



P. O. Box 7192 (zip 71137-7192)
1000 Grimmer Dr.
Shreveport, LA 71107
Phone: (318) 222-2424
Fax: (318) 222-2425

January 18, 2019

Mr. Todd Emmert
Elm Springs, Inc.
P.O. Box 58
Shongaloo, LA 71072-0058

Re: LDNR-Irrigation Water Well Sampling Project
Herman Gamble Water Well- Serial Number: 6576Z
Section 34, Township 13 N, Range 15 W
GPS via hand held (Water Well): 32.07112, -93.89940

Dear Mr. Emmert:

Approach Environmental, LLC (Approach Environmental) was retained by Elm Springs, Inc. (Elm Springs) to conduct a Irrigation Water Well Sampling Project at the referenced location. On November 13, 2018, Approach Environmental met with OC inspector David Barnhill to collect groundwater samples from the referenced water well to evaluate specific groundwater quality parameters requested by the Louisiana Department of Natural Resources (LDNR).

The irrigation water well sampling activities included photo documentation of the water well (photos attached), water well purging (if well was not used on a regular basis), obtaining GPS coordinates (via hand-held GPS), groundwater sampling, and preparation of a brief letter report presenting the analytical data, sampling procedures, and well conditions. According to LDNR SONRIS, the Herman Gamble (LDNR serial number 6576Z) water well is registered as an irrigation well with a recorded total depth of 212' below ground surface (bgs), a depth to water of 120' bgs and is completed in the Wilcox aquifer. The depth to water could not be measured during the sampling event due to an existing pump in the well. The well is constructed of 4-inch diameter PVC piping and is located on the property of a chicken farm. The equipment to operate the pump is located inside of a small pump shed and the well was approximately 2' North of the pump shed. The well was equipped with a valve and a water hose, but the water hose was unable to be detached and sample was taken from the end of the water hose. The well was purged of approximately 50-100 gallons. Once purged, the water sample was collected in laboratory supplied sample containers by an experienced Environmental Scientist wearing nitrile gloves and immediately placed on ice in an ice chest. Proper chain-of-custody procedures were followed and are documented with the attached laboratory report.

The sample was, then, delivered, via FedEx overnight, to Element Materials Technology, a LELAP Certification No.: 01997, a LDHH Certification No.: LA180028, and a ISDH Certification No.: C-LA-01 located in Lafayette, Louisiana. As requested by the LDNR, the sample was analyzed for Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO), TPH Diesel Range Organics (DRO), TPH Oil Range Organics (ORO) by method SW8015, RCRA Metals by method SW6010/7470A, Inorganic Anions in water by IC method SW9056 (Chlorides), Polynuclear Aromatic Hydrocarbons (PAH) by EPA 8270C, Semi-Volatile Organic Compounds by method SW8270C, Volatile Organic Compounds (VOC) by method SW8260B, Total Dissolved Solids (TDS) by method SM2540C, and Dissolved Methane by EPA RSK-175.

A Google Earth map illustrating the location of the referenced irrigation water well, photographic documentation, and the analytical laboratory report are attached for review. Based on our review of the analytical data, the following parameters were detected within the respective method detection limits: TPG-DRO was detected at 0.0808 mg/l; TPH-GRO was detected at 0.0618 mg/l; Chlorides was detected at 49.2 mg/l; Arsenic was detected at 0.0144mg/l; Barium was detected at 0.0106 mg/l; Cadmium was detected at 0.0130 mg/l; Selenium was detected at 0.0252 mg/l; Sodium was detected at 208 mg/l; Bromodichloromethane was detected at 0.0310 mg/l; Bromoform was detected at 0.00636 mg/l; Chlorodibromomethane was detected at 0.0301 mg/l; Chloroform was detected at 0.0252 mg/l; TDS was detected at 516 mg/l and Methane was detected at 314 ug/l. No other parameters were detected above the respective method detection limits.

Due to the unexpected TPH and VOC concentrations in the water sample, Approach Environmental recommends re-sampling and analysis of the water well.

Should you have any questions and/or comments, please do not hesitate to contact me at (318) 222-2424.

Sincerely,



Mark S. Moore
Louisiana Professional Geoscientist (P.G. #490)
Approach Environmental, L.L.C.

Encl./

Attachments Table of Contents

Site Photographs with Maps

Analytical Data Report



Herman Gamble-6576Z water well



Herman Gamble-6576Z Water hose/Sample Collection Point



Zoomed in Google Earth Aerial Map of the Herman Gamble-6576Z water well



Zoomed out Google Earth Aerial Map of the Herman Gamble-6576Z water well



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

November 29, 2018

Mark Moore
Approach Environmental, LLC
151 Freestate Blvd.
Suite B
Shreveport, LA 71107
TEL: 318 222 2424
FAX:

Order No.: 18110485

RE: Approach Environmental - LDNR Residential Water Wells

Dear Mark Moore:

Element Materials Technology Lafayette received 1 sample(s) on 11/14/2018 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as -dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA180028. ISDH Certification No.: C-LA-01. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

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

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 18110485
Date: 11/29/2018

CLIENT: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential Water Wells

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

The Dissolved Methane (RSK175) analysis was subcontracted to Gulf Coast Analytical Laboratories, Inc. Their report is attached in its entirety.



Element Materials Technology Lafayette
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Analytical Report

(consolidated MDL)

WO#: 18110485

Date Reported: 11/29/2018

CLIENT: Approach Environmental, LLC **Collection Date:** 11/13/2018 10:40:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18110485-001 **Matrix:** WATER
Client Sample ID 6576Z Herman Gamble

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	SW3511	Analyst: CRM
TPH DRO/ORO IN WATER BY SW8015							
TPH (Diesel Range)	0.0808	0.00408	0.133	J	mg/L	1	11/16/2018 1:08:00 AM
TPH (Oil Range)	< 0.123	0.0487	0.123		mg/L	1	11/16/2018 1:08:00 AM
Surr: 4-Terphenyl-d14	84.4		51.4-146		%Rec	1	11/16/2018 1:08:00 AM
TPH-GRO IN WATER BY SW8015					SW8015B		Analyst: CRM
TPH (Gasoline Range)	0.0618	0.0149	0.150	J	mg/L	1	11/14/2018 9:03:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	102		70-130		%Rec	1	11/14/2018 9:03:00 PM
RCRA METALS - SW6010/7470A					SW7470A		Analyst: MRM
MERCURY IN GROUND WATER, TOTAL							
Mercury	< 0.000200	0.0000540	0.000200		mg/L	1	11/16/2018 2:23:31 PM
INORGANIC ANIONS IN WATER BY IC					SW9056A		Analyst: SGP
Chloride	49.2	0.332	5.00		mg/L	20	11/26/2018 11:41:55 AM
RCRA METALS - SW6010/7470A					SW6010B		Analyst: STS
METALS IN WATER BY ICP, TOTALS							
Arsenic	0.0144	0.00895	0.0100		mg/L	1	11/27/2018 8:45:30 PM
Barium	0.0109	0.00103	0.0100		mg/L	1	11/27/2018 8:45:30 PM
Cadmium	0.00130	0.000781	0.00500	J	mg/L	1	11/27/2018 8:45:30 PM
Chromium	< 0.0100	0.000483	0.0100		mg/L	1	11/27/2018 8:45:30 PM
Lead	< 0.0100	0.00488	0.0100		mg/L	1	11/27/2018 8:45:30 PM
Selenium	0.0252	0.00526	0.0200		mg/L	1	11/27/2018 8:45:30 PM
Silver	< 0.00500	0.000340	0.00500		mg/L	1	11/27/2018 8:45:30 PM
Sodium	208	2.32	5.00		mg/L	1	11/27/2018 8:45:30 PM
PAH IN WATER BY EPA 8270C					SW8270C	SW3511	Analyst: CRM
2-Methylnaphthalene	< 0.000516	0.0000194	0.000516		mg/L	1	11/15/2018 5:33:00 PM
Acenaphthene	< 0.00103	0.0000538	0.00103		mg/L	1	11/15/2018 5:33:00 PM
Acenaphthylene	< 0.00103	0.000116	0.00103		mg/L	1	11/15/2018 5:33:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	C	Value is below Minimum Compound Limit.	DF	Dilution Factor
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits



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WO#: 18110485

Date Reported: 11/29/2018

CLIENT: Approach Environmental, LLC **Collection Date:** 11/13/2018 10:40:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18110485-001 **Matrix:** WATER
Client Sample ID 6576Z Herman Gamble

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PAH IN WATER BY EPA 8270C					SW8270C	SW3511	Analyst: CRM
Anthracene	< 0.00103	0.00000615	0.00103		mg/L	1	11/15/2018 5:33:00 PM
Benzo(a)anthracene	< 0.000516	0.0000251	0.000516		mg/L	1	11/15/2018 5:33:00 PM
Benzo(a)pyrene	< 0.000175	0.0000468	0.000175		mg/L	1	11/15/2018 5:33:00 PM
Benzo(b)fluoranthene	< 0.000516	0.0000441	0.000516		mg/L	1	11/15/2018 5:33:00 PM
Benzo(k)fluoranthene	< 0.000516	0.0000633	0.000516		mg/L	1	11/15/2018 5:33:00 PM
Chrysene	< 0.000516	0.0000249	0.000516		mg/L	1	11/15/2018 5:33:00 PM
Dibenz(a,h)anthracene	< 0.00103	0.0000531	0.00103		mg/L	1	11/15/2018 5:33:00 PM
Fluoranthene	< 0.00103	0.00000557	0.00103		mg/L	1	11/15/2018 5:33:00 PM
Fluorene	< 0.000619	0.0000239	0.000619		mg/L	1	11/15/2018 5:33:00 PM
Indeno(1,2,3-cd)pyrene	< 0.000516	0.000148	0.000516		mg/L	1	11/15/2018 5:33:00 PM
Naphthalene	< 0.00103	0.0000265	0.00103		mg/L	1	11/15/2018 5:33:00 PM
Phenanthrene	< 0.00103	0.0000307	0.00103		mg/L	1	11/15/2018 5:33:00 PM
Pyrene	< 0.00103	0.00000120	0.00103		mg/L	1	11/15/2018 5:33:00 PM
Surr: 4-Terphenyl-d14	84.9	0	49.2-161		%Rec	1	11/15/2018 5:33:00 PM

