

December 26, 2023

Jake Dyer
Environmental Works, Inc.
1731 Locust Street
Kansas City, MO 64108
TEL: (816) 285-8410
FAX:



Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Mercury Testing

WorkOrder: 23120398

Dear Jake Dyer:

TEKLAB, INC received 3 samples on 12/6/2023 11:50:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Patrick Riley
Project Manager
(618)344-1004 ex 44
patrickriley@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: Environmental Works, Inc.

Work Order: 23120398

Client Project: Mercury Testing

Report Date: 26-Dec-23

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Client: Environmental Works, Inc.

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Abbr Definition

* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.

DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.

DNI Did not ignite

DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.

ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.

IDPH IL Dept. of Public Health

LCS Laboratory control sample is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.

LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.

MDL "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."

MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).

MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MW Molecular weight

NC Data is not acceptable for compliance purposes

ND Not Detected at the Reporting Limit

NELAP NELAP Accredited

PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.

RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.

RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).

SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.

Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"

TNTC Too numerous to count (> 200 CFU)

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Qualifiers

- # - Unknown hydrocarbon
- C - RL shown is a Client Requested Quantitation Limit
- H - Holding times exceeded
- J - Analyte detected below quantitation limits
- ND - Not Detected at the Reporting Limit
- S - Spike Recovery outside recovery limits
- X - Value exceeds Maximum Contaminant Level
- B - Analyte detected in associated Method Blank
- E - Value above quantitation range
- I - Associated internal standard was outside method criteria
- M - Manual Integration used to determine area response
- R - RPD outside accepted recovery limits
- T - TIC(Tentatively identified compound)



Case Narrative

<http://www.teklabinc.com/>

Client: Environmental Works, Inc.

Work Order: 23120398

Client Project: Mercury Testing

Report Date: 26-Dec-23

Cooler Receipt Temp: 4.4 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com



Accreditations

<http://www.teklabinc.com/>

Client: Environmental Works, Inc.

Work Order: 23120398

Client Project: Mercury Testing

Report Date: 26-Dec-23

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2024	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2024	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2024	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2024	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville



Laboratory Results

<http://www.teklabinc.com/>

Client: Environmental Works, Inc.

Work Order: 23120398

Client Project: Mercury Testing

Report Date: 26-Dec-23

Lab ID: 23120398-001

Client Sample ID: MERC-1

Matrix: SOLID

Collection Date: 12/05/2023 12:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		1.3	%	1	12/07/2023 9:46	R340244
SW-846 7471B								
Mercury	NELAP	1.95		97.2	mg/Kg-dry	200	12/11/2023 10:47	215660
SW-846 3546, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD								
Aroclor 1016	NELAP	0.368	S	ND	mg/Kg-dry	1	12/18/2023 23:25	216112
Aroclor 1221	NELAP	0.368		ND	mg/Kg-dry	1	12/18/2023 23:25	216112
Aroclor 1232	NELAP	0.368		ND	mg/Kg-dry	1	12/18/2023 23:25	216112
Aroclor 1242	NELAP	0.368		1.67	mg/Kg-dry	1	12/18/2023 23:25	216112
Aroclor 1248	NELAP	0.368		ND	mg/Kg-dry	1	12/18/2023 23:25	216112
Aroclor 1254	NELAP	0.368		ND	mg/Kg-dry	1	12/18/2023 23:25	216112
Aroclor 1260	NELAP	0.368		ND	mg/Kg-dry	1	12/18/2023 23:25	216112
Surr: Decachlorobiphenyl	*	14.2-114		48.8	%REC	1	12/18/2023 23:25	216112
Surr: Tetrachloro-meta-xylene	*	18.1-113		37.5	%REC	1	12/18/2023 23:25	216112

Matrix spike control limits for Aroclor 1016 are not applicable due to pattern overlap with Aroclor 1242.

Elevated reporting limit due to sample composition.



