



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

January 15, 2019

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

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

Dear Mr. Emmert:

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

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

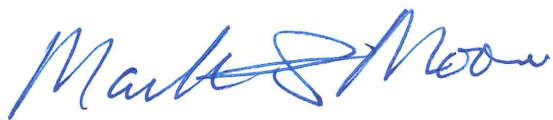
The sample was, then, delivered, via FedEx overnight, to Element Materials Technology, a LELAP Certification No.: 01997, a LDHH Certification No.: LA180028, and a ISDH Certification No.: C-LA-01 located in Lafayette, Louisiana. As requested by the LDNR, the sample was analyzed for Total Petroleum Hydrocarbons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

A Google Earth map illustrating the location of the referenced 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: TPG-DRO was detected at 0.0808 mg/l; TPH-GRO was detected at 0.0618 mg/l; Chlorides was detected at 49.2 mg/l; Arsenic was detected at 0.0144mg/l; Barium was detected at 0.0106 mg/l; Cadmium was detected at 0.0130 mg/l; Selenium was detected at 0.0252 mg/l; Sodium was detected at 208 mg/l; Bromodichloromethane was detected at 0.0310 mg/l; Bromoform was detected at 0.00636 mg/l; Chlorodibromomethane was detected at 0.0301 mg/l; Chloroform was detected at 0.0252 mg/l; TDS was detected at 516 mg/l and Methane was detected at 314 ug/l. No other parameters were detected above the respective method detection limits.

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

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

Sincerely,

A handwritten signature in blue ink that reads "Mark S. Moore". The signature is fluid and cursive, with the first name "Mark" and last name "Moore" clearly legible.

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

Encl./

Attachments Table of Contents

Site Photographs with Maps

Analytical Data Report



Herman Gamble-6576Z water well



Herman Gamble-6576Z Water hose/Sample Collection Point



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



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



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

November 29, 2018

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

Order No.: 18110485

RE: Approach Environmental - LDNR Residential Water Wells

Dear Mark Moore:

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

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

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

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

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

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

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

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



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

Case Narrative

WO#: 18110485
Date: 11/29/2018

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

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

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

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

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



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

Analytical Report

(consolidated MDL)

WO#: **18110485**

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

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

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

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



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

(consolidated MDL)

WO#: **18110485**

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

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

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

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

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



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Analytical Report

(consolidated MDL)

WO#: 18110485

Date Reported: 11/29/2018

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

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

NOTES:

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

| | | | | |
|--------------------|----|--|----|--|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | C | Value is below Minimum Compound Limit. | DF | Dilution Factor |
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| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |



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Analytical Report

(consolidated MDL)

WO#: **18110485**

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

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

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

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



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

Analytical Report

(consolidated MDL)

WO#: **18110485**

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

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

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

Qualifiers:

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



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

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

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



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

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

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

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

NOTES:

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

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



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

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

Qualifiers:

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

| | | | | | |
|----------------------------|------------------------|--------------------------|--------------------|----------------------------------|-----------------------|
| Sample ID: MB-28291 | SampType: MBLK | TestCode: 625_ALL | Units: mg/L | Prep Date: 11/14/2018 | RunNo: 74168 |
| Client ID: PBW | Batch ID: 28291 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 11/15/2018 | SeqNo: 1855950 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|----------------------------|-----------|---------|-----------|-------------|------|----------|-----------|-------------|------|----------|------|
| Hexachlorobenzene | < 0.00400 | 0.00400 | | | | | | | | | |
| Hexachlorobutadiene | < 0.00400 | 0.00400 | | | | | | | | | |
| Hexachlorocyclopentadiene | < 0.00400 | 0.00400 | | | | | | | | | |
| Hexachloroethane | < 0.00400 | 0.00400 | | | | | | | | | |
| Isophorone | < 0.00400 | 0.00400 | | | | | | | | | |
| Nitrobenzene | < 0.00400 | 0.00400 | | | | | | | | | |
| N-Nitrosodi-n-propylamine | < 0.00400 | 0.00400 | | | | | | | | | |
| N-Nitrosodiphenylamine | < 0.00400 | 0.00400 | | | | | | | | | |
| Pentachlorophenol | < 0.00400 | 0.00400 | | | | | | | | | |
| Phenol | < 0.00800 | 0.00800 | | | | | | | | | |
| Surr: 2,4,6-Tribromophenol | 0.0232 | | 0.03000 | | 77.3 | 74 | 120 | | | | |
| Surr: 2-Fluorobiphenyl | 0.0194 | | 0.02000 | | 96.8 | 63 | 111 | | | | |
| Surr: 2-Fluorophenol | 0.0169 | | 0.03000 | | 56.3 | 40 | 71 | | | | |
| Surr: Nitrobenzene-d5 | 0.0188 | | 0.02000 | | 94.0 | 67 | 104 | | | | |
| Surr: Phenol-d5 | 0.0111 | | 0.03000 | | 37.1 | 27 | 58 | | | | |
| Surr: Terphenyl-d14 | 0.0226 | | 0.02000 | | 113 | 55 | 123 | | | | |

| | | | | | |
|------------------------------|------------------------|--------------------------|--------------------|----------------------------------|-----------------------|
| Sample ID: LCSD-28291 | SampType: LCSD | TestCode: 625_ALL | Units: mg/L | Prep Date: 11/14/2018 | RunNo: 74168 |
| Client ID: LCSS02 | Batch ID: 28291 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 11/15/2018 | SeqNo: 1855951 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|------------------------|--------|---------|-----------|-------------|------|----------|-----------|-------------|-------|----------|------|
| 1,2,4-Trichlorobenzene | 0.0425 | 0.00400 | 0.05000 | 0 | 85.1 | 57 | 130 | 0.04175 | 1.84 | 30 | |
| 1,3-Dinitrobenzene | 0.0520 | 0.00400 | 0.05000 | 0 | 104 | 79 | 120 | 0.04970 | 4.56 | 40 | |
| 2,4,5-Trichlorophenol | 0.0512 | 0.00800 | 0.05000 | 0 | 102 | 65 | 120 | 0.05092 | 0.492 | 40 | |
| 2,4,6-Trichlorophenol | 0.0515 | 0.00800 | 0.05000 | 0 | 103 | 52 | 129 | 0.04930 | 4.44 | 35 | |

Qualifiers:

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

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



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

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

Qualifiers:

| | | | | | |
|---|---|-----|--|----|--|
| B | Analyte detected in the associated Method Blank | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | RL | Reporting Limit |
| S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit | U | Analyte not detected |
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28291

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

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



Element Materials Technology Lafayette
 2417 W. Pinhook Road
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QC SUMMARY REPORT

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

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

BatchID: 28308

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

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

Qualifiers:

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



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

WO#: 18110485
 29-Nov-18

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

BatchID: 28308

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

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

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

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

Qualifiers:

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



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 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28308

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

NOTES:

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

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

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



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

WO#: 18110485
 29-Nov-18

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

BatchID: 28309

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

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

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

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

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

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

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

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

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



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

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28309

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

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

Qualifiers:

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



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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28324

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

Mercury < 0.000200 0.000200

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

Mercury 0.00968 0.000200 0.01000 0 96.8 80 120

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

Mercury 0.00954 0.000200 0.01000 0 95.4 80 120 0.009683 1.47 20

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

Mercury 0.00862 0.000200 0.01000 0 86.2 75 125

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28324

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

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



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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28394

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

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

Qualifiers:

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28394

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

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

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

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

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: 28394

| Sample ID: 18110551-014DMSD | SampType: MSD | TestCode: 6010_W | Units: mg/L | Prep Date: 11/27/2018 | RunNo: 74271 | | | | | | |
|------------------------------------|------------------------|-------------------------|----------------------------------|------------------------------|---------------------|----------|-----------|-------------|-------|----------|------|
| Client ID: ZZZZZZ | Batch ID: 28394 | TestNo: SW6010B | Analysis Date: 11/27/2018 | SeqNo: 1858619 | | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | 0.511 | 0.0100 | 0.5000 | 0.01340 | 99.4 | 75 | 125 | 0.4959 | 2.92 | 20 | |
| Barium | 0.502 | 0.0100 | 0.5000 | 0 | 100 | 75 | 125 | 0.4990 | 0.579 | 20 | |
| Cadmium | 0.474 | 0.00500 | 0.5000 | 0.0008000 | 94.6 | 75 | 125 | 0.4711 | 0.571 | 20 | |
| Chromium | 0.500 | 0.0100 | 0.5000 | 0 | 100 | 75 | 125 | 0.4969 | 0.642 | 20 | |
| Lead | 0.489 | 0.0100 | 0.5000 | 0 | 97.8 | 75 | 125 | 0.4867 | 0.471 | 20 | |
| Selenium | 0.482 | 0.0200 | 0.5000 | 0 | 96.4 | 75 | 125 | 0.4813 | 0.166 | 20 | |
| Silver | 0.0966 | 0.00500 | 0.1000 | 0 | 96.6 | 75 | 125 | 0.09590 | 0.727 | 20 | |
| Sodium | 52.9 | 10.0 | 50.00 | 0 | 106 | 75 | 125 | 52.98 | 0.170 | 20 | |

Qualifiers:

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



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 2417 W. Pinhook Road
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 TEL: (337) 235-0483 FAX: (337) 233-6540
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: R74020

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

| | | | | | | | | | | | |
|----------------------|------|-------|-------|---|-----|----|-----|--|--|--|--|
| TPH (Gasoline Range) | 13.3 | 0.150 | 12.50 | 0 | 106 | 80 | 130 | | | | |
|----------------------|------|-------|-------|---|-----|----|-----|--|--|--|--|

| | | | | | | | | | | | |
|----------------------------|-------------------------|---------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCSD GAS | SampType: LCSD | TestCode: 8015_G_W | Units: mg/L | Prep Date: | RunNo: 74020 | | | | | | |
| Client ID: LCSS02 | Batch ID: R74020 | TestNo: SW8015B | | Analysis Date: 11/14/2018 | SeqNo: 1851186 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|----------------------|------|-------|-------|---|------|----|-----|-------|------|----|--|
| TPH (Gasoline Range) | 12.4 | 0.150 | 12.50 | 0 | 99.5 | 80 | 130 | 13.31 | 6.75 | 20 | |
|----------------------|------|-------|-------|---|------|----|-----|-------|------|----|--|

| | | | | | | | | | | | |
|------------------------|-------------------------|---------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MBLK | SampType: MBLK | TestCode: 8015_G_W | Units: mg/L | Prep Date: | RunNo: 74020 | | | | | | |
| Client ID: PBW | Batch ID: R74020 | TestNo: SW8015B | | Analysis Date: 11/14/2018 | SeqNo: 1851187 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

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

Qualifiers:

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



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

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

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

BatchID: R74058

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

Total Dissolved Solids (Residue, Filterable) < 20.0 20.0

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

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

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

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

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

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

Qualifiers:

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



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

WO#: 18110485
 29-Nov-18

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

BatchID: R74058

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

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

Qualifiers:

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



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 2417 W. Pinhook Road
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: R74059

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

Qualifiers:

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: R74059

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

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

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

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

Qualifiers:

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



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

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: R74059

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

Qualifiers:

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

WO#: 18110485
 29-Nov-18

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

BatchID: R74059

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

NOTES:

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

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

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



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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: R74059

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

| | | | | | | |
|--------------------|---|---|-----|--|----|--|
| Qualifiers: | B | Analyte detected in the associated Method Blank | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | M | Matrix Interference | ND | Not Detected at the Reporting Limit | RL | Reporting Limit |
| | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit | U | Analyte not detected |
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QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: R74059

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

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



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18110485
 29-Nov-18

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

BatchID: R74205

| | | | | | | | | | | | |
|------------------------|-------------------------|-------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MBLK | SampType: MBLK | TestCode: 9056_W | Units: mg/L | Prep Date: | RunNo: 74205 | | | | | | |
| Client ID: PBW | Batch ID: R74205 | TestNo: SW9056A | | Analysis Date: 11/26/2018 | SeqNo: 1857113 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Chloride | < 0.250 | 0.250 | | | | | | | | | |

| | | | | | | | | | | | |
|------------------------|-------------------------|-------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS | SampType: LCS | TestCode: 9056_W | Units: mg/L | Prep Date: | RunNo: 74205 | | | | | | |
| Client ID: LCSW | Batch ID: R74205 | TestNo: SW9056A | | Analysis Date: 11/26/2018 | SeqNo: 1857114 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Chloride | 10.0 | 0.250 | 10.00 | 0 | 100 | 80 | 120 | | | | |

| | | | | | | | | | | | |
|--------------------------|-------------------------|-------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|-------|----------|------|
| Sample ID: LCSD | SampType: LCSD | TestCode: 9056_W | Units: mg/L | Prep Date: | RunNo: 74205 | | | | | | |
| Client ID: LCSS02 | Batch ID: R74205 | TestNo: SW9056A | | Analysis Date: 11/26/2018 | SeqNo: 1857115 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Chloride | 10.1 | 0.250 | 10.00 | 0 | 101 | 80 | 120 | 10.05 | 0.178 | 15 | |

| | | | | | | | | | | | |
|-----------------------------------|-------------------------|-------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: 18110542-002BMS | SampType: MS | TestCode: 9056_W | Units: mg/L | Prep Date: | RunNo: 74205 | | | | | | |
| Client ID: ZZZZZ | Batch ID: R74205 | TestNo: SW9056A | | Analysis Date: 11/26/2018 | SeqNo: 1857120 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Chloride | 2,940 | 50.0 | 1,000 | 1,942 | 99.6 | 80 | 120 | | | | |

Qualifiers:

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



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

QC SUMMARY REPORT

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

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R74205

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

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



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Sample Log-In Check List

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

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

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

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

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

Cooler Information

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

ANALYTICAL RESULTS

PERFORMED BY

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

Report Date 11/21/2018

GCAL Report 218111557



Project 18110485

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



Laboratory Endorsement

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

Common Abbreviations that may be Utilized in this Report

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

Reporting Flags that may be Utilized in this Report

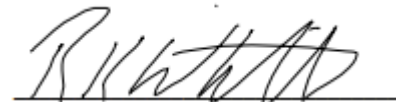
| | |
|---------------|---|
| J or I | Indicates the result is between the MDL and LOQ |
| J | DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria |
| U | Indicates the compound was analyzed for but not detected |
| B or V | Indicates the analyte was detected in the associated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

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

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

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

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



Authorized Signature
GCAL Report 218111557

Certifications

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

Case Narrative

Client: Element Materials Technology **Report:** 218111557

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

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

Sample Summary

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

Sample Results

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

EPA RSK-175

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

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

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

GC Volatiles QC Summary

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



CHAIN OF CUSTODY RECORD

Omega COCID 7792

PAGE: 1

OF: 1

ADDRESS

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

| | | | | | | | | | |
|--|--|----------------------------|--|---|--|--|--|--------|--|
| SUB CONTRACTOR: GCAL | | COMPANY: Gulf Coast | | SPECIAL INSTRUCTIONS / COMMENTS: methane by RSK175 <i>EUA 01972PO</i> | | | | | |
| 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 | 18110485-001G | 6576Z Herman Ga | VOAU | Water | 11/13/2018 10:40:00 AM | 2 | |
| | METHANE_SUB (RSK-175) | | | | | | |

Client ID: 4462 - Element Materials Technology

SDG: 218111557

PM: JLM



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



CHAIN OF CUSTODY RECORD

Omega COCID 7792

PAGE: 1

OF: 1

ADDRESS

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

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

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

Sample ID: 6576Z Herman Gamble

Yellow box containing: Client ID: 4462 - Element Materials Technology, SDG: 218111557, PM: JLM, and a barcode.

Form with sections: Relinquished By (signature), Date: 11/14/2018, Received By, Date, Time; REPORT TRANSMITTAL DESIRED (checkboxes for HARD COPY, FAX, EMAIL, ONLINE); FOR LAB USE ONLY (Temp of samples, Attempt to Cool?); TAT: Standard, RUSH, Next BD, 2nd BD, 3rd BD; Note: RUSH requests will incur surcharges!



SAMPLE RECEIVING CHECKLIST



| SAMPLE DELIVERY GROUP 218111557 | | | CHECKLIST | | YES | NO |
|---|-------------------------------------|---------------------------|--|-------------------------------------|-------------------------------------|----|
| Client PM JLM 4462 - Element Materials Technology | Transport Method CUST | | Samples received with proper thermal preservation? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| | | | Radioactivity is <1600 cpm? If no, record cpm value in notes section. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| Profile Number 271810 | Received By Reese, Sean M | | 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) 11/15/18 | | 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 5.7 | None | None | | |
| NOTES | | | | | | |



element™

Chain of Custody

Laboratory Number: 18110485

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

| Which Regulations Apply: | | Turn Time | (Rush turn times will incur a surcharge and must be pre-approved by lab.) | | Container | Pres. | Requested Tests | | | | | | | | | | Comments | |
|-------------------------------------|---|---|---|---|-----------|---------------------------------------|---|----------|--------------|-------------|-----|----------|------------------|--------|-----------|------|----------|---|
| <input type="checkbox"/> RCRA | <input type="checkbox"/> Drinking Water | <input type="checkbox"/> Standard | | | Quantity | Type P=Plastic, G=Glass, V=Vial | HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃ | VOC 8260 | SemiVOC 8276 | PCRA Metals | TDS | PH-D,G,O | Dissolved Metals | Sodium | Chlorides | HOLD | | |
| <input type="checkbox"/> POTW | <input type="checkbox"/> Distribution | RUSH | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> NPDES | <input type="checkbox"/> Special | <input type="checkbox"/> 1 Day | | | Date | Time | Grab / Composite | Matrix | | | | | | | | | | |
| <input type="checkbox"/> USDA/FDA | <input type="checkbox"/> State | <input checked="" type="checkbox"/> 2 Day | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> RECAP/RISC | <input type="checkbox"/> Other | <input type="checkbox"/> Other | | | | | | | | | | | | | | | | |
| 6576Z Herman Gamble | | 11/13/18 | 1040 | G | ✓ | 13 | PL | Hcl Hrdg | X | X | X | X | X | ✓ | X | X | | 48-hr Rush on Voc's Method detect on Limit Required |
| Trip Blank | | 11/13/18 | - | - | Ag | 3 | ✓ | HCL | X | | | | | | | | | |
| 11/14/18 | | | | | | | | | | | | | | | | | | |

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

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

- 9301 Innovation Drive, Suite 115 Daleville, IN 47334-0569 USA P 765-378-4103 F 765-378-4109
- 629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731
- 2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777
- 909 Executive Dr Warsaw, IN 46628-2368 USA P 574-267-3305 F 574-269-6569
- 3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707 F 574-273-5699
- 2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540