GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

October 27, 2022

Chris Decker
Laboratory for EPA
100 OB Curtis Drive
Ridgeland, Mississippi 39157

Re: Jackson Emergency Response
Work Order: 594761

Dear Chris Decker:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on September 28, 2022. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,

Adrian Melendrez for
Jake Crook
Project Manager

Purchase Order: Pending
Enclosures

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

October 27, 2022

Mr. Jake Crook
GEL
2040 Savage Road
Charleston, South Carolina 29407

Re: GEL Subcontract - J. Crook
Work Order: 20501
SDG: 594761

Dear Mr. Crook:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on September 29, 2022. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

CFA WO # 20501

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Chain of Custody and Analytical Request

GEL Work Order Number: 594761 GEL Project Manager: Jake Crook

Project #: EPAJ00122
PO Number: Pending
Project/Site Name: Jackson Emergency Response
Client Name: GEL Laboratories LLC
Address: 2040 Savage Road Charleston, SC 29414
Collected By: Client Send Results To: team.crook@gel.com COC#:_____

DUE DATE: 20-OCT-2022

Sample ID	Date Collected (mm-dd-yy)	Time Collected (hhmm)	Sample Matrix	Field QC	Lab QC	Analyses Requested	Subcontract Laboratory	#Cont.
TF081	27-SEP-22	13:45	Drinking Water (Potable)			Subcontract for 2,3,7,8-TCDD	Cape Fear Analytical	
TF082	27-SEP-22	15:35	Drinking Water (Potable)			Subcontract for 2,3,7,8-TCDD		
TF083	27-SEP-22	15:00	Drinking Water (Potable)			Subcontract for 2,3,7,8-TCDD		

Page 1 of 1

temp. = 2.0°C

Chain of Custody Signatures

Relinquished By: (Signed)	Date	Time	Received By: (Signed)	Date	Time
Jill Johnson	9/28/22	15:03pm	Cynde Larkins for Rebecca O'Toole	27Sep22	10:10

Reference the GEL work order number on invoice and send to aplab@gel.com.

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: GEL	Work Order: 20501
Shipping Company: FedEx	Date/Time Received: 9/29/21 1810

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?			

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Custody seal/s present on cooler?			✓	Seal intact? Yes No
3	Chain of Custody documents included with shipment?	✓			
4	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags **loose ice** blue ice dry ice none other (describe) Temperature Blank present: Yes (No) 2.1-0.1=2.0v
5	Aqueous samples found to have visible solids?			✓	Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?	✓			Sample IDs, containers affected and pH observed: 9/1/21 pH=7 If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?			✓	List type and number of containers / Sample IDs, containers affected: # Samples Not listed on COC Received 6-1L Amber
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: _____ Date: 9/29/21

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
GEL Laboratories (GELA)
SDG 594761
Work Order 20501

Method/Analysis Information

Product:	**TCDD Only by EPA Method 1613B in Liquids**
Analytical Method:	EPA Method 1613B
Extraction Method:	SW846 3520C
Analytical Batch Number:	51257
Clean Up Batch Number:	51256
Extraction Batch Number:	51255

Sample Analysis

Samples were received at 2.0°C.
The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
12033014	Method Blank (MB)
12033015	Laboratory Control Sample (LCS)
12033016	Laboratory Control Sample Duplicate (LCSD)
20501001	TF081
20501002	TF082
20501003	TF083

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 21.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CVS) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Receipt Temperature
Samples were received within temperature requirements.

