	0.074	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
4,4'-DDD	ND		0.85	0.22	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
4,4'-DDE	ND		0.85	0.17	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
4,4'-DDT	ND		0.85	0.60	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Dieldrin	ND		0.85	0.21	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Endosulfan I	ND		0.85	0.23	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Endosulfan II	ND		0.85	0.18	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Endosulfan sulfate	ND		0.85	0.22	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Endrin	ND		0.85	0.33	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Endrin aldehyde	ND		0.85	0.30	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Endrin ketone	ND		0.85	0.30	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Heptachlor	ND		0.85	0.26	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Heptachlor epoxide	ND		0.85	0.21	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Methoxychlor	ND		0.85	0.33	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
Toxaphene	ND		34	23	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
cis-Nonachlor	ND		0.85	0.19	ug/Kg		05/05/22 13:17	05/06/22 15:54	1
trans-Nonachlor	ND		0.85	0.20	ug/Kg		05/05/22 13:17	05/06/22 15:54	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene (Surr)	74		40 - 137	05/05/22 13:17	05/06/22 15:54	1
Tetrachloro-m-xylene (Surr)	76		40 - 137	05/05/22 13:17	05/06/22 15:54	1
DCB Decachlorobiphenyl (Surr)	101		42 - 124	05/05/22 13:17	05/06/22 15:54	1
DCB Decachlorobiphenyl (Surr)	100		42 - 124	05/05/22 13:17	05/06/22 15:54	1

Lab Sample ID: LCS 180-397794/2-A
Matrix: Sediment
Analysis Batch: 397875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 397794

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aldrin	16.7	13.9		ug/Kg		83	60 - 131
alpha-BHC	16.7	14.5		ug/Kg		87	67 - 125
beta-BHC	16.7	13.8		ug/Kg		83	63 - 123
delta-BHC	16.7	13.4		ug/Kg		81	50 - 134
gamma-BHC (Lindane)	16.7	14.1		ug/Kg		85	69 - 124
cis-Chlordane	16.7	13.4		ug/Kg		80	57 - 120
trans-Chlordane	16.7	13.4		ug/Kg		80	65 - 119
4,4'-DDD	16.7	16.5		ug/Kg		99	64 - 131
4,4'-DDE	16.7	15.6		ug/Kg		94	57 - 132
4,4'-DDT	16.7	14.9		ug/Kg		89	54 - 117
Dieldrin	16.7	15.5		ug/Kg		93	64 - 127
Endosulfan I	16.7	13.8		ug/Kg		83	55 - 131

Eurofins Pittsburgh

QC Sample Results

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

Method: EPA 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 180-397794/2-A
Matrix: Sediment
Analysis Batch: 397875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 397794

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Endosulfan II	16.7	14.8		ug/Kg		89	61 - 130
Endosulfan sulfate	16.7	13.4		ug/Kg		80	57 - 132
Endrin	16.7	15.7		ug/Kg		94	66 - 125
Endrin aldehyde	16.7	14.4		ug/Kg		87	62 - 130
Endrin ketone	16.7	15.5		ug/Kg		93	76 - 120
Heptachlor	16.7	14.9		ug/Kg		90	62 - 133
Heptachlor epoxide	16.7	14.3		ug/Kg		86	30 - 129
Methoxychlor	16.7	15.1		ug/Kg		91	53 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene (Surr)	73		40 - 137
Tetrachloro-m-xylene (Surr)	74		40 - 137
DCB Decachlorobiphenyl (Surr)	104		42 - 124
DCB Decachlorobiphenyl (Surr)	100		42 - 124

