ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 10/29/2018

GCAL Report 218101937

Project XTO Energy

Deliver To	***Additional Recipients***
Brian Strasert GSI Environmental 2211 Norfolk Street Suite 1000 Houston, TX 77098 (713) 522-6300	James Kearley, GSI Environmental Whitney Godwin, GSI Environmental

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

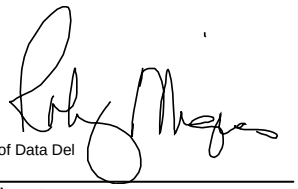
J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics **-** The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.



Robyn Migues/Dir of Data Del

Authorized Signature
GCAL Report 218101937

Certifications

Certification	Certification Number
DOD ELAP	L16-398-R5
Alabama	01955
Arkansas	18-062-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234

Case Narrative

Client: GSI Environmental **Report:** 218101937

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

This report is revised 10/29/18. The data is updated to report to the MDL with J values.

No anomalies were found for the analyzed sample(s).

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21810193701	Bagley R.S.W.	Water	10/17/2018 18:30	10/19/2018 12:41
21810193702	Dup-01	Water	10/17/2018 00:01	10/19/2018 12:41
21810193703	FB	Water	10/17/2018 18:50	10/19/2018 12:41
21810193704	Evans RSW	Water	10/18/2018 12:00	10/19/2018 12:41
21810193705	FB-02	Water	10/18/2018 12:30	10/19/2018 12:41
21810193706	Trip Blank	Water	10/17/2018 00:01	10/19/2018 12:41

Summary of Compounds Detected

No analytes were detected for analyses performed by GCAL.

Sample Results

Bagley R.S.W.

Collect Date 10/17/2018 18:30 **GCAL ID** 21810193701
Receive Date 10/19/2018 12:41 **Matrix** Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	10/21/2018 01:08	LBH	646259

CAS#	Parameter	Result	DL	LOQ	Reg Limit	Units
71-43-2	Benzene	0.200U	0.200	5.00	5	ug/L
100-41-4	Ethylbenzene	0.200U	0.200	5.00	700	ug/L
108-88-3	Toluene	0.200U	0.200	5.00	1000	ug/L
1330-20-7	Xylene (total)	0.400U	0.400	15.0	10000	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	42.2	ug/L	84	78 - 130
1868-53-7	Dibromofluoromethane	50	48.9	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	50.4	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	44.6	ug/L	89	71 - 127

Dup-01

Collect Date 10/17/2018 00:01 **GCAL ID** 21810193702
Receive Date 10/19/2018 12:41 **Matrix** Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	10/21/2018 01:30	LBH	646259

CAS#	Parameter	Result	DL	LOQ	Reg Limit	Units
71-43-2	Benzene	0.200U	0.200	5.00	5	ug/L
100-41-4	Ethylbenzene	0.200U	0.200	5.00	700	ug/L
108-88-3	Toluene	0.200U	0.200	5.00	1000	ug/L
1330-20-7	Xylene (total)	0.400U	0.400	15.0	10000	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	41.1	ug/L	82	78 - 130
1868-53-7	Dibromofluoromethane	50	48.5	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	50.4	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	44.3	ug/L	89	71 - 127

Sample Results

FB

Collect Date	10/17/2018 18:50	**GCAL ID**	21810193703
Receive Date	10/19/2018 12:41	**Matrix**	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	10/21/2018 02:37	LBH	646259

CAS#	Parameter	Result	DL	LOQ	Reg Limit	Units
71-43-2	Benzene	0.200U	0.200	5.00	5	ug/L
100-41-4	Ethylbenzene	0.200U	0.200	5.00	700	ug/L
108-88-3	Toluene	0.200U	0.200	5.00	1000	ug/L
1330-20-7	Xylene (total)	0.400U	0.400	15.0	10000	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	42.1	ug/L	84	78 - 130
1868-53-7	Dibromofluoromethane	50	47.6	ug/L	95	77 - 127
2037-26-5	Toluene d8	50	51.7	ug/L	103	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	44.4	ug/L	89	71 - 127

Evans RSW

Collect Date	10/18/2018 12:00	**GCAL ID**	21810193704
Receive Date	10/19/2018 12:41	**Matrix**	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	10/21/2018 01:52	LBH	646259

CAS#	Parameter	Result	DL	LOQ	Reg Limit	Units
71-43-2	Benzene	0.200U	0.200	5.00	5	ug/L
100-41-4	Ethylbenzene	0.200U	0.200	5.00	700	ug/L
108-88-3	Toluene	0.200U	0.200	5.00	1000	ug/L
1330-20-7	Xylene (total)	0.400U	0.400	15.0	10000	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	41.8	ug/L	84	78 - 130
1868-53-7	Dibromofluoromethane	50	48.1	ug/L	96	77 - 127
2037-26-5	Toluene d8	50	51.8	ug/L	104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	44.6	ug/L	89	71 - 127

