



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

November 20, 2018

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

Re: LDNR-Residential Water Well Sampling Project
Leroy Smith Water Well- Serial Number: 5124Z
Section 33, Township 13 N, Range 15 W
GPS via hand held (Water Well): 32.07738, -93.90556

Dear Mr. Emmert:

Approach Environmental, LLC (Approach Environmental) was retained by Elm Springs, Inc. (Elm Springs) to conduct a Residential Water Well Sampling Project at the referenced location. On October 19, 2018, Approach Environmental split groundwater samples with ICON Environmental Services, Inc. (ICON) and Hydro-Environmental Technology, Inc. (HET) from the referenced water well to evaluate specific groundwater quality requested by the Louisiana Department of Natural Resources (LDNR). ICON was the lead consultant onsite and was responsible for landowner notifications and scheduling as well as water well purging and sampling procedures.

The residential 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 Leroy Smith (LDNR serial number 5124Z) water well has a recorded total depth of 220' below ground surface, is completed in the Wilcox formation, and has a recorded depth to water of 60' below ground the registration form. 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 was located in a small pump house, approximately 35' North of the residence. The well was equipped with a valve, but the valve had a water hose attached to it that was not easily removeable. The sample was collected from a faucet on the house (approximately 50'

southeast of the pump shed). The well was purged of approximately 30 gallons of water since the owner stated the well water was used when they were “in town”. 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 residential 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: TPH-GRO was detected at 0.0499 mg/l; Chlorides was detected at 119 mg/l; Barium was detected at 0.162 mg/l; Cadmium was detected at 0.000800 mg/l; Selenium was detected at 0.0125 mg/l; Sodium was detected at 176 mg/l; Bis(2-ethylhexyl) phthalate was detected at 0.00267 mg/l; and TDS was detected at 583 mg/l. No other parameters were detected above the respective method detection limits.

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



Leroy Smith-5124Z water well



Faucet from which well was purged and sample collected



Zoomed in Google Earth Aerial Map of the Leroy Smith-5124Z water well



Zoomed out Google Earth Aerial Map of the Leroy Smith-5124Z 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

October 31, 2018

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

Order No.: 18100821

RE: Approach Environmental - LDNR Residential Water Wells

Dear Mark Moore:

Element Materials Technology Lafayette received 2 sample(s) on 10/20/2018 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



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

Case Narrative

WO#: 18100821
Date: 10/31/2018

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.



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Analytical Report

(consolidated MDL)

WO#: **18100821**

Date Reported: **10/31/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/19/2018 10:25:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100821-001 **Matrix:** AQUEOUS
Client Sample ID 5124 Z Smith Leroy

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)	< 0.134	0.00408	0.134		mg/L	1	10/20/2018 6:46:00 PM
TPH (Oil Range)	< 0.123	0.0487	0.123		mg/L	1	10/20/2018 6:46:00 PM
Surr: 4-Terphenyl-d14	107		51.4-146		%Rec	1	10/20/2018 6:46:00 PM
TPH-GRO IN WATER BY SW8015					SW8015B		Analyst: CRM
TPH (Gasoline Range)	0.0499	0.0149	0.150	J	mg/L	1	10/21/2018 5:36:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	102		70-130		%Rec	1	10/21/2018 5:36:00 PM
RCRA METALS - SW6010/7470A					SW7470A	SW7470A	Analyst: MRM
MERCURY IN GROUND WATER, TOTAL							
Mercury	< 0.000200	0.0000540	0.000200		mg/L	1	10/22/2018 12:37:52 PM
INORGANIC ANIONS IN WATER BY IC					SW9056A		Analyst: SGP
Chloride	119	0.332	5.00		mg/L	20	10/25/2018 10:01:01 AM
RCRA METALS - SW6010/7470A					SW6010B		Analyst: STS
METALS IN WATER BY ICP, TOTALS							
Arsenic	< 0.0100	0.00895	0.0100		mg/L	1	10/29/2018 9:38:48 PM
Barium	0.162	0.00103	0.0100		mg/L	1	10/23/2018 3:24:44 PM
Cadmium	0.00120	0.000781	0.00500	J	mg/L	1	10/23/2018 3:24:44 PM
Chromium	< 0.0100	0.000483	0.0100		mg/L	1	10/23/2018 3:24:44 PM
Lead	< 0.0100	0.00488	0.0100		mg/L	1	10/23/2018 3:24:44 PM
Selenium	0.0125	0.00526	0.0200	J	mg/L	1	10/25/2018 2:51:48 PM
Silver	< 0.00500	0.000340	0.00500		mg/L	1	10/23/2018 3:24:44 PM
Sodium	176	2.32	5.00		mg/L	1	10/23/2018 3:24:44 PM
PAH IN WATER BY EPA 8270C					SW8270C	SW3511	Analyst: CRM
2-Methylnaphthalene	< 0.000513	0.0000193	0.000513		mg/L	1	10/20/2018 4:24:00 PM
Acenaphthene	< 0.00103	0.0000534	0.00103		mg/L	1	10/20/2018 4:24:00 PM
Acenaphthylene	< 0.00103	0.000115	0.00103		mg/L	1	10/20/2018 4:24:00 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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Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100821-001 **Matrix:** AQUEOUS
Client Sample ID 5124 Z Smith Leroy

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PAH IN WATER BY EPA 8270C					SW8270C	SW3511	Analyst: CRM
Anthracene	< 0.00103	0.00000611	0.00103		mg/L	1	10/20/2018 4:24:00 PM
Benzo(a)anthracene	< 0.000513	0.0000249	0.000513		mg/L	1	10/20/2018 4:24:00 PM
Benzo(a)pyrene	< 0.000174	0.0000465	0.000174		mg/L	1	10/20/2018 4:24:00 PM
Benzo(b)fluoranthene	< 0.000513	0.0000438	0.000513		mg/L	1	10/20/2018 4:24:00 PM
Benzo(k)fluoranthene	< 0.000513	0.0000629	0.000513		mg/L	1	10/20/2018 4:24:00 PM
Chrysene	< 0.000513	0.0000247	0.000513		mg/L	1	10/20/2018 4:24:00 PM
Dibenz(a,h)anthracene	< 0.00103	0.0000527	0.00103		mg/L	1	10/20/2018 4:24:00 PM
Fluoranthene	< 0.00103	0.00000554	0.00103		mg/L	1	10/20/2018 4:24:00 PM
Fluorene	< 0.000615	0.0000237	0.000615		mg/L	1	10/20/2018 4:24:00 PM
Indeno(1,2,3-cd)pyrene	< 0.000513	0.000147	0.000513		mg/L	1	10/20/2018 4:24:00 PM
Naphthalene	< 0.00103	0.0000264	0.00103		mg/L	1	10/20/2018 4:24:00 PM
Phenanthrene	< 0.00103	0.0000305	0.00103		mg/L	1	10/20/2018 4:24:00 PM
Pyrene	< 0.00103	0.00000119	0.00103		mg/L	1	10/20/2018 4:24:00 PM
Surr: 4-Terphenyl-d14	107	0	49.2-161		%Rec	1	10/20/2018 4:24:00 PM

SEMIVOLATILE ORGANICS IN WATER					SW8270C	E625/SW351	Analyst: CRM
1,2,4,5-Tetrachlorobenzene	< 0.00100	0.000500	0.00100		mg/L	1	10/21/2018 3:49:00 PM
1,2,4-Trichlorobenzene	< 0.00500	0.00100	0.00500		mg/L	1	10/21/2018 3:49:00 PM
1,2-Dichlorobenzene	< 0.00500	0.00100	0.00500		mg/L	1	10/21/2018 3:49:00 PM
1,3-Dichlorobenzene	< 0.00500	0.000504	0.00500		mg/L	1	10/21/2018 3:49:00 PM
1,3-Dinitrobenzene	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
1,4-Dichlorobenzene	< 0.00500	0.00100	0.00500		mg/L	1	10/21/2018 3:49:00 PM
2,3,4,6-Tetrachlorophenol	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
2,4,5-Trichlorophenol	< 0.0100	0.000500	0.0100		mg/L	1	10/21/2018 3:49:00 PM
2,4,6-Trichlorophenol	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
2,4-Dichlorophenol	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
2,4-Dimethylphenol	< 0.00500	0.000556	0.00500		mg/L	1	10/21/2018 3:49:00 PM
2,4-Dinitrophenol	< 0.0200	0.00200	0.0200		mg/L	1	10/21/2018 3:49:00 PM
2,4-Dinitrotoluene	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
2,6-Dinitrotoluene	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
2-Chloronaphthalene	< 0.00500	0.0000614	0.00500		mg/L	1	10/21/2018 3:49:00 PM
2-Chlorophenol	< 0.00500	0.0000539	0.00500		mg/L	1	10/21/2018 3:49:00 PM
2-Nitroaniline	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 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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Analytical Report

(consolidated MDL)

WO#: **18100821**

Date Reported: **10/31/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/19/2018 10:25:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100821-001 **Matrix:** AQUEOUS
Client Sample ID 5124 Z Smith Leroy