Lab Sample ID: LCSD 180-397794/3-A
Matrix: Sediment
Analysis Batch: 397875

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 397794

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Aldrin	16.7	14.0		ug/Kg		84	60 - 131	1	40
alpha-BHC	16.7	14.7		ug/Kg		88	67 - 125	1	40
beta-BHC	16.7	14.1		ug/Kg		85	63 - 123	2	40
delta-BHC	16.7	14.1		ug/Kg		85	50 - 134	5	40
gamma-BHC (Lindane)	16.7	14.7		ug/Kg		88	69 - 124	4	40
cis-Chlordane	16.7	13.6		ug/Kg		82	57 - 120	2	40
trans-Chlordane	16.7	13.3		ug/Kg		80	65 - 119	1	40
4,4'-DDD	16.7	16.1		ug/Kg		96	64 - 131	3	40
4,4'-DDE	16.7	15.6		ug/Kg		93	57 - 132	0	40
4,4'-DDT	16.7	15.3		ug/Kg		92	54 - 117	3	40
Dieldrin	16.7	15.2		ug/Kg		91	64 - 127	2	40
Endosulfan I	16.7	14.1		ug/Kg		85	55 - 131	3	40
Endosulfan II	16.7	15.4		ug/Kg		92	61 - 130	4	40
Endosulfan sulfate	16.7	13.9		ug/Kg		83	57 - 132	4	40
Endrin	16.7	15.4		ug/Kg		92	66 - 125	2	40
Endrin aldehyde	16.7	14.8		ug/Kg		89	62 - 130	2	40
Endrin ketone	16.7	15.5		ug/Kg		93	76 - 120	0	40
Heptachlor	16.7	15.2		ug/Kg		91	62 - 133	2	40
Heptachlor epoxide	16.7	14.4		ug/Kg		86	30 - 129	0	40
Methoxychlor	16.7	15.3		ug/Kg		92	53 - 129	1	40

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene (Surr)	77		40 - 137
Tetrachloro-m-xylene (Surr)	76		40 - 137
DCB Decachlorobiphenyl (Surr)	98		42 - 124
DCB Decachlorobiphenyl (Surr)	100		42 - 124

Eurofins Pittsburgh

QC Association Summary

Client: Flowers Chemical Laboratories
Project/Site: Chlordane Isomers

Job ID: 180-137177-1

GC Semi VOA

Prep Batch: 396907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137177-2	506030 SO3	Total/NA	Sediment	3541	
MB 180-396907/1-A	Method Blank	Total/NA	Sediment	3541	
LCS 180-396907/2-A	Lab Control Sample	Total/NA	Sediment	3541	
LCSD 180-396907/3-A	Lab Control Sample Dup	Total/NA	Sediment	3541	

Analysis Batch: 397330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137177-2	506030 SO3	Total/NA	Sediment	EPA 8081B	396907
MB 180-396907/1-A	Method Blank	Total/NA	Sediment	EPA 8081B	396907
LCS 180-396907/2-A	Lab Control Sample	Total/NA	Sediment	EPA 8081B	396907
LCSD 180-396907/3-A	Lab Control Sample Dup	Total/NA	Sediment	EPA 8081B	396907

Prep Batch: 397794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137177-1	506030 SO1	Total/NA	Sediment	3541	
MB 180-397794/1-A	Method Blank	Total/NA	Sediment	3541	
LCS 180-397794/2-A	Lab Control Sample	Total/NA	Sediment	3541	
LCSD 180-397794/3-A	Lab Control Sample Dup	Total/NA	Sediment	3541	

Analysis Batch: 397875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137177-1	506030 SO1	Total/NA	Sediment	EPA 8081B	397794
MB 180-397794/1-A	Method Blank	Total/NA	Sediment	EPA 8081B	397794
LCS 180-397794/2-A	Lab Control Sample	Total/NA	Sediment	EPA 8081B	397794
LCSD 180-397794/3-A	Lab Control Sample Dup	Total/NA	Sediment	EPA 8081B	397794

General Chemistry

Analysis Batch: 396901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137177-1	506030 SO1	Total/NA	Sediment	2540G	
180-137177-2	506030 SO3	Total/NA	Sediment	2540G	

Check Box That Applies To Your Location

Flowers Chemical Laboratories, Inc.

481 Newburyport Ave.
Altamonte Springs, FL 32701
Bus: 407-339-5984
Fax: 407-260-6110

Flowers Chemical Labs-South

West Park Industrial Plaza
571 N.W. Mercantile Pl., Ste. 111
Port St. Lucie, FL 34986
Bus: 772-343-8006
Fax: 772-343-8089

Flowers Chemical Labs-North

812 S.W. Harvey Greene Dr.
Madison, FL 32340
Bus: 850-973-6878
Fax: 850-973-6878

Flowers Chemical Labs-Keys

3980 Overseas Highway, Ste. 103
Marathon, FL 33050
Bus: 305-743-8598
Fax: 305-743-8598



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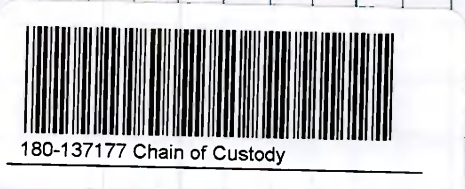
Client Eurofins Environment Testing America	Project Name	P.O. #
Address 301 Alpha Drive	Client Contact Debbie Lowe, Samantha Bayura	FAX
Pittsburgh, PA, 15238	FCL Project Manager June Flowers Ext212	E-MAIL Awilda@flowerslabs.com, June@flowerslabs.com
Phone 412-963-2439, 412-963-2438	Requested Due Date 10 Day Standard OR <input type="text"/>	Rush Charges May Apply