SEMIVOLATILE ORGANICS IN WATER					SW8270C	E625/SW351	Analyst: KSK
1,2,4,5-Tetrachlorobenzene	< 0.00101	0.000505	0.00101		mg/L	1	11/15/2018 3:29:00 PM
1,2,4-Trichlorobenzene	< 0.00505	0.00101	0.00505		mg/L	1	11/15/2018 3:29:00 PM
1,2-Dichlorobenzene	< 0.00505	0.00101	0.00505		mg/L	1	11/15/2018 3:29:00 PM
1,3-Dichlorobenzene	< 0.00505	0.000509	0.00505		mg/L	1	11/15/2018 3:29:00 PM
1,3-Dinitrobenzene	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
1,4-Dichlorobenzene	< 0.00505	0.00101	0.00505		mg/L	1	11/15/2018 3:29:00 PM
2,3,4,6-Tetrachlorophenol	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
2,4,5-Trichlorophenol	< 0.0101	0.000505	0.0101		mg/L	1	11/15/2018 3:29:00 PM
2,4,6-Trichlorophenol	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
2,4-Dichlorophenol	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
2,4-Dimethylphenol	< 0.00505	0.000562	0.00505		mg/L	1	11/15/2018 3:29:00 PM
2,4-Dinitrophenol	< 0.0202	0.00202	0.0202		mg/L	1	11/15/2018 3:29:00 PM
2,4-Dinitrotoluene	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
2,6-Dinitrotoluene	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
2-Chloronaphthalene	< 0.00505	0.0000620	0.00505		mg/L	1	11/15/2018 3:29:00 PM
2-Chlorophenol	< 0.00505	0.0000545	0.00505		mg/L	1	11/15/2018 3:29:00 PM
2-Nitroaniline	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM

Qualifiers: * Value exceeds Maximum Contaminant Level. B Analyte detected in the associated Method Blank
 C Value is below Minimum Compound Limit. DF Dilution Factor
 E Value above quantitation range H Holding times for preparation or analysis exceeded
 J Analyte detected below quantitation limits M Matrix Interference
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
 Website: www.element.com

Analytical Report

(consolidated MDL)

WO#: 18110485

Date Reported: 11/29/2018

CLIENT: Approach Environmental, LLC **Collection Date:** 11/13/2018 10:40:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18110485-001 **Matrix:** WATER
Client Sample ID 6576Z Herman Gamble

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS IN WATER					SW8270C	E625/SW351	Analyst: KSK
3,3'-Dichlorobenzidine	< 0.0101	0.000481	0.0101		mg/L	1	11/15/2018 3:29:00 PM
3-Nitroaniline	< 0.0202	0.000505	0.0202		mg/L	1	11/15/2018 3:29:00 PM
4-Chloroaniline	< 0.00505	0.000240	0.00505		mg/L	1	11/15/2018 3:29:00 PM
4-Nitroaniline	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
4-Nitrophenol	< 0.0202	0.00505	0.0202		mg/L	1	11/15/2018 3:29:00 PM
Aniline	< 0.00505	0.000495	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Biphenyl	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Bis(2-chloroethyl)ether	< 0.00505	0.0000825	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Bis(2-chloroisopropyl)ether	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Bis(2-ethylhexyl)phthalate	< 0.00505	0.000305	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Butyl benzyl phthalate	< 0.00505	0.000107	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Dibenzofuran	< 0.00505	0.0000808	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Diethyl phthalate	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Dimethyl phthalate	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Di-n-octyl phthalate	< 0.0101	0.000183	0.0101		mg/L	1	11/15/2018 3:29:00 PM
Dinoseb	< 0.00505	0.000303	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Hexachlorobenzene	< 0.00101	0.000505	0.00101		mg/L	1	11/15/2018 3:29:00 PM
Hexachlorobutadiene	< 0.00202	0.00101	0.00202		mg/L	1	11/15/2018 3:29:00 PM
Hexachlorocyclopentadiene	< 0.0101	0.000505	0.0101		mg/L	1	11/15/2018 3:29:00 PM
Hexachloroethane	< 0.00505	0.00202	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Isophorone	< 0.00505	0.000181	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Nitrobenzene	< 0.00101	0.000505	0.00101		mg/L	1	11/15/2018 3:29:00 PM
N-Nitrosodi-n-propylamine	< 0.00505	0.000505	0.00505		mg/L	1	11/15/2018 3:29:00 PM
N-Nitrosodiphenylamine	< 0.00505	0.000144	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Pentachlorophenol	< 0.0101	0.00101	0.0101		mg/L	1	11/15/2018 3:29:00 PM
Phenol	< 0.00505	0.0000527	0.00505		mg/L	1	11/15/2018 3:29:00 PM
Surr: 2,4,6-Tribromophenol	75.9		47.2-144		%Rec	1	11/15/2018 3:29:00 PM
Surr: 2-Fluorobiphenyl	103		52.2-116		%Rec	1	11/15/2018 3:29:00 PM
Surr: 2-Fluorophenol	48.7		27.3-80.6		%Rec	1	11/15/2018 3:29:00 PM
Surr: 4-Terphenyl-d14	122		48.1-134		%Rec	1	11/15/2018 3:29:00 PM
Surr: Nitrobenzene-d5	95.2		42.5-144		%Rec	1	11/15/2018 3:29:00 PM
Surr: Phenol-d5	5.26		10-67.1	S	%Rec	1	11/15/2018 3:29:00 PM

NOTES:

S: Surrogate outside of control limits. Re-extraction was not possible due to insufficient sample.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	C	Value is below Minimum Compound Limit.	DF	Dilution Factor
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits



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Analytical Report

(consolidated MDL)

WO#: **18110485**

Date Reported: **11/29/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 11/13/2018 10:40:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18110485-001 **Matrix:** WATER
Client Sample ID 6576Z Herman Gamble

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS IN WATER				SW8260B		Analyst: KSK	
1,1,1,2-Tetrachloroethane	< 0.00500	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
1,1,1-Trichloroethane	< 0.00500	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
1,1,2,2-Tetrachloroethane	< 0.000500	0.000150	0.000500		mg/L	1	11/15/2018 9:45:00 PM
1,1,2-Trichloroethane	< 0.00500	0.000172	0.00500		mg/L	1	11/15/2018 9:45:00 PM
1,1-Dichloroethane	< 0.00500	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
1,1-Dichloroethene	< 0.00500	0.000361	0.00500		mg/L	1	11/15/2018 9:45:00 PM
1,2-Dibromo-3-chloropropane	< 0.00500	0.000210	0.00500		mg/L	1	11/15/2018 9:45:00 PM
1,2-Dichlorobenzene	< 0.0200	0.000500	0.0200		mg/L	1	11/15/2018 9:45:00 PM
1,2-Dichloroethane	< 0.00500	0.000500	0.00500		mg/L	1	11/15/2018 9:45:00 PM
1,2-Dichloroethene, Total	< 0.00600	0.000400	0.00600		mg/L	1	11/15/2018 9:45:00 PM
1,2-Dichloropropane	< 0.00500	0.000148	0.00500		mg/L	1	11/15/2018 9:45:00 PM
1,3-Dichlorobenzene	< 0.0100	0.000500	0.0100		mg/L	1	11/15/2018 9:45:00 PM
1,4-Dichlorobenzene	< 0.0200	0.000500	0.0200		mg/L	1	11/15/2018 9:45:00 PM
2-Butanone	< 0.0100	0.000442	0.0100		mg/L	1	11/15/2018 9:45:00 PM
4-Methyl-2-pentanone	< 0.0100	0.000325	0.0100		mg/L	1	11/15/2018 9:45:00 PM
Acetone	< 0.0100	0.00226	0.0100		mg/L	1	11/15/2018 9:45:00 PM
Benzene	< 0.00500	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Bromodichloromethane	0.0310	0.000136	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Bromoform	0.00636	0.000500	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Bromomethane	< 0.00500	0.000688	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Carbon disulfide	< 0.0100	0.000133	0.0100		mg/L	1	11/15/2018 9:45:00 PM
Carbon tetrachloride	< 0.00500	0.0000773	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Chlorobenzene	< 0.00500	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Chlorodibromomethane	0.0301	0.000170	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Chloroethane	< 0.0100	0.00155	0.0100		mg/L	1	11/15/2018 9:45:00 PM
Chloroform	0.0252	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Chloromethane	< 0.00500	0.00200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
cis-1,2-Dichloroethene	< 0.00300	0.000200	0.00300		mg/L	1	11/15/2018 9:45:00 PM
cis-1,3-Dichloropropene	< 0.00200	0.000500	0.00200		mg/L	1	11/15/2018 9:45:00 PM
Ethylbenzene	< 0.00500	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Isobutyl alcohol	< 0.100	0.00400	0.100		mg/L	1	11/15/2018 9:45:00 PM
Methyl tert-butyl ether	< 0.00500	0.000500	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Methylene chloride	< 0.00500	0.000457	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Styrene	< 0.00500	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	C	Value is below Minimum Compound Limit.	DF	Dilution Factor
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Analytical Report

(consolidated MDL)

WO#: **18110485**

Date Reported: **11/29/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 11/13/2018 10:40:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18110485-001 **Matrix:** WATER
Client Sample ID 6576Z Herman Gamble

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS IN WATER				SW8260B		Analyst: KSK	
Tetrachloroethene	< 0.00500	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Toluene	< 0.00500	0.000200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
trans-1,2-Dichloroethene	< 0.00300	0.000204	0.00300		mg/L	1	11/15/2018 9:45:00 PM
trans-1,3-Dichloropropene	< 0.00200	0.000500	0.00200		mg/L	1	11/15/2018 9:45:00 PM
Trichloroethene	< 0.00500	0.000500	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Trichlorofluoromethane	< 0.00500	0.00200	0.00500		mg/L	1	11/15/2018 9:45:00 PM
Vinyl chloride	< 0.00200	0.00200	0.00200		mg/L	1	11/15/2018 9:45:00 PM
Xylenes, Total	< 0.0150	0.00150	0.0150		mg/L	1	11/15/2018 9:45:00 PM
Surr: 4-Bromofluorobenzene	109		65.1-136		%Rec	1	11/15/2018 9:45:00 PM
Surr: Dibromofluoromethane	103		40.4-143		%Rec	1	11/15/2018 9:45:00 PM
Surr: Toluene-d8	103		58.2-127		%Rec	1	11/15/2018 9:45:00 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	516	11.9	20.0		mg/L	1	11/16/2018 8:32:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
C	Value is below Minimum Compound Limit.	DF	Dilution Factor
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: MB-28291	SampType: MBLK	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74065						
Client ID: PBW	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1852200						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	< 0.00100	0.00100									
1,2,4-Trichlorobenzene	< 0.00500	0.00500									
1,2-Dichlorobenzene	< 0.00500	0.00500									
1,3-Dichlorobenzene	< 0.00500	0.00500									
1,3-Dinitrobenzene	< 0.00500	0.00500									
1,4-Dichlorobenzene	< 0.00500	0.00500									
2,3,4,6-Tetrachlorophenol	< 0.00500	0.00500									
2,4,5-Trichlorophenol	< 0.0100	0.0100									
2,4,6-Trichlorophenol	< 0.00500	0.00500									
2,4-Dichlorophenol	< 0.00500	0.00500									
2,4-Dimethylphenol	< 0.00500	0.00500									
2,4-Dinitrophenol	< 0.0200	0.0200									
2,4-Dinitrotoluene	< 0.00500	0.00500									
2,6-Dinitrotoluene	< 0.00500	0.00500									
2-Chloronaphthalene	< 0.00500	0.00500									
2-Chlorophenol	< 0.00500	0.00500									
2-Nitroaniline	< 0.00500	0.00500									
3,3'-Dichlorobenzidine	< 0.0100	0.0100									
3-Nitroaniline	< 0.0200	0.0200									
4-Chloroaniline	< 0.00500	0.00500									
4-Nitroaniline	< 0.00500	0.00500									
4-Nitrophenol	< 0.0200	0.0200									
Aniline	< 0.00500	0.00500									
Biphenyl	< 0.00500	0.00500									
Bis(2-chloroethyl)ether	< 0.00500	0.00500									
Bis(2-chloroisopropyl)ether	< 0.00500	0.00500									