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS IN WATER					SW8270C	E625/SW351	Analyst: CRM
3,3'-Dichlorobenzidine	< 0.0100	0.000477	0.0100		mg/L	1	10/21/2018 3:49:00 PM
3-Nitroaniline	< 0.0200	0.000500	0.0200		mg/L	1	10/21/2018 3:49:00 PM
4-Chloroaniline	< 0.00500	0.000237	0.00500		mg/L	1	10/21/2018 3:49:00 PM
4-Nitroaniline	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
4-Nitrophenol	< 0.0200	0.00500	0.0200		mg/L	1	10/21/2018 3:49:00 PM
Aniline	< 0.00500	0.000490	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Biphenyl	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Bis(2-chloroethyl)ether	< 0.00500	0.0000817	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Bis(2-chloroisopropyl)ether	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Bis(2-ethylhexyl)phthalate	0.00267	0.000302	0.00500	J	mg/L	1	10/21/2018 3:49:00 PM
Butyl benzyl phthalate	< 0.00500	0.000106	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Dibenzofuran	< 0.00500	0.0000800	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Diethyl phthalate	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Dimethyl phthalate	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Di-n-octyl phthalate	< 0.0100	0.000182	0.0100		mg/L	1	10/21/2018 3:49:00 PM
Dinoseb	< 0.00500	0.000300	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Hexachlorobenzene	< 0.00100	0.000500	0.00100		mg/L	1	10/21/2018 3:49:00 PM
Hexachlorobutadiene	< 0.00200	0.00100	0.00200		mg/L	1	10/21/2018 3:49:00 PM
Hexachlorocyclopentadiene	< 0.0100	0.000500	0.0100		mg/L	1	10/21/2018 3:49:00 PM
Hexachloroethane	< 0.00500	0.00200	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Isophorone	< 0.00500	0.000179	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Nitrobenzene	< 0.00100	0.000500	0.00100		mg/L	1	10/21/2018 3:49:00 PM
N-Nitrosodi-n-propylamine	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 3:49:00 PM
N-Nitrosodiphenylamine	< 0.00500	0.000143	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Pentachlorophenol	< 0.0100	0.00100	0.0100		mg/L	1	10/21/2018 3:49:00 PM
Phenol	< 0.00500	0.0000521	0.00500		mg/L	1	10/21/2018 3:49:00 PM
Surr: 2,4,6-Tribromophenol	88.8		47.2-144		%Rec	1	10/21/2018 3:49:00 PM
Surr: 2-Fluorobiphenyl	96.4		52.2-116		%Rec	1	10/21/2018 3:49:00 PM
Surr: 2-Fluorophenol	48.7		27.3-80.6		%Rec	1	10/21/2018 3:49:00 PM
Surr: 4-Terphenyl-d14	112		48.1-134		%Rec	1	10/21/2018 3:49:00 PM
Surr: Nitrobenzene-d5	87.7		42.5-144		%Rec	1	10/21/2018 3:49:00 PM
Surr: Phenol-d5	32.9		10-67.1		%Rec	1	10/21/2018 3:49:00 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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Analytical Report

(consolidated MDL)

WO#: **18100821**

Date Reported: **10/31/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/19/2018 10:25:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100821-001 **Matrix:** AQUEOUS
Client Sample ID 5124 Z Smith Leroy

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS IN WATER				SW8260B		Analyst: CRM	
1,1,1,2-Tetrachloroethane	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
1,1,1-Trichloroethane	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
1,1,2,2-Tetrachloroethane	< 0.000500	0.000150	0.000500		mg/L	1	10/21/2018 4:21:00 PM
1,1,2-Trichloroethane	< 0.00500	0.000172	0.00500		mg/L	1	10/21/2018 4:21:00 PM
1,1-Dichloroethane	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
1,1-Dichloroethene	< 0.00500	0.000361	0.00500		mg/L	1	10/21/2018 4:21:00 PM
1,2-Dibromo-3-chloropropane	< 0.00500	0.000210	0.00500		mg/L	1	10/21/2018 4:21:00 PM
1,2-Dichlorobenzene	< 0.0200	0.000500	0.0200		mg/L	1	10/21/2018 4:21:00 PM
1,2-Dichloroethane	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 4:21:00 PM
1,2-Dichloroethene, Total	< 0.00600	0.000400	0.00600		mg/L	1	10/21/2018 4:21:00 PM
1,2-Dichloropropane	< 0.00500	0.000148	0.00500		mg/L	1	10/21/2018 4:21:00 PM
1,3-Dichlorobenzene	< 0.0100	0.000500	0.0100		mg/L	1	10/21/2018 4:21:00 PM
1,4-Dichlorobenzene	< 0.0200	0.000500	0.0200		mg/L	1	10/21/2018 4:21:00 PM
2-Butanone	< 0.0100	0.000442	0.0100		mg/L	1	10/21/2018 4:21:00 PM
4-Methyl-2-pentanone	< 0.0100	0.000325	0.0100		mg/L	1	10/21/2018 4:21:00 PM
Acetone	< 0.0100	0.00226	0.0100		mg/L	1	10/21/2018 4:21:00 PM
Benzene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Bromodichloromethane	< 0.00500	0.000136	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Bromoform	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Bromomethane	< 0.00500	0.000688	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Carbon disulfide	< 0.0100	0.000133	0.0100		mg/L	1	10/21/2018 4:21:00 PM
Carbon tetrachloride	< 0.00500	0.0000773	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Chlorobenzene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Chlorodibromomethane	< 0.00500	0.000170	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Chloroethane	< 0.0100	0.00155	0.0100		mg/L	1	10/21/2018 4:21:00 PM
Chloroform	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Chloromethane	< 0.00500	0.00200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
cis-1,2-Dichloroethene	< 0.00300	0.000200	0.00300		mg/L	1	10/21/2018 4:21:00 PM
cis-1,3-Dichloropropene	< 0.00200	0.000500	0.00200		mg/L	1	10/21/2018 4:21:00 PM
Ethylbenzene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Isobutyl alcohol	< 0.100	0.00400	0.100		mg/L	1	10/21/2018 4:21:00 PM
Methyl tert-butyl ether	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Methylene chloride	< 0.00500	0.000457	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Styrene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 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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 Website: www.element.com

Analytical Report

(consolidated MDL)

WO#: **18100821**

Date Reported: **10/31/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/19/2018 10:25:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100821-001 **Matrix:** AQUEOUS
Client Sample ID 5124 Z Smith Leroy

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS IN WATER				SW8260B		Analyst: CRM	
Tetrachloroethene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Toluene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
trans-1,2-Dichloroethene	< 0.00300	0.000204	0.00300		mg/L	1	10/21/2018 4:21:00 PM
trans-1,3-Dichloropropene	< 0.00200	0.000500	0.00200		mg/L	1	10/21/2018 4:21:00 PM
Trichloroethene	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Trichlorofluoromethane	< 0.00500	0.00200	0.00500		mg/L	1	10/21/2018 4:21:00 PM
Vinyl chloride	< 0.00200	0.00200	0.00200		mg/L	1	10/21/2018 4:21:00 PM
Xylenes, Total	< 0.0150	0.00150	0.0150		mg/L	1	10/21/2018 4:21:00 PM
Surr: 4-Bromofluorobenzene	101		65.1-136		%Rec	1	10/21/2018 4:21:00 PM
Surr: Dibromofluoromethane	98.4		40.4-143		%Rec	1	10/21/2018 4:21:00 PM
Surr: Toluene-d8	106		58.2-127		%Rec	1	10/21/2018 4:21:00 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	583	11.9	20.0		mg/L	1	10/22/2018 9:52:00 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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Analytical Report

(consolidated MDL)

WO#: **18100821**

Date Reported: **10/31/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/20/2018 9:00:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100821-002 **Matrix:** AQUEOUS
Client Sample ID Trip Blank

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TPH-GRO IN WATER BY SW8015				SW8015B		Analyst: CRM	
TPH (Gasoline Range)	0.0631	0.0149	0.150	J	mg/L	1	10/21/2018 5:08:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	103		70-130		%Rec	1	10/21/2018 5:08:00 PM

VOLATILES BY GC/MS IN WATER				SW8260B		Analyst: CRM	
1,1,1,2-Tetrachloroethane	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
1,1,1-Trichloroethane	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
1,1,2,2-Tetrachloroethane	< 0.000500	0.000150	0.000500		mg/L	1	10/21/2018 4:00:00 PM
1,1,2-Trichloroethane	< 0.00500	0.000172	0.00500		mg/L	1	10/21/2018 4:00:00 PM
1,1-Dichloroethane	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
1,1-Dichloroethene	< 0.00500	0.000361	0.00500		mg/L	1	10/21/2018 4:00:00 PM
1,2-Dibromo-3-chloropropane	< 0.00500	0.000210	0.00500		mg/L	1	10/21/2018 4:00:00 PM
1,2-Dichlorobenzene	< 0.0200	0.000500	0.0200		mg/L	1	10/21/2018 4:00:00 PM
1,2-Dichloroethane	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 4:00:00 PM
1,2-Dichloroethene, Total	< 0.00600	0.000400	0.00600		mg/L	1	10/21/2018 4:00:00 PM
1,2-Dichloropropane	< 0.00500	0.000148	0.00500		mg/L	1	10/21/2018 4:00:00 PM
1,3-Dichlorobenzene	< 0.0100	0.000500	0.0100		mg/L	1	10/21/2018 4:00:00 PM
1,4-Dichlorobenzene	< 0.0200	0.000500	0.0200		mg/L	1	10/21/2018 4:00:00 PM
2-Butanone	< 0.0100	0.000442	0.0100		mg/L	1	10/21/2018 4:00:00 PM
4-Methyl-2-pentanone	< 0.0100	0.000325	0.0100		mg/L	1	10/21/2018 4:00:00 PM
Acetone	< 0.0100	0.00226	0.0100		mg/L	1	10/21/2018 4:00:00 PM
Benzene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Bromodichloromethane	< 0.00500	0.000136	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Bromoform	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Bromomethane	< 0.00500	0.000688	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Carbon disulfide	< 0.0100	0.000133	0.0100		mg/L	1	10/21/2018 4:00:00 PM
Carbon tetrachloride	< 0.00500	0.0000773	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Chlorobenzene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Chlorodibromomethane	< 0.00500	0.000170	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Chloroethane	< 0.0100	0.00155	0.0100		mg/L	1	10/21/2018 4:00:00 PM
Chloroform	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Chloromethane	< 0.00500	0.00200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
cis-1,2-Dichloroethene	< 0.00300	0.000200	0.00300		mg/L	1	10/21/2018 4:00:00 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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Analytical Report