Sampled By (PRINT):	Pick-Up Fee \$ <input type="text"/>	Vehicle Surcharge \$ <input type="text"/>	Sampling Fee \$ <input type="text"/>
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Sampler Signature	Date Sampled	PRESERVATIVES	ANALYSES REQUEST	COMMENTS
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GW - ground water DW - drinking water WW - wastewater
SW - surface water S - soil/solid SL - sludge HW - waste

ITEM NO.	SAMPLE ID	DATE	TIME	MATRIX	(LAB USE ONLY) LAB NO.	PRESERVATIVES					ANALYSES REQUEST					Total # Containers		
						NONE	H ₂ SO ₄	HNO ₃	HCl	Na ₂ S ₂ O ₃	Chlordane Isomers:	Oxychlordane	gamma-Chlordane	alpha-Chlordane	trans-Nonachlor		cis-Nonachlor	EPA 8081
1	506030 501	4-21-22	1330	S														
2	↓ 503	↓	↓	S														
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		



Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
<i>Matthew D...</i>			<i>D. Watson</i>	4-26-22	9:30						

FINANCE CHARGES APPLIED TO PAST DUE INVOICES

• WHITE - Lab Copy - To Be Scanned

• YELLOW - Client Copy

Login Sample Receipt Checklist

Client: Flowers Chemical Laboratories

Job Number: 180-137177-1

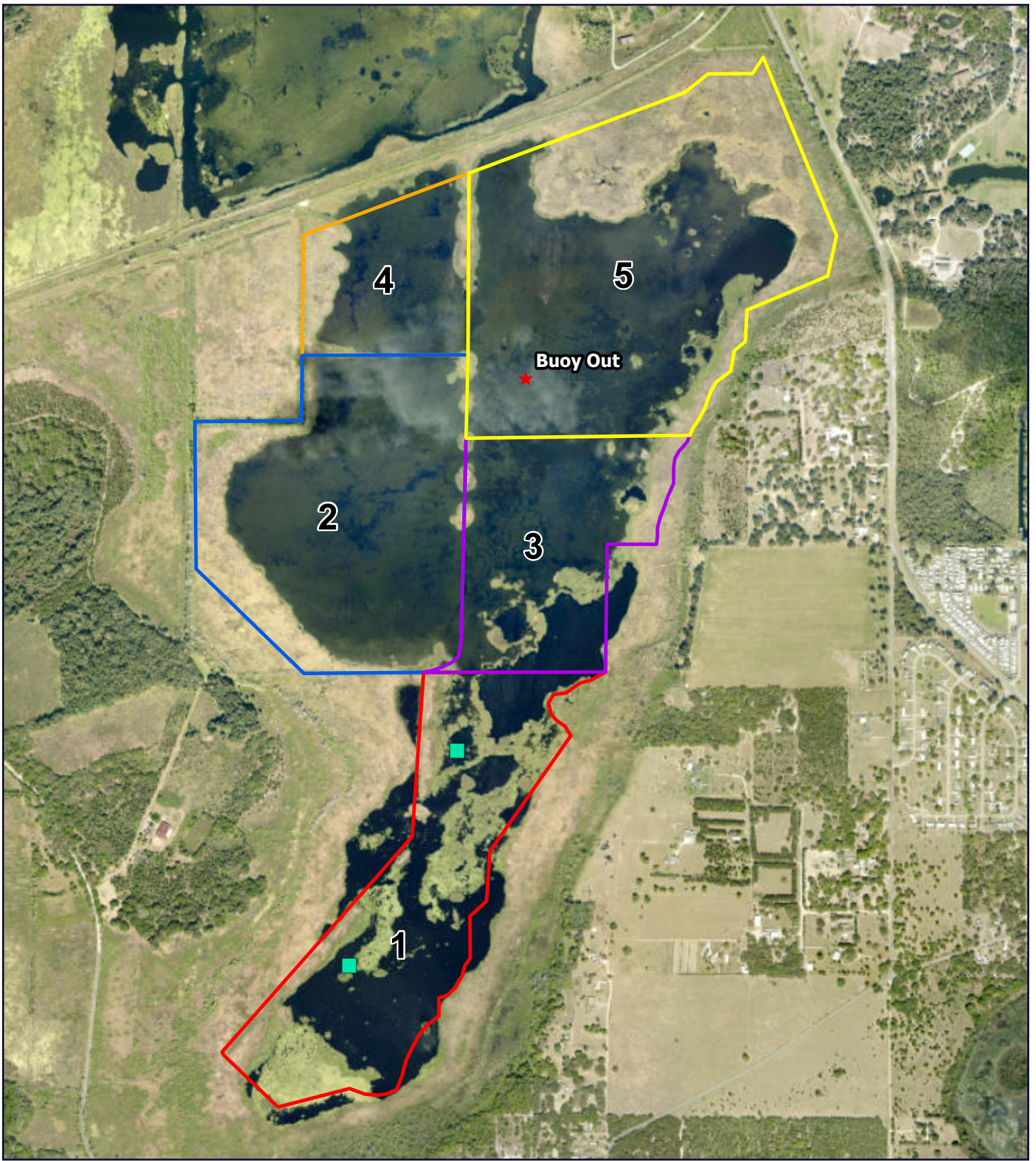
Login Number: 137177

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



**EMERALDA MARSH
SOIL SAMPLES
2020 TRUE COLOR AERIAL
LAKE COUNTY, FLORIDA**

1 INCH = 1,200 FEET



MAP SCALE IS SET FOR MAPS PRINTED ON 8.5X11 PAPER.

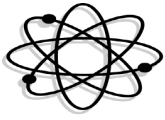
Legend

- ★ Buoy
- Soil Samples
- 1 (± 118.8 AC)
- 2 (± 143.7 AC)
- 3 (± 80.7 AC)
- 4 (± 49.5 AC)
- 5 (± 196.7 AC)



ENVIRONMENTAL CONSULTING & DESIGN