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP763_1	Primary Dioxin Analysis	Dioxin Analysis	DB-5MS	60m x 0.25mm, 0.25um

Sample Data Summary

Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Certificate of Analysis Report
for

GELA001 GEL Laboratories

Client SDG: 594761 CFA Work Order: 20501

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the specified detection limit.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature:  **Name: Erin Suhrie**

Date: 27 OCT 2022 **Title: Data Validator**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**594761**	**Client:**	**GELA001**	**Project:**	**GELA00713**
Lab Sample ID:	**20501001**	**Date Collected:**	**09/27/2022 13:45**	**Matrix:**	**WATER**
Client Sample:	**1613B TCDD Water**	**Date Received:**	**09/29/2022 10:10**		
Client ID:	**TF081**			**Prep Basis:**	**As Received**
Batch ID:	**51257**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/25/2022 19:10**	**Analyst:**	**MW1**	**Instrument:**	**HRP763**
Data File:	**b25oct22b-5**			**Dilution:**	**1**
Prep Batch:	**51255**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**24-OCT-22**	**Prep Aliquot:**	**1048.5 mL**		

CAS No.	Parmname	Qual	Result	Units	PQL	RDL
1746-01-6	2,3,7,8-TCDD	U	10.0	pg/L	9.54	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1190	1910	pg/L	62.5	(31%-137%)
37Cl-2,3,7,8-TCDD		160	191	pg/L	84.0	(42%-164%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**594761**	**Client:**	**GELA001**	**Project:**	**GELA00713**
Lab Sample ID:	**20501002**	**Date Collected:**	**09/27/2022 15:35**	**Matrix:**	**WATER**
Client Sample:	**1613B TCDD Water**	**Date Received:**	**09/29/2022 10:10**		
Client ID:	**TF082**			**Prep Basis:**	**As Received**
Batch ID:	**51257**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/25/2022 19:57**	**Analyst:**	**MW1**	**Instrument:**	**HRP763**
Data File:	**b25oct22b-6**			**Dilution:**	**1**
Prep Batch:	**51255**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**24-OCT-22**	**Prep Aliquot:**	**1026.8 mL**		

CAS No.	Parmname	Qual	Result	Units	PQL	RDL
1746-01-6	2,3,7,8-TCDD	U	10.0	pg/L	9.74	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1390	1950	pg/L	71.3	(31%-137%)
37Cl-2,3,7,8-TCDD		163	195	pg/L	83.8	(42%-164%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**594761**	**Client:**	**GELA001**	**Project:**	**GELA00713**
Lab Sample ID:	**20501003**	**Date Collected:**	**09/27/2022 15:00**	**Matrix:**	**WATER**
Client Sample:	**1613B TCDD Water**	**Date Received:**	**09/29/2022 10:10**		
Client ID:	**TF083**			**Prep Basis:**	**As Received**
Batch ID:	**51257**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/25/2022 20:45**	**Analyst:**	**MW1**	**Instrument:**	**HRP763**
Data File:	**b25oct22b-7**			**Dilution:**	**1**
Prep Batch:	**51255**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**24-OCT-22**	**Prep Aliquot:**	**1032.1 mL**		

CAS No.	Parmname	Qual	Result	Units	PQL	RDL
1746-01-6	2,3,7,8-TCDD	U	10.0	pg/L	9.69	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1350	1940	pg/L	69.9	(31%-137%)
37Cl-2,3,7,8-TCDD		149	194	pg/L	77.0	(42%-164%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 594761

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
20501001	TF081	13C-2,3,7,8-TCDD		62.5	(31%-137%)
		37Cl-2,3,7,8-TCDD		84.0	(42%-164%)
20501002	TF082	13C-2,3,7,8-TCDD		71.3	(31%-137%)
		37Cl-2,3,7,8-TCDD		83.8	(42%-164%)
20501003	TF083	13C-2,3,7,8-TCDD		69.9	(31%-137%)
		37Cl-2,3,7,8-TCDD		77.0	(42%-164%)
12033015	LCS for batch 51255	13C-2,3,7,8-TCDD		61.7	(25%-141%)
		37Cl-2,3,7,8-TCDD		70.8	(37%-158%)
12033016	LCSD for batch 51255	13C-2,3,7,8-TCDD		72.3	(25%-141%)
		37Cl-2,3,7,8-TCDD		82.5	(37%-158%)
12033014	MB for batch 51255	13C-2,3,7,8-TCDD		70.8	(31%-137%)
		37Cl-2,3,7,8-TCDD		82.7	(42%-164%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 594761 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 51255 **Matrix:** WATER