(consolidated MDL)

WO#: **18100821**

Date Reported: **10/31/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/20/2018 9:00:00 AM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100821-002 **Matrix:** AQUEOUS
Client Sample ID Trip Blank

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS IN WATER				SW8260B		Analyst: CRM	
cis-1,3-Dichloropropene	< 0.00200	0.000500	0.00200		mg/L	1	10/21/2018 4:00:00 PM
Ethylbenzene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Isobutyl alcohol	< 0.100	0.00400	0.100		mg/L	1	10/21/2018 4:00:00 PM
Methyl tert-butyl ether	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Methylene chloride	< 0.00500	0.000457	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Styrene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Tetrachloroethene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Toluene	< 0.00500	0.000200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
trans-1,2-Dichloroethene	< 0.00300	0.000204	0.00300		mg/L	1	10/21/2018 4:00:00 PM
trans-1,3-Dichloropropene	< 0.00200	0.000500	0.00200		mg/L	1	10/21/2018 4:00:00 PM
Trichloroethene	< 0.00500	0.000500	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Trichlorofluoromethane	< 0.00500	0.00200	0.00500		mg/L	1	10/21/2018 4:00:00 PM
Vinyl chloride	< 0.00200	0.00200	0.00200		mg/L	1	10/21/2018 4:00:00 PM
Xylenes, Total	< 0.0150	0.00150	0.0150		mg/L	1	10/21/2018 4:00:00 PM
Surr: 4-Bromofluorobenzene	104		65.1-136		%Rec	1	10/21/2018 4:00:00 PM
Surr: Dibromofluoromethane	97.2		40.4-143		%Rec	1	10/21/2018 4:00:00 PM
Surr: Toluene-d8	101		58.2-127		%Rec	1	10/21/2018 4:00:00 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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QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: 28090

Sample ID: MB-28090	SampType: MBLK	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73484						
Client ID: PBW	Batch ID: 28090	TestNo: SW8270C	SW3511	Analysis Date: 10/20/2018	SeqNo: 1839003						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

2-Methylnaphthalene	< 0.000519	0.000519									
Acenaphthene	< 0.00104	0.00104									
Acenaphthylene	< 0.00104	0.00104									
Anthracene	< 0.00104	0.00104									
Benzo(a)anthracene	< 0.000519	0.000519									
Benzo(a)pyrene	< 0.000176	0.000176									
Benzo(b)fluoranthene	< 0.000519	0.000519									
Benzo(k)fluoranthene	< 0.000519	0.000519									
Chrysene	< 0.000519	0.000519									
Dibenz(a,h)anthracene	< 0.00104	0.00104									
Fluoranthene	< 0.00104	0.00104									
Fluorene	< 0.000623	0.000623									
Indeno(1,2,3-cd)pyrene	< 0.000519	0.000519									
Naphthalene	< 0.00104	0.00104									
Phenanthrene	< 0.00104	0.00104									
Pyrene	< 0.00104	0.00104									
Surr: 4-Terphenyl-d14	0.00211		0.002377		88.7	49.2	161				

Sample ID: LCSD-28090	SampType: LCSD	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73484						
Client ID: LCSS02	Batch ID: 28090	TestNo: SW8270C	SW3511	Analysis Date: 10/20/2018	SeqNo: 1839007						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

2-Methylnaphthalene	0.00239	0.000523	0.002390	0	100	60.8	127	0.002298	3.91	40	
Acenaphthene	0.00215	0.00105	0.002395	0	89.7	72.5	121	0.002155	0.333	40	
Acenaphthylene	0.00232	0.00105	0.002395	0	97.0	65.7	128	0.002174	6.64	40	

Qualifiers:

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	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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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: 28090

Sample ID: LCS D-28090	SampType: LCS D	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73484						
Client ID: LCS S02	Batch ID: 28090	TestNo: SW8270C	SW3511	Analysis Date: 10/20/2018	SeqNo: 1839007						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Anthracene	0.00192	0.00105	0.002395	0	80.1	73.4	120	0.001867	2.71	40	
Benzo(a)anthracene	0.00237	0.000523	0.002395	0	98.9	69	121	0.002178	8.36	40	
Benzo(a)pyrene	0.00211	0.000178	0.002395	0	88.1	70.6	120	0.001978	6.49	40	
Benzo(b)fluoranthene	0.00244	0.000523	0.002395	0	102	65.3	127	0.002315	5.38	40	
Benzo(k)fluoranthene	0.00244	0.000523	0.002395	0	102	68.6	125	0.002315	5.45	40	
Chrysene	0.00237	0.000523	0.002395	0	99.0	74.4	120	0.002267	4.50	40	
Dibenz(a,h)anthracene	0.00232	0.00105	0.002395	0	96.9	66.4	126	0.002351	1.36	40	
Fluoranthene	0.00263	0.00105	0.002395	0	110	70.7	121	0.002739	4.21	40	
Fluorene	0.00199	0.000627	0.002395	0	83.3	62.5	134	0.002063	3.39	40	
Indeno(1,2,3-cd)pyrene	0.00242	0.000523	0.002395	0	101	66.9	120	0.002368	2.09	40	
Naphthalene	0.00225	0.00105	0.002395	0	93.8	63.5	137	0.002169	3.49	40	
Phenanthrene	0.00233	0.00105	0.002395	0	97.3	74.1	118	0.002236	4.07	40	
Pyrene	0.00236	0.00105	0.002395	0	98.5	73.2	120	0.002193	7.32	40	
Surr: 4-Terphenyl-d14	0.00227		0.002395		94.9	49.2	161		0	40	

Sample ID: LCS-28090	SampType: LCS	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73484						
Client ID: LCSW	Batch ID: 28090	TestNo: SW8270C	SW3511	Analysis Date: 10/20/2018	SeqNo: 1839008						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	0.00230	0.000519	0.002371	0	97.0	60.8	127				
Acenaphthene	0.00216	0.00104	0.002375	0	90.8	72.5	121				
Acenaphthylene	0.00217	0.00104	0.002375	0	91.5	65.7	128				
Anthracene	0.00187	0.00104	0.002375	0	78.6	73.4	120				
Benzo(a)anthracene	0.00218	0.000519	0.002375	0	91.7	69	121				
Benzo(a)pyrene	0.00198	0.000176	0.002375	0	83.3	70.6	120				

Qualifiers:

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	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#: 18100821
 31-Oct-18

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

BatchID: 28090

Sample ID: LCS-28090	SampType: LCS	TestCode: 8270_W_LVI_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73484						
Client ID: LCSW	Batch ID: 28090	TestNo: SW8270C	SW3511	Analysis Date: 10/20/2018	SeqNo: 1839008						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	0.00232	0.000519	0.002375	0	97.5	65.3	127				
Benzo(k)fluoranthene	0.00231	0.000519	0.002375	0	97.5	68.6	125				
Chrysene	0.00227	0.000519	0.002375	0	95.5	74.4	120				
Dibenz(a,h)anthracene	0.00235	0.00104	0.002375	0	99.0	66.4	126				
Fluoranthene	0.00274	0.00104	0.002375	0	115	70.7	121				
Fluorene	0.00206	0.000622	0.002375	0	86.9	62.5	134				
Indeno(1,2,3-cd)pyrene	0.00237	0.000519	0.002375	0	99.7	66.9	120				
Naphthalene	0.00217	0.00104	0.002375	0	91.3	63.5	137				
Phenanthrene	0.00224	0.00104	0.002375	0	94.2	74.1	118				
Pyrene	0.00219	0.00104	0.002375	0	92.3	73.2	120				
Surr: 4-Terphenyl-d14	0.00231		0.002375		97.3	49.2	161				

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28091

Sample ID: LCS-D-28091	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73483						
Client ID: LCSW	Batch ID: 28091	TestNo: SW8015B	SW3511	Analysis Date: 10/19/2018	SeqNo: 1838997						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	1.82	0.135	1.786	0	102	70	130				
Surr: 4-Terphenyl-d14	0.0652		0.05952		110	51.4	146				

Sample ID: LCSD-D-28091	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73483						
Client ID: LCSS02	Batch ID: 28091	TestNo: SW8015B	SW3511	Analysis Date: 10/19/2018	SeqNo: 1838998						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	1.85	0.136	1.789	0	104	70	130	1.820	1.87	14.1
Surr: 4-Terphenyl-d14	0.0660		0.05965		111	51.4	146		0	40

Sample ID: LCSD-M-28091	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73483						
Client ID: LCSS02	Batch ID: 28091	TestNo: SW8015B	SW3511	Analysis Date: 10/19/2018	SeqNo: 1838999						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.50	0.124	1.774	0	84.5	70	130	1.584	5.44	23.2
Surr: 4-Terphenyl-d14	0.0568		0.05913		96.1	51.4	146		0	40

Sample ID: LCS-M-28091	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73483						
Client ID: LCSW	Batch ID: 28091	TestNo: SW8015B	SW3511	Analysis Date: 10/19/2018	SeqNo: 1839000						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.58	0.125	1.780	0	88.9	70	130			
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Qualifiers:

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	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#: **18100821**
31-Oct-18

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

BatchID: 28091

Sample ID: LCS-M-28091	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73483						
Client ID: LCSW	Batch ID: 28091	TestNo: SW8015B	SW3511	Analysis Date: 10/19/2018	SeqNo: 1839000						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 0.0662 0.05934 111 51.4 146

Sample ID: MB-28091	SampType: MBLK	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73483						
Client ID: PBW	Batch ID: 28091	TestNo: SW8015B	SW3511	Analysis Date: 10/19/2018	SeqNo: 1839001						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) < 0.135 0.135
 TPH (Oil Range) < 0.125 0.125
 Surr: 4-Terphenyl-d14 0.0622 0.05933 105 51.4 146