4703 NW 53rd Ave
Suite B-2
Gainesville, FL 32653



FLOWERS CHEMICAL LABORATORIES INC.

P.O. Box 150597, Altamonte Springs, FL 32715-0597
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812 SW Harvey Green Dr, Madison, FL 32340
3980 Overseas Hwy, Suite 103, Marathon, FL 33050

Phone: 407-339-5984 E83018 (Main Lab)
Phone: 772-343-8006 E86562 (South Lab)
Phone: 850-973-6878 E82405 (North Lab)
Phone: 305-743-8598 E35834 (Keys Lab)

Environmental Consulting & Design
4703 NW 53rd Ave, Ste B2
Gainesville, FL 32653

PO #: n/a
Client Project #: Emerald Marsh Reiteration
Date Sampled: Dec 15, 2021
Jan 06, 2022; Invoice: 493262

Report Summary

Date Received: Dec 15, 2021

FCL Project Manager: Willow A. King

Laboratory #	Sample Description	Analysis	Chemist	Location	SampleMatrix
493262SO1	N	EPA6020B	EVB	Main Lab	Soil
		EPA7470A	PCW	Main Lab	
		EPA8081B	DLJ	Main Lab	
		X8081	OKS	Main Lab	
493262SO2	S	EPA6020B	EVB	Main Lab	Soil
		EPA7470A	PCW	Main Lab	
		EPA8081B	DLJ	Main Lab	
		X8081	OKS	Main Lab	
493262SW1	E1	EPA365.1	PCW	Main Lab	Surface Water
493262SW2	P1	EPA365.1	PCW	Main Lab	Surface Water
493262SW3	P2	EPA365.1	PCW	Main Lab	Surface Water

Certificate of Results

Sample integrity was certified prior to analysis. Test results meet all requirements of the NELAC Standards except as noted in the Quality Control Report. Uncertainties for these data are available on request. This report may not be reproduced in part; results relate only to items tested.



Jefferson S. Flowers, Ph.D.
President/Technical Director



FLOWERS CHEMICAL LABORATORIES INC.