Laboratory Results

<http://www.teklabinc.com/>

Client: Environmental Works, Inc.
 Client Project: Mercury Testing
 Lab ID: 23120398-002
 Matrix: SOLID

Work Order: 23120398
 Report Date: 26-Dec-23

Client Sample ID: MERC-2

Collection Date: 12/05/2023 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		1.2	%	1	12/07/2023 9:46	R340244
SW-846 7471B								
Mercury	NELAP	5.00	S	137	mg/Kg-dry	500	12/13/2023 10:13	215850
<i>Matrix spike did not recover within control limits due to sample composition. Verified by re-prep and re-analysis.</i>								
SW-846 3546, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD								
Aroclor 1016	NELAP	0.147		ND	mg/Kg-dry	1	12/19/2023 0:13	216112
Aroclor 1221	NELAP	0.147		ND	mg/Kg-dry	1	12/19/2023 0:13	216112
Aroclor 1232	NELAP	0.147		ND	mg/Kg-dry	1	12/19/2023 0:13	216112
Aroclor 1242	NELAP	0.147		1.65	mg/Kg-dry	1	12/19/2023 0:13	216112
Aroclor 1248	NELAP	0.147		ND	mg/Kg-dry	1	12/19/2023 0:13	216112
Aroclor 1254	NELAP	0.147		ND	mg/Kg-dry	1	12/19/2023 0:13	216112
Aroclor 1260	NELAP	0.147		ND	mg/Kg-dry	1	12/19/2023 0:13	216112
Surr: Decachlorobiphenyl	*	14.2-114		54.1	%REC	1	12/19/2023 0:13	216112
Surr: Tetrachloro-meta-xylene	*	18.1-113		47.8	%REC	1	12/19/2023 0:13	216112
<i>Elevated reporting limit due to sample composition.</i>								



Laboratory Results

<http://www.teklabinc.com/>

Client: Environmental Works, Inc.
 Client Project: Mercury Testing
 Lab ID: 23120398-003
 Matrix: SOLID

Work Order: 23120398
 Report Date: 26-Dec-23

Client Sample ID: MERC-3

Collection Date: 12/05/2023 13:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		0.6	%	1	12/07/2023 9:47	R340244
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.0400	SX	1.13	mg/L	200	12/22/2023 10:28	216264
<i>Matrix spike did not recover within control limits due to matrix interference. Verified by bench spike</i>								
SW-846 7471B								
Mercury	NELAP	4.85		203	mg/Kg-dry	500	12/11/2023 11:21	215660
SW-846 3546, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD								
Aroclor 1016	NELAP	0.180		ND	mg/Kg-dry	1	12/19/2023 0:29	216112
Aroclor 1221	NELAP	0.180		ND	mg/Kg-dry	1	12/19/2023 0:29	216112
Aroclor 1232	NELAP	0.180		ND	mg/Kg-dry	1	12/19/2023 0:29	216112
Aroclor 1242	NELAP	0.180		1.79	mg/Kg-dry	1	12/19/2023 0:29	216112
Aroclor 1248	NELAP	0.180		ND	mg/Kg-dry	1	12/19/2023 0:29	216112
Aroclor 1254	NELAP	0.180		ND	mg/Kg-dry	1	12/19/2023 0:29	216112
Aroclor 1260	NELAP	0.180		ND	mg/Kg-dry	1	12/19/2023 0:29	216112
Surr: Decachlorobiphenyl	*	14.2-114		56.4	%REC	1	12/19/2023 0:29	216112
Surr: Tetrachloro-meta-xylene	*	18.1-113		48.4	%REC	1	12/19/2023 0:29	216112
<i>Elevated reporting limit due to sample composition.</i>								



Quality Control Results

<http://www.teklabinc.com/>

Client: Environmental Works, Inc.

Work Order: 23120398

Client Project: Mercury Testing

Report Date: 26-Dec-23

EPA SW846 3550C, 5035A, ASTM D2974

Batch R340244		SampType: LCS		Units %							
SampID: LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Percent Moisture	*	0.1		99.0	99.00	0	100.0	90	110	12/07/2023	

Batch R340244		SampType: LCSQC		Units %							
SampID: LCSQC											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Percent Moisture	*	0.1		99.0	99.00	0	100.0	90	110	12/07/2023	

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 216264		SampType: MBLK		Units mg/L							
SampID: MBLK-216264											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	12/22/2023	

Batch 216264		SampType: LCS		Units mg/L							
SampID: LCS-216264											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00454	0.0050	0	90.9	85	115	12/22/2023	

Batch 216264		SampType: MS		Units mg/L							
SampID: 23120398-003AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.0400	S	1.09	0.0050	1.129	-814.4	75	125	12/22/2023	

SW-846 7471B

Batch 215660		SampType: MBLK		Units mg/Kg							
SampID: MBLK-215660											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.010		< 0.010	0.0045	0	0	-100	100	12/08/2023	

Batch 215660		SampType: LCS		Units mg/Kg							
SampID: LCS-215660											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.010		0.216	0.2500	0	86.5	85	115	12/09/2023	



Quality Control Results

<http://www.teklabinc.com/>

Client: Environmental Works, Inc.