Qualifiers:	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: MB-28291	SampType: MBLK	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74065
Client ID: PBW	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1852200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-ethylhexyl)phthalate	< 0.00500	0.00500									
Butyl benzyl phthalate	< 0.00500	0.00500									
Dibenzofuran	< 0.00500	0.00500									
Diethyl phthalate	< 0.00500	0.00500									
Dimethyl phthalate	< 0.00500	0.00500									
Di-n-octyl phthalate	< 0.0100	0.0100									
Dinoseb	< 0.00500	0.00500									
Hexachlorobenzene	< 0.00100	0.00100									
Hexachlorobutadiene	< 0.00200	0.00200									
Hexachlorocyclopentadiene	< 0.0100	0.0100									
Hexachloroethane	< 0.00500	0.00500									
Isophorone	< 0.00500	0.00500									
Nitrobenzene	< 0.00100	0.00100									
N-Nitrosodi-n-propylamine	< 0.00500	0.00500									
N-Nitrosodiphenylamine	< 0.00500	0.00500									
Pentachlorophenol	< 0.0100	0.0100									
Phenol	< 0.00500	0.00500									
Surr: 2,4,6-Tribromophenol	0.0232		0.03000		77.3	47.2	144				
Surr: 2-Fluorobiphenyl	0.0194		0.02000		96.8	52.2	116				
Surr: 2-Fluorophenol	0.0169		0.03000		56.3	27.3	80.6				
Surr: 4-Terphenyl-d14	0.0226		0.02000		113	48.1	134				
Surr: Nitrobenzene-d5	0.0188		0.02000		94.0	42.5	144				
Surr: Phenol-d5	0.0111		0.03000		37.1	10	67.1				

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: LCSD-28291	SampType: LCSD	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74065						
Client ID: LCSS02	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1852202						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	0.0469	0.00100	0.05000	0	93.8	51.3	119	0.04481	4.55	40	
1,2,4-Trichlorobenzene	0.0425	0.00500	0.05000	0	85.1	47.4	103	0.04175	1.84	40	
1,2-Dichlorobenzene	0.0427	0.00500	0.05000	0	85.4	32	119	0.04100	4.07	40	
1,3-Dichlorobenzene	0.0399	0.00500	0.05000	0	79.7	33.9	108	0.03860	3.24	40	
1,3-Dinitrobenzene	0.0520	0.00500	0.05000	0	104	56.5	132	0.04970	4.56	40	
1,4-Dichlorobenzene	0.0388	0.00500	0.05000	0	77.6	31.8	107	0.03738	3.78	40	
2,3,4,6-Tetrachlorophenol	0.0591	0.00500	0.05000	0	118	71.4	118	0.05368	9.66	40	S*
2,4,5-Trichlorophenol	0.0512	0.0100	0.05000	0	102	63.4	113	0.05092	0.492	40	
2,4,6-Trichlorophenol	0.0515	0.00500	0.05000	0	103	62.5	109	0.04930	4.44	40	
2,4-Dichlorophenol	0.0479	0.00500	0.05000	0	95.7	65.8	105	0.04628	3.38	40	
2,4-Dimethylphenol	0.0559	0.00500	0.05000	0	112	56.4	106	0.05218	6.80	40	S*
2,4-Dinitrophenol	0.0618	0.0200	0.05000	0	124	10	171	0.05625	9.36	40	
2,4-Dinitrotoluene	0.0503	0.00500	0.05000	0	101	72.6	107	0.04729	6.22	40	
2,6-Dinitrotoluene	0.0548	0.00500	0.05000	0	110	62.5	112	0.05124	6.75	40	
2-Chloronaphthalene	0.0437	0.00500	0.05000	0	87.5	43.2	121	0.04206	3.90	40	
2-Chlorophenol	0.0465	0.00500	0.05000	0	93.1	57.4	104	0.04375	6.20	40	
2-Nitroaniline	0.0542	0.00500	0.05000	0	108	71.4	120	0.05077	6.58	40	
3,3'-Dichlorobenzidine	0.0852	0.0100	0.1000	0	85.2	49.2	113	0.08101	5.07	40	
3-Nitroaniline	0.0416	0.0200	0.05000	0	83.2	37.7	116	0.03988	4.26	40	
4-Chloroaniline	0.0439	0.00500	0.05000	0	87.8	56.4	98.6	0.04238	3.57	40	
4-Nitroaniline	0.0543	0.00500	0.05000	0	109	64	113	0.05032	7.63	40	
4-Nitrophenol	0.0256	0.0200	0.05000	0	51.2	22.5	63.1	0.02366	7.79	40	
Aniline	0.0426	0.00500	0.05000	0	85.1	48.9	102	0.03982	6.69	40	
Biphenyl	0.0475	0.00500	0.05000	0	95.0	41.7	130	0.04557	4.15	40	
Bis(2-chloroethyl)ether	0.0445	0.00500	0.05000	0	89.1	51.9	112	0.04166	6.67	40	
Bis(2-chloroisopropyl)ether	0.0465	0.00500	0.05000	0	93.0	50.1	125	0.04279	8.28	40	

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: LCSD-28291	SampType: LCSD	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74065						
Client ID: LCSS02	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1852202						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-ethylhexyl)phthalate	0.0562	0.00500	0.05000	0	112	46.9	137	0.05214	7.47	40	
Butyl benzyl phthalate	0.0569	0.00500	0.05000	0	114	47.6	134	0.05284	7.44	40	
Dibenzofuran	0.0504	0.00500	0.05000	0	101	59.5	126	0.04852	3.82	40	
Diethyl phthalate	0.0526	0.00500	0.05000	0	105	55.4	121	0.04913	6.90	40	
Dimethyl phthalate	0.0523	0.00500	0.05000	0	105	66	109	0.04947	5.50	40	
Di-n-octyl phthalate	0.0566	0.0100	0.05000	0	113	36.9	145	0.05287	6.86	40	
Dinoseb	0.0522	0.00500	0.05000	0	104	10	180	0.04808	8.13	40	
Hexachlorobenzene	0.0444	0.00100	0.05000	0	88.8	59.5	100	0.04186	5.88	40	
Hexachlorobutadiene	0.0407	0.00200	0.05000	0	81.4	43.1	101	0.04097	0.683	40	
Hexachlorocyclopentadiene	0.0482	0.0100	0.05000	0	96.4	10	151	0.04780	0.792	40	
Hexachloroethane	0.0375	0.00500	0.05000	0	75.0	22.2	110	0.03646	2.81	40	
Isophorone	0.0554	0.00500	0.05000	0	111	63.1	110	0.05181	6.63	40	S*
Nitrobenzene	0.0476	0.00100	0.05000	0	95.1	67	108	0.04528	4.94	40	
N-Nitrosodi-n-propylamine	0.0457	0.00500	0.05000	0	91.4	49.4	130	0.04244	7.36	40	
N-Nitrosodiphenylamine	0.0503	0.00500	0.05000	0	101	67.1	105	0.04787	5.04	40	
Pentachlorophenol	0.0430	0.0100	0.05000	0	86.0	47.1	104	0.04123	4.26	40	
Phenol	0.0219	0.00500	0.05000	0	43.8	25.2	50.1	0.01973	10.4	40	
Surr: 2,4,6-Tribromophenol	0.0257		0.03000		85.7	47.2	144		0	40	
Surr: 2-Fluorobiphenyl	0.0212		0.02000		106	52.2	116		0	40	
Surr: 2-Fluorophenol	0.0204		0.03000		68.2	27.3	80.6		0	40	
Surr: 4-Terphenyl-d14	0.0264		0.02000		132	48.1	134		0	40	
Surr: Nitrobenzene-d5	0.0202		0.02000		101	42.5	144		0	40	
Surr: Phenol-d5	0.0133		0.03000		44.4	10	67.1		0	40	

NOTES:

S* - High recovery(ies) indicate high bias. Data deemed acceptable as the specific target analyte(s) were not observed in the field sample(s).

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



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 Lafayette, LA 70508-3344
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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: LCS-28291	SampType: LCS	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74065						
Client ID: LCSW	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1852203						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	0.0448	0.00100	0.05000	0	89.6	51.3	119				
1,2,4-Trichlorobenzene	0.0417	0.00500	0.05000	0	83.5	47.4	103				
1,2-Dichlorobenzene	0.0410	0.00500	0.05000	0	82.0	32	119				
1,3-Dichlorobenzene	0.0386	0.00500	0.05000	0	77.2	33.9	108				
1,3-Dinitrobenzene	0.0497	0.00500	0.05000	0	99.4	56.5	132				
1,4-Dichlorobenzene	0.0374	0.00500	0.05000	0	74.8	31.8	107				
2,3,4,6-Tetrachlorophenol	0.0537	0.00500	0.05000	0	107	71.4	118				
2,4,5-Trichlorophenol	0.0509	0.0100	0.05000	0	102	63.4	113				
2,4,6-Trichlorophenol	0.0493	0.00500	0.05000	0	98.6	62.5	109				
2,4-Dichlorophenol	0.0463	0.00500	0.05000	0	92.6	65.8	105				
2,4-Dimethylphenol	0.0522	0.00500	0.05000	0	104	56.4	106				
2,4-Dinitrophenol	0.0563	0.0200	0.05000	0	113	10	171				
2,4-Dinitrotoluene	0.0473	0.00500	0.05000	0	94.6	72.6	107				
2,6-Dinitrotoluene	0.0512	0.00500	0.05000	0	102	62.5	112				
2-Chloronaphthalene	0.0421	0.00500	0.05000	0	84.1	43.2	121				
2-Chlorophenol	0.0438	0.00500	0.05000	0	87.5	57.4	104				
2-Nitroaniline	0.0508	0.00500	0.05000	0	102	71.4	120				
3,3'-Dichlorobenzidine	0.0810	0.0100	0.1000	0	81.0	49.2	113				
3-Nitroaniline	0.0399	0.0200	0.05000	0	79.8	37.7	116				
4-Chloroaniline	0.0424	0.00500	0.05000	0	84.8	56.4	98.6				
4-Nitroaniline	0.0503	0.00500	0.05000	0	101	64	113				
4-Nitrophenol	0.0237	0.0200	0.05000	0	47.3	22.5	63.1				
Aniline	0.0398	0.00500	0.05000	0	79.6	48.9	102				
Biphenyl	0.0456	0.00500	0.05000	0	91.1	41.7	130				
Bis(2-chloroethyl)ether	0.0417	0.00500	0.05000	0	83.3	51.9	112				
Bis(2-chloroisopropyl)ether	0.0428	0.00500	0.05000	0	85.6	50.1	125				