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Phone: 305-743-8598 E35834 (Keys Lab)

Environmental Consulting & Design
4703 NW 53rd Ave, Ste B2
Gainesville, FL 32653

PO #: n/a
Client Project #: Emerald Marsh Reiteration
Date Sampled: Dec 15, 2021
Jan 06, 2022; Invoice: 493262

Analysis Report

Lab #:	Sampled:	Desc:								
Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed	
Arsenic	1.13	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7440-38-2	12/16/21	
Barium	55.6	mg/kg	1.00	0.200	0.400	10485989	EPA6020B	7440-39-3	12/16/21	
Cadmium	0.106 l	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7440-43-9	12/16/21	
Chromium	1.39	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7440-47-3	12/16/21	
Copper	32.3	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7440-50-8	12/16/21	
Lead	1.96	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7439-92-1	12/16/21	
Selenium	0.789	mg/kg	1.00	0.200	0.400	10485989	EPA6020B	7782-49-2	12/16/21	
Silver	0.202	mg/kg	1.00	0.0500	0.100	10485989	EPA6020B	7440-22-4	12/16/21	
Mercury	0.0124	mg/kg	20.0			10486292	EPA7470A	7439-97-6	12/17/21	
4,4'-DDD	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	72-54-8	12/28/21	
4,4'-DDE	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	72-55-9	12/28/21	
4,4'-DDT	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	50-29-3	12/28/21	
a-BHC	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	319-84-6	12/28/21	
Aldrin	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	309-00-2	12/28/21	
b-BHC	3.30 U	ug/kg	1.00	3.30	6.60	10487770	EPA8081B	319-85-7	12/28/21	
Chlordane	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	57-74-9	12/28/21	
d-BHC	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	319-86-8	12/28/21	
Dieldrin	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	60-57-1	12/28/21	
Endosulfan_I	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	959-98-8	12/28/21	
Endosulfan_II	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	33213-65-9	12/28/21	
Endosulfan_sulfate	3.30 U	ug/kg	1.00	3.30	6.60	10487770	EPA8081B	1031-07-8	12/28/21	
Endrin	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	72-20-8	12/28/21	
Endrin_Aldehyde	3.30 U	ug/kg	1.00	3.30	6.60	10487770	EPA8081B	7421-93-4	12/28/21	
Heptachlor	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	76-44-8	12/28/21	
Heptachlor epoxide	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	1024-57-3	12/28/21	
Lindane (g-BHC)	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	58-89-9	12/28/21	
Methoxychlor	17.0 U	ug/kg	1.00	17.0	34.0	10487770	EPA8081B	72-43-5	12/28/21	
Toxaphene	83.0 U	ug/kg	1.00	83.0	166	10487770	EPA8081B	8001-35-2	12/28/21	



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Environmental Consulting & Design
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Gainesville, FL 32653

PO #: n/a
Client Project #: Emerald Marsh Reiteration
Date Sampled: Dec 15, 2021
Jan 06, 2022; Invoice: 493262

Lab #:	Sampled:	Desc:								
Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed	
Surr:Tetrachloro-m-xylene (50-120%)	59.77%		1.00	1.00	1.00	10487770	EPA8081B		12/28/21	
Chlor_Pest_Extraction	30.0	g	1.00	1.00	2.00	10487839	X8081		12/22/21	

Lab #:	Sampled:	Desc:								
Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed	
Arsenic	0.723	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7440-38-2	12/16/21	
Barium	22.1	mg/kg	1.00	0.200	0.400	10485989	EPA6020B	7440-39-3	12/16/21	
Cadmium	0.100 U	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7440-43-9	12/16/21	
Chromium	0.495	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7440-47-3	12/16/21	
Copper	2.94	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7440-50-8	12/16/21	
Lead	0.317	mg/kg	1.00	0.100	0.200	10485989	EPA6020B	7439-92-1	12/16/21	
Selenium	0.357 l	mg/kg	1.00	0.200	0.400	10485989	EPA6020B	7782-49-2	12/16/21	
Silver	0.119	mg/kg	1.00	0.0500	0.100	10485989	EPA6020B	7440-22-4	12/16/21	
Mercury	0.000478	mg/kg	20.0			10486292	EPA7470A	7439-97-6	12/17/21	
4,4'-DDD	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	72-54-8	12/28/21	
4,4'-DDE	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	72-55-9	12/28/21	
4,4'-DDT	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	50-29-3	12/28/21	
a-BHC	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	319-84-6	12/28/21	
Aldrin	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	309-00-2	12/28/21	
b-BHC	3.30 U	ug/kg	1.00	3.30	6.60	10487770	EPA8081B	319-85-7	12/28/21	
Chlordane	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	57-74-9	12/28/21	
d-BHC	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	319-86-8	12/28/21	
Dieldrin	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	60-57-1	12/28/21	
Endosulfan_I	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	959-98-8	12/28/21	
Endosulfan_II	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	33213-65-9	12/28/21	
Endosulfan_sulfate	3.30 U	ug/kg	1.00	3.30	6.60	10487770	EPA8081B	1031-07-8	12/28/21	
Endrin	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	72-20-8	12/28/21	
Endrin_Aldehyde	3.30 U	ug/kg	1.00	3.30	6.60	10487770	EPA8081B	7421-93-4	12/28/21	
Heptachlor	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	76-44-8	12/28/21	
Heptachlor epoxide	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	1024-57-3	12/28/21	