Work Order: 23120398

Client Project: Mercury Testing

Report Date: 26-Dec-23

SW-846 7471B

Batch 215850 **SampType: MBLK** Units **mg/Kg**

SampID: MBLK-215850

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.010		< 0.010	0.0045	0	0	-100	100	12/13/2023

Batch 215850 **SampType: LCS** Units **mg/Kg**

SampID: LCS-215850

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.010		0.274	0.2500	0	109.5	85	115	12/13/2023

Batch 215850 **SampType: MS** Units **mg/Kg-dry**

SampID: 23120398-002AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		4.82	S	227	0.2409	136.8	37510	75	125	12/13/2023

Batch 215850 **SampType: MSD** Units **mg/Kg-dry**

SampID: 23120398-002AMSD

RPD Limit **15**

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		4.76	S	211	0.2381	136.8	31230	227.2	7.30	12/13/2023

SW-846 3546, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD

Batch 216112 **SampType: MBLK** Units **mg/Kg**

SampID: MBLK-216112

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aroclor 1016		0.0375		ND						12/18/2023
Aroclor 1221		0.0375		ND						12/18/2023
Aroclor 1232		0.0375		ND						12/18/2023
Aroclor 1242		0.0375		ND						12/18/2023
Aroclor 1248		0.0375		ND						12/18/2023
Aroclor 1254		0.0375		ND						12/18/2023
Aroclor 1260		0.0375		ND						12/18/2023
Surr: Decachlorobiphenyl	*			6.1	8.300		73.0	49.8	114	12/18/2023
Surr: Tetrachloro-meta-xylene	*			5.0	8.300		60.1	44	99.4	12/18/2023

Client: Environmental Works, Inc.

Work Order: 23120398

Client Project: Mercury Testing

Report Date: 26-Dec-23

SW-846 3546, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD
Batch 216112 **SampType:** LCS **Units mg/Kg**

SampID: LCSPCB-216112

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aroclor 1016		0.0375		0.114	0.167	0	68.2	50	150	12/18/2023
Aroclor 1260		0.0375		0.127	0.167	0	76.2	50	150	12/18/2023
Surr: Decachlorobiphenyl	*			5.8	8.300		70.4	49.8	114	12/18/2023
Surr: Tetrachloro-meta-xylene	*			4.5	8.300		54.8	44	99.4	12/18/2023

Batch 216112 **SampType:** MS **Units mg/Kg-dry**

SampID: 23120398-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aroclor 1016		0.342	S	ND	1.52	0	0	35.3	143	12/18/2023
Aroclor 1260		0.342		0.856	1.52	0	56.3	40.8	140	12/18/2023
Surr: Decachlorobiphenyl	*			41.1	75.77		54.2	14.2	114	12/18/2023
Surr: Tetrachloro-meta-xylene	*			33.5	75.77		44.2	18.1	113	12/18/2023

Batch 216112 **SampType:** MSD **Units mg/Kg-dry**

 RPD Limit **56.5**

SampID: 23120398-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Aroclor 1016		0.284	S	ND	1.26	0	0	0	0.00	12/18/2023
Aroclor 1260		0.284		0.800	1.26	0	63.3	0.856	6.84	12/18/2023
Surr: Decachlorobiphenyl	*			37.9	62.92		60.3			12/18/2023
Surr: Tetrachloro-meta-xylene	*			31.4	62.92		49.9			12/18/2023



Receiving Check List

<http://www.teklabinc.com/>

Client: Environmental Works, Inc.

Work Order: 23120398

Client Project: Mercury Testing

Report Date: 26-Dec-23

Carrier: Crossroads

Received By: HAW

Completed by:

Amber Dilallo

Reviewed by:

Patrick Riley

On:

06-Dec-23

Amber Dilallo

On:

06-Dec-23

Patrick Riley

Pages to follow: Chain of custody

Extra pages included

- | | | | | |
|---|---|---|--|----------------------------------|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> | Temp °C 4.4 |
| Type of thermal preservation? | None <input type="checkbox"/> | Ice <input checked="" type="checkbox"/> | Blue Ice <input type="checkbox"/> | Dry Ice <input type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Reported field parameters measured: | Field <input type="checkbox"/> | Lab <input type="checkbox"/> | NA <input checked="" type="checkbox"/> | |
| Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

- | | | | |
|---|------------------------------|-----------------------------|---|
| Water – at least one vial per sample has zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials <input checked="" type="checkbox"/> |
| Water - TOX containers have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No TOX containers <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| NPDES/CWA TCN interferences checked/treated in the field? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

Any No responses must be detailed below or on the COC.