Lab Sample ID: 12033015

Instrument: HRP763 **Analysis Date:** 10/26/2022 03:17 **Dilution:** 1

Analyst: MW1 **Prep Batch ID:** 51255

Batch ID: 51257

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	200	199	99.7	73-146

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 594761 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 51255 **Matrix:** WATER

Lab Sample ID: 12033016

Instrument: HRP763 **Analysis Date:** 10/26/2022 04:04 **Dilution:** 1

Analyst: MW1 **Prep Batch ID:** 51255

Batch ID: 51257

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	200	183	91.3	73-146	8.89	0-20

Method Blank Summary

SDG Number:	**594761**	**Client:**	**GELA001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 51255**	**Instrument ID:**	**HRP763**	**Data File:**	**b25oct22b_2-3**
Lab Sample ID:	**12033014**	**Prep Date:**	**24-OCT-22**	**Analyzed:**	**10/26/22 04:52**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 51255	12033015	b25oct22b_2-1	10/26/22	0317
02	LCSD for batch 51255	12033016	b25oct22b_2-2	10/26/22	0404
03	TF081	20501001	b25oct22b-5	10/25/22	1910
04	TF082	20501002	b25oct22b-6	10/25/22	1957
05	TF083	20501003	b25oct22b-7	10/25/22	2045

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**594761**	**Client:**	**GELA001**	**Project:**	**GELA00713**
Lab Sample ID:	**12033014**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51255**				
Client ID:	**MB for batch 51255**			**Prep Basis:**	**As Received**
Batch ID:	**51257**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/26/2022 04:52**	**Analyst:**	**MW1**	**Instrument:**	**HRP763**
Data File:	**b25oct22b_2-3**			**Dilution:**	**1**
Prep Batch:	**51255**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**24-OCT-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	PQL	RDL
1746-01-6	2,3,7,8-TCDD	U	10.0	pg/L	10.0	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1420	2000	pg/L	70.8	(31%-137%)
37Cl-2,3,7,8-TCDD		165	200	pg/L	82.7	(42%-164%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**594761**	**Client:**	**GELA001**	**Project:**	**GELA00713**
Lab Sample ID:	**12033015**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51255**				
Client ID:	**LCS for batch 51255**			**Prep Basis:**	**As Received**
Batch ID:	**51257**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/26/2022 03:17**	**Analyst:**	**MW1**	**Instrument:**	**HRP763**
Data File:	**b25oct22b_2-1**			**Dilution:**	**1**
Prep Batch:	**51255**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**24-OCT-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	PQL	RDL
1746-01-6	2,3,7,8-TCDD		199	pg/L	10.0	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1230	2000	pg/L	61.7	(25%-141%)
37Cl-2,3,7,8-TCDD		142	200	pg/L	70.8	(37%-158%)

Comments:

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**594761**	**Client:**	**GELA001**	**Project:**	**GELA00713**
Lab Sample ID:	**12033016**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 51255**				
Client ID:	**LCSD for batch 51255**			**Prep Basis:**	**As Received**
Batch ID:	**51257**	**Method:**	**EPA Method 1613B**		
Run Date:	**10/26/2022 04:04**	**Analyst:**	**MW1**	**Instrument:**	**HRP763**
Data File:	**b25oct22b_2-2**			**Dilution:**	**1**
Prep Batch:	**51255**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**24-OCT-22**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	PQL	RDL
1746-01-6	2,3,7,8-TCDD		183	pg/L	10.0	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1450	2000	pg/L	72.3	(25%-141%)
37Cl-2,3,7,8-TCDD		165	200	pg/L	82.5	(37%-158%)

Comments: