



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 09, 2018

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

Order No.: 18100944

RE: Approach Environmental - LDNR Residential Water Wells

Dear Drake Duhon:

Element Materials Technology Lafayette received 2 sample(s) on 10/25/2018 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.

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



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Case Narrative

WO#: 18100944
Date: 11/9/2018

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

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

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

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

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



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Analytical Report

(consolidated MDL)

WO#: **18100944**

Date Reported **11/9/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/24/2018 4:45:00 PM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100944-001 **Matrix:** WATER
Client Sample ID 9435Z Wynon McClay

| 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) | 0.0869 | 0.00419 | 0.137 | J | mg/L | 1 | 10/26/2018 2:57:00 PM |
| TPH (Oil Range) | < 0.127 | 0.0500 | 0.127 | | mg/L | 1 | 10/26/2018 2:57:00 PM |
| Surr: 4-Terphenyl-d14 | 83.8 | | 51.4-146 | | %Rec | 1 | 10/26/2018 2:57:00 PM |
| TPH-GRO IN WATER BY SW8015 | | | | | SW8015B | | Analyst: CRM |
| TPH (Gasoline Range) | 0.0505 | 0.0149 | 0.150 | J | mg/L | 1 | 10/26/2018 1:15:00 PM |
| Surr: alpha, alpha, alpha-Trifluorotoluene | 115 | | 70-130 | | %Rec | 1 | 10/26/2018 1:15:00 PM |
| RCRA METALS - SW6010/7470A | | | | | SW7470A | | Analyst: KML |
| MERCURY IN GROUND WATER, TOTAL | | | | | | | |
| Mercury | < 0.000200 | 0.0000540 | 0.000200 | | mg/L | 1 | 10/26/2018 2:55:09 PM |
| INORGANIC ANIONS IN WATER BY IC | | | | | SW9056A | | Analyst: SGP |
| Chloride | 66.6 | 0.332 | 5.00 | | mg/L | 20 | 10/25/2018 2:21:50 PM |
| RCRA METALS - SW6010/7470A | | | | | SW6010B | | Analyst: STS |
| METALS IN WATER BY ICP, TOTALS | | | | | | | |
| Arsenic | < 0.0100 | 0.00895 | 0.0100 | | mg/L | 1 | 10/30/2018 9:02:51 PM |
| Barium | 0.0181 | 0.00103 | 0.0100 | | mg/L | 1 | 10/30/2018 9:02:51 PM |
| Cadmium | < 0.00500 | 0.000781 | 0.00500 | | mg/L | 1 | 10/30/2018 9:02:51 PM |
| Chromium | 0.000500 | 0.000483 | 0.0100 | J | mg/L | 1 | 10/30/2018 9:02:51 PM |
| Lead | < 0.0100 | 0.00488 | 0.0100 | | mg/L | 1 | 10/30/2018 9:02:51 PM |
| Selenium | 0.0108 | 0.00526 | 0.0200 | J | mg/L | 1 | 10/30/2018 9:02:51 PM |
| Silver | 0.000500 | 0.000340 | 0.00500 | J | mg/L | 1 | 10/30/2018 9:02:51 PM |
| Sodium | 258 | 2.32 | 5.00 | | mg/L | 1 | 10/30/2018 9:02:51 PM |
| PAH IN WATER BY EPA 8270C | | | | | SW8270C | SW3511 | Analyst: CRM |
| 2-Methylnaphthalene | < 0.000508 | 0.0000191 | 0.000508 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Acenaphthene | < 0.00102 | 0.0000530 | 0.00102 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Acenaphthylene | < 0.00102 | 0.000114 | 0.00102 | | mg/L | 1 | 10/26/2018 8:33:00 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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Date Reported **11/9/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/24/2018 4:45:00 PM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100944-001 **Matrix:** WATER
Client Sample ID 9435Z Wynon McClay

| Analyses | Result | MDL | PQL | Qual | Units | DF | Date Analyzed |
|----------------------------------|------------|------------|----------|------|----------------|---------------|-----------------------|
| PAH IN WATER BY EPA 8270C | | | | | SW8270C | SW3511 | Analyst: CRM |
| Anthracene | < 0.00102 | 0.0000606 | 0.00102 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Benzo(a)anthracene | < 0.000508 | 0.0000247 | 0.000508 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Benzo(a)pyrene | < 0.000173 | 0.0000461 | 0.000173 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Benzo(b)fluoranthene | < 0.000508 | 0.0000434 | 0.000508 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Benzo(k)fluoranthene | < 0.000508 | 0.0000624 | 0.000508 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Chrysene | < 0.000508 | 0.0000245 | 0.000508 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Dibenz(a,h)anthracene | < 0.00102 | 0.0000523 | 0.00102 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Fluoranthene | < 0.00102 | 0.00000549 | 0.00102 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Fluorene | < 0.000610 | 0.0000235 | 0.000610 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Indeno(1,2,3-cd)pyrene | < 0.000508 | 0.000146 | 0.000508 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Naphthalene | < 0.00102 | 0.0000262 | 0.00102 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Phenanthrene | < 0.00102 | 0.00000303 | 0.00102 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Pyrene | < 0.00102 | 0.00000118 | 0.00102 | | mg/L | 1 | 10/26/2018 8:33:00 PM |
| Surr: 4-Terphenyl-d14 | 105 | 0 | 49.2-161 | | %Rec | 1 | 10/26/2018 8:33:00 PM |

| | | | | | | | |
|---------------------------------------|-----------|-----------|---------|--|----------------|-------------------|-----------------------|
| SEMIVOLATILE ORGANICS IN WATER | | | | | SW8270C | E625/SW351 | Analyst: KSK |
| 1,2,4,5-Tetrachlorobenzene | < 0.00102 | 0.000510 | 0.00102 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 1,2,4-Trichlorobenzene | < 0.00510 | 0.00102 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 1,2-Dichlorobenzene | < 0.00510 | 0.00102 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 1,3-Dichlorobenzene | < 0.00510 | 0.000514 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 1,3-Dinitrobenzene | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 1,4-Dichlorobenzene | < 0.00510 | 0.00102 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2,3,4,6-Tetrachlorophenol | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2,4,5-Trichlorophenol | < 0.0102 | 0.000510 | 0.0102 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2,4,6-Trichlorophenol | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2,4-Dichlorophenol | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2,4-Dimethylphenol | < 0.00510 | 0.000567 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2,4-Dinitrophenol | < 0.0204 | 0.00204 | 0.0204 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2,4-Dinitrotoluene | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2,6-Dinitrotoluene | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2-Chloronaphthalene | < 0.00510 | 0.0000627 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2-Chlorophenol | < 0.00510 | 0.0000550 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 2-Nitroaniline | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |

Qualifiers:
 * Value exceeds Maximum Contaminant Level.
 C Value is below Minimum Compound Limit.
 E Value above quantitation range
 J Analyte detected below quantitation limits
 ND Not Detected at the Reporting Limit

B Analyte detected in the associated Method Blank
 DF Dilution Factor
 H Holding times for preparation or analysis exceeded
 M Matrix Interference
 R RPD outside accepted recovery limits



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WO#: **18100944**

Date Reported **11/9/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/24/2018 4:45:00 PM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100944-001 **Matrix:** WATER
Client Sample ID 9435Z Wynon McClay