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: LCS-28291	SampType: LCS	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74065						
Client ID: LCSW	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1852203						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-ethylhexyl)phthalate	0.0521	0.00500	0.05000	0	104	46.9	137				
Butyl benzyl phthalate	0.0528	0.00500	0.05000	0	106	47.6	134				
Dibenzofuran	0.0485	0.00500	0.05000	0	97.0	59.5	126				
Diethyl phthalate	0.0491	0.00500	0.05000	0	98.3	55.4	121				
Dimethyl phthalate	0.0495	0.00500	0.05000	0	98.9	66	109				
Di-n-octyl phthalate	0.0529	0.0100	0.05000	0	106	36.9	145				
Dinoseb	0.0481	0.00500	0.05000	0	96.2	10	180				
Hexachlorobenzene	0.0419	0.00100	0.05000	0	83.7	59.5	100				
Hexachlorobutadiene	0.0410	0.00200	0.05000	0	81.9	43.1	101				
Hexachlorocyclopentadiene	0.0478	0.0100	0.05000	0	95.6	10	151				
Hexachloroethane	0.0365	0.00500	0.05000	0	72.9	22.2	110				
Isophorone	0.0518	0.00500	0.05000	0	104	63.1	110				
Nitrobenzene	0.0453	0.00100	0.05000	0	90.6	67	108				
N-Nitrosodi-n-propylamine	0.0424	0.00500	0.05000	0	84.9	49.4	130				
N-Nitrosodiphenylamine	0.0479	0.00500	0.05000	0	95.7	67.1	105				
Pentachlorophenol	0.0412	0.0100	0.05000	0	82.5	47.1	104				
Phenol	0.0197	0.00500	0.05000	0	39.5	25.2	50.1				
Surr: 2,4,6-Tribromophenol	0.0260		0.03000		86.7	47.2	144				
Surr: 2-Fluorobiphenyl	0.0212		0.02000		106	52.2	116				
Surr: 2-Fluorophenol	0.0198		0.03000		66.1	27.3	80.6				
Surr: 4-Terphenyl-d14	0.0264		0.02000		132	48.1	134				
Surr: Nitrobenzene-d5	0.0201		0.02000		100	42.5	144				
Surr: Phenol-d5	0.0129		0.03000		42.8	10	67.1				

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: MB-28291	SampType: MBLK	TestCode: 625_ALL	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74168						
Client ID: PBW	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1855950						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	< 0.00400	0.00400									
1,3-Dinitrobenzene	< 0.00400	0.00400									
2,4,5-Trichlorophenol	< 0.00800	0.00800									
2,4,6-Trichlorophenol	< 0.00800	0.00800									
2,4-Dichlorophenol	< 0.00800	0.00800									
2,4-Dimethylphenol	< 0.00800	0.00800									
2,4-Dinitrophenol	< 0.0200	0.0200									
2,4-Dinitrotoluene	< 0.00400	0.00400									
2,6-Dinitrotoluene	< 0.00400	0.00400									
2-Chloronaphthalene	< 0.00400	0.00400									
2-Chlorophenol	< 0.00800	0.00800									
2-Nitroaniline	< 0.00400	0.00400									
3,3'-Dichlorobenzidine	< 0.00400	0.00400									
3-Nitroaniline	< 0.00400	0.00400									
4-Chloroaniline	< 0.00400	0.00400									
4-Nitroaniline	< 0.00400	0.00400									
4-Nitrophenol	< 0.0200	0.0200									
Aniline	< 0.00400	0.00400									
Bis(2-chloroethyl)ether	< 0.00400	0.00400									
Bis(2-chloroisopropyl)ether	< 0.00400	0.00400									
Bis(2-ethylhexyl)phthalate	< 0.00400	0.00400									
Butyl benzyl phthalate	< 0.00400	0.00400									
Dibenzofuran	< 0.00400	0.00400									
Diethyl phthalate	< 0.00400	0.00400									
Dimethyl phthalate	< 0.00400	0.00400									
Di-n-octyl phthalate	< 0.00400	0.00400									

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: MB-28291	SampType: MBLK	TestCode: 625_ALL	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74168						
Client ID: PBW	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1855950						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexachlorobenzene	< 0.00400	0.00400									
Hexachlorobutadiene	< 0.00400	0.00400									
Hexachlorocyclopentadiene	< 0.00400	0.00400									
Hexachloroethane	< 0.00400	0.00400									
Isophorone	< 0.00400	0.00400									
Nitrobenzene	< 0.00400	0.00400									
N-Nitrosodi-n-propylamine	< 0.00400	0.00400									
N-Nitrosodiphenylamine	< 0.00400	0.00400									
Pentachlorophenol	< 0.00400	0.00400									
Phenol	< 0.00800	0.00800									
Surr: 2,4,6-Tribromophenol	0.0232		0.03000		77.3	74	120				
Surr: 2-Fluorobiphenyl	0.0194		0.02000		96.8	63	111				
Surr: 2-Fluorophenol	0.0169		0.03000		56.3	40	71				
Surr: Nitrobenzene-d5	0.0188		0.02000		94.0	67	104				
Surr: Phenol-d5	0.0111		0.03000		37.1	27	58				
Surr: Terphenyl-d14	0.0226		0.02000		113	55	123				

Sample ID: LCSD-28291	SampType: LCSD	TestCode: 625_ALL	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74168						
Client ID: LCSS02	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1855951						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	0.0425	0.00400	0.05000	0	85.1	57	130	0.04175	1.84	30	
1,3-Dinitrobenzene	0.0520	0.00400	0.05000	0	104	79	120	0.04970	4.56	40	
2,4,5-Trichlorophenol	0.0512	0.00800	0.05000	0	102	65	120	0.05092	0.492	40	
2,4,6-Trichlorophenol	0.0515	0.00800	0.05000	0	103	52	129	0.04930	4.44	35	

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: LCSD-28291	SampType: LCSD	TestCode: 625_ALL	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74168						
Client ID: LCSS02	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1855951						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-Dichlorophenol	0.0479	0.00800	0.05000	0	95.7	53	122	0.04628	3.38	30	
2,4-Dimethylphenol	0.0559	0.00800	0.05000	0	112	42	120	0.05218	6.80	35	
2,4-Dinitrophenol	0.0618	0.0200	0.05000	0	124	5	173	0.05625	9.36	79	
2,4-Dinitrotoluene	0.0541	0.00400	0.05000	0	108	48	127	0.05081	6.26	25	
2,6-Dinitrotoluene	0.0548	0.00400	0.05000	0	110	68	137	0.05124	6.75	29	
2-Chloronaphthalene	0.0437	0.00400	0.05000	0	87.5	65	120	0.04206	3.90	15	
2-Chlorophenol	0.0465	0.00800	0.05000	0	93.1	36	120	0.04375	6.20	37	
2-Nitroaniline	0.0542	0.00400	0.05000	0	108	80	120	0.05077	6.58	40	
3,3'-Dichlorobenzidine	0.0829	0.00400	0.1000	0	82.9	8	213	0.07880	5.07	65	
3-Nitroaniline	0.0416	0.00400	0.05000	0	83.2	68	101	0.03988	4.26	40	
4-Chloroaniline	0.0439	0.00400	0.05000	0	87.8	65	107	0.04238	3.57	40	
4-Nitroaniline	0.0525	0.00400	0.05000	0	105	78	120	0.04866	7.63	40	
4-Nitrophenol	0.0256	0.0200	0.05000	0	51.2	13	129	0.02366	7.79	79	
Aniline	0.0426	0.00400	0.05000	0	85.1	39	101	0.03982	6.69	40	
Bis(2-chloroethyl)ether	0.0445	0.00400	0.05000	0	89.1	43	126	0.04166	6.67	65	
Bis(2-chloroisopropyl)ether	0.0455	0.00400	0.05000	0	91.0	63	139	0.04186	8.28	46	
Bis(2-ethylhexyl)phthalate	0.0551	0.00400	0.05000	0	110	29	137	0.05116	7.47	50	
Butyl benzyl phthalate	0.0569	0.00400	0.05000	0	114	5	140	0.05284	7.44	36	
Dibenzofuran	0.0494	0.00400	0.05000	0	98.7	81	120	0.04752	3.82	40	
Diethyl phthalate	0.0519	0.00400	0.05000	0	104	5	120	0.04841	6.91	60	
Dimethyl phthalate	0.0524	0.00400	0.05000	0	105	5	120	0.04955	5.50	110	
Di-n-octyl phthalate	0.0566	0.00400	0.05000	0	113	19	132	0.05287	6.86	42	
Hexachlorobenzene	0.0444	0.00400	0.05000	0	88.8	8	142	0.04186	5.88	33	
Hexachlorobutadiene	0.0407	0.00400	0.05000	0	81.4	38	120	0.04097	0.683	38	
Hexachlorocyclopentadiene	0.0545	0.00400	0.05000	0	109	10	116	0.05409	0.808	40	
Hexachloroethane	0.0375	0.00400	0.05000	0	75.0	55	120	0.03646	2.81	32	

Qualifiers:	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: LCS-D-28291	SampType: LCS-D	TestCode: 625_ALL	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74168						
Client ID: LCS-S02	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1855951						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Isophorone	0.0554	0.00400	0.05000	0	111	47	180	0.05181	6.63	56	
Nitrobenzene	0.0476	0.00400	0.05000	0	95.1	54	158	0.04528	4.94	37	
N-Nitrosodi-n-propylamine	0.0457	0.00400	0.05000	0	91.4	14	198	0.04244	7.36	52	
N-Nitrosodiphenylamine	0.0507	0.00400	0.05000	0	101	71	120	0.04824	5.04	40	
Pentachlorophenol	0.0420	0.00400	0.05000	0	84.0	38	152	0.04014	4.53	52	
Phenol	0.0219	0.00800	0.05000	0	43.8	17	120	0.01973	10.4	39	
Surr: 2,4,6-Tribromophenol	0.0257		0.03000		85.7	74	120		0	40	
Surr: 2-Fluorobiphenyl	0.0212		0.02000		106	63	111		0	40	
Surr: 2-Fluorophenol	0.0204		0.03000		68.2	40	71		0	40	
Surr: Nitrobenzene-d5	0.0202		0.02000		101	67	104		0	40	
Surr: Phenol-d5	0.0133		0.03000		44.4	27	58		0	40	
Surr: Terphenyl-d14	0.0263		0.02000		132	55	123		0	40	S