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PO #: n/a
Client Project #: Emerald Marsh Reiteration
Date Sampled: Dec 15, 2021
Jan 06, 2022; Invoice: 493262

Lab #: 493262SO2 Sampled: 12/15/21 10:00 AM Desc: S

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Lindane (g-BHC)	1.70 U	ug/kg	1.00	1.70	3.40	10487770	EPA8081B	58-89-9	12/28/21
Methoxychlor	17.0 U	ug/kg	1.00	17.0	34.0	10487770	EPA8081B	72-43-5	12/28/21
Toxaphene	83.0 U	ug/kg	1.00	83.0	166	10487770	EPA8081B	8001-35-2	12/28/21
Surr:Tetrachloro-m-xylene (50-120%)	54.29%		1.00	1.00	1.00	10487770	EPA8081B		12/28/21
Chlor_Pest_Extraction	30.0	g	1.00	1.00	2.00	10487839	X8081		12/22/21

Lab #: 493262SW1 Sampled: 12/15/21 11:00 AM Desc: E1

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Total Phosphorus(as P)	0.0344	mg/L	1.00	0.00300	0.0100	10487768	EPA365.1	7723-14-0	12/28/21

Lab #: 493262SW2 Sampled: 12/15/21 11:30 AM Desc: P1

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Total Phosphorus(as P)	0.0703	mg/L	1.00	0.00300	0.0100	10487768	EPA365.1	7723-14-0	12/28/21

Lab #: 493262SW3 Sampled: 12/15/21 11:00 AM Desc: P2

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Total Phosphorus(as P)	0.141	mg/L	1.00	0.00300	0.0100	10487768	EPA365.1	7723-14-0	12/28/21



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Date Sampled: Dec 15, 2021
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Quality Report

Quality Control Batch: 10485989

Analyst: EVB

Blank	Result	Units
Arsenic	0.100U	mg/kg
Barium	0.200U	mg/kg
Cadmium	0.100U	mg/kg
Chromium	0.100U	mg/kg
Copper	0.100U	mg/kg
Lead	0.100U	mg/kg
Selenium	0.200U	mg/kg
Silver	0.0500U	mg/kg

Laboratory Control Sample

	Result	Units	Spike	%REC	%REC Lim
Arsenic	0.0959	mg/kg	0.100	95.90	80.00-120.00
Barium	0.112	mg/kg	0.100	112.40	80.00-120.00
Cadmium	0.108	mg/kg	0.100	108.40	80.00-120.00
Chromium	0.110	mg/kg	0.100	109.90	80.00-120.00
Copper	0.112	mg/kg	0.100	111.50	80.00-120.00
Lead	0.103	mg/kg	0.100	103.20	80.00-120.00
Selenium	0.0975	mg/kg	0.100	97.50	80.00-120.00
Silver	0.102	mg/kg	0.100	102.10	80.00-120.00

Matrix Spike

	Result	Units	Spike	%REC	%REC Lim	Sample	Lab Number
Arsenic	0.167	mg/kg	0.150	110.00	75.00-125.00	0.00180	100000SO2
Barium	0.153	mg/kg	0.150	102.20	75.00-125.00	0.200U	100000SO2
Cadmium	0.177	mg/kg	0.150	118.20	75.00-125.00	0.100U	100000SO2
Chromium	0.167	mg/kg	0.150	111.00	75.00-125.00	0.100U	100000SO2
Copper	0.160	mg/kg	0.150	106.93	75.00-125.00	0.100U	100000SO2
Lead	0.153	mg/kg	0.150	101.93	75.00-125.00	0.100U	100000SO2
Selenium	0.177	mg/kg	0.150	117.67	75.00-125.00	0.200U	100000SO2
Silver	0.133	mg/kg	0.150	88.00	75.00-125.00	0.00100	100000SO2