Sample Results

FB-02

Collect Date 10/18/2018 12:30 **GCAL ID** 21810193705
Receive Date 10/19/2018 12:41 **Matrix** Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	10/21/2018 02:59	LBH	646259

CAS#	Parameter	Result	DL	LOQ	Reg Limit	Units
71-43-2	Benzene	0.200U	0.200	5.00	5	ug/L
100-41-4	Ethylbenzene	0.200U	0.200	5.00	700	ug/L
108-88-3	Toluene	0.200U	0.200	5.00	1000	ug/L
1330-20-7	Xylene (total)	0.400U	0.400	15.0	10000	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	41.3	ug/L	83	78 - 130
1868-53-7	Dibromofluoromethane	50	47.6	ug/L	95	77 - 127
2037-26-5	Toluene d8	50	50.6	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.3	ug/L	91	71 - 127

Trip Blank

Collect Date 10/17/2018 00:01 **GCAL ID** 21810193706
Receive Date 10/19/2018 12:41 **Matrix** Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	10/21/2018 03:21	LBH	646259

CAS#	Parameter	Result	DL	LOQ	Reg Limit	Units
71-43-2	Benzene	0.200U	0.200	5.00	5	ug/L
100-41-4	Ethylbenzene	0.200U	0.200	5.00	700	ug/L
108-88-3	Toluene	0.200U	0.200	5.00	1000	ug/L
1330-20-7	Xylene (total)	0.400U	0.400	15.0	10000	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	41.1	ug/L	82	78 - 130
1868-53-7	Dibromofluoromethane	50	48.5	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	50.8	ug/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.4	ug/L	91	71 - 127

GC/MS Volatiles QC Summary

Analytical Batch 646259	Client ID	MB646259		LCS646259				LCSD646259				
	GCAL ID	1860281		1860282				1860283				
	Sample Type	MB		LCS				LCSD				
	Prep Date	NA		NA				NA				
	Analysis Date	10/20/2018 20:41		10/20/2018 19:12				10/20/2018 19:34				
	Matrix	Water		Water				Water				
EPA 8260B		Units Result	ug/L DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Benzene	71-43-2	0.200U	0.200	50.0	53.8	108	70 - 129	50.0	51.9	104	4	20
Ethylbenzene	100-41-4	0.200U	0.200	50.0	55.4	111	74 - 126	50.0	54.3	109	2	30
Toluene	108-88-3	0.200U	0.200	50.0	52.0	104	72 - 120	50.0	50.5	101	3	20
Xylene (total)	1330-20-7	0.400U	0.400	150	169	113	74 - 127	150	164	109	3	30
Surrogate												
1,2-Dichloroethane-d4	17060-07-0	42.8	86	50	45.2	90	71 - 127	50	43.9	88	NA	NA
4-Bromofluorobenzene	460-00-4	41.3	83	50	49.7	99	78 - 130	50	49.7	99	NA	NA
Dibromofluoromethane	1868-53-7	47.7	95	50	46.8	94	77 - 127	50	47.3	95	NA	NA
Toluene d8	2037-26-5	50.6	101	50	47.1	94	76 - 134	50	48.1	96	NA	NA

GCAL ANALYTICAL LABORATORIES, LLC

CHAIN OF CUSTODY RECORD

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Client ID: 4990 - GSI Environmental
SDG: 218101937
PM: EPM

Report to:
Client: GSI Environmental
Address: 2211 Norfolk, Suite 1000 Houston TX 77098
Contact: Whitney Godwin
Phone: 713-522-6300
E-mail:

Bill to:
Client: GSI Environmental
Address: (same)
Contact:
Phone:
E-mail:

P.O. Number: 4927
Project Name/Number: XTO Energy
Sampled By: James Kearley and Jairo Liviano

Analytical Requests & Method: BTEX by 8260

GCAL use only:
Custody Seal used ☐ yes ☐ no intact ☐ yes ☐ no
Temperature °C 3.9 ESG 40CFR

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	BTEX by 8260	Preservative
W	10/17/18	1830		✓	Bayley R.S.W	3	✓	-1
		—		✓	Dup-01	3	✓	-2
		1850		✓	FB	3	✓	-3
	10/18/18	1200		✓	Evans RSW	3	✓	-4
		1230		✓	FB-02	3	✓	-5
	—	—		—	Trip blank	2	✓	-6

Air Bill No:

Turn Around Time (Business Days): ☐ 24h* ☑ 48h* ☐ 3 days* ☐ 1 week* ☐ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	10/18/18	1900		10/18/18	2:17
	10/18/18	6:04	Daynell Lewis	10/19/18	1030
Daynell Lewis	10/19/18	1241		10/19/18	1241

Note:

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

SAMPLE RECEIVING CHECKLIST

218101937

SAMPLE DELIVERY GROUP 218101937	
Client **PM** EPM 4990 - GSI Environmental	**Transport Method** COURIER
Profile Number 277552	**Received By** Reese, Sean M
Line Item(s) 2 - W - 2 day BTEX	**Receive Date(s)** 10/19/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E29	Temp °C
		3.9

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

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