Sample ID: LCS-28291	SampType: LCS	TestCode: 625_ALL	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74168						
Client ID: LCSW	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1855952						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	0.0417	0.00400	0.05000	0	83.5	57	130				
1,3-Dinitrobenzene	0.0497	0.00400	0.05000	0	99.4	79	120				
2,4,5-Trichlorophenol	0.0509	0.00800	0.05000	0	102	65	120				
2,4,6-Trichlorophenol	0.0493	0.00800	0.05000	0	98.6	52	129				
2,4-Dichlorophenol	0.0463	0.00800	0.05000	0	92.6	53	122				
2,4-Dimethylphenol	0.0522	0.00800	0.05000	0	104	42	120				
2,4-Dinitrophenol	0.0563	0.0200	0.05000	0	113	5	173				
2,4-Dinitrotoluene	0.0508	0.00400	0.05000	0	102	48	127				

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: LCS-28291	SampType: LCS	TestCode: 625_ALL	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74168						
Client ID: LCSW	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1855952						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,6-Dinitrotoluene	0.0512	0.00400	0.05000	0	102	68	137				
2-Chloronaphthalene	0.0421	0.00400	0.05000	0	84.1	65	120				
2-Chlorophenol	0.0438	0.00800	0.05000	0	87.5	36	120				
2-Nitroaniline	0.0508	0.00400	0.05000	0	102	80	120				
3,3'-Dichlorobenzidine	0.0788	0.00400	0.1000	0	78.8	8	213				
3-Nitroaniline	0.0399	0.00400	0.05000	0	79.8	68	101				
4-Chloroaniline	0.0424	0.00400	0.05000	0	84.8	65	107				
4-Nitroaniline	0.0487	0.00400	0.05000	0	97.3	78	120				
4-Nitrophenol	0.0237	0.0200	0.05000	0	47.3	13	129				
Aniline	0.0398	0.00400	0.05000	0	79.6	39	101				
Bis(2-chloroethyl)ether	0.0417	0.00400	0.05000	0	83.3	43	126				
Bis(2-chloroisopropyl)ether	0.0419	0.00400	0.05000	0	83.7	63	139				
Bis(2-ethylhexyl)phthalate	0.0512	0.00400	0.05000	0	102	29	137				
Butyl benzyl phthalate	0.0528	0.00400	0.05000	0	106	5	140				
Dibenzofuran	0.0475	0.00400	0.05000	0	95.0	81	120				
Diethyl phthalate	0.0484	0.00400	0.05000	0	96.8	5	120				
Dimethyl phthalate	0.0496	0.00400	0.05000	0	99.1	5	120				
Di-n-octyl phthalate	0.0529	0.00400	0.05000	0	106	19	132				
Hexachlorobenzene	0.0419	0.00400	0.05000	0	83.7	8	142				
Hexachlorobutadiene	0.0410	0.00400	0.05000	0	81.9	38	120				
Hexachlorocyclopentadiene	0.0541	0.00400	0.05000	0	108	10	116				
Hexachloroethane	0.0365	0.00400	0.05000	0	72.9	55	120				
Isophorone	0.0518	0.00400	0.05000	0	104	47	180				
Nitrobenzene	0.0453	0.00400	0.05000	0	90.6	54	158				
N-Nitrosodi-n-propylamine	0.0424	0.00400	0.05000	0	84.9	14	198				
N-Nitrosodiphenylamine	0.0482	0.00400	0.05000	0	96.5	71	120				

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28291

Sample ID: LCS-28291	SampType: LCS	TestCode: 625_ALL	Units: mg/L	Prep Date: 11/14/2018	RunNo: 74168						
Client ID: LCSW	Batch ID: 28291	TestNo: SW8270C	E625/SW3510	Analysis Date: 11/15/2018	SeqNo: 1855952						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	0.0401	0.00400	0.05000	0	80.3	38	152				
Phenol	0.0197	0.00800	0.05000	0	39.5	17	120				
Surr: 2,4,6-Tribromophenol	0.0260		0.03000		86.7	74	120				
Surr: 2-Fluorobiphenyl	0.0212		0.02000		106	63	111				
Surr: 2-Fluorophenol	0.0198		0.03000		66.1	40	71				
Surr: Nitrobenzene-d5	0.0201		0.02000		100	67	104				
Surr: Phenol-d5	0.0129		0.03000		42.8	27	58				
Surr: Terphenyl-d14	0.0263		0.02000		132	55	123				S

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28308

Sample ID: MB-28308	SampType: MBLK	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74057						
Client ID: PBW	Batch ID: 28308	TestNo: SW8270C	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852067						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	< 0.000518	0.000518									
Acenaphthene	< 0.00104	0.00104									
Acenaphthylene	< 0.00104	0.00104									
Anthracene	< 0.00104	0.00104									
Benzo(a)anthracene	< 0.000518	0.000518									
Benzo(a)pyrene	< 0.000176	0.000176									
Benzo(b)fluoranthene	< 0.000518	0.000518									
Benzo(k)fluoranthene	< 0.000518	0.000518									
Chrysene	< 0.000518	0.000518									
Dibenz(a,h)anthracene	< 0.00104	0.00104									
Fluoranthene	< 0.00104	0.00104									
Fluorene	< 0.000621	0.000621									
Indeno(1,2,3-cd)pyrene	< 0.000518	0.000518									
Naphthalene	< 0.00104	0.00104									
Phenanthrene	< 0.00104	0.00104									
Pyrene	< 0.00104	0.00104									
Surr: 4-Terphenyl-d14	0.00276		0.002372		117	49.2	161				

Sample ID: LCSD-28308	SampType: LCSD	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74057						
Client ID: LCSS02	Batch ID: 28308	TestNo: SW8270C	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852069						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	0.00244	0.000516	0.002357	0	103	60.8	127	0.001982	20.6	40	
Acenaphthene	0.00237	0.00103	0.002362	0	100	72.5	121	0.001877	23.1	40	
Acenaphthylene	0.00220	0.00103	0.002362	0	93.1	65.7	128	0.001806	19.6	40	

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28308

Sample ID: LCS D-28308	SampType: LCS D	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74057
Client ID: LCS S02	Batch ID: 28308	TestNo: SW8270C	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852069

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Anthracene	0.00208	0.00103	0.002362	0	87.9	73.4	120	0.001673	21.5	40	
Benzo(a)anthracene	0.00229	0.000516	0.002362	0	96.8	69	121	0.001853	20.9	40	
Benzo(a)pyrene	0.00240	0.000175	0.002362	0	101	70.6	120	0.001926	21.7	40	
Benzo(b)fluoranthene	0.00226	0.000516	0.002362	0	95.5	65.3	127	0.001980	13.0	40	
Benzo(k)fluoranthene	0.00233	0.000516	0.002362	0	98.9	68.6	125	0.001868	22.2	40	
Chrysene	0.00223	0.000516	0.002362	0	94.3	74.4	120	0.001859	18.0	40	
Dibenz(a,h)anthracene	0.00242	0.00103	0.002362	0	103	66.4	126	0.002001	19.0	40	
Fluoranthene	0.00237	0.00103	0.002362	0	100	70.7	121	0.002131	10.4	40	
Fluorene	0.00243	0.000619	0.002362	0	103	62.5	134	0.001943	22.4	40	
Indeno(1,2,3-cd)pyrene	0.00219	0.000516	0.002362	0	92.9	66.9	120	0.001754	22.3	40	
Naphthalene	0.00220	0.00103	0.002362	0	93.1	63.5	137	0.001859	16.8	40	
Phenanthrene	0.00237	0.00103	0.002362	0	100	74.1	118	0.001922	20.9	40	
Pyrene	0.00238	0.00103	0.002362	0	101	73.2	120	0.001706	32.9	40	
Surr: 4-Terphenyl-d14	0.00214		0.002362		90.7	49.2	161		0	40	

Sample ID: LCS S-28308	SampType: LCS S	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74057
Client ID: LCS W	Batch ID: 28308	TestNo: SW8270C	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852070

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	0.00198	0.000517	0.002362	0	83.9	60.8	127				
Acenaphthene	0.00188	0.00103	0.002366	0	79.3	72.5	121				
Acenaphthylene	0.00181	0.00103	0.002366	0	76.3	65.7	128				
Anthracene	0.00167	0.00103	0.002366	0	70.7	73.4	120				S
Benzo(a)anthracene	0.00185	0.000517	0.002366	0	78.3	69	121				
Benzo(a)pyrene	0.00193	0.000176	0.002366	0	81.4	70.6	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28308

Sample ID: LCS-28308	SampType: LCS	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74057						
Client ID: LCSW	Batch ID: 28308	TestNo: SW8270C	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852070						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	0.00198	0.000517	0.002366	0	83.7	65.3	127				
Benzo(k)fluoranthene	0.00187	0.000517	0.002366	0	78.9	68.6	125				
Chrysene	0.00186	0.000517	0.002366	0	78.6	74.4	120				
Dibenz(a,h)anthracene	0.00200	0.00103	0.002366	0	84.5	66.4	126				
Fluoranthene	0.00213	0.00103	0.002366	0	90.1	70.7	121				
Fluorene	0.00194	0.000620	0.002366	0	82.1	62.5	134				
Indeno(1,2,3-cd)pyrene	0.00175	0.000517	0.002366	0	74.1	66.9	120				
Naphthalene	0.00186	0.00103	0.002366	0	78.5	63.5	137				
Phenanthrene	0.00192	0.00103	0.002366	0	81.2	74.1	118				
Surr: 4-Terphenyl-d14	0.00184		0.002366		77.7	49.2	161				

NOTES:

S: Spike outside of recovery limits. Sample(s) could not be re-extracted due to insufficient volume.