Qualifiers:

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	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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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: MB-28100	SampType: MBLK	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73486						
Client ID: PBW	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839012						
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:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: MB-28100	SampType: MBLK	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73486						
Client ID: PBW	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839012						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-ethylhexyl)phthalate	0.00328	0.00500									J
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	0.0290		0.03000		96.7	47.2	144				
Surr: 2-Fluorobiphenyl	0.0210		0.02000		105	52.2	116				
Surr: 2-Fluorophenol	0.0207		0.03000		68.9	27.3	80.6				
Surr: 4-Terphenyl-d14	0.0226		0.02000		113	48.1	134				
Surr: Nitrobenzene-d5	0.0197		0.02000		98.5	42.5	144				
Surr: Phenol-d5	0.0146		0.03000		48.6	10	67.1				

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: LCSD-28100	SampType: LCSD	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73486						
Client ID: LCSS02	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839013						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	0.0420	0.00100	0.05000	0	84.1	51.3	119	0.04018	4.52	40	
1,2,4-Trichlorobenzene	0.0389	0.00500	0.05000	0	77.9	47.4	103	0.03703	5.03	40	
1,2-Dichlorobenzene	0.0387	0.00500	0.05000	0	77.3	32	119	0.03686	4.79	40	
1,3-Dichlorobenzene	0.0367	0.00500	0.05000	0	73.5	33.9	108	0.03498	4.87	40	
1,3-Dinitrobenzene	0.0465	0.00500	0.05000	0	93.0	56.5	132	0.04251	8.92	40	
1,4-Dichlorobenzene	0.0367	0.00500	0.05000	0	73.4	31.8	107	0.03477	5.35	40	
2,3,4,6-Tetrachlorophenol	0.0518	0.00500	0.05000	0	104	71.4	118	0.04833	6.88	40	
2,4,5-Trichlorophenol	0.0497	0.0100	0.05000	0	99.5	63.4	113	0.04660	6.50	40	
2,4,6-Trichlorophenol	0.0484	0.00500	0.05000	0	96.8	62.5	109	0.04509	7.05	40	
2,4-Dichlorophenol	0.0476	0.00500	0.05000	0	95.3	65.8	105	0.04494	5.83	40	
2,4-Dimethylphenol	0.0472	0.00500	0.05000	0	94.3	56.4	106	0.04454	5.74	40	
2,4-Dinitrophenol	0.0492	0.0200	0.05000	0	98.4	10	171	0.04628	6.13	40	
2,4-Dinitrotoluene	0.0461	0.00500	0.05000	0	92.1	72.6	107	0.04306	6.76	40	
2,6-Dinitrotoluene	0.0492	0.00500	0.05000	0	98.4	62.5	112	0.04595	6.86	40	
2-Chloronaphthalene	0.0430	0.00500	0.05000	0	85.9	43.2	121	0.04050	5.93	40	
2-Chlorophenol	0.0446	0.00500	0.05000	0	89.2	57.4	104	0.04125	7.76	40	
2-Nitroaniline	0.0504	0.00500	0.05000	0	101	71.4	120	0.04647	8.09	40	
3,3'-Dichlorobenzidine	0.104	0.0100	0.1000	0	104	49.2	113	0.09971	3.77	40	
3-Nitroaniline	0.0417	0.0200	0.05000	0	83.4	37.7	116	0.03883	7.18	40	
4-Chloroaniline	0.0436	0.00500	0.05000	0	87.1	56.4	98.6	0.04073	6.75	40	
4-Nitroaniline	0.0496	0.00500	0.05000	0	99.3	64	113	0.04623	7.09	40	
4-Nitrophenol	0.0237	0.0200	0.05000	0	47.4	22.5	63.1	0.02171	8.81	40	
Aniline	0.0392	0.00500	0.05000	0	78.5	48.9	102	0.03578	9.24	40	
Biphenyl	0.0455	0.00500	0.05000	0	91.0	41.7	130	0.04290	5.86	40	
Bis(2-chloroethyl)ether	0.0438	0.00500	0.05000	0	87.6	51.9	112	0.04062	7.52	40	
Bis(2-chloroisopropyl)ether	0.0471	0.00500	0.05000	0	94.2	50.1	125	0.04282	9.51	40	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected



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QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: LCSD-28100	SampType: LCSD	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73486						
Client ID: LCSS02	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839013						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-ethylhexyl)phthalate	0.0524	0.00500	0.05000	0	105	46.9	137	0.04966	5.36	40	
Butyl benzyl phthalate	0.0527	0.00500	0.05000	0	105	47.6	134	0.04916	6.92	40	
Dibenzofuran	0.0479	0.00500	0.05000	0	95.7	59.5	126	0.04502	6.14	40	
Diethyl phthalate	0.0492	0.00500	0.05000	0	98.4	55.4	121	0.04580	7.15	40	
Dimethyl phthalate	0.0499	0.00500	0.05000	0	99.8	66	109	0.04651	6.98	40	
Di-n-octyl phthalate	0.0552	0.0100	0.05000	0	110	36.9	145	0.05113	7.60	40	
Dinoseb	0.0431	0.00500	0.05000	0	86.2	10	180	0.03984	7.82	40	
Hexachlorobenzene	0.0453	0.00100	0.05000	0	90.5	59.5	100	0.04164	8.32	40	
Hexachlorobutadiene	0.0354	0.00200	0.05000	0	70.9	43.1	101	0.03472	2.05	40	
Hexachlorocyclopentadiene	0.0446	0.0100	0.05000	0	89.3	10	151	0.04244	5.07	40	
Hexachloroethane	0.0342	0.00500	0.05000	0	68.3	22.2	110	0.03285	3.91	40	
Isophorone	0.0525	0.00500	0.05000	0	105	63.1	110	0.04852	7.94	40	
Nitrobenzene	0.0460	0.00100	0.05000	0	91.9	67	108	0.04242	8.04	40	
N-Nitrosodi-n-propylamine	0.0464	0.00500	0.05000	0	92.8	49.4	130	0.04263	8.47	40	
N-Nitrosodiphenylamine	0.0460	0.00500	0.05000	0	92.0	67.1	105	0.04318	6.34	40	
Pentachlorophenol	0.0361	0.0100	0.05000	0	72.3	47.1	104	0.03364	7.18	40	
Phenol	0.0209	0.00500	0.05000	0	41.7	25.2	50.1	0.01920	8.26	40	
Surr: 2,4,6-Tribromophenol	0.0260		0.03000		86.7	47.2	144		0	40	
Surr: 2-Fluorobiphenyl	0.0195		0.02000		97.3	52.2	116		0	40	
Surr: 2-Fluorophenol	0.0183		0.03000		61.1	27.3	80.6		0	40	
Surr: 4-Terphenyl-d14	0.0214		0.02000		107	48.1	134		0	40	
Surr: Nitrobenzene-d5	0.0187		0.02000		93.5	42.5	144		0	40	
Surr: Phenol-d5	0.0121		0.03000		40.5	10	67.1		0	40	

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: LCS-28100	SampType: LCS	TestCode: 8270_W_REC	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73486						
Client ID: LCSW	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839014						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	0.0402	0.00100	0.05000	0	80.4	51.3	119				
1,2,4-Trichlorobenzene	0.0370	0.00500	0.05000	0	74.1	47.4	103				
1,2-Dichlorobenzene	0.0369	0.00500	0.05000	0	73.7	32	119				
1,3-Dichlorobenzene	0.0350	0.00500	0.05000	0	70.0	33.9	108				
1,3-Dinitrobenzene	0.0425	0.00500	0.05000	0	85.0	56.5	132				
1,4-Dichlorobenzene	0.0348	0.00500	0.05000	0	69.5	31.8	107				
2,3,4,6-Tetrachlorophenol	0.0483	0.00500	0.05000	0	96.7	71.4	118				
2,4,5-Trichlorophenol	0.0466	0.0100	0.05000	0	93.2	63.4	113				
2,4,6-Trichlorophenol	0.0451	0.00500	0.05000	0	90.2	62.5	109				
2,4-Dichlorophenol	0.0449	0.00500	0.05000	0	89.9	65.8	105				
2,4-Dimethylphenol	0.0445	0.00500	0.05000	0	89.1	56.4	106				
2,4-Dinitrophenol	0.0463	0.0200	0.05000	0	92.6	10	171				
2,4-Dinitrotoluene	0.0431	0.00500	0.05000	0	86.1	72.6	107				
2,6-Dinitrotoluene	0.0460	0.00500	0.05000	0	91.9	62.5	112				
2-Chloronaphthalene	0.0405	0.00500	0.05000	0	81.0	43.2	121				
2-Chlorophenol	0.0412	0.00500	0.05000	0	82.5	57.4	104				
2-Nitroaniline	0.0465	0.00500	0.05000	0	92.9	71.4	120				
3,3'-Dichlorobenzidine	0.0997	0.0100	0.1000	0	99.7	49.2	113				
3-Nitroaniline	0.0388	0.0200	0.05000	0	77.7	37.7	116				
4-Chloroaniline	0.0407	0.00500	0.05000	0	81.5	56.4	98.6				
4-Nitroaniline	0.0462	0.00500	0.05000	0	92.5	64	113				
4-Nitrophenol	0.0217	0.0200	0.05000	0	43.4	22.5	63.1				
Aniline	0.0358	0.00500	0.05000	0	71.6	48.9	102				
Biphenyl	0.0429	0.00500	0.05000	0	85.8	41.7	130				
Bis(2-chloroethyl)ether	0.0406	0.00500	0.05000	0	81.2	51.9	112				
Bis(2-chloroisopropyl)ether	0.0428	0.00500	0.05000	0	85.6	50.1	125				