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Quality Control Batch: 10485989		Analyst: EVB							
Matrix Spike Duplicate		Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
Arsenic		0.160	mg/kg	0.150	105.60	75.00-125.00	0.00180	4.04	40.00
Barium		0.152	mg/kg	0.150	101.20	75.00-125.00	0.200U	0.98	40.00
Cadmium		0.196	mg/kg	0.150	130.60	75.00-125.00	0.100U	9.97	40.00
Chromium		0.189	mg/kg	0.150	126.27	75.00-125.00	0.100U	12.87	40.00
Copper		0.181	mg/kg	0.150	120.87	75.00-125.00	0.100U	12.23	40.00
Lead		0.152	mg/kg	0.150	101.47	75.00-125.00	0.100U	0.46	40.00
Selenium		0.159	mg/kg	0.150	106.13	75.00-125.00	0.200U	10.31	40.00
Silver		0.162	mg/kg	0.150	107.07	75.00-125.00	0.00100	19.42	40.00

Quality Control Batch: 10486292		Analyst: PCW							
Blank		Result	Units						
Mercury		0U	mg/kg						
Laboratory Control Sample		Result	Units	Spike	%REC	%REC Lim			
Mercury		0.00100	mg/kg	0.00100	100.00	80.00-120.00			
Matrix Spike		Result	Units	Spike	%REC	%REC Lim	Sample	Lab Number	
Mercury		0.0513	mg/kg	0.0600	85.02	80.00-120.00		4926701SO3	
Matrix Spike Duplicate		Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
Mercury		0.0496	mg/kg	0.0600	82.09	80.00-120.00		3.49	20.00

Quality Control Batch: 10487768		Analyst: PCW							
Blank		Result	Units						
Total Phosphorus(as P)		0.00300U	mg/L						
Laboratory Control Sample		Result	Units	Spike	%REC	%REC Lim			
Total Phosphorus(as P)		0.407	mg/L	0.400	101.82	90.00-110.00			



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Quality Control Batch: 10487768	Analyst: PCW							
Matrix Spike	Result	Units	Spike	%REC	%REC Lim	Sample	Lab Number	
Total Phosphorus(as P)	0.203	mg/L	0.200	93.12	85.00-115.00	0.0164	4930071SW1	

Matrix Spike Duplicate	Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
Total Phosphorus(as P)	0.203	mg/L	0.200	93.46	85.00-115.00	0.0164	0.34	20.00

Quality Control Batch: 10487770	Analyst: DLJ							
Blank	Result	Units						
4,4'-DDD	1.70U	ug/kg						
4,4'-DDE	1.70U	ug/kg						
4,4'-DDT	1.70U	ug/kg						
a-BHC	1.70U	ug/kg						
Aldrin	1.70U	ug/kg						
b-BHC	3.30U	ug/kg						
Chlordane	1.70U	ug/kg						
d-BHC	1.70U	ug/kg						
Dieldrin	1.70U	ug/kg						
Endosulfan_I	1.70U	ug/kg						
Endosulfan_II	1.70U	ug/kg						
Endosulfan_sulfate	3.30U	ug/kg						
Endrin	1.70U	ug/kg						
Endrin_Aldehyde	3.30U	ug/kg						
Heptachlor	1.70U	ug/kg						
Heptachlor epoxide	1.70U	ug/kg						
Lindane (g-BHC)	1.70U	ug/kg						
Methoxychlor	17.0U	ug/kg						
Toxaphene	83.0U	ug/kg						
Surr:Tetrachloro-m-xylene	10.3	ug/kg						

Laboratory Control Sample	Result	Units	Spike	%REC	%REC Lim			
4,4'-DDD	4.04	ug/kg	4.17	96.84	50.00-170.00			