Sample ID: LCS-28308	SampType: LCS	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74057						
Client ID: LCSW	Batch ID: 28308	TestNo: SW8270C	SW3511	Analysis Date: 11/16/2018	SeqNo: 1852353						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pyrene	0.00181	0.00103	0.002366	0	76.6	73.2	120				

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



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 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28309

Sample ID: LCS-D-28309	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74069						
Client ID: LCSW	Batch ID: 28309	TestNo: SW8015B	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852357						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.03	0.134	1.766	0	115	70	130				
Surr: 4-Terphenyl-d14	0.0607		0.05886		103	51.4	146				

Sample ID: LCSD-D-28309	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74069						
Client ID: LCSS02	Batch ID: 28309	TestNo: SW8015B	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852358						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.00	0.134	1.766	0	113	70	130	2.025	1.49	14.1
Surr: 4-Terphenyl-d14	0.0560		0.05887		95.2	51.4	146		0	40

Sample ID: LCSD-M-28309	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74069						
Client ID: LCSS02	Batch ID: 28309	TestNo: SW8015B	SW3511	Analysis Date: 11/16/2018	SeqNo: 1852359						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.98	0.125	1.779	0	111	70	130	1.904	3.73	23.2
Surr: 4-Terphenyl-d14	0.0594		0.05931		100	51.4	146		0	40

Sample ID: LCS-M-28309	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74069						
Client ID: LCSW	Batch ID: 28309	TestNo: SW8015B	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852360						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.90	0.125	1.783	0	107	70	130			
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Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28309

Sample ID: LCS-M-28309	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74069						
Client ID: LCSW	Batch ID: 28309	TestNo: SW8015B	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852360						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.0581		0.05943		97.8	51.4	146				

Sample ID: MB-28309	SampType: MBLK	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 11/15/2018	RunNo: 74069						
Client ID: PBW	Batch ID: 28309	TestNo: SW8015B	SW3511	Analysis Date: 11/15/2018	SeqNo: 1852361						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	0.0645	0.135									J
TPH (Oil Range)	< 0.125	0.125									
Surr: 4-Terphenyl-d14	0.0549		0.05934		92.6	51.4	146				

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
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 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28324

Sample ID: MB-28324	SampType: MBLK	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 11/16/2018	RunNo: 74076
Client ID: PBW	Batch ID: 28324	TestNo: SW7470A		Analysis Date: 11/16/2018	SeqNo: 1852569
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury < 0.000200 0.000200

Sample ID: LCS-28324	SampType: LCS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 11/16/2018	RunNo: 74076
Client ID: LCSW	Batch ID: 28324	TestNo: SW7470A		Analysis Date: 11/16/2018	SeqNo: 1852570
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00968 0.000200 0.01000 0 96.8 80 120

Sample ID: LCSD-28324	SampType: LCSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 11/16/2018	RunNo: 74076
Client ID: LCSS02	Batch ID: 28324	TestNo: SW7470A		Analysis Date: 11/16/2018	SeqNo: 1852571
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00954 0.000200 0.01000 0 95.4 80 120 0.009683 1.47 20

Sample ID: 18110484-001DMS	SampType: MS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 11/16/2018	RunNo: 74076
Client ID: ZZZZZ	Batch ID: 28324	TestNo: SW7470A		Analysis Date: 11/16/2018	SeqNo: 1852575
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00862 0.000200 0.01000 0 86.2 75 125

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits
 M Matrix Interference ND Not Detected at the Reporting Limit RL Reporting Limit
 S Spike Recovery outside accepted recovery limits SDL Sample detection limit U Analyte not detected
 W Sample container temperature is out of limit as specified at testcode



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: **18110485**
29-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28324

Sample ID: 18110484-001DMSD	SampType: MSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 11/16/2018	RunNo: 74076						
Client ID: ZZZZZZ	Batch ID: 28324	TestNo: SW7470A	Analysis Date: 11/16/2018	SeqNo: 1852576							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00870	0.000200	0.01000	0	87.0	75	125	0.008622	0.880	20	

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28394

Sample ID: MB-28394	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 11/27/2018	RunNo: 74271						
Client ID: PBW	Batch ID: 28394	TestNo: SW6010B		Analysis Date: 11/27/2018	SeqNo: 1858598						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.00900	0.0100									J
Barium	< 0.0100	0.0100									
Cadmium	< 0.00500	0.00500									
Chromium	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Selenium	0.0166	0.0200									J
Silver	< 0.00500	0.00500									
Sodium	< 10.0	10.0									

Sample ID: LCS-28394	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 11/27/2018	RunNo: 74271						
Client ID: LCSW	Batch ID: 28394	TestNo: SW6010B		Analysis Date: 11/27/2018	SeqNo: 1858599						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.481	0.0100	0.5000	0	96.3	80	120				
Barium	0.474	0.0100	0.5000	0	94.7	80	120				
Cadmium	0.470	0.00500	0.5000	0	94.0	80	120				
Chromium	0.474	0.0100	0.5000	0	94.8	80	120				
Lead	0.474	0.0100	0.5000	0	94.8	80	120				
Selenium	0.494	0.0200	0.5000	0	98.8	80	120				
Silver	0.0960	0.00500	0.1000	0	96.0	80	120				
Sodium	47.9	10.0	50.00	0	95.7	80	120				

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28394

Sample ID: LCSD-28394	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 11/27/2018	RunNo: 74271						
Client ID: LCSS02	Batch ID: 28394	TestNo: SW6010B		Analysis Date: 11/27/2018	SeqNo: 1858600						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	0.485	0.0100	0.5000	0	97.1	80	120	0.4813	0.828	20	
Barium	0.477	0.0100	0.5000	0	95.5	80	120	0.4737	0.778	20	
Cadmium	0.473	0.00500	0.5000	0	94.6	80	120	0.4702	0.615	20	
Chromium	0.477	0.0100	0.5000	0	95.3	80	120	0.4742	0.505	20	
Lead	0.478	0.0100	0.5000	0	95.5	80	120	0.4739	0.799	20	
Selenium	0.499	0.0200	0.5000	0	99.8	80	120	0.4941	0.987	20	
Silver	0.0963	0.00500	0.1000	0	96.3	80	120	0.09600	0.312	20	
Sodium	50.8	10.0	50.00	0	102	80	120	47.86	6.00	20	

Sample ID: 18110551-014DMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 11/27/2018	RunNo: 74271						
Client ID: ZZZZZ	Batch ID: 28394	TestNo: SW6010B		Analysis Date: 11/27/2018	SeqNo: 1858618						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	0.496	0.0100	0.5000	0.01340	96.5	75	125				
Barium	0.499	0.0100	0.5000	0	99.8	75	125				
Cadmium	0.471	0.00500	0.5000	0.0008000	94.1	75	125				
Chromium	0.497	0.0100	0.5000	0	99.4	75	125				
Lead	0.487	0.0100	0.5000	0	97.3	75	125				
Selenium	0.481	0.0200	0.5000	0	96.3	75	125				
Silver	0.0959	0.00500	0.1000	0	95.9	75	125				
Sodium	53.0	10.0	50.00	0	106	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: 28394

Sample ID: 18110551-014DMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 11/27/2018	RunNo: 74271
Client ID: ZZZZZZ	Batch ID: 28394	TestNo: SW6010B		Analysis Date: 11/27/2018	SeqNo: 1858619

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.511	0.0100	0.5000	0.01340	99.4	75	125	0.4959	2.92	20	
Barium	0.502	0.0100	0.5000	0	100	75	125	0.4990	0.579	20	
Cadmium	0.474	0.00500	0.5000	0.0008000	94.6	75	125	0.4711	0.571	20	
Chromium	0.500	0.0100	0.5000	0	100	75	125	0.4969	0.642	20	
Lead	0.489	0.0100	0.5000	0	97.8	75	125	0.4867	0.471	20	
Selenium	0.482	0.0200	0.5000	0	96.4	75	125	0.4813	0.166	20	
Silver	0.0966	0.00500	0.1000	0	96.6	75	125	0.09590	0.727	20	
Sodium	52.9	10.0	50.00	0	106	75	125	52.98	0.170	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
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QC SUMMARY REPORT

WO#: **18110485**
29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74020

Sample ID: LCS GAS	SampType: LCS	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 74020
Client ID: LCSW	Batch ID: R74020	TestNo: SW8015B	Analysis Date: 11/14/2018	SeqNo: 1851185	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

TPH (Gasoline Range)	13.3	0.150	12.50	0	106	80	130				
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Sample ID: LCSD GAS	SampType: LCSD	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 74020
Client ID: LCSS02	Batch ID: R74020	TestNo: SW8015B	Analysis Date: 11/14/2018	SeqNo: 1851186	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

TPH (Gasoline Range)	12.4	0.150	12.50	0	99.5	80	130	13.31	6.75	20	
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Sample ID: MBLK	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 74020
Client ID: PBW	Batch ID: R74020	TestNo: SW8015B	Analysis Date: 11/14/2018	SeqNo: 1851187	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

TPH (Gasoline Range)	0.0893	0.150									J
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0500		0.05000		100	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: **18110485**
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74058

Sample ID: MB-R74058	SampType: MBLK	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 74058						
Client ID: PBW	Batch ID: R74058	TestNo: SM2540C		Analysis Date: 11/16/2018	SeqNo: 1853451						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 20.0 20.0

Sample ID: LCS-R74058	SampType: LCS	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 74058						
Client ID: LCSW	Batch ID: R74058	TestNo: SM2540C		Analysis Date: 11/16/2018	SeqNo: 1853452						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,010 20.0 1,000 0 101 85 115

Sample ID: LCSD-R74058	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 74058						
Client ID: LCSS02	Batch ID: R74058	TestNo: SM2540C		Analysis Date: 11/16/2018	SeqNo: 1853453						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,010 20.0 1,000 0 101 85 115 1,008 0.0992 10

Sample ID: 18110410-001CDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 74058						
Client ID: ZZZZZ	Batch ID: R74058	TestNo: SM2540C		Analysis Date: 11/16/2018	SeqNo: 1853458						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,360 100 1,360 0 10

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74058

Sample ID: 18110410-001CDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 74058						
Client ID: ZZZZZZ	Batch ID: R74058	TestNo: SM2540C		Analysis Date: 11/16/2018	SeqNo: 1853458						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 18110485-001EDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 74058						
Client ID: 6576Z Herman Gam	Batch ID: R74058	TestNo: SM2540C		Analysis Date: 11/16/2018	SeqNo: 1853460						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)	523	20.0						516.0	1.35	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74059

Sample ID: MB	SampType: MBLK	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 74059						
Client ID: PBW	Batch ID: R74059	TestNo: SW8260B		Analysis Date: 11/15/2018	SeqNo: 1852071						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	< 0.00500	0.00500									
1,1,1-Trichloroethane	< 0.00500	0.00500									
1,1,2,2-Tetrachloroethane	< 0.000500	0.000500									
1,1,2-Trichloroethane	< 0.00500	0.00500									
1,1-Dichloroethane	< 0.00500	0.00500									
1,1-Dichloroethene	< 0.00500	0.00500									
1,2-Dibromo-3-chloropropane	< 0.00500	0.00500									
1,2-Dichlorobenzene	< 0.0200	0.0200									
1,2-Dichloroethane	< 0.00500	0.00500									
1,2-Dichloroethene, Total	< 0.00600	0.00600									
1,2-Dichloropropane	< 0.00500	0.00500									
1,3-Dichlorobenzene	< 0.0100	0.0100									
1,4-Dichlorobenzene	< 0.0200	0.0200									
2-Butanone	< 0.0100	0.0100									
4-Methyl-2-pentanone	< 0.0100	0.0100									
Acetone	< 0.0100	0.0100									
Benzene	< 0.00500	0.00500									
Bromodichloromethane	< 0.00500	0.00500									
Bromoform	< 0.00500	0.00500									
Bromomethane	< 0.00500	0.00500									
Carbon disulfide	< 0.0100	0.0100									
Carbon tetrachloride	< 0.00500	0.00500									
Chlorobenzene	< 0.00500	0.00500									
Chlorodibromomethane	< 0.00500	0.00500									
Chloroethane	< 0.0100	0.0100									
Chloroform	< 0.00500	0.00500									