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
LCS-28100	LCS	8270_W_REC	mg/L	10/19/2018	73486						
Client ID:	Batch ID:	TestNo:		Analysis Date:	SeqNo:						
LCSW	28100	SW8270C	E625/SW3510	10/21/2018	1839014						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-ethylhexyl)phthalate	0.0497	0.00500	0.05000	0	99.3	46.9	137				
Butyl benzyl phthalate	0.0492	0.00500	0.05000	0	98.3	47.6	134				
Dibenzofuran	0.0450	0.00500	0.05000	0	90.0	59.5	126				
Diethyl phthalate	0.0458	0.00500	0.05000	0	91.6	55.4	121				
Dimethyl phthalate	0.0465	0.00500	0.05000	0	93.0	66	109				
Di-n-octyl phthalate	0.0511	0.0100	0.05000	0	102	36.9	145				
Dinoseb	0.0398	0.00500	0.05000	0	79.7	10	180				
Hexachlorobenzene	0.0416	0.00100	0.05000	0	83.3	59.5	100				
Hexachlorobutadiene	0.0347	0.00200	0.05000	0	69.4	43.1	101				
Hexachlorocyclopentadiene	0.0424	0.0100	0.05000	0	84.9	10	151				
Hexachloroethane	0.0329	0.00500	0.05000	0	65.7	22.2	110				
Isophorone	0.0485	0.00500	0.05000	0	97.0	63.1	110				
Nitrobenzene	0.0424	0.00100	0.05000	0	84.8	67	108				
N-Nitrosodi-n-propylamine	0.0426	0.00500	0.05000	0	85.3	49.4	130				
N-Nitrosodiphenylamine	0.0432	0.00500	0.05000	0	86.4	67.1	105				
Pentachlorophenol	0.0336	0.0100	0.05000	0	67.3	47.1	104				
Phenol	0.0192	0.00500	0.05000	0	38.4	25.2	50.1				
Surr: 2,4,6-Tribromophenol	0.0228		0.03000		75.9	47.2	144				
Surr: 2-Fluorobiphenyl	0.0170		0.02000		85.0	52.2	116				
Surr: 2-Fluorophenol	0.0157		0.03000		52.3	27.3	80.6				
Surr: 4-Terphenyl-d14	0.0209		0.02000		105	48.1	134				
Surr: Nitrobenzene-d5	0.0164		0.02000		81.8	42.5	144				
Surr: Phenol-d5	0.0105		0.03000		35.0	10	67.1				

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: MB-28100	SampType: MBLK	TestCode: 625_ALL	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73503						
Client ID: PBW	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839157						
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	0.00322	0.00400									J
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:	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	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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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: MB-28100	SampType: MBLK	TestCode: 625_ALL	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73503						
Client ID: PBW	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839157						
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	0.0290		0.03000		96.7	74	120				
Surr: 2-Fluorobiphenyl	0.0210		0.02000		105	63	111				
Surr: 2-Fluorophenol	0.0207		0.03000		68.9	40	71				
Surr: Nitrobenzene-d5	0.0197		0.02000		98.5	67	104				
Surr: Phenol-d5	0.0146		0.03000		48.6	27	58				
Surr: Terphenyl-d14	0.0226		0.02000		113	55	123				

Sample ID: LCSD-28100	SampType: LCSD	TestCode: 625_ALL	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73503						
Client ID: LCSS02	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839159						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	0.0389	0.00400	0.05000	0	77.9	57	130	0.03703	5.03	30	
1,3-Dinitrobenzene	0.0465	0.00400	0.05000	0	93.0	79	120	0.04251	8.92	40	
2,4,5-Trichlorophenol	0.0497	0.00800	0.05000	0	99.5	65	120	0.04660	6.50	40	
2,4,6-Trichlorophenol	0.0484	0.00800	0.05000	0	96.8	52	129	0.04509	7.05	35	

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: LCSD-28100	SampType: LCSD	TestCode: 625_ALL	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73503						
Client ID: LCSS02	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839159						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-Dichlorophenol	0.0476	0.00800	0.05000	0	95.3	53	122	0.04494	5.83	30	
2,4-Dimethylphenol	0.0472	0.00800	0.05000	0	94.3	42	120	0.04454	5.74	35	
2,4-Dinitrophenol	0.0492	0.0200	0.05000	0	98.4	5	173	0.04628	6.13	79	
2,4-Dinitrotoluene	0.0495	0.00400	0.05000	0	99.0	48	127	0.04623	6.81	25	
2,6-Dinitrotoluene	0.0492	0.00400	0.05000	0	98.4	68	137	0.04595	6.86	29	
2-Chloronaphthalene	0.0430	0.00400	0.05000	0	85.9	65	120	0.04050	5.93	15	
2-Chlorophenol	0.0446	0.00800	0.05000	0	89.2	36	120	0.04125	7.76	37	
2-Nitroaniline	0.0504	0.00400	0.05000	0	101	80	120	0.04647	8.09	40	
3,3'-Dichlorobenzidine	0.101	0.00400	0.1000	0	101	8	213	0.09699	3.78	65	
3-Nitroaniline	0.0417	0.00400	0.05000	0	83.4	68	101	0.03883	7.18	40	
4-Chloroaniline	0.0436	0.00400	0.05000	0	87.1	65	107	0.04073	6.75	40	
4-Nitroaniline	0.0480	0.00400	0.05000	0	96.0	78	120	0.04470	7.10	40	
4-Nitrophenol	0.0237	0.0200	0.05000	0	47.4	13	129	0.02171	8.81	79	
Aniline	0.0392	0.00400	0.05000	0	78.5	39	101	0.03578	9.24	40	
Bis(2-chloroethyl)ether	0.0438	0.00400	0.05000	0	87.6	43	126	0.04062	7.52	65	
Bis(2-chloroisopropyl)ether	0.0461	0.00400	0.05000	0	92.1	63	139	0.04188	9.52	46	
Bis(2-ethylhexyl)phthalate	0.0514	0.00400	0.05000	0	103	29	137	0.04874	5.36	50	
Butyl benzyl phthalate	0.0527	0.00400	0.05000	0	105	5	140	0.04916	6.92	36	
Dibenzofuran	0.0469	0.00400	0.05000	0	93.8	81	120	0.04409	6.14	40	
Diethyl phthalate	0.0485	0.00400	0.05000	0	97.0	5	120	0.04514	7.14	60	
Dimethyl phthalate	0.0500	0.00400	0.05000	0	99.9	5	120	0.04659	6.98	110	
Di-n-octyl phthalate	0.0552	0.00400	0.05000	0	110	19	132	0.05113	7.60	42	
Hexachlorobenzene	0.0453	0.00400	0.05000	0	90.5	8	142	0.04164	8.32	33	
Hexachlorobutadiene	0.0354	0.00400	0.05000	0	70.9	38	120	0.03472	2.05	38	
Hexachlorocyclopentadiene	0.0504	0.00400	0.05000	0	101	10	116	0.04790	5.18	40	
Hexachloroethane	0.0342	0.00400	0.05000	0	68.3	55	120	0.03285	3.91	32	

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: LCS-D-28100	SampType: LCS-D	TestCode: 625_ALL	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73503						
Client ID: LCS-S02	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839159						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Isophorone	0.0525	0.00400	0.05000	0	105	47	180	0.04852	7.94	56	
Nitrobenzene	0.0460	0.00400	0.05000	0	91.9	54	158	0.04242	8.04	37	
N-Nitrosodi-n-propylamine	0.0464	0.00400	0.05000	0	92.8	14	198	0.04263	8.47	52	
N-Nitrosodiphenylamine	0.0464	0.00400	0.05000	0	92.7	71	120	0.04352	6.34	40	
Pentachlorophenol	0.0349	0.00400	0.05000	0	69.7	38	152	0.03225	7.77	52	
Phenol	0.0209	0.00800	0.05000	0	41.7	17	120	0.01920	8.26	39	
Surr: 2,4,6-Tribromophenol	0.0260		0.03000		86.7	74	120		0	40	
Surr: 2-Fluorobiphenyl	0.0195		0.02000		97.3	63	111		0	40	
Surr: 2-Fluorophenol	0.0183		0.03000		61.1	40	71		0	40	
Surr: Nitrobenzene-d5	0.0187		0.02000		93.5	67	104		0	40	
Surr: Phenol-d5	0.0121		0.03000		40.5	27	58		0	40	
Surr: Terphenyl-d14	0.0213		0.02000		107	55	123		0	40	

Sample ID: LCS-28100	SampType: LCS	TestCode: 625_ALL	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73503						
Client ID: LCSW	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839160						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	0.0370	0.00400	0.05000	0	74.1	57	130				
1,3-Dinitrobenzene	0.0425	0.00400	0.05000	0	85.0	79	120				
2,4,5-Trichlorophenol	0.0466	0.00800	0.05000	0	93.2	65	120				
2,4,6-Trichlorophenol	0.0451	0.00800	0.05000	0	90.2	52	129				
2,4-Dichlorophenol	0.0449	0.00800	0.05000	0	89.9	53	122				
2,4-Dimethylphenol	0.0445	0.00800	0.05000	0	89.1	42	120				
2,4-Dinitrophenol	0.0463	0.0200	0.05000	0	92.6	5	173				
2,4-Dinitrotoluene	0.0462	0.00400	0.05000	0	92.5	48	127				

Qualifiers:

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	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#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: LCS-28100	SampType: LCS	TestCode: 625_ALL	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73503						
Client ID: LCSW	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839160						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,6-Dinitrotoluene	0.0460	0.00400	0.05000	0	91.9	68	137				
2-Chloronaphthalene	0.0405	0.00400	0.05000	0	81.0	65	120				
2-Chlorophenol	0.0412	0.00800	0.05000	0	82.5	36	120				
2-Nitroaniline	0.0465	0.00400	0.05000	0	92.9	80	120				
3,3'-Dichlorobenzidine	0.0970	0.00400	0.1000	0	97.0	8	213				
3-Nitroaniline	0.0388	0.00400	0.05000	0	77.7	68	101				
4-Chloroaniline	0.0407	0.00400	0.05000	0	81.5	65	107				
4-Nitroaniline	0.0447	0.00400	0.05000	0	89.4	78	120				
4-Nitrophenol	0.0217	0.0200	0.05000	0	43.4	13	129				
Aniline	0.0358	0.00400	0.05000	0	71.6	39	101				
Bis(2-chloroethyl)ether	0.0406	0.00400	0.05000	0	81.2	43	126				
Bis(2-chloroisopropyl)ether	0.0419	0.00400	0.05000	0	83.8	63	139				
Bis(2-ethylhexyl)phthalate	0.0487	0.00400	0.05000	0	97.5	29	137				
Butyl benzyl phthalate	0.0492	0.00400	0.05000	0	98.3	5	140				
Dibenzofuran	0.0441	0.00400	0.05000	0	88.2	81	120				
Diethyl phthalate	0.0451	0.00400	0.05000	0	90.3	5	120				
Dimethyl phthalate	0.0466	0.00400	0.05000	0	93.2	5	120				
Di-n-octyl phthalate	0.0511	0.00400	0.05000	0	102	19	132				
Hexachlorobenzene	0.0416	0.00400	0.05000	0	83.3	8	142				
Hexachlorobutadiene	0.0347	0.00400	0.05000	0	69.4	38	120				
Hexachlorocyclopentadiene	0.0479	0.00400	0.05000	0	95.8	10	116				
Hexachloroethane	0.0329	0.00400	0.05000	0	65.7	55	120				
Isophorone	0.0485	0.00400	0.05000	0	97.0	47	180				
Nitrobenzene	0.0424	0.00400	0.05000	0	84.8	54	158				
N-Nitrosodi-n-propylamine	0.0426	0.00400	0.05000	0	85.3	14	198				
N-Nitrosodiphenylamine	0.0435	0.00400	0.05000	0	87.0	71	120				

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28100

Sample ID: LCS-28100	SampType: LCS	TestCode: 625_ALL	Units: mg/L	Prep Date: 10/19/2018	RunNo: 73503						
Client ID: LCSW	Batch ID: 28100	TestNo: SW8270C	E625/SW3510	Analysis Date: 10/21/2018	SeqNo: 1839160						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	0.0322	0.00400	0.05000	0	64.5	38	152				
Phenol	0.0192	0.00800	0.05000	0	38.4	17	120				
Surr: 2,4,6-Tribromophenol	0.0228		0.03000		75.9	74	120				
Surr: 2-Fluorobiphenyl	0.0170		0.02000		85.0	63	111				
Surr: 2-Fluorophenol	0.0157		0.03000		52.3	40	71				
Surr: Nitrobenzene-d5	0.0164		0.02000		81.8	67	104				
Surr: Phenol-d5	0.0105		0.03000		35.0	27	58				
Surr: Terphenyl-d14	0.0209		0.02000		104	55	123				

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28111

Sample ID: MB-28111	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73665
Client ID: PBW	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/29/2018	SeqNo: 1842719
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic < 0.0100 0.0100

Sample ID: LCS-28111	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73665
Client ID: LCSW	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/29/2018	SeqNo: 1842722
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.526 0.0100 0.5000 0 105 80 120

Sample ID: LCSD-28111	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73665
Client ID: LCSS02	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/29/2018	SeqNo: 1842723
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.518 0.0100 0.5000 0 104 80 120 0.5260 1.53 20

Sample ID: 18100762-002DMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73665
Client ID: ZZZZZZ	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/29/2018	SeqNo: 1842727
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.542 0.0100 0.5000 0 108 75 125

Qualifiers: 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 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#: **18100821**
31-Oct-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28111

Sample ID: 18100762-002DMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73665						
Client ID: ZZZZZZ	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/29/2018	SeqNo: 1842728						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.531	0.0100	0.5000	0	106	75	125	0.5416	2.03	20	

Qualifiers:

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits
- W Sample container temperature is out of limit as specified at testcode

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- SDL Sample detection limit

- M Matrix Interference
- RL Reporting Limit
- U Analyte not detected



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QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: 28111

Sample ID: MB-28111	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73612
Client ID: PBW	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/25/2018	SeqNo: 1841624
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Selenium	< 0.0200	0.0200									
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Sample ID: LCS-28111	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73612
Client ID: LCSW	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/25/2018	SeqNo: 1841625
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Selenium	0.475	0.0200	0.5000	0	94.9	80	120				
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Sample ID: LCSD-28111	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73612
Client ID: LCSS02	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/25/2018	SeqNo: 1841626
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Selenium	0.469	0.0200	0.5000	0	93.9	80	120	0.4747	1.14	20	
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Sample ID: 18100762-002DMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73612
Client ID: ZZZZZZ	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/25/2018	SeqNo: 1841634
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Selenium	0.466	0.0200	0.5000	0.008500	91.6	75	125				
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Qualifiers:

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	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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 Website: www.element.com

QC SUMMARY REPORT

WO#: **18100821**
31-Oct-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28111

Sample ID: 18100762-002DMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73612						
Client ID: ZZZZZZ	Batch ID: 28111	TestNo: SW6010B	Analysis Date: 10/25/2018	SeqNo: 1841635							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.486	0.0200	0.5000	0.008500	95.4	75	125	0.4663	4.06	20	

Qualifiers:	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	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#: **18100821**
31-Oct-18

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

BatchID: 28111

Sample ID: MB-28111	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73540						
Client ID: PBW	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/23/2018	SeqNo: 1839958						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.0100	0.0100									
Barium	< 0.0100	0.0100									
Cadmium	< 0.00500	0.00500									
Chromium	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Silver	< 0.00500	0.00500									
Sodium	< 10.0	10.0									

Sample ID: LCS-28111	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73540						
Client ID: LCSW	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/23/2018	SeqNo: 1839959						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.488	0.0100	0.5000	0	97.6	80	120				
Barium	0.485	0.0100	0.5000	0	97.1	80	120				
Cadmium	0.467	0.00500	0.5000	0	93.4	80	120				
Chromium	0.485	0.0100	0.5000	0	96.9	80	120				
Lead	0.481	0.0100	0.5000	0	96.2	80	120				
Silver	0.0951	0.00500	0.1000	0	95.1	80	120				
Sodium	50.3	10.0	50.00	0	101	80	120				

Qualifiers:	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	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#: **18100821**
31-Oct-18

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

BatchID: 28111

Sample ID: LCSD-28111	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73540						
Client ID: LCSS02	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/23/2018	SeqNo: 1839960						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.477	0.0100	0.5000	0	95.3	80	120	0.4879	2.32	20	
Barium	0.479	0.0100	0.5000	0	95.9	80	120	0.4854	1.26	20	
Cadmium	0.464	0.00500	0.5000	0	92.9	80	120	0.4672	0.601	20	
Chromium	0.479	0.0100	0.5000	0	95.8	80	120	0.4846	1.18	20	
Lead	0.476	0.0100	0.5000	0	95.3	80	120	0.4812	1.02	20	
Silver	0.0939	0.00500	0.1000	0	93.9	80	120	0.09510	1.27	20	
Sodium	50.7	10.0	50.00	0	101	80	120	50.29	0.792	20	

Sample ID: 18100762-002DMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73540						
Client ID: ZZZZZ	Batch ID: 28111	TestNo: SW6010B		Analysis Date: 10/23/2018	SeqNo: 1839966						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.504	0.0100	0.5000	0.01130	98.6	75	125				
Barium	0.708	0.0100	0.5000	0.2256	96.5	75	125				
Cadmium	0.477	0.00500	0.5000	0.001200	95.1	75	125				
Chromium	0.484	0.0100	0.5000	0	96.8	75	125				
Lead	0.484	0.0100	0.5000	0	96.8	75	125				
Silver	0.0949	0.00500	0.1000	0	94.9	75	125				
Sodium	202	10.0	50.00	157.3	88.6	75	125				

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: 28111

Sample ID: 18100762-002DMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73540						
Client ID: ZZZZZZ	Batch ID: 28111	TestNo: SW6010B	Analysis Date: 10/23/2018	SeqNo: 1839967							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.516	0.0100	0.5000	0.01130	101	75	125	0.5042	2.35	20	
Barium	0.719	0.0100	0.5000	0.2256	98.6	75	125	0.7082	1.47	20	
Cadmium	0.480	0.00500	0.5000	0.001200	95.8	75	125	0.4767	0.752	20	
Chromium	0.491	0.0100	0.5000	0	98.3	75	125	0.4840	1.52	20	
Lead	0.486	0.0100	0.5000	0	97.2	75	125	0.4839	0.392	20	
Silver	0.0966	0.00500	0.1000	0	96.6	75	125	0.09490	1.78	20	
Sodium	204	10.0	50.00	157.3	92.4	75	125	201.6	0.938	20	

Qualifiers:	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	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#: **18100821**
31-Oct-18

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

BatchID: 28113

Sample ID: MB-28113	SampType: MBLK	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73512
Client ID: PBW	Batch ID: 28113	TestNo: SW7470A	SW7470A	Analysis Date: 10/22/2018	SeqNo: 1839290
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-28113	SampType: LCS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73512
Client ID: LCSW	Batch ID: 28113	TestNo: SW7470A	SW7470A	Analysis Date: 10/22/2018	SeqNo: 1839291
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00962 0.000200 0.01000 0 96.2 80 120

Sample ID: LCSD-28113	SampType: LCSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73512
Client ID: LCSS02	Batch ID: 28113	TestNo: SW7470A	SW7470A	Analysis Date: 10/22/2018	SeqNo: 1839292
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00975 0.000200 0.01000 0 97.5 80 120 0.009624 1.31 20

Sample ID: 18100762-001DMS	SampType: MS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73512
Client ID: ZZZZZZ	Batch ID: 28113	TestNo: SW7470A	SW7470A	Analysis Date: 10/22/2018	SeqNo: 1839294
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00829 0.000200 0.01000 0 82.9 75 125

Qualifiers: 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 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#: **18100821**
31-Oct-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28113

Sample ID: 18100762-001DMSD	SampType: MSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 10/22/2018	RunNo: 73512						
Client ID: ZZZZZZ	Batch ID: 28113	TestNo: SW7470A SW7470A	Analysis Date: 10/22/2018	SeqNo: 1839295							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00872	0.000200	0.01000	0	87.2	75	125	0.008293	4.96	20	

Qualifiers:

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits
- W Sample container temperature is out of limit as specified at testcode

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- SDL Sample detection limit

- M Matrix Interference
- RL Reporting Limit
- U Analyte not detected



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QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: R73487

Sample ID: LCS	SampType: LCS	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 73487						
Client ID: LCSW	Batch ID: R73487	TestNo: SW8260B		Analysis Date: 10/21/2018	SeqNo: 1839015						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	0.0526	0.00500	0.05000	0	105	73.4	120				
1,1,1-Trichloroethane	0.0489	0.00500	0.05000	0	97.9	64.5	127				
1,1,2,2-Tetrachloroethane	0.0541	0.000500	0.05000	0	108	63.6	120				
1,1,2-Trichloroethane	0.0504	0.00500	0.05000	0	101	74.9	120				
1,1-Dichloroethane	0.0471	0.00500	0.05000	0	94.2	67.9	123				
1,1-Dichloroethene	0.0447	0.00500	0.05000	0	89.4	60.3	135				
1,2-Dibromo-3-chloropropane	0.0553	0.00500	0.05000	0	111	56.6	132				
1,2-Dichlorobenzene	0.0531	0.0200	0.05000	0	106	76.4	120				
1,2-Dichloroethane	0.0478	0.00500	0.05000	0	95.6	67.5	124				
1,2-Dichloroethene, Total	0.0983	0.00600	0.1000	0	98.3	72.5	122				
1,2-Dichloropropane	0.0500	0.00500	0.05000	0	99.9	77.2	120				
1,3-Dichlorobenzene	0.0520	0.0100	0.05000	0	104	75.1	120				
1,4-Dichlorobenzene	0.0519	0.0200	0.05000	0	104	76.1	120				
2-Butanone	0.0476	0.0100	0.05000	0	95.3	61	127				
4-Methyl-2-pentanone	0.0480	0.0100	0.05000	0	96.0	54.1	129				
Acetone	0.0831	0.0100	0.1000	0	83.1	52.1	135				
Benzene	0.0483	0.00500	0.05000	0	96.6	67.8	125				
Bromodichloromethane	0.0494	0.00500	0.05000	0	98.7	72	120				
Bromoform	0.0508	0.00500	0.05000	0	102	70.4	121				
Bromomethane	0.0454	0.00500	0.05000	0	90.7	41.6	157				
Carbon disulfide	0.0447	0.0100	0.05000	0	89.3	52.2	135				
Carbon tetrachloride	0.0467	0.00500	0.05000	0	93.5	65.6	125				
Chlorobenzene	0.0499	0.00500	0.05000	0	99.8	74.5	120				
Chlorodibromomethane	0.0526	0.00500	0.05000	0	105	75	120				
Chloroethane	0.0398	0.0100	0.05000	0	79.5	49.5	146				
Chloroform	0.0484	0.00500	0.05000	0	96.8	71	120				

Qualifiers:	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	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
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QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: R73487

Sample ID: LCS	SampType: LCS	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 73487						
Client ID: LCSW	Batch ID: R73487	TestNo: SW8260B		Analysis Date: 10/21/2018	SeqNo: 1839015						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloromethane	0.0438	0.00500	0.05000	0	87.6	45.8	145				
cis-1,2-Dichloroethene	0.0506	0.00300	0.05000	0	101	73.8	124				
cis-1,3-Dichloropropene	0.0528	0.00200	0.05000	0	106	80	120				
Ethylbenzene	0.0558	0.00500	0.05000	0	112	76.9	118				
Isobutyl alcohol	0.498	0.100	0.5000	0	99.6	70	130				
Methyl tert-butyl ether	0.0509	0.00500	0.05000	0	102	62.6	134				
Methylene chloride	0.0465	0.00500	0.05000	0	93.0	65.8	125				
Styrene	0.0473	0.00500	0.05000	0	94.6	79	120				
Tetrachloroethene	0.0743	0.00500	0.05000	0	149	68.6	152				
Toluene	0.0506	0.00500	0.05000	0	101	73.3	120				
trans-1,2-Dichloroethene	0.0477	0.00300	0.05000	0	95.5	67.7	124				
trans-1,3-Dichloropropene	0.0555	0.00200	0.05000	0	111	79.6	121				
Trichloroethene	0.0504	0.00500	0.05000	0	101	74.5	124				
Trichlorofluoromethane	0.0452	0.00500	0.05000	0	90.3	45.2	142				
Vinyl chloride	0.0466	0.00200	0.05000	0	93.2	37.4	174				
Xylenes, Total	0.148	0.0150	0.1500	0	98.3	80	120				
Surr: 4-Bromofluorobenzene	0.0365		0.03000		122	65.1	136				
Surr: Dibromofluoromethane	0.0273		0.03000		90.9	40.4	143				
Surr: Toluene-d8	0.0308		0.03000		103	58.2	127				

Sample ID: MB	SampType: MBLK	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 73487						
Client ID: PBW	Batch ID: R73487	TestNo: SW8260B		Analysis Date: 10/21/2018	SeqNo: 1839016						
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

Qualifiers:	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	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
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QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: R73487

Sample ID: MB	SampType: MBLK	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 73487						
Client ID: PBW	Batch ID: R73487	TestNo: SW8260B		Analysis Date: 10/21/2018	SeqNo: 1839016						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
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									
Chloromethane	< 0.00500	0.00500									

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: R73487

Sample ID: MB	SampType: MBLK	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 73487						
Client ID: PBW	Batch ID: R73487	TestNo: SW8260B		Analysis Date: 10/21/2018	SeqNo: 1839016						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

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	0.0307		0.03000		102	65.1	136				
Surr: Dibromofluoromethane	0.0274		0.03000		91.4	40.4	143				
Surr: Toluene-d8	0.0298		0.03000		99.4	58.2	127				

Sample ID: LCSD	SampType: LCSD	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 73487						
Client ID: LCSS02	Batch ID: R73487	TestNo: SW8260B		Analysis Date: 10/21/2018	SeqNo: 1839018						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1,1,2-Tetrachloroethane	0.0491	0.00500	0.05000	0	98.3	73.4	120	0.05265	6.92	20	
1,1,1-Trichloroethane	0.0448	0.00500	0.05000	0	89.5	64.5	127	0.04894	8.92	20	

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

QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: R73487

Sample ID: LCSD	SampType: LCSD	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 73487						
Client ID: LCSS02	Batch ID: R73487	TestNo: SW8260B	Analysis Date: 10/21/2018	SeqNo: 1839018							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	0.0521	0.000500	0.05000	0	104	63.6	120	0.05410	3.77	20	
1,1,2-Trichloroethane	0.0468	0.00500	0.05000	0	93.6	74.9	120	0.05037	7.33	20	
1,1-Dichloroethane	0.0442	0.00500	0.05000	0	88.4	67.9	123	0.04710	6.31	20	
1,1-Dichloroethene	0.0406	0.00500	0.05000	0	81.2	60.3	135	0.04469	9.64	20	
1,2-Dibromo-3-chloropropane	0.0540	0.00500	0.05000	0	108	56.6	132	0.05532	2.47	20	
1,2-Dichlorobenzene	0.0492	0.0200	0.05000	0	98.3	76.4	120	0.05311	7.72	20	
1,2-Dichloroethane	0.0446	0.00500	0.05000	0	89.2	67.5	124	0.04781	6.90	20	
1,2-Dichloroethene, Total	0.0909	0.00600	0.1000	0	90.9	72.5	122	0.09833	7.83	20	
1,2-Dichloropropane	0.0468	0.00500	0.05000	0	93.7	77.2	120	0.04996	6.42	20	
1,3-Dichlorobenzene	0.0476	0.0100	0.05000	0	95.2	75.1	120	0.05196	8.74	20	
1,4-Dichlorobenzene	0.0472	0.0200	0.05000	0	94.5	76.1	120	0.05191	9.42	20	
2-Butanone	0.0456	0.0100	0.05000	0	91.1	61	127	0.04764	4.46	20	
4-Methyl-2-pentanone	0.0463	0.0100	0.05000	0	92.6	54.1	129	0.04800	3.58	20	
Acetone	0.0771	0.0100	0.1000	0	77.1	52.1	135	0.08310	7.54	20	
Benzene	0.0440	0.00500	0.05000	0	88.1	67.8	125	0.04832	9.27	20	
Bromodichloromethane	0.0465	0.00500	0.05000	0	93.1	72	120	0.04937	5.92	20	
Bromoform	0.0478	0.00500	0.05000	0	95.6	70.4	121	0.05083	6.14	20	
Bromomethane	0.0422	0.00500	0.05000	0	84.4	41.6	157	0.04536	7.22	20	
Carbon disulfide	0.0411	0.0100	0.05000	0	82.2	52.2	135	0.04467	8.28	20	
Carbon tetrachloride	0.0441	0.00500	0.05000	0	88.3	65.6	125	0.04674	5.72	20	
Chlorobenzene	0.0462	0.00500	0.05000	0	92.4	74.5	120	0.04989	7.64	20	
Chlorodibromomethane	0.0494	0.00500	0.05000	0	98.7	75	120	0.05255	6.28	20	
Chloroethane	0.0368	0.0100	0.05000	0	73.6	49.5	146	0.03975	7.65	20	
Chloroform	0.0450	0.00500	0.05000	0	90.0	71	120	0.04842	7.37	20	
Chloromethane	0.0405	0.00500	0.05000	0	80.9	45.8	145	0.04378	7.86	20	
cis-1,2-Dichloroethene	0.0467	0.00300	0.05000	0	93.3	73.8	124	0.05058	8.04	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected



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QC SUMMARY REPORT

WO#: 18100821
 31-Oct-18

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

BatchID: R73487

Sample ID: LCSD	SampType: LCSD	TestCode: 8260_W_REC	Units: mg/L	Prep Date:	RunNo: 73487						
Client ID: LCSS02	Batch ID: R73487	TestNo: SW8260B	Analysis Date: 10/21/2018	SeqNo: 1839018							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	0.0502	0.00200	0.05000	0	100	80	120	0.05283	5.17	20	
Ethylbenzene	0.0507	0.00500	0.05000	0	101	76.9	118	0.05582	9.69	20	
Isobutyl alcohol	0.484	0.100	0.5000	0	96.9	70	130	0.4982	2.81	20	
Methyl tert-butyl ether	0.0512	0.00500	0.05000	0	102	62.6	134	0.05089	0.685	20	
Methylene chloride	0.0425	0.00500	0.05000	0	85.0	65.8	125	0.04648	8.97	20	
Styrene	0.0439	0.00500	0.05000	0	87.8	79	120	0.04731	7.52	20	
Tetrachloroethene	0.0589	0.00500	0.05000	0	118	68.6	152	0.07434	23.2	20	R
Toluene	0.0462	0.00500	0.05000	0	92.5	73.3	120	0.05056	8.93	20	
trans-1,2-Dichloroethene	0.0442	0.00300	0.05000	0	88.5	67.7	124	0.04774	7.59	20	
trans-1,3-Dichloropropene	0.0523	0.00200	0.05000	0	105	79.6	121	0.05551	6.03	20	
Trichloroethene	0.0459	0.00500	0.05000	0	91.8	74.5	124	0.05037	9.24	20	
Trichlorofluoromethane	0.0412	0.00500	0.05000	0	82.3	45.2	142	0.04515	9.25	20	
Vinyl chloride	0.0421	0.00200	0.05000	0	84.1	37.4	174	0.04660	10.3	20	
Xylenes, Total	0.135	0.0150	0.1500	0	90.1	80	120	0.1475	8.78	20	
Surr: 4-Bromofluorobenzene	0.0355		0.03000		118	65.1	136		0	20	
Surr: Dibromofluoromethane	0.0268		0.03000		89.2	40.4	143		0	20	
Surr: Toluene-d8	0.0302		0.03000		101	58.2	127		0	20	

Qualifiers:	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	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#: 18100821
 31-Oct-18

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

BatchID: R73490

Sample ID: GAS LCS	SampType: LCS	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 73490						
Client ID: LCSW	Batch ID: R73490	TestNo: SW8015B	Analysis Date: 10/21/2018	SeqNo: 1839030							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range) 12.6 0.150 12.50 0 101 80 130

Sample ID: GAS LCSD	SampType: LCSD	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 73490						
Client ID: LCSS02	Batch ID: R73490	TestNo: SW8015B	Analysis Date: 10/21/2018	SeqNo: 1839031							
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 12.64 4.90 20

Sample ID: MBLK	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 73490						
Client ID: PBW	Batch ID: R73490	TestNo: SW8015B	Analysis Date: 10/21/2018	SeqNo: 1839032							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range) 0.103 0.150 J
 Surr: alpha, alpha, alpha-Trifluorotoluene 0.0515 0.05000 103 70 130

Qualifiers:

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	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#: **18100821**
31-Oct-18

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

BatchID: R73499

Sample ID: MB-R73499	SampType: MBLK	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 73499						
Client ID: PBW	Batch ID: R73499	TestNo: SM2540C		Analysis Date: 10/22/2018	SeqNo: 1839911						
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-R73499	SampType: LCS	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 73499						
Client ID: LCSW	Batch ID: R73499	TestNo: SM2540C		Analysis Date: 10/22/2018	SeqNo: 1839912						
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-R73499	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 73499						
Client ID: LCSS02	Batch ID: R73499	TestNo: SM2540C		Analysis Date: 10/22/2018	SeqNo: 1839913						
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 1,009 0.494 10

Sample ID: 18100821-001EDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 73499						
Client ID: 5124 Z Smith Leroy	Batch ID: R73499	TestNo: SM2540C		Analysis Date: 10/22/2018	SeqNo: 1839915						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 580 20.0 583.0 0.516 10

Qualifiers:	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	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#: **18100821**
31-Oct-18

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

BatchID: R73499

Sample ID: 18100821-001EDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 73499						
Client ID: 5124 Z Smith Leroy	Batch ID: R73499	TestNo: SM2540C		Analysis Date: 10/22/2018	SeqNo: 1839915						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:	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	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#: **18100821**
31-Oct-18

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

BatchID: R73590

Sample ID: MBLK	SampType: MBLK	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 73590
Client ID: PBW	Batch ID: R73590	TestNo: SW9056A		Analysis Date: 10/25/2018	SeqNo: 1841489
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: 73590
Client ID: LCSW	Batch ID: R73590	TestNo: SW9056A		Analysis Date: 10/25/2018	SeqNo: 1841490
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 10.7 0.250 10.00 0 107 80 120

Sample ID: LCSD	SampType: LCSD	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 73590
Client ID: LCSS02	Batch ID: R73590	TestNo: SW9056A		Analysis Date: 10/25/2018	SeqNo: 1841491
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 10.2 0.250 10.00 0 102 80 120 10.67 4.51 15

Sample ID: 18100886-002ams	SampType: MS	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 73590
Client ID: ZZZZZ	Batch ID: R73590	TestNo: SW9056A		Analysis Date: 10/25/2018	SeqNo: 1841499
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 190 5.00 100.0 95.36 95.1 80 120

Qualifiers: 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 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#: **18100821**
31-Oct-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73590

Sample ID: 18100886-002amsd	SampType: MSD	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 73590						
Client ID: ZZZZZZ	Batch ID: R73590	TestNo: SW9056A		Analysis Date: 10/25/2018	SeqNo: 1841500						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	194	5.00	100.0	95.36	99.1	80	120	190.5	2.09	15	

Qualifiers:	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	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: **18100821** RcptNo: **1**

Logged by:	Annie Reedy	10/20/2018 9:00:00 AM	<i>A. Reedy</i>
Completed By:	Annie Reedy	10/20/2018 10:09:11 AM	<i>A. Reedy</i>
Reviewed By:	Caitlin Duplantis	10/22/2018 8:56:08 AM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? FedEx
Tracking No.: 783342662998

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 quantity and preservative for Trip Blank to the chain

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.7	Good				

ANALYTICAL RESULTS

PERFORMED BY

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

Report Date 10/31/2018

GCAL Report 218102416



Project 18100821

<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

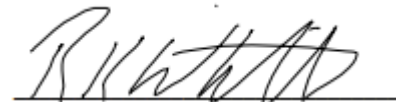
J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (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 218102416

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:** 218102416

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
21810241601	5124 Z Smith Leroy	Water	10/19/2018 10:25	10/23/2018 12:36

Sample Results

5124 Z Smith Leroy	Collect Date 10/19/2018 10:25	GCAL ID 21810241601
	Receive Date 10/23/2018 12:36	Matrix Water

EPA RSK-175

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	10/30/2018 16:10	JAR	646914

CAS#	Parameter	Result	LOQ	Units
74-82-8	Methane	ND	2.00	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
115-07-1	Propene	40.50	24.6	ug/L	61	40 - 143

GC Volatiles QC Summary

Analytical Batch 646914		Client ID 646914	GCAL ID 1863230	Sample Type MB	Prep Date NA	Analysis Date 10/30/2018 12:14	Matrix Water	LCS646914 1863231	LCS NA	10/30/2018 12:14	Water	LCSD646914 1863232	LCSD NA	10/30/2018 12:30	Water
EPA RSK-175		Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit			
Methane	74-82-8	ND	2.00	17.5	13.5	77	39 - 120	17.5	13.3	76	1	27			
Surrogate															
Propene	115-07-1	29.1	72	40.5	25.7	63	40 - 143	40.5	25.2	62	NA	NA			



CHAIN OF CUSTODY RECORD

Omega COCID 7717

PAGE

Client ID: 4462 - Element Materials Technology

SDG: 218102416

PM: JLM



TEL: (337) 233-0403
FAX: (337) 233-6540

Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Gulf Coast		SPECIAL INSTRUCTIONS / COMMENTS: dissolved methane by RSK175			
ADDRESS: 7979 GSRI Avenue							
CITY, STATE, ZIP: Baton Rouge, LA 70820							
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	18100821-001G RSK-175	5124 Z Smith Leroy	VOAU	Aqueous	10/19/2018 10:25:00 AM	2	

Relinquished By: <i>Sherry J. Haddock</i>	Date: 10/22/2018	Time: 4:32 PM	Received By: <i>John A. Bent</i>	Date: 10-22-18	Time: 7:32	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE 280PM ELT FOR LAB USE ONLY Temp of samples 0.3 °C Attempt to Cool? ice Comments: _____
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By: <i>Sherry J. Haddock</i>	Date: 10-23-18	Time: 12:36	Received By: <i>John A. Bent</i>	Date: 10-23-18	Time: 12:36	
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!						



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 218102416			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"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 271810	Received By Savage, Tiffany R		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"/>	
Line Item(s) 1 - Water	Receive Date(s) 10/23/18		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	None	None		
		0.3				
NOTES						