| Analyses | Result | MDL | PQL | Qual | Units | DF | Date Analyzed |
|---------------------------------------|-----------|-----------|-----------|----------------|-------------------|---------------------|-----------------------|
| SEMIVOLATILE ORGANICS IN WATER | | | | SW8270C | E625/SW351 | Analyst: KSK | |
| 3,3'-Dichlorobenzidine | < 0.0102 | 0.000486 | 0.0102 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 3-Nitroaniline | < 0.0204 | 0.000510 | 0.0204 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 4-Chloroaniline | < 0.00510 | 0.000242 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 4-Nitroaniline | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| 4-Nitrophenol | < 0.0204 | 0.00510 | 0.0204 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Aniline | < 0.00510 | 0.000500 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Biphenyl | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Bis(2-chloroethyl)ether | < 0.00510 | 0.0000833 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Bis(2-chloroisopropyl)ether | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Bis(2-ethylhexyl)phthalate | < 0.00510 | 0.000308 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Butyl benzyl phthalate | < 0.00510 | 0.000108 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Dibenzofuran | < 0.00510 | 0.0000816 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Diethyl phthalate | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Dimethyl phthalate | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Di-n-octyl phthalate | < 0.0102 | 0.000185 | 0.0102 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Dinoseb | < 0.00510 | 0.000306 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Hexachlorobenzene | < 0.00102 | 0.000510 | 0.00102 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Hexachlorobutadiene | < 0.00204 | 0.00102 | 0.00204 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Hexachlorocyclopentadiene | < 0.0102 | 0.000510 | 0.0102 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Hexachloroethane | < 0.00510 | 0.00204 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Isophorone | < 0.00510 | 0.000183 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Nitrobenzene | < 0.00102 | 0.000510 | 0.00102 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| N-Nitrosodi-n-propylamine | < 0.00510 | 0.000510 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| N-Nitrosodiphenylamine | < 0.00510 | 0.000146 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Pentachlorophenol | < 0.0102 | 0.00102 | 0.0102 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Phenol | < 0.00510 | 0.0000532 | 0.00510 | | mg/L | 1 | 10/26/2018 4:43:00 PM |
| Surr: 2,4,6-Tribromophenol | 72.5 | | 47.2-144 | | %Rec | 1 | 10/26/2018 4:43:00 PM |
| Surr: 2-Fluorobiphenyl | 93.2 | | 52.2-116 | | %Rec | 1 | 10/26/2018 4:43:00 PM |
| Surr: 2-Fluorophenol | 49.3 | | 27.3-80.6 | | %Rec | 1 | 10/26/2018 4:43:00 PM |
| Surr: 4-Terphenyl-d14 | 102 | | 48.1-134 | | %Rec | 1 | 10/26/2018 4:43:00 PM |
| Surr: Nitrobenzene-d5 | 87.9 | | 42.5-144 | | %Rec | 1 | 10/26/2018 4:43:00 PM |
| Surr: Phenol-d5 | 34.2 | | 10-67.1 | | %Rec | 1 | 10/26/2018 4:43:00 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#: **18100944**

Date Reported **11/9/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/24/2018 4:45:00 PM
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100944-001 **Matrix:** WATER
Client Sample ID 9435Z Wynon McClay

| 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 | 10/25/2018 12:52:00 PM |
| 1,1,1-Trichloroethane | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,1,2,2-Tetrachloroethane | < 0.000500 | 0.000150 | 0.000500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,1,2-Trichloroethane | < 0.00500 | 0.000172 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,1-Dichloroethane | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,1-Dichloroethene | < 0.00500 | 0.000361 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,2-Dibromo-3-chloropropane | < 0.00500 | 0.000210 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,2-Dichlorobenzene | < 0.0200 | 0.000500 | 0.0200 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,2-Dichloroethane | < 0.00500 | 0.000500 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,2-Dichloroethene, Total | < 0.00600 | 0.000400 | 0.00600 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,2-Dichloropropane | < 0.00500 | 0.000148 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,3-Dichlorobenzene | < 0.0100 | 0.000500 | 0.0100 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 1,4-Dichlorobenzene | < 0.0200 | 0.000500 | 0.0200 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 2-Butanone | < 0.0100 | 0.000442 | 0.0100 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| 4-Methyl-2-pentanone | < 0.0100 | 0.000325 | 0.0100 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Acetone | < 0.0100 | 0.00226 | 0.0100 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Benzene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Bromodichloromethane | < 0.00500 | 0.000136 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Bromoform | < 0.00500 | 0.000500 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Bromomethane | < 0.00500 | 0.000688 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Carbon disulfide | < 0.0100 | 0.000133 | 0.0100 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Carbon tetrachloride | < 0.00500 | 0.0000773 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Chlorobenzene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Chlorodibromomethane | < 0.00500 | 0.000170 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Chloroethane | < 0.0100 | 0.00155 | 0.0100 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Chloroform | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Chloromethane | < 0.00500 | 0.00200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| cis-1,2-Dichloroethene | < 0.00300 | 0.000200 | 0.00300 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| cis-1,3-Dichloropropene | < 0.00200 | 0.000500 | 0.00200 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Ethylbenzene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Isobutyl alcohol | < 0.100 | 0.00400 | 0.100 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Methyl tert-butyl ether | < 0.00500 | 0.000500 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Methylene chloride | < 0.00500 | 0.000457 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Styrene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |

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 C Value is below Minimum Compound Limit.
 E Value above quantitation range
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B Analyte detected in the associated Method Blank
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| 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 | 10/25/2018 12:52:00 PM |
| Toluene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| trans-1,2-Dichloroethene | < 0.00300 | 0.000204 | 0.00300 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| trans-1,3-Dichloropropene | < 0.00200 | 0.000500 | 0.00200 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Trichloroethene | < 0.00500 | 0.000500 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Trichlorofluoromethane | < 0.00500 | 0.00200 | 0.00500 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Vinyl chloride | < 0.00200 | 0.00200 | 0.00200 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Xylenes, Total | < 0.0150 | 0.00150 | 0.0150 | | mg/L | 1 | 10/25/2018 12:52:00 PM |
| Surr: 4-Bromofluorobenzene | 102 | | 65.1-136 | | %Rec | 1 | 10/25/2018 12:52:00 PM |
| Surr: Dibromofluoromethane | 104 | | 40.4-143 | | %Rec | 1 | 10/25/2018 12:52:00 PM |
| Surr: Toluene-d8 | 103 | | 58.2-127 | | %Rec | 1 | 10/25/2018 12:52:00 PM |
| TOTAL DISSOLVED SOLIDS | | | | SM2540C | | Analyst: GMS | |
| Total Dissolved Solids (Residue, Filterable) | 402 | 11.9 | 20.0 | | mg/L | 1 | 10/26/2018 8:37:00 AM |

Qualifiers:

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

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Element Materials Technology Lafayette
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 Website: www.element.com

Analytical Report

(consolidated MDL)

WO#: **18100944**

Date Reported **11/9/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/24/2018
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100944-002 **Matrix:** AQUEOUS
Client Sample ID Trip Blank

| Analyses | Result | MDL | PQL | Qual | Units | DF | Date Analyzed |
|--|------------|-----------|----------------|------|--------------|----|-----------------------|
| TPH-GRO IN WATER BY SW8015 | | | SW8015B | | Analyst: CRM | | |
| TPH (Gasoline Range) | 0.0463 | 0.0149 | 0.150 | J | mg/L | 1 | 10/26/2018 1:42:00 PM |
| Surr: alpha, alpha, alpha-Trifluorotoluene | 108 | | 70-130 | | %Rec | 1 | 10/26/2018 1:42:00 PM |
| VOLATILES BY GC/MS IN WATER | | | SW8260B | | Analyst: KSK | | |
| 1,1,1,2-Tetrachloroethane | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,1,1-Trichloroethane | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,1,2,2-Tetrachloroethane | < 0.000500 | 0.000150 | 0.000500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,1,2-Trichloroethane | < 0.00500 | 0.000172 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,1-Dichloroethane | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,1-Dichloroethene | < 0.00500 | 0.000361 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,2-Dibromo-3-chloropropane | < 0.00500 | 0.000210 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,2-Dichlorobenzene | < 0.0200 | 0.000500 | 0.0200 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,2-Dichloroethane | < 0.00500 | 0.000500 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,2-Dichloroethene, Total | < 0.00600 | 0.000400 | 0.00600 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,2-Dichloropropane | < 0.00500 | 0.000148 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,3-Dichlorobenzene | < 0.0100 | 0.000500 | 0.0100 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 1,4-Dichlorobenzene | < 0.0200 | 0.000500 | 0.0200 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 2-Butanone | < 0.0100 | 0.000442 | 0.0100 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| 4-Methyl-2-pentanone | < 0.0100 | 0.000325 | 0.0100 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Acetone | < 0.0100 | 0.00226 | 0.0100 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Benzene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Bromodichloromethane | < 0.00500 | 0.000136 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Bromoform | < 0.00500 | 0.000500 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Bromomethane | < 0.00500 | 0.000688 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Carbon disulfide | < 0.0100 | 0.000133 | 0.0100 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Carbon tetrachloride | < 0.00500 | 0.0000773 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Chlorobenzene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Chlorodibromomethane | < 0.00500 | 0.000170 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Chloroethane | < 0.0100 | 0.00155 | 0.0100 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Chloroform | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Chloromethane | < 0.00500 | 0.00200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| cis-1,2-Dichloroethene | < 0.00300 | 0.000200 | 0.00300 | | mg/L | 1 | 10/25/2018 1:13:00 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#: **18100944**