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74059

Sample ID: MB	SampType: MBLK	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 74059						
Client ID: PBW	Batch ID: R74059	TestNo: SW8260B		Analysis Date: 11/15/2018	SeqNo: 1852071						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloromethane	< 0.00500	0.00500									
cis-1,2-Dichloroethene	< 0.00300	0.00300									
cis-1,3-Dichloropropene	< 0.00200	0.00200									
Ethylbenzene	< 0.00500	0.00500									
Isobutyl alcohol	< 0.100	0.100									
Methyl tert-butyl ether	< 0.00500	0.00500									
Methylene chloride	< 0.00500	0.00500									
Styrene	< 0.00500	0.00500									
Tetrachloroethene	< 0.00500	0.00500									
Toluene	< 0.00500	0.00500									
trans-1,2-Dichloroethene	< 0.00300	0.00300									
trans-1,3-Dichloropropene	< 0.00200	0.00200									
Trichloroethene	< 0.00500	0.00500									
Trichlorofluoromethane	< 0.00500	0.00500									
Vinyl chloride	< 0.00200	0.00200									
Xylenes, Total	< 0.0150	0.0150									
Surr: 4-Bromofluorobenzene	0.0321		0.03000		107	65.1	136				
Surr: Dibromofluoromethane	0.0304		0.03000		101	40.4	143				
Surr: Toluene-d8	0.0304		0.03000		101	58.2	127				

Sample ID: LCSD 17221A-8	SampType: LCSD	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 74059						
Client ID: LCSS02	Batch ID: R74059	TestNo: SW8260B		Analysis Date: 11/15/2018	SeqNo: 1852075						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1,1,2-Tetrachloroethane	0.0513	0.00500	0.05000	0	103	73.4	120	0.05105	0.566	20	
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Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74059

Sample ID: LCSD 17221A-8	SampType: LCSD	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 74059						
Client ID: LCSS02	Batch ID: R74059	TestNo: SW8260B	Analysis Date: 11/15/2018	SeqNo: 1852075							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	0.0477	0.00500	0.05000	0	95.3	64.5	127	0.04818	1.06	20	
1,1,2,2-Tetrachloroethane	0.0575	0.000500	0.05000	0	115	63.6	120	0.05592	2.72	20	
1,1,2-Trichloroethane	0.0522	0.00500	0.05000	0	104	74.9	120	0.05194	0.442	20	
1,1-Dichloroethane	0.0476	0.00500	0.05000	0	95.3	67.9	123	0.04828	1.36	20	
1,1-Dichloroethene	0.0460	0.00500	0.05000	0	92.1	60.3	135	0.04832	4.81	20	
1,2-Dibromo-3-chloropropane	0.0584	0.00500	0.05000	0	117	56.6	132	0.05975	2.25	20	
1,2-Dichlorobenzene	0.0521	0.0200	0.05000	0	104	76.4	120	0.05156	1.06	20	
1,2-Dichloroethane	0.0500	0.00500	0.05000	0	100	67.5	124	0.05035	0.658	20	
1,2-Dichloroethene, Total	0.0999	0.00600	0.1000	0	99.9	72.5	122	0.1020	2.10	20	
1,2-Dichloropropane	0.0536	0.00500	0.05000	0	107	77.2	120	0.05248	2.17	20	
1,3-Dichlorobenzene	0.0514	0.0100	0.05000	0	103	75.1	120	0.05062	1.57	20	
1,4-Dichlorobenzene	0.0516	0.0200	0.05000	0	103	76.1	120	0.05030	2.49	20	
2-Butanone	0.0492	0.0100	0.05000	0	98.4	61	127	0.05156	4.64	20	
4-Methyl-2-pentanone	0.0486	0.0100	0.05000	0	97.3	54.1	129	0.05207	6.79	20	
Acetone	0.0921	0.0100	0.1000	0	92.1	52.1	135	0.09263	0.530	20	
Benzene	0.0484	0.00500	0.05000	0	96.8	67.8	125	0.04887	0.987	20	
Bromodichloromethane	0.0523	0.00500	0.05000	0	105	72	120	0.05112	2.32	20	
Bromoform	0.0547	0.00500	0.05000	0	109	70.4	121	0.05520	0.892	20	
Bromomethane	0.0459	0.00500	0.05000	0	91.8	41.6	157	0.04446	3.19	20	
Carbon disulfide	0.0433	0.0100	0.05000	0	86.7	52.2	135	0.04588	5.69	20	
Carbon tetrachloride	0.0438	0.00500	0.05000	0	87.7	65.6	125	0.04414	0.705	20	
Chlorobenzene	0.0512	0.00500	0.05000	0	103	74.5	120	0.05106	0.371	20	
Chlorodibromomethane	0.0527	0.00500	0.05000	0	105	75	120	0.05330	1.17	20	
Chloroethane	0.0390	0.0100	0.05000	0	78.0	49.5	146	0.03972	1.83	20	
Chloroform	0.0489	0.00500	0.05000	0	97.7	71	120	0.04911	0.510	20	
Chloromethane	0.0382	0.00500	0.05000	0	76.5	45.8	145	0.04053	5.81	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74059

Sample ID: LCS D 17221A-8	SampType: LCS D	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 74059						
Client ID: LCS S02	Batch ID: R74059	TestNo: SW8260B	Analysis Date: 11/15/2018	SeqNo: 1852075							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,2-Dichloroethene	0.0515	0.00300	0.05000	0	103	73.8	124	0.05168	0.329	20	
cis-1,3-Dichloropropene	0.0575	0.00200	0.05000	0	115	80	120	0.05659	1.54	20	
Ethylbenzene	0.0530	0.00500	0.05000	0	106	76.9	118	0.05325	0.471	20	
Isobutyl alcohol	0.494	0.100	0.5000	0	98.8	70	130	0.5609	12.6	20	
Methyl tert-butyl ether	0.0488	0.00500	0.05000	0	97.7	62.6	134	0.05066	3.66	20	
Methylene chloride	0.0486	0.00500	0.05000	0	97.2	65.8	125	0.04668	4.03	20	
Styrene	0.0505	0.00500	0.05000	0	101	79	120	0.04969	1.58	20	
Tetrachloroethene	0.0781	0.00500	0.05000	0	156	68.6	152	0.08156	4.31	20	S*
Toluene	0.0499	0.00500	0.05000	0	99.7	73.3	120	0.04891	1.92	20	
trans-1,2-Dichloroethene	0.0484	0.00300	0.05000	0	96.7	67.7	124	0.05038	4.07	20	
trans-1,3-Dichloropropene	0.0574	0.00200	0.05000	0	115	79.6	121	0.05722	0.262	20	
Trichloroethene	0.0489	0.00500	0.05000	0	97.7	74.5	124	0.04991	2.13	20	
Trichlorofluoromethane	0.0437	0.00500	0.05000	0	87.5	45.2	142	0.04582	4.64	20	
Vinyl chloride	0.0441	0.00200	0.05000	0	88.1	37.4	174	0.04566	3.57	20	
Xylenes, Total	0.159	0.0150	0.1500	0	106	80	120	0.1578	0.632	20	
Surr: 4-Bromofluorobenzene	0.0363		0.03000		121	65.1	136		0	20	
Surr: Dibromofluoromethane	0.0290		0.03000		96.7	40.4	143		0	20	
Surr: Toluene-d8	0.0313		0.03000		104	58.2	127		0	20	

NOTES:

S* - High recovery(ies) indicate high bias. Data deemed acceptable as the specific target analyte(s) were not observed in the field sample(s).

Sample ID: LCS 17221A-82	SampType: LCS	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 74059						
Client ID: LCS W	Batch ID: R74059	TestNo: SW8260B	Analysis Date: 11/15/2018	SeqNo: 1852076							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	0.0510	0.00500	0.05000	0	102	73.4	120				

Qualifiers:	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74059

Sample ID: LCS 17221A-82	SampType: LCS	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 74059						
Client ID: LCSW	Batch ID: R74059	TestNo: SW8260B	Analysis Date: 11/15/2018	SeqNo: 1852076							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	0.0482	0.00500	0.05000	0	96.4	64.5	127				
1,1,2,2-Tetrachloroethane	0.0559	0.000500	0.05000	0	112	63.6	120				
1,1,2-Trichloroethane	0.0519	0.00500	0.05000	0	104	74.9	120				
1,1-Dichloroethane	0.0483	0.00500	0.05000	0	96.6	67.9	123				
1,1-Dichloroethene	0.0483	0.00500	0.05000	0	96.6	60.3	135				
1,2-Dibromo-3-chloropropane	0.0598	0.00500	0.05000	0	120	56.6	132				
1,2-Dichlorobenzene	0.0516	0.0200	0.05000	0	103	76.4	120				
1,2-Dichloroethane	0.0504	0.00500	0.05000	0	101	67.5	124				
1,2-Dichloroethene, Total	0.102	0.00600	0.1000	0	102	72.5	122				
1,2-Dichloropropane	0.0525	0.00500	0.05000	0	105	77.2	120				
1,3-Dichlorobenzene	0.0506	0.0100	0.05000	0	101	75.1	120				
1,4-Dichlorobenzene	0.0503	0.0200	0.05000	0	101	76.1	120				
2-Butanone	0.0516	0.0100	0.05000	0	103	61	127				
4-Methyl-2-pentanone	0.0521	0.0100	0.05000	0	104	54.1	129				
Acetone	0.0926	0.0100	0.1000	0	92.6	52.1	135				
Benzene	0.0489	0.00500	0.05000	0	97.7	67.8	125				
Bromodichloromethane	0.0511	0.00500	0.05000	0	102	72	120				
Bromoform	0.0552	0.00500	0.05000	0	110	70.4	121				
Bromomethane	0.0445	0.00500	0.05000	0	88.9	41.6	157				
Carbon disulfide	0.0459	0.0100	0.05000	0	91.8	52.2	135				
Carbon tetrachloride	0.0441	0.00500	0.05000	0	88.3	65.6	125				
Chlorobenzene	0.0511	0.00500	0.05000	0	102	74.5	120				
Chlorodibromomethane	0.0533	0.00500	0.05000	0	107	75	120				
Chloroethane	0.0397	0.0100	0.05000	0	79.4	49.5	146				
Chloroform	0.0491	0.00500	0.05000	0	98.2	71	120				
Chloromethane	0.0405	0.00500	0.05000	0	81.1	45.8	145				