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Quality Control Batch: 10487770		Analyst: DLJ					
Laboratory Control Sample	Result	Units	Spike	%REC	%REC Lim		
4,4'-DDE	4.60	ug/kg	4.17	110.28	50.00-170.00		
4,4'-DDT	4.66	ug/kg	4.17	111.75	50.00-170.00		
a-BHC	4.40	ug/kg	4.17	105.61	50.00-170.00		
Aldrin	4.31	ug/kg	4.17	103.50	50.00-170.00		
b-BHC	4.84	ug/kg	4.17	116.26	50.00-170.00		
d-BHC	4.51	ug/kg	4.17	108.27	50.00-170.00		
Dieldrin	4.34	ug/kg	4.17	104.09	50.00-170.00		
Endosulfan_I	4.48	ug/kg	4.17	107.58	50.00-170.00		
Endosulfan_II	4.95	ug/kg	4.17	118.86	50.00-170.00		
Endosulfan_sulfate	4.39	ug/kg	4.17	105.33	50.00-170.00		
Endrin	4.26	ug/kg	4.17	102.31	50.00-170.00		
Endrin_Aldehyde	5.91	ug/kg	4.17	141.90	50.00-170.00		
Heptachlor	4.87	ug/kg	4.17	116.77	50.00-170.00		
Heptachlor epoxide	4.72	ug/kg	4.17	113.21	50.00-170.00		
Lindane (g-BHC)	4.59	ug/kg	4.17	110.10	50.00-170.00		
Methoxychlor	4.87	ug/kg	4.17	116.98	50.00-170.00		
Surr:Tetrachloro-m-xylene	10.5	ug/kg	16.7	62.96	50.00-120.00		
Laboratory Control Sample Duplicate	Result	Units	Spike	%REC	%REC Lim	RPD	RPD Lim
4,4'-DDD	4.21	ug/kg	4.17	101.09	50.00-170.00	4.29	30.00
4,4'-DDE	4.65	ug/kg	4.17	111.59	50.00-170.00	1.18	30.00
4,4'-DDT	4.84	ug/kg	4.17	116.24	50.00-170.00	3.93	30.00
a-BHC	4.46	ug/kg	4.17	107.02	50.00-170.00	1.33	30.00
Aldrin	4.51	ug/kg	4.17	108.34	50.00-170.00	4.56	30.00
b-BHC	4.98	ug/kg	4.17	119.47	50.00-170.00	2.72	30.00
d-BHC	4.64	ug/kg	4.17	111.46	50.00-170.00	2.90	30.00
Dieldrin	4.45	ug/kg	4.17	106.79	50.00-170.00	2.56	30.00
Endosulfan_I	4.68	ug/kg	4.17	112.43	50.00-170.00	4.41	30.00
Endosulfan_II	4.92	ug/kg	4.17	118.04	50.00-170.00	0.69	30.00
Endosulfan_sulfate	4.65	ug/kg	4.17	111.62	50.00-170.00	5.80	30.00



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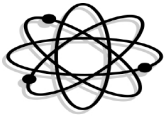
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Date Sampled: Dec 15, 2021
Jan 06, 2022; Invoice: 493262

Quality Control Batch: 10487770	Analyst: DLJ						
Laboratory Control Sample Duplicate	Result	Units	Spike	%REC	%REC Lim	RPD	RPD Lim
Endrin	4.41	ug/kg	4.17	105.74	50.00-170.00	3.29	30.00
Endrin_Aldehyde	6.02	ug/kg	4.17	144.50	50.00-170.00	1.82	30.00
Heptachlor	4.73	ug/kg	4.17	113.48	50.00-170.00	2.85	30.00
Heptachlor epoxide	4.93	ug/kg	4.17	118.37	50.00-170.00	4.46	30.00
Lindane (g-BHC)	4.66	ug/kg	4.17	111.84	50.00-170.00	1.57	30.00
Methoxychlor	4.74	ug/kg	4.17	113.78	50.00-170.00	2.77	30.00
Surr:Tetrachloro-m-xylene	10.5	ug/kg	16.7	63.20	50.00-120.00	0.38	30.00



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PO #: n/a
Client Project #: Emerald Marsh Reiteration
Date Sampled: Dec 15, 2021
Jan 06, 2022; Invoice: 493262

Narrative Report

Sample Handling

Sample handling and holding time criteria were met for all samples. Samples collected by submitter. No unusual events occurred during analysis. Results are reported on a wet weight basis for aqueous matrices and on a dry weight basis for sludge and soil matrices unless otherwise noted.

Quality Control

Enclosed analyses met method or FCL criteria, unless otherwise denoted on the sample results. Applied data qualifiers are defined below.

Attachments

Chain of Custody

Qualifier	Meaning
U	Compound was analyzed for but not detected.
J	Estimated value; one or more QC components associated with this data value exceed current QC limits.
Q	Sample held beyond the accepted holding time.
L	Off-scale high; reported concentration exceeds the highest standard.
V	Analyte was detected in both the sample and the associated method blank.
W	The dissolved oxygen blank was above 0.2 mg/L but less than the MDL.
Z	Too numerous to count colonies on plate.
A	Absent
P	Present
T	Value reported is less than the statistical method detection limit. Reported for informational purposes only.
M	Value reported is greater than the statistical method detection limit, but less than the reported MDL.
G	The greatest of the dilutions performed did not yield sufficient oxygen depletion for valid data.
S	The least of the dilutions performed did not yield sufficient oxygen residual for valid data.
O	Result is greater than (over) the specified value.
I	Reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
B	Results based upon colony plate count outside ideal range.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.