Date Reported **11/9/2018**

CLIENT: Approach Environmental, LLC **Collection Date:** 10/24/2018
Project: Approach Environmental - LDNR Residential Water Wells
Lab ID: 18100944-002 **Matrix:** AQUEOUS
Client Sample ID Trip Blank

| Analyses | Result | MDL | PQL | Qual | Units | DF | Date Analyzed |
|------------------------------------|-----------|----------|----------|----------------|-------|---------------------|-----------------------|
| VOLATILES BY GC/MS IN WATER | | | | SW8260B | | Analyst: KSK | |
| cis-1,3-Dichloropropene | < 0.00200 | 0.000500 | 0.00200 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Ethylbenzene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Isobutyl alcohol | < 0.100 | 0.00400 | 0.100 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Methyl tert-butyl ether | < 0.00500 | 0.000500 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Methylene chloride | < 0.00500 | 0.000457 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Styrene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Tetrachloroethene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Toluene | < 0.00500 | 0.000200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| trans-1,2-Dichloroethene | < 0.00300 | 0.000204 | 0.00300 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| trans-1,3-Dichloropropene | < 0.00200 | 0.000500 | 0.00200 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Trichloroethene | < 0.00500 | 0.000500 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Trichlorofluoromethane | < 0.00500 | 0.00200 | 0.00500 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Vinyl chloride | < 0.00200 | 0.00200 | 0.00200 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Xylenes, Total | < 0.0150 | 0.00150 | 0.0150 | | mg/L | 1 | 10/25/2018 1:13:00 PM |
| Surr: 4-Bromofluorobenzene | 98.4 | | 65.1-136 | | %Rec | 1 | 10/25/2018 1:13:00 PM |
| Surr: Dibromofluoromethane | 105 | | 40.4-143 | | %Rec | 1 | 10/25/2018 1:13:00 PM |
| Surr: Toluene-d8 | 102 | | 58.2-127 | | %Rec | 1 | 10/25/2018 1:13:00 PM |

Qualifiers:

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

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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28141

| Sample ID: MB-28141 | SampType: MBLK | TestCode: 8270_W_REC | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73627 | | | | | | |
|-----------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: PBW | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1841977 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 1,2,4,5-Tetrachlorobenzene | < 0.00100 | 0.00100 | | | | | | | | | |
| 1,2,4-Trichlorobenzene | < 0.00500 | 0.00500 | | | | | | | | | |
| 1,2-Dichlorobenzene | < 0.00500 | 0.00500 | | | | | | | | | |
| 1,3-Dichlorobenzene | < 0.00500 | 0.00500 | | | | | | | | | |
| 1,3-Dinitrobenzene | < 0.00500 | 0.00500 | | | | | | | | | |
| 1,4-Dichlorobenzene | < 0.00500 | 0.00500 | | | | | | | | | |
| 2,3,4,6-Tetrachlorophenol | < 0.00500 | 0.00500 | | | | | | | | | |
| 2,4,5-Trichlorophenol | < 0.0100 | 0.0100 | | | | | | | | | |
| 2,4,6-Trichlorophenol | < 0.00500 | 0.00500 | | | | | | | | | |
| 2,4-Dichlorophenol | < 0.00500 | 0.00500 | | | | | | | | | |
| 2,4-Dimethylphenol | < 0.00500 | 0.00500 | | | | | | | | | |
| 2,4-Dinitrophenol | < 0.0200 | 0.0200 | | | | | | | | | |
| 2,4-Dinitrotoluene | < 0.00500 | 0.00500 | | | | | | | | | |
| 2,6-Dinitrotoluene | < 0.00500 | 0.00500 | | | | | | | | | |
| 2-Chloronaphthalene | < 0.00500 | 0.00500 | | | | | | | | | |
| 2-Chlorophenol | < 0.00500 | 0.00500 | | | | | | | | | |
| 2-Nitroaniline | < 0.00500 | 0.00500 | | | | | | | | | |
| 3,3'-Dichlorobenzidine | < 0.0100 | 0.0100 | | | | | | | | | |
| 3-Nitroaniline | < 0.0200 | 0.0200 | | | | | | | | | |
| 4-Chloroaniline | < 0.00500 | 0.00500 | | | | | | | | | |
| 4-Nitroaniline | < 0.00500 | 0.00500 | | | | | | | | | |
| 4-Nitrophenol | < 0.0200 | 0.0200 | | | | | | | | | |
| Aniline | < 0.00500 | 0.00500 | | | | | | | | | |
| Biphenyl | < 0.00500 | 0.00500 | | | | | | | | | |
| Bis(2-chloroethyl)ether | < 0.00500 | 0.00500 | | | | | | | | | |
| Bis(2-chloroisopropyl)ether | < 0.00500 | 0.00500 | | | | | | | | | |

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28141

| Sample ID: MB-28141 | SampType: MBLK | TestCode: 8270_W_REC | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73627 | | | | | | |
|----------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: PBW | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1841977 | | | | | | |
| 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 | 0.0222 | | 0.03000 | | 74.0 | 47.2 | 144 | | | | |
| Surr: 2-Fluorobiphenyl | 0.0190 | | 0.02000 | | 94.8 | 52.2 | 116 | | | | |
| Surr: 2-Fluorophenol | 0.0151 | | 0.03000 | | 50.4 | 27.3 | 80.6 | | | | |
| Surr: 4-Terphenyl-d14 | 0.0222 | | 0.02000 | | 111 | 48.1 | 134 | | | | |
| Surr: Nitrobenzene-d5 | 0.0178 | | 0.02000 | | 88.8 | 42.5 | 144 | | | | |
| Surr: Phenol-d5 | 0.0104 | | 0.03000 | | 34.7 | 10 | 67.1 | | | | |

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

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

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

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

BatchID: 28141

| Sample ID: LCSD-28141 | SampType: LCSD | TestCode: 8270_W_REC | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73627 | | | | | | |
|-----------------------------|-----------------|----------------------|-------------|---------------------------|----------------|----------|-----------|-------------|-------|----------|------|
| Client ID: LCSS02 | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1841978 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 1,2,4,5-Tetrachlorobenzene | 0.0398 | 0.00100 | 0.05000 | 0 | 79.6 | 51.3 | 119 | 0.03953 | 0.643 | 40 | |
| 1,2,4-Trichlorobenzene | 0.0340 | 0.00500 | 0.05000 | 0 | 67.9 | 47.4 | 103 | 0.03375 | 0.656 | 40 | |
| 1,2-Dichlorobenzene | 0.0354 | 0.00500 | 0.05000 | 0 | 70.8 | 32 | 119 | 0.03522 | 0.547 | 40 | |
| 1,3-Dichlorobenzene | 0.0336 | 0.00500 | 0.05000 | 0 | 67.2 | 33.9 | 108 | 0.03339 | 0.597 | 40 | |
| 1,3-Dinitrobenzene | 0.0432 | 0.00500 | 0.05000 | 0 | 86.4 | 56.5 | 132 | 0.04171 | 3.54 | 40 | |
| 1,4-Dichlorobenzene | 0.0328 | 0.00500 | 0.05000 | 0 | 65.5 | 31.8 | 107 | 0.03307 | 0.984 | 40 | |
| 2,3,4,6-Tetrachlorophenol | 0.0487 | 0.00500 | 0.05000 | 0 | 97.4 | 71.4 | 118 | 0.04776 | 1.90 | 40 | |
| 2,4,5-Trichlorophenol | 0.0463 | 0.0100 | 0.05000 | 0 | 92.7 | 63.4 | 113 | 0.04490 | 3.13 | 40 | |
| 2,4,6-Trichlorophenol | 0.0453 | 0.00500 | 0.05000 | 0 | 90.6 | 62.5 | 109 | 0.04384 | 3.29 | 40 | |
| 2,4-Dichlorophenol | 0.0427 | 0.00500 | 0.05000 | 0 | 85.4 | 65.8 | 105 | 0.04116 | 3.63 | 40 | |
| 2,4-Dimethylphenol | 0.0441 | 0.00500 | 0.05000 | 0 | 88.3 | 56.4 | 106 | 0.04265 | 3.42 | 40 | |
| 2,4-Dinitrophenol | 0.0477 | 0.0200 | 0.05000 | 0 | 95.4 | 10 | 171 | 0.04553 | 4.67 | 40 | |
| 2,4-Dinitrotoluene | 0.0428 | 0.00500 | 0.05000 | 0 | 85.6 | 72.6 | 107 | 0.04103 | 4.19 | 40 | |
| 2,6-Dinitrotoluene | 0.0460 | 0.00500 | 0.05000 | 0 | 91.9 | 62.5 | 112 | 0.04493 | 2.27 | 40 | |
| 2-Chloronaphthalene | 0.0385 | 0.00500 | 0.05000 | 0 | 76.9 | 43.2 | 121 | 0.03734 | 2.94 | 40 | |
| 2-Chlorophenol | 0.0403 | 0.00500 | 0.05000 | 0 | 80.6 | 57.4 | 104 | 0.03877 | 3.86 | 40 | |
| 2-Nitroaniline | 0.0463 | 0.00500 | 0.05000 | 0 | 92.6 | 71.4 | 120 | 0.04448 | 4.01 | 40 | |
| 3,3'-Dichlorobenzidine | 0.0714 | 0.0100 | 0.1000 | 0 | 71.4 | 49.2 | 113 | 0.07104 | 0.577 | 40 | |
| 3-Nitroaniline | 0.0371 | 0.0200 | 0.05000 | 0 | 74.1 | 37.7 | 116 | 0.03579 | 3.48 | 40 | |
| 4-Chloroaniline | 0.0387 | 0.00500 | 0.05000 | 0 | 77.4 | 56.4 | 98.6 | 0.03712 | 4.23 | 40 | |
| 4-Nitroaniline | 0.0462 | 0.00500 | 0.05000 | 0 | 92.4 | 64 | 113 | 0.04496 | 2.68 | 40 | |
| 4-Nitrophenol | 0.0220 | 0.0200 | 0.05000 | 0 | 43.9 | 22.5 | 63.1 | 0.02131 | 2.97 | 40 | |
| Aniline | 0.0351 | 0.00500 | 0.05000 | 0 | 70.2 | 48.9 | 102 | 0.03310 | 5.91 | 40 | |
| Biphenyl | 0.0414 | 0.00500 | 0.05000 | 0 | 82.8 | 41.7 | 130 | 0.04000 | 3.40 | 40 | |
| Bis(2-chloroethyl)ether | 0.0399 | 0.00500 | 0.05000 | 0 | 79.8 | 51.9 | 112 | 0.03784 | 5.24 | 40 | |
| Bis(2-chloroisopropyl)ether | 0.0430 | 0.00500 | 0.05000 | 0 | 86.0 | 50.1 | 125 | 0.04021 | 6.70 | 40 | |

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



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28141

| Sample ID: LCSD-28141 | SampType: LCSD | TestCode: 8270_W_REC | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73627 | | | | | | |
|----------------------------|-----------------|----------------------|-------------|---------------------------|----------------|----------|-----------|-------------|-------|----------|------|
| Client ID: LCSS02 | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1841978 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Bis(2-ethylhexyl)phthalate | 0.0488 | 0.00500 | 0.05000 | 0 | 97.7 | 46.9 | 137 | 0.04728 | 3.27 | 40 | |
| Butyl benzyl phthalate | 0.0482 | 0.00500 | 0.05000 | 0 | 96.5 | 47.6 | 134 | 0.04683 | 2.98 | 40 | |
| Dibenzofuran | 0.0440 | 0.00500 | 0.05000 | 0 | 87.9 | 59.5 | 126 | 0.04282 | 2.64 | 40 | |
| Diethyl phthalate | 0.0449 | 0.00500 | 0.05000 | 0 | 89.9 | 55.4 | 121 | 0.04352 | 3.22 | 40 | |
| Dimethyl phthalate | 0.0457 | 0.00500 | 0.05000 | 0 | 91.5 | 66 | 109 | 0.04439 | 3.02 | 40 | |
| Di-n-octyl phthalate | 0.0526 | 0.0100 | 0.05000 | 0 | 105 | 36.9 | 145 | 0.05037 | 4.28 | 40 | |
| Dinoseb | 0.0404 | 0.00500 | 0.05000 | 0 | 80.7 | 10 | 180 | 0.03925 | 2.81 | 40 | |
| Hexachlorobenzene | 0.0371 | 0.00100 | 0.05000 | 0 | 74.2 | 59.5 | 100 | 0.03569 | 3.85 | 40 | |
| Hexachlorobutadiene | 0.0306 | 0.00200 | 0.05000 | 0 | 61.2 | 43.1 | 101 | 0.03127 | 2.19 | 40 | |
| Hexachlorocyclopentadiene | 0.0368 | 0.0100 | 0.05000 | 0 | 73.5 | 10 | 151 | 0.03705 | 0.775 | 40 | |
| Hexachloroethane | 0.0298 | 0.00500 | 0.05000 | 0 | 59.6 | 22.2 | 110 | 0.03012 | 1.05 | 40 | |
| Isophorone | 0.0474 | 0.00500 | 0.05000 | 0 | 94.7 | 63.1 | 110 | 0.04544 | 4.15 | 40 | |
| Nitrobenzene | 0.0418 | 0.00100 | 0.05000 | 0 | 83.7 | 67 | 108 | 0.03988 | 4.77 | 40 | |
| N-Nitrosodi-n-propylamine | 0.0404 | 0.00500 | 0.05000 | 0 | 80.9 | 49.4 | 130 | 0.03808 | 6.02 | 40 | |
| N-Nitrosodiphenylamine | 0.0431 | 0.00500 | 0.05000 | 0 | 86.2 | 67.1 | 105 | 0.04187 | 2.86 | 40 | |
| Pentachlorophenol | 0.0350 | 0.0100 | 0.05000 | 0 | 69.9 | 47.1 | 104 | 0.03386 | 3.21 | 40 | |
| Phenol | 0.0205 | 0.00500 | 0.05000 | 0 | 41.0 | 25.2 | 50.1 | 0.01917 | 6.76 | 40 | |
| Surr: 2,4,6-Tribromophenol | 0.0219 | | 0.03000 | | 73.2 | 47.2 | 144 | | 0 | 40 | |
| Surr: 2-Fluorobiphenyl | 0.0182 | | 0.02000 | | 91.0 | 52.2 | 116 | | 0 | 40 | |
| Surr: 2-Fluorophenol | 0.0180 | | 0.03000 | | 59.8 | 27.3 | 80.6 | | 0 | 40 | |
| Surr: 4-Terphenyl-d14 | 0.0217 | | 0.02000 | | 108 | 48.1 | 134 | | 0 | 40 | |
| Surr: Nitrobenzene-d5 | 0.0175 | | 0.02000 | | 87.3 | 42.5 | 144 | | 0 | 40 | |
| Surr: Phenol-d5 | 0.0115 | | 0.03000 | | 38.2 | 10 | 67.1 | | 0 | 40 | |

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

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

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28141

| Sample ID: LCS-28141 | SampType: LCS | TestCode: 8270_W_REC | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73627 | | | | | | |
|-----------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSW | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1841979 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 1,2,4,5-Tetrachlorobenzene | 0.0395 | 0.00100 | 0.05000 | 0 | 79.1 | 51.3 | 119 | | | | |
| 1,2,4-Trichlorobenzene | 0.0337 | 0.00500 | 0.05000 | 0 | 67.5 | 47.4 | 103 | | | | |
| 1,2-Dichlorobenzene | 0.0352 | 0.00500 | 0.05000 | 0 | 70.4 | 32 | 119 | | | | |
| 1,3-Dichlorobenzene | 0.0334 | 0.00500 | 0.05000 | 0 | 66.8 | 33.9 | 108 | | | | |
| 1,3-Dinitrobenzene | 0.0417 | 0.00500 | 0.05000 | 0 | 83.4 | 56.5 | 132 | | | | |
| 1,4-Dichlorobenzene | 0.0331 | 0.00500 | 0.05000 | 0 | 66.1 | 31.8 | 107 | | | | |
| 2,3,4,6-Tetrachlorophenol | 0.0478 | 0.00500 | 0.05000 | 0 | 95.5 | 71.4 | 118 | | | | |
| 2,4,5-Trichlorophenol | 0.0449 | 0.0100 | 0.05000 | 0 | 89.8 | 63.4 | 113 | | | | |
| 2,4,6-Trichlorophenol | 0.0438 | 0.00500 | 0.05000 | 0 | 87.7 | 62.5 | 109 | | | | |
| 2,4-Dichlorophenol | 0.0412 | 0.00500 | 0.05000 | 0 | 82.3 | 65.8 | 105 | | | | |
| 2,4-Dimethylphenol | 0.0426 | 0.00500 | 0.05000 | 0 | 85.3 | 56.4 | 106 | | | | |
| 2,4-Dinitrophenol | 0.0455 | 0.0200 | 0.05000 | 0 | 91.1 | 10 | 171 | | | | |
| 2,4-Dinitrotoluene | 0.0410 | 0.00500 | 0.05000 | 0 | 82.1 | 72.6 | 107 | | | | |
| 2,6-Dinitrotoluene | 0.0449 | 0.00500 | 0.05000 | 0 | 89.9 | 62.5 | 112 | | | | |
| 2-Chloronaphthalene | 0.0373 | 0.00500 | 0.05000 | 0 | 74.7 | 43.2 | 121 | | | | |
| 2-Chlorophenol | 0.0388 | 0.00500 | 0.05000 | 0 | 77.5 | 57.4 | 104 | | | | |
| 2-Nitroaniline | 0.0445 | 0.00500 | 0.05000 | 0 | 89.0 | 71.4 | 120 | | | | |
| 3,3'-Dichlorobenzidine | 0.0710 | 0.0100 | 0.1000 | 0 | 71.0 | 49.2 | 113 | | | | |
| 3-Nitroaniline | 0.0358 | 0.0200 | 0.05000 | 0 | 71.6 | 37.7 | 116 | | | | |
| 4-Chloroaniline | 0.0371 | 0.00500 | 0.05000 | 0 | 74.2 | 56.4 | 98.6 | | | | |
| 4-Nitroaniline | 0.0450 | 0.00500 | 0.05000 | 0 | 89.9 | 64 | 113 | | | | |
| 4-Nitrophenol | 0.0213 | 0.0200 | 0.05000 | 0 | 42.6 | 22.5 | 63.1 | | | | |
| Aniline | 0.0331 | 0.00500 | 0.05000 | 0 | 66.2 | 48.9 | 102 | | | | |
| Biphenyl | 0.0400 | 0.00500 | 0.05000 | 0 | 80.0 | 41.7 | 130 | | | | |
| Bis(2-chloroethyl)ether | 0.0378 | 0.00500 | 0.05000 | 0 | 75.7 | 51.9 | 112 | | | | |
| Bis(2-chloroisopropyl)ether | 0.0402 | 0.00500 | 0.05000 | 0 | 80.4 | 50.1 | 125 | | | | |

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



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28141

| Sample ID: LCS-28141 | SampType: LCS | TestCode: 8270_W_REC | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73627 | | | | | | |
|----------------------------|-----------------|----------------------|-------------|---------------------------|----------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSW | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1841979 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Bis(2-ethylhexyl)phthalate | 0.0473 | 0.00500 | 0.05000 | 0 | 94.6 | 46.9 | 137 | | | | |
| Butyl benzyl phthalate | 0.0468 | 0.00500 | 0.05000 | 0 | 93.7 | 47.6 | 134 | | | | |
| Dibenzofuran | 0.0428 | 0.00500 | 0.05000 | 0 | 85.6 | 59.5 | 126 | | | | |
| Diethyl phthalate | 0.0435 | 0.00500 | 0.05000 | 0 | 87.0 | 55.4 | 121 | | | | |
| Dimethyl phthalate | 0.0444 | 0.00500 | 0.05000 | 0 | 88.8 | 66 | 109 | | | | |
| Di-n-octyl phthalate | 0.0504 | 0.0100 | 0.05000 | 0 | 101 | 36.9 | 145 | | | | |
| Dinoseb | 0.0392 | 0.00500 | 0.05000 | 0 | 78.5 | 10 | 180 | | | | |
| Hexachlorobenzene | 0.0357 | 0.00100 | 0.05000 | 0 | 71.4 | 59.5 | 100 | | | | |
| Hexachlorobutadiene | 0.0313 | 0.00200 | 0.05000 | 0 | 62.5 | 43.1 | 101 | | | | |
| Hexachlorocyclopentadiene | 0.0371 | 0.0100 | 0.05000 | 0 | 74.1 | 10 | 151 | | | | |
| Hexachloroethane | 0.0301 | 0.00500 | 0.05000 | 0 | 60.2 | 22.2 | 110 | | | | |
| Isophorone | 0.0454 | 0.00500 | 0.05000 | 0 | 90.9 | 63.1 | 110 | | | | |
| Nitrobenzene | 0.0399 | 0.00100 | 0.05000 | 0 | 79.8 | 67 | 108 | | | | |
| N-Nitrosodi-n-propylamine | 0.0381 | 0.00500 | 0.05000 | 0 | 76.2 | 49.4 | 130 | | | | |
| N-Nitrosodiphenylamine | 0.0419 | 0.00500 | 0.05000 | 0 | 83.7 | 67.1 | 105 | | | | |
| Pentachlorophenol | 0.0339 | 0.0100 | 0.05000 | 0 | 67.7 | 47.1 | 104 | | | | |
| Phenol | 0.0192 | 0.00500 | 0.05000 | 0 | 38.3 | 25.2 | 50.1 | | | | |
| Surr: 2,4,6-Tribromophenol | 0.0226 | | 0.03000 | | 75.3 | 47.2 | 144 | | | | |
| Surr: 2-Fluorobiphenyl | 0.0184 | | 0.02000 | | 92.1 | 52.2 | 116 | | | | |
| Surr: 2-Fluorophenol | 0.0178 | | 0.03000 | | 59.3 | 27.3 | 80.6 | | | | |
| Surr: 4-Terphenyl-d14 | 0.0223 | | 0.02000 | | 112 | 48.1 | 134 | | | | |
| Surr: Nitrobenzene-d5 | 0.0176 | | 0.02000 | | 87.8 | 42.5 | 144 | | | | |
| Surr: Phenol-d5 | 0.0113 | | 0.03000 | | 37.8 | 10 | 67.1 | | | | |

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28141

| Sample ID: MB-28141 | SampType: MBLK | TestCode: 625_ALL | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73670 | | | | | | |
|----------------------------|------------------------|--------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: PBW | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1842768 | | | | | | |
| 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: | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits | M | Matrix Interference |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | RL | Reporting Limit |
| | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit | U | Analyte not detected |
| | W | Sample container temperature is out of limit as specified at testcode | | | | |



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28141

| Sample ID: MB-28141 | SampType: MBLK | TestCode: 625_ALL | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73670 | | | | | | |
|----------------------------|------------------------|--------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: PBW | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1842768 | | | | | | |
| 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 | 0.0222 | | 0.03000 | | 74.0 | 74 | 120 | | | | S |
| Surr: 2-Fluorobiphenyl | 0.0190 | | 0.02000 | | 94.8 | 63 | 111 | | | | |
| Surr: 2-Fluorophenol | 0.0151 | | 0.03000 | | 50.4 | 40 | 71 | | | | |
| Surr: Nitrobenzene-d5 | 0.0178 | | 0.02000 | | 88.8 | 67 | 104 | | | | |
| Surr: Phenol-d5 | 0.0104 | | 0.03000 | | 34.7 | 27 | 58 | | | | |
| Surr: Terphenyl-d14 | 0.0222 | | 0.02000 | | 111 | 55 | 123 | | | | |

| Sample ID: LCSD-28141 | SampType: LCSD | TestCode: 625_ALL | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73670 | | | | | | |
|------------------------------|------------------------|--------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSS02 | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1842774 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|------------------------|--------|---------|---------|---|------|----|-----|---------|-------|----|--|
| 1,2,4-Trichlorobenzene | 0.0340 | 0.00400 | 0.05000 | 0 | 67.9 | 57 | 130 | 0.03375 | 0.656 | 30 | |
| 1,3-Dinitrobenzene | 0.0432 | 0.00400 | 0.05000 | 0 | 86.4 | 79 | 120 | 0.04171 | 3.54 | 40 | |
| 2,4,5-Trichlorophenol | 0.0463 | 0.00800 | 0.05000 | 0 | 92.7 | 65 | 120 | 0.04490 | 3.13 | 40 | |
| 2,4,6-Trichlorophenol | 0.0453 | 0.00800 | 0.05000 | 0 | 90.6 | 52 | 129 | 0.04384 | 3.29 | 35 | |

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



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

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

BatchID: 28141

| Sample ID: LCSD-28141 | SampType: LCSD | TestCode: 625_ALL | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73670 | | | | | | |
|-----------------------------|-----------------|-------------------|-------------|---------------------------|----------------|----------|-----------|-------------|-------|----------|------|
| Client ID: LCSS02 | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1842774 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 2,4-Dichlorophenol | 0.0427 | 0.00800 | 0.05000 | 0 | 85.4 | 53 | 122 | 0.04116 | 3.63 | 30 | |
| 2,4-Dimethylphenol | 0.0441 | 0.00800 | 0.05000 | 0 | 88.3 | 42 | 120 | 0.04265 | 3.42 | 35 | |
| 2,4-Dinitrophenol | 0.0477 | 0.0200 | 0.05000 | 0 | 95.4 | 5 | 173 | 0.04553 | 4.67 | 79 | |
| 2,4-Dinitrotoluene | 0.0428 | 0.00400 | 0.05000 | 0 | 85.6 | 48 | 127 | 0.04103 | 4.19 | 25 | |
| 2,6-Dinitrotoluene | 0.0460 | 0.00400 | 0.05000 | 0 | 91.9 | 68 | 137 | 0.04493 | 2.27 | 29 | |
| 2-Chloronaphthalene | 0.0385 | 0.00400 | 0.05000 | 0 | 76.9 | 65 | 120 | 0.03734 | 2.94 | 15 | |
| 2-Chlorophenol | 0.0403 | 0.00800 | 0.05000 | 0 | 80.6 | 36 | 120 | 0.03877 | 3.86 | 37 | |
| 2-Nitroaniline | 0.0463 | 0.00400 | 0.05000 | 0 | 92.6 | 80 | 120 | 0.04448 | 4.01 | 40 | |
| 3,3'-Dichlorobenzidine | 0.0714 | 0.00400 | 0.1000 | 0 | 71.4 | 8 | 213 | 0.07104 | 0.577 | 65 | |
| 3-Nitroaniline | 0.0371 | 0.00400 | 0.05000 | 0 | 74.1 | 68 | 101 | 0.03579 | 3.48 | 40 | |
| 4-Chloroaniline | 0.0387 | 0.00400 | 0.05000 | 0 | 77.4 | 65 | 107 | 0.03712 | 4.23 | 40 | |
| 4-Nitroaniline | 0.0462 | 0.00400 | 0.05000 | 0 | 92.4 | 78 | 120 | 0.04496 | 2.68 | 40 | |
| 4-Nitrophenol | 0.0220 | 0.0200 | 0.05000 | 0 | 43.9 | 13 | 129 | 0.02131 | 2.97 | 79 | |
| Aniline | 0.0351 | 0.00400 | 0.05000 | 0 | 70.2 | 39 | 101 | 0.03310 | 5.91 | 40 | |
| Bis(2-chloroethyl)ether | 0.0399 | 0.00400 | 0.05000 | 0 | 79.8 | 43 | 126 | 0.03784 | 5.24 | 65 | |
| Bis(2-chloroisopropyl)ether | 0.0430 | 0.00400 | 0.05000 | 0 | 86.0 | 63 | 139 | 0.04021 | 6.70 | 46 | |
| Bis(2-ethylhexyl)phthalate | 0.0488 | 0.00400 | 0.05000 | 0 | 97.7 | 29 | 137 | 0.04728 | 3.27 | 50 | |
| Butyl benzyl phthalate | 0.0482 | 0.00400 | 0.05000 | 0 | 96.5 | 5 | 140 | 0.04683 | 2.98 | 36 | |
| Dibenzofuran | 0.0440 | 0.00400 | 0.05000 | 0 | 87.9 | 81 | 120 | 0.04282 | 2.64 | 40 | |
| Diethyl phthalate | 0.0449 | 0.00400 | 0.05000 | 0 | 89.9 | 5 | 120 | 0.04352 | 3.22 | 60 | |
| Dimethyl phthalate | 0.0457 | 0.00400 | 0.05000 | 0 | 91.5 | 5 | 120 | 0.04439 | 3.02 | 110 | |
| Di-n-octyl phthalate | 0.0526 | 0.00400 | 0.05000 | 0 | 105 | 19 | 132 | 0.05037 | 4.28 | 42 | |
| Hexachlorobenzene | 0.0371 | 0.00400 | 0.05000 | 0 | 74.2 | 8 | 142 | 0.03569 | 3.85 | 33 | |
| Hexachlorobutadiene | 0.0306 | 0.00400 | 0.05000 | 0 | 61.2 | 38 | 120 | 0.03127 | 2.19 | 38 | |
| Hexachlorocyclopentadiene | 0.0368 | 0.00400 | 0.05000 | 0 | 73.5 | 10 | 116 | 0.03705 | 0.775 | 40 | |
| Hexachloroethane | 0.0298 | 0.00400 | 0.05000 | 0 | 59.6 | 55 | 120 | 0.03012 | 1.05 | 32 | |

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

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

BatchID: 28141

| Sample ID: LCS-28141 | SampType: LCS | TestCode: 625_ALL | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73670 | | | | | | |
|-----------------------------|------------------------|--------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCS02 | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1842774 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Isophorone | 0.0474 | 0.00400 | 0.05000 | 0 | 94.7 | 47 | 180 | 0.04544 | 4.15 | 56 | |
| Nitrobenzene | 0.0418 | 0.00400 | 0.05000 | 0 | 83.7 | 54 | 158 | 0.03988 | 4.77 | 37 | |
| N-Nitrosodi-n-propylamine | 0.0404 | 0.00400 | 0.05000 | 0 | 80.9 | 14 | 198 | 0.03808 | 6.02 | 52 | |
| N-Nitrosodiphenylamine | 0.0431 | 0.00400 | 0.05000 | 0 | 86.2 | 71 | 120 | 0.04187 | 2.86 | 40 | |
| Pentachlorophenol | 0.0350 | 0.00400 | 0.05000 | 0 | 69.9 | 38 | 152 | 0.03386 | 3.21 | 52 | |
| Phenol | 0.0205 | 0.00800 | 0.05000 | 0 | 41.0 | 17 | 120 | 0.01917 | 6.76 | 39 | |
| Surr: 2,4,6-Tribromophenol | 0.0219 | | 0.03000 | | 73.2 | 74 | 120 | | 0 | 40 | S |
| Surr: 2-Fluorobiphenyl | 0.0182 | | 0.02000 | | 91.0 | 63 | 111 | | 0 | 40 | |
| Surr: 2-Fluorophenol | 0.0180 | | 0.03000 | | 59.8 | 40 | 71 | | 0 | 40 | |
| Surr: Nitrobenzene-d5 | 0.0175 | | 0.02000 | | 87.3 | 67 | 104 | | 0 | 40 | |
| Surr: Phenol-d5 | 0.0115 | | 0.03000 | | 38.2 | 27 | 58 | | 0 | 40 | |
| Surr: Terphenyl-d14 | 0.0217 | | 0.02000 | | 108 | 55 | 123 | | 0 | 40 | |

| Sample ID: LCS-28141 | SampType: LCS | TestCode: 625_ALL | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73670 | | | | | | |
|-----------------------------|------------------------|--------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSW | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1842775 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 1,2,4-Trichlorobenzene | 0.0337 | 0.00400 | 0.05000 | 0 | 67.5 | 57 | 130 | | | | |
| 1,3-Dinitrobenzene | 0.0417 | 0.00400 | 0.05000 | 0 | 83.4 | 79 | 120 | | | | |
| 2,4,5-Trichlorophenol | 0.0449 | 0.00800 | 0.05000 | 0 | 89.8 | 65 | 120 | | | | |
| 2,4,6-Trichlorophenol | 0.0438 | 0.00800 | 0.05000 | 0 | 87.7 | 52 | 129 | | | | |
| 2,4-Dichlorophenol | 0.0412 | 0.00800 | 0.05000 | 0 | 82.3 | 53 | 122 | | | | |
| 2,4-Dimethylphenol | 0.0426 | 0.00800 | 0.05000 | 0 | 85.3 | 42 | 120 | | | | |
| 2,4-Dinitrophenol | 0.0455 | 0.0200 | 0.05000 | 0 | 91.1 | 5 | 173 | | | | |
| 2,4-Dinitrotoluene | 0.0410 | 0.00400 | 0.05000 | 0 | 82.1 | 48 | 127 | | | | |

Qualifiers:

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



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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28141

| Sample ID: LCS-28141 | SampType: LCS | TestCode: 625_ALL | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73670 | | | | | | |
|-----------------------------|------------------------|--------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSW | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1842775 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 2,6-Dinitrotoluene | 0.0449 | 0.00400 | 0.05000 | 0 | 89.9 | 68 | 137 | | | | |
| 2-Chloronaphthalene | 0.0373 | 0.00400 | 0.05000 | 0 | 74.7 | 65 | 120 | | | | |
| 2-Chlorophenol | 0.0388 | 0.00800 | 0.05000 | 0 | 77.5 | 36 | 120 | | | | |
| 2-Nitroaniline | 0.0445 | 0.00400 | 0.05000 | 0 | 89.0 | 80 | 120 | | | | |
| 3,3'-Dichlorobenzidine | 0.0710 | 0.00400 | 0.1000 | 0 | 71.0 | 8 | 213 | | | | |
| 3-Nitroaniline | 0.0358 | 0.00400 | 0.05000 | 0 | 71.6 | 68 | 101 | | | | |
| 4-Chloroaniline | 0.0371 | 0.00400 | 0.05000 | 0 | 74.2 | 65 | 107 | | | | |
| 4-Nitroaniline | 0.0450 | 0.00400 | 0.05000 | 0 | 89.9 | 78 | 120 | | | | |
| 4-Nitrophenol | 0.0213 | 0.0200 | 0.05000 | 0 | 42.6 | 13 | 129 | | | | |
| Aniline | 0.0331 | 0.00400 | 0.05000 | 0 | 66.2 | 39 | 101 | | | | |
| Bis(2-chloroethyl)ether | 0.0378 | 0.00400 | 0.05000 | 0 | 75.7 | 43 | 126 | | | | |
| Bis(2-chloroisopropyl)ether | 0.0402 | 0.00400 | 0.05000 | 0 | 80.4 | 63 | 139 | | | | |
| Bis(2-ethylhexyl)phthalate | 0.0473 | 0.00400 | 0.05000 | 0 | 94.6 | 29 | 137 | | | | |
| Butyl benzyl phthalate | 0.0468 | 0.00400 | 0.05000 | 0 | 93.7 | 5 | 140 | | | | |
| Dibenzofuran | 0.0428 | 0.00400 | 0.05000 | 0 | 85.6 | 81 | 120 | | | | |
| Diethyl phthalate | 0.0435 | 0.00400 | 0.05000 | 0 | 87.0 | 5 | 120 | | | | |
| Dimethyl phthalate | 0.0444 | 0.00400 | 0.05000 | 0 | 88.8 | 5 | 120 | | | | |
| Di-n-octyl phthalate | 0.0504 | 0.00400 | 0.05000 | 0 | 101 | 19 | 132 | | | | |
| Hexachlorobenzene | 0.0357 | 0.00400 | 0.05000 | 0 | 71.4 | 8 | 142 | | | | |
| Hexachlorobutadiene | 0.0313 | 0.00400 | 0.05000 | 0 | 62.5 | 38 | 120 | | | | |
| Hexachlorocyclopentadiene | 0.0371 | 0.00400 | 0.05000 | 0 | 74.1 | 10 | 116 | | | | |
| Hexachloroethane | 0.0301 | 0.00400 | 0.05000 | 0 | 60.2 | 55 | 120 | | | | |
| Isophorone | 0.0454 | 0.00400 | 0.05000 | 0 | 90.9 | 47 | 180 | | | | |
| Nitrobenzene | 0.0399 | 0.00400 | 0.05000 | 0 | 79.8 | 54 | 158 | | | | |
| N-Nitrosodi-n-propylamine | 0.0381 | 0.00400 | 0.05000 | 0 | 76.2 | 14 | 198 | | | | |
| N-Nitrosodiphenylamine | 0.0419 | 0.00400 | 0.05000 | 0 | 83.7 | 71 | 120 | | | | |

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28141

| Sample ID: LCS-28141 | SampType: LCS | TestCode: 625_ALL | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73670 | | | | | | |
|-----------------------------|------------------------|--------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSW | Batch ID: 28141 | TestNo: SW8270C | E625/SW3510 | Analysis Date: 10/26/2018 | SeqNo: 1842775 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|----------------------------|--------|---------|---------|---|------|----|-----|--|--|--|--|
| Pentachlorophenol | 0.0339 | 0.00400 | 0.05000 | 0 | 67.7 | 38 | 152 | | | | |
| Phenol | 0.0192 | 0.00800 | 0.05000 | 0 | 38.3 | 17 | 120 | | | | |
| Surr: 2,4,6-Tribromophenol | 0.0226 | | 0.03000 | | 75.3 | 74 | 120 | | | | |
| Surr: 2-Fluorobiphenyl | 0.0184 | | 0.02000 | | 92.1 | 63 | 111 | | | | |
| Surr: 2-Fluorophenol | 0.0178 | | 0.03000 | | 59.3 | 40 | 71 | | | | |
| Surr: Nitrobenzene-d5 | 0.0176 | | 0.02000 | | 87.8 | 67 | 104 | | | | |
| Surr: Phenol-d5 | 0.0113 | | 0.03000 | | 37.8 | 27 | 58 | | | | |
| Surr: Terphenyl-d14 | 0.0223 | | 0.02000 | | 112 | 55 | 123 | | | | |

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28142

| | | | | | | | | | | | |
|-------------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS-D-28142 | SampType: LCS | TestCode: 8015_DO_W_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73635 | | | | | | |
| Client ID: LCSW | Batch ID: 28142 | TestNo: SW8015B | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842143 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|-----------------------|--------|-------|---------|---|------|------|-----|--|--|--|--|
| TPH (Diesel Range) | 1.71 | 0.135 | 1.787 | 0 | 95.9 | 70 | 130 | | | | |
| Surr: 4-Terphenyl-d14 | 0.0605 | | 0.05956 | | 102 | 51.4 | 146 | | | | |

| | | | | | | | | | | | |
|--------------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCSD-D-28142 | SampType: LCSD | TestCode: 8015_DO_W_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73635 | | | | | | |
| Client ID: LCSS02 | Batch ID: 28142 | TestNo: SW8015B | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842144 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | |
|-----------------------|--------|-------|---------|---|------|------|-----|-------|------|------|
| TPH (Diesel Range) | 1.75 | 0.137 | 1.804 | 0 | 97.2 | 70 | 130 | 1.714 | 2.27 | 14.1 |
| Surr: 4-Terphenyl-d14 | 0.0383 | | 0.06013 | | 63.7 | 51.4 | 146 | | 0 | 40 |

| | | | | | | | | | | | |
|--------------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCSD-M-28142 | SampType: LCSD | TestCode: 8015_DO_W_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73635 | | | | | | |
| Client ID: LCSS02 | Batch ID: 28142 | TestNo: SW8015B | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842145 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | |
|-----------------------|--------|-------|---------|---|------|------|-----|-------|------|------|
| TPH (Oil Range) | 1.55 | 0.124 | 1.773 | 0 | 87.3 | 70 | 130 | 1.373 | 11.9 | 23.2 |
| Surr: 4-Terphenyl-d14 | 0.0744 | | 0.05910 | | 126 | 51.4 | 146 | | 0 | 40 |

| | | | | | | | | | | | |
|-------------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS-M-28142 | SampType: LCS | TestCode: 8015_DO_W_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73635 | | | | | | |
| Client ID: LCSW | Batch ID: 28142 | TestNo: SW8015B | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842146 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | |
|-----------------|------|-------|-------|---|------|----|-----|--|--|--|
| TPH (Oil Range) | 1.37 | 0.126 | 1.804 | 0 | 76.1 | 70 | 130 | | | |
|-----------------|------|-------|-------|---|------|----|-----|--|--|--|

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28142

| | | | | | | | | | | | |
|-------------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS-M-28142 | SampType: LCS | TestCode: 8015_DO_W_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73635 | | | | | | |
| Client ID: LCSW | Batch ID: 28142 | TestNo: SW8015B | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842146 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Surr: 4-Terphenyl-d14 | 0.0457 | | 0.06013 | | 76.0 | 51.4 | 146 | | | | |

| | | | | | | | | | | | |
|----------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MB-28142 | SampType: MBLK | TestCode: 8015_DO_W_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73635 | | | | | | |
| Client ID: PBW | Batch ID: 28142 | TestNo: SW8015B | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842147 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| TPH (Diesel Range) | 0.0501 | 0.137 | | | | | | | | | J |
| TPH (Oil Range) | < 0.127 | 0.127 | | | | | | | | | |
| Surr: 4-Terphenyl-d14 | 0.0520 | | 0.06038 | | 86.1 | 51.4 | 146 | | | | |

Qualifiers:

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

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

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28146

| Sample ID: MB-28146 | SampType: MBLK | TestCode: 8270_W_LVI_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73636 | | | | | | |
|----------------------------|------------------------|------------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: PBW | Batch ID: 28146 | TestNo: SW8270C | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842148 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 2-Methylnaphthalene | < 0.000519 | 0.000519 | | | | | | | | | |
| Acenaphthene | < 0.00104 | 0.00104 | | | | | | | | | |
| Acenaphthylene | < 0.00104 | 0.00104 | | | | | | | | | |
| Anthracene | 0.0000425 | 0.00104 | | | | | | | | | J |
| Benzo(a)anthracene | < 0.000519 | 0.000519 | | | | | | | | | |
| Benzo(a)pyrene | < 0.000176 | 0.000176 | | | | | | | | | |
| Benzo(b)fluoranthene | < 0.000519 | 0.000519 | | | | | | | | | |
| Benzo(k)fluoranthene | < 0.000519 | 0.000519 | | | | | | | | | |
| Chrysene | < 0.000519 | 0.000519 | | | | | | | | | |
| Dibenz(a,h)anthracene | < 0.00104 | 0.00104 | | | | | | | | | |
| Fluoranthene | < 0.00104 | 0.00104 | | | | | | | | | |
| Fluorene | < 0.000622 | 0.000622 | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | < 0.000519 | 0.000519 | | | | | | | | | |
| Naphthalene | < 0.00104 | 0.00104 | | | | | | | | | |
| Phenanthrene | 0.0000394 | 0.00104 | | | | | | | | | J |
| Pyrene | < 0.00104 | 0.00104 | | | | | | | | | |
| Surr: 4-Terphenyl-d14 | 0.00275 | | 0.002375 | | 116 | 49.2 | 161 | | | | |

| Sample ID: LCSD-28146 | SampType: LCSD | TestCode: 8270_W_LVI_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73636 | | | | | | |
|------------------------------|------------------------|------------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSS02 | Batch ID: 28146 | TestNo: SW8270C | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842153 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 2-Methylnaphthalene | 0.00239 | 0.000521 | 0.002382 | 0 | 101 | 60.8 | 127 | 0.002603 | 8.33 | 40 | |
| Acenaphthene | 0.00251 | 0.00104 | 0.002386 | 0 | 105 | 72.5 | 121 | 0.002676 | 6.26 | 40 | |
| Acenaphthylene | 0.00240 | 0.00104 | 0.002386 | 0 | 100 | 65.7 | 128 | 0.002362 | 1.51 | 40 | |