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74059

Sample ID: LCS 17221A-82	SampType: LCS	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 74059						
Client ID: LCSW	Batch ID: R74059	TestNo: SW8260B	Analysis Date: 11/15/2018	SeqNo: 1852076							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,2-Dichloroethene	0.0517	0.00300	0.05000	0	103	73.8	124				
cis-1,3-Dichloropropene	0.0566	0.00200	0.05000	0	113	80	120				
Ethylbenzene	0.0532	0.00500	0.05000	0	106	76.9	118				
Isobutyl alcohol	0.561	0.100	0.5000	0	112	70	130				
Methyl tert-butyl ether	0.0507	0.00500	0.05000	0	101	62.6	134				
Methylene chloride	0.0467	0.00500	0.05000	0	93.4	65.8	125				
Styrene	0.0497	0.00500	0.05000	0	99.4	79	120				
Tetrachloroethene	0.0816	0.00500	0.05000	0	163	68.6	152				S*
Toluene	0.0489	0.00500	0.05000	0	97.8	73.3	120				
trans-1,2-Dichloroethene	0.0504	0.00300	0.05000	0	101	67.7	124				
trans-1,3-Dichloropropene	0.0572	0.00200	0.05000	0	114	79.6	121				
Trichloroethene	0.0499	0.00500	0.05000	0	99.8	74.5	124				
Trichlorofluoromethane	0.0458	0.00500	0.05000	0	91.6	45.2	142				
Vinyl chloride	0.0457	0.00200	0.05000	0	91.3	37.4	174				
Xylenes, Total	0.158	0.0150	0.1500	0	105	80	120				
Surr: 4-Bromofluorobenzene	0.0373		0.03000		124	65.1	136				
Surr: Dibromofluoromethane	0.0289		0.03000		96.3	40.4	143				
Surr: Toluene-d8	0.0309		0.03000		103	58.2	127				

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC
Project: Approach Environmental - LDNR Residential

BatchID: R74205

Sample ID: MBLK	SampType: MBLK	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 74205
Client ID: PBW	Batch ID: R74205	TestNo: SW9056A		Analysis Date: 11/26/2018	SeqNo: 1857113
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride < 0.250 0.250

Sample ID: LCS	SampType: LCS	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 74205
Client ID: LCSW	Batch ID: R74205	TestNo: SW9056A		Analysis Date: 11/26/2018	SeqNo: 1857114
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 10.0 0.250 10.00 0 100 80 120

Sample ID: LCSD	SampType: LCSD	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 74205
Client ID: LCSS02	Batch ID: R74205	TestNo: SW9056A		Analysis Date: 11/26/2018	SeqNo: 1857115
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 10.1 0.250 10.00 0 101 80 120 10.05 0.178 15

Sample ID: 18110542-002BMS	SampType: MS	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 74205
Client ID: ZZZZZ	Batch ID: R74205	TestNo: SW9056A		Analysis Date: 11/26/2018	SeqNo: 1857120
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 2,940 50.0 1,000 1,942 99.6 80 120

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits
 M Matrix Interference ND Not Detected at the Reporting Limit RL Reporting Limit
 S Spike Recovery outside accepted recovery limits SDL Sample detection limit U Analyte not detected
 W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: **18110485**
29-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R74205

Sample ID: 18110542-002BMSD	SampType: MSD	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 74205						
Client ID: ZZZZZZ	Batch ID: R74205	TestNo: SW9056A		Analysis Date: 11/26/2018	SeqNo: 1857121						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2,950	50.0	1,000	1,942	101	80	120	2,938	0.377	15	

Qualifiers:	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode				



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Sample Log-In Check List

Client Name: **APPROACH_ENVIRON** Work Order Number: **18110485** RcptNo: **1**

Logged by:	Tammy Thibodeaux	11/14/2018 9:55:00 AM	<i>Tammy Thibodeaux</i>
Completed By:	Tammy Thibodeaux	11/14/2018 12:42:19 PM	<i>Tammy Thibodeaux</i>
Reviewed By:	Caitlin Duplantis	11/15/2018 1:05:22 PM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Added trip blank information to COC. It is also associated with the 6729Z Blake Gamble sample logged in under workorder 18110484. It's results will be reported in workorder 18110484.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Not Present			

ANALYTICAL RESULTS

PERFORMED BY

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

Report Date 11/21/2018

GCAL Report 218111557



Project 18110485

<i>Deliver To</i>	<i>Additional Recipients</i>
Annie Reedy	Caitlin Duplantis, Element Materials Technology
Element Materials Technology	Cristina Thibeaux, Element Materials Technology
2417 W Pinhook Rd	Rhonda David, Element Materials Technology
Lafayette, LA 70508	Buffy Hudson, Element Materials Technology
800-737-2378	



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

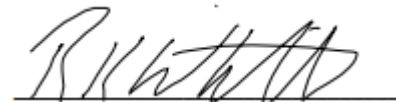
J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (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 - % difference 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.



Authorized Signature
GCAL Report 218111557

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: Element Materials Technology **Report:** 218111557

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.

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

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21811155701	6576Z Herman Gamble	Water	11/13/2018 10:40	11/15/2018 10:03

Sample Results

6576Z Herman Gamble	Collect Date	11/13/2018 10:40	GCAL ID	21811155701
	Receive Date	11/15/2018 10:03	Matrix	Water

EPA RSK-175

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	20	11/21/2018 14:43	JAR	648589

CAS#	Parameter	Result	LOQ	Units
74-82-8	Methane	314	40.0	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
115-07-1	Propene	40.50	Diluted Out	ug/L	0*	40 - 143

GC Volatiles QC Summary

Analytical Batch 648589		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB648589 1871586 MB NA 11/21/2018 11:15 Water	LCS648589 1871587 LCS NA 11/21/2018 11:21 Water			
EPA RSK-175		Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R
Methane Surrogate	74-82-8	ND	2.00	17.5	15.1	86	39 - 120
Propene	115-07-1	25.6	63	40.5	33.4	82	40 - 143



CHAIN OF CUSTODY RECORD

Omega COCID 7792

PAGE: 1

OF: 1

ADDRESS

Element Materials Technology
Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 233-0483
FAX: (337) 233-6540
Website: www.element.com

SUB CONTRACTOR: GCAL	COMPANY: Gulf Coast	SPECIAL INSTRUCTIONS / COMMENTS:		
ADDRESS: 7979 GSRI Avenue		methane by RSK175		
CITY, STATE, ZIP: Baton Rouge, LA 70820		EUA 01972PO		
PHONE: (225) 769-4900	FAX: (225) 767-5717			EMAIL:
ACCOUNT #:				

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	18110485-001G	6576Z Herman Ga	VOAU	Water	11/13/2018 10:40:00 AM	2	
	METHANE_SUB (RSK-175)						

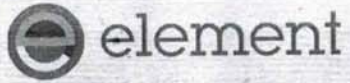
Client ID: 4462 - Element Materials Technology

SDG: 218111557

PM: JLM



Relinquished By: <i>[Signature]</i>	Date: 11/14/2018	Time: 1500	Received By: <i>[Signature]</i>	Date: 11-14-18	Time: 1500	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE FOR LAB USE ONLY Temp of samples: <u>5.7°C</u> Attempt to Cool? _____ Comments: <u>SICM</u>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By: <i>[Signature]</i>	Date: 11-15-18	Time: 1003	Received By: <i>[Signature]</i>	Date: 11-15-18	Time: 1003	
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/> Note: RUSH requests will incur surcharges!						



CHAIN OF CUSTODY RECORD

Omega COCID 7792

PAGE: 1

OF: 1

ADDRESS

Element Materials Technology
 Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 233-0483
 FAX: (337) 233-6540
 Website: www.element.com

SUB CONTRACTOR: GCAL	COMPANY: Gulf Coast	SPECIAL INSTRUCTIONS / COMMENTS methane by RSK175
ADDRESS: 7979 GSRI Avenue		
CITY, STATE, ZIP: Baton Rouge, LA 70820		
PHONE: (225) 769-4900	FAX: (225) 767-5717	
ACCOUNT #:		

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description
1	18110485-001G METHANE_SUB (RSK-175)	6576Z Herman Ga	VOAU	Water	11/13/2018 10:40:00 AM	2	

Sample ID: 6576Z Herman Gamble

Client ID: 4462 - Element Materials Technology
 SDG: 218111557
 PM: JLM



Relinquished By: <i>[Signature]</i>	Date: 11/14/2018	Time:	Received By:	Date:	Time:	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARD COPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
TAT: Standard <input type="checkbox"/> RUSH Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						FOR LAB USE ONLY Temp of samples: _____ °C Attempt to Cool? _____ Comments: _____
Note: RUSH requests will incur surcharges!						



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 218111557			CHECKLIST	YES	NO
Client PM JLM 4462 - Element Materials Technology	Transport Method CUST		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Profile Number 271810	Received By Reese, Sean M		Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line Item(s) 1 - Water	Receive Date(s) 11/15/18		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			Samples collected in containers provided by GCAL?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
COOLERS			DISCREPANCIES	LAB PRESERVATIONS	
Airbill	Thermometer ID: E29	Temp °C 5.7	None	None	
NOTES					



element™

Chain of Custody

Laboratory Number: 18110485

Company Name: Contact Name: Address: City, State Zip: Phone Number: Fax Number: E-mail Address:	Client Information: Approach Env Mark Moore 1000 Grinnett Dr. Shreveport, La 71107 318 464 9191 drake.c@approachenv.com	Billing Information: Same	PO Number: Quote Number: Required QC Level: Bill Monthly: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Project Name/Number: LDNR Residential wells Sampler's Signature: Shipping Method: UPS / FedEx / NOW DHL / Element / <u>Hand</u> Mail	Page 1 of 1 Matrix Code DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
---	--	-------------------------------------	--	---	---

Which Regulations Apply:		Turn Time		(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container		Pres.	Requested Tests										Comments					
<input type="checkbox"/> RCRA	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Standard	<input type="checkbox"/> RUSH		Quantity	Type P=Plastic, G=Glass, V=Vial		HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	VOC 8260	Semivoc 8276	PCMA Metals	TDS	PH-D, G, O	Dissolved Metals	Sodium	Chlorides	Hold						
<input type="checkbox"/> POTW		<input type="checkbox"/> 1 Day	<input checked="" type="checkbox"/> 2 Day		Date	Time	Grab / Composite	Matrix															
<input type="checkbox"/> NPDES	<input type="checkbox"/> Distribution	<input type="checkbox"/> Other			6576Z	Herman Gamble	11/13/18	1040	G	✓	13	P/G	Heb Hard	X	X	X	X	X	X	X	X	X	48-hr Rush on Voc's Method defect on Limit Required
<input type="checkbox"/> USDA/FDA	<input type="checkbox"/> Special				TRIP Blank	11/13/18	-	-	Ag	3	✓	NCL	X										
<input type="checkbox"/> RECAP/RISC	<input type="checkbox"/> State																						

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1		11/13/18 1515		11-13-18 3:15 pm	
2		11/14/18 0800		11-14-18 0800	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 1.7
3		11/14/18 0955		11-14-18 09:55	

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions. (IB)

9301 Innovation Drive, Suite 115 Daleville, IN 47334-0569 USA P 765-378-4103 F 765-378-4109

629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731

2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777

909 Executive Dr Warsaw, IN 46680-2368 USA P 574-267-3305 F 574-269-6569

3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707 F 574-273-5699

2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540