Qualifiers:

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



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28146

| Sample ID: LCS-28146 | SampType: LCS | TestCode: 8270_W_LVI_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73636 | | | | | | |
|-----------------------------|------------------------|------------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|-------|----------|------|
| Client ID: LCS02 | Batch ID: 28146 | TestNo: SW8270C | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842153 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Anthracene | 0.00230 | 0.00104 | 0.002386 | 0 | 96.3 | 73.4 | 120 | 0.002219 | 3.49 | 40 | |
| Benzo(a)anthracene | 0.00264 | 0.000521 | 0.002386 | 0 | 111 | 69 | 121 | 0.002624 | 0.641 | 40 | |
| Benzo(a)pyrene | 0.00236 | 0.000177 | 0.002386 | 0 | 98.8 | 70.6 | 120 | 0.002326 | 1.38 | 40 | |
| Benzo(b)fluoranthene | 0.00286 | 0.000521 | 0.002386 | 0 | 120 | 65.3 | 127 | 0.002691 | 5.96 | 40 | |
| Benzo(k)fluoranthene | 0.00266 | 0.000521 | 0.002386 | 0 | 111 | 68.6 | 125 | 0.002614 | 1.65 | 40 | |
| Chrysene | 0.00260 | 0.000521 | 0.002386 | 0 | 109 | 74.4 | 120 | 0.002541 | 2.39 | 40 | |
| Dibenz(a,h)anthracene | 0.00273 | 0.00104 | 0.002386 | 0 | 114 | 66.4 | 126 | 0.002789 | 2.31 | 40 | |
| Fluoranthene | 0.00282 | 0.00104 | 0.002386 | 0 | 118 | 70.7 | 121 | 0.002391 | 16.4 | 40 | |
| Fluorene | 0.00255 | 0.000625 | 0.002386 | 0 | 107 | 62.5 | 134 | 0.002731 | 6.90 | 40 | |
| Indeno(1,2,3-cd)pyrene | 0.00254 | 0.000521 | 0.002386 | 0 | 107 | 66.9 | 120 | 0.002480 | 2.49 | 40 | |
| Naphthalene | 0.00245 | 0.00104 | 0.002386 | 0 | 102 | 63.5 | 137 | 0.002279 | 7.03 | 40 | |
| Phenanthrene | 0.00253 | 0.00104 | 0.002386 | 0 | 106 | 74.1 | 118 | 0.002560 | 1.18 | 40 | |
| Pyrene | 0.00283 | 0.00104 | 0.002386 | 0 | 119 | 73.2 | 120 | 0.002744 | 3.23 | 40 | |
| Surr: 4-Terphenyl-d14 | 0.00258 | | 0.002386 | | 108 | 49.2 | 161 | | 0 | 40 | |

| Sample ID: LCS-28146 | SampType: LCS | TestCode: 8270_W_LVI_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73636 | | | | | | |
|-----------------------------|------------------------|------------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSW | Batch ID: 28146 | TestNo: SW8270C | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842154 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 2-Methylnaphthalene | 0.00260 | 0.000523 | 0.002393 | 0 | 109 | 60.8 | 127 | | | | |
| Acenaphthene | 0.00268 | 0.00105 | 0.002398 | 0 | 112 | 72.5 | 121 | | | | |
| Acenaphthylene | 0.00236 | 0.00105 | 0.002398 | 0 | 98.5 | 65.7 | 128 | | | | |
| Anthracene | 0.00222 | 0.00105 | 0.002398 | 0 | 92.6 | 73.4 | 120 | | | | |
| Benzo(a)anthracene | 0.00262 | 0.000523 | 0.002398 | 0 | 109 | 69 | 121 | | | | |
| Benzo(a)pyrene | 0.00233 | 0.000178 | 0.002398 | 0 | 97.0 | 70.6 | 120 | | | | |

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



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28146

| Sample ID: LCS-28146 | SampType: LCS | TestCode: 8270_W_LVI_ | Units: mg/L | Prep Date: 10/25/2018 | RunNo: 73636 | | | | | | |
|-----------------------------|------------------------|------------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSW | Batch ID: 28146 | TestNo: SW8270C | SW3511 | Analysis Date: 10/26/2018 | SeqNo: 1842154 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Benzo(b)fluoranthene | 0.00269 | 0.000523 | 0.002398 | 0 | 112 | 65.3 | 127 | | | | |
| Benzo(k)fluoranthene | 0.00261 | 0.000523 | 0.002398 | 0 | 109 | 68.6 | 125 | | | | |
| Chrysene | 0.00254 | 0.000523 | 0.002398 | 0 | 106 | 74.4 | 120 | | | | |
| Dibenz(a,h)anthracene | 0.00279 | 0.00105 | 0.002398 | 0 | 116 | 66.4 | 126 | | | | |
| Fluoranthene | 0.00239 | 0.00105 | 0.002398 | 0 | 99.7 | 70.7 | 121 | | | | |
| Fluorene | 0.00273 | 0.000628 | 0.002398 | 0 | 114 | 62.5 | 134 | | | | |
| Indeno(1,2,3-cd)pyrene | 0.00248 | 0.000523 | 0.002398 | 0 | 103 | 66.9 | 120 | | | | |
| Naphthalene | 0.00228 | 0.00105 | 0.002398 | 0 | 95.1 | 63.5 | 137 | | | | |
| Phenanthrene | 0.00256 | 0.00105 | 0.002398 | 0 | 107 | 74.1 | 118 | | | | |
| Pyrene | 0.00274 | 0.00105 | 0.002398 | 0 | 114 | 73.2 | 120 | | | | |
| Surr: 4-Terphenyl-d14 | 0.00261 | | 0.002398 | | 109 | 49.2 | 161 | | | | |

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28150

| | | | | | | | | | | | |
|----------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MB-28150 | SampType: MBLK | TestCode: HG_W_7470A | Units: mg/L | Prep Date: 10/26/2018 | RunNo: 73631 | | | | | | |
| Client ID: PBW | Batch ID: 28150 | TestNo: SW7470A | | Analysis Date: 10/26/2018 | SeqNo: 1842059 | | | | | | |
| 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-28150 | SampType: LCS | TestCode: HG_W_7470A | Units: mg/L | Prep Date: 10/26/2018 | RunNo: 73631 | | | | | | |
| Client ID: LCSW | Batch ID: 28150 | TestNo: SW7470A | | Analysis Date: 10/26/2018 | SeqNo: 1842060 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Mercury | 0.0108 | 0.000200 | 0.01000 | 0 | 108 | 80 | 120 | | | | |

| | | | | | | | | | | | |
|------------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCSD-28150 | SampType: LCSD | TestCode: HG_W_7470A | Units: mg/L | Prep Date: 10/26/2018 | RunNo: 73631 | | | | | | |
| Client ID: LCSS02 | Batch ID: 28150 | TestNo: SW7470A | | Analysis Date: 10/26/2018 | SeqNo: 1842061 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Mercury | 0.0106 | 0.000200 | 0.01000 | 0 | 106 | 80 | 120 | 0.01084 | 2.60 | 20 | |

| | | | | | | | | | | | |
|-----------------------------------|------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: 18100869-001DMS | SampType: MS | TestCode: HG_W_7470A | Units: mg/L | Prep Date: 10/26/2018 | RunNo: 73631 | | | | | | |
| Client ID: ZZZZZZ | Batch ID: 28150 | TestNo: SW7470A | | Analysis Date: 10/26/2018 | SeqNo: 1842065 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Mercury | 0.0104 | 0.000200 | 0.01000 | 0 | 104 | 75 | 125 | | | | |

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28150

| Sample ID: 18100869-001DMSD | SampType: MSD | TestCode: HG_W_7470A | Units: mg/L | Prep Date: 10/26/2018 | RunNo: 73631 | | | | | | |
|-----------------------------|-----------------|----------------------|-------------|---------------------------|----------------|----------|-----------|-------------|------|----------|------|
| Client ID: ZZZZZZ | Batch ID: 28150 | TestNo: SW7470A | | Analysis Date: 10/26/2018 | SeqNo: 1842066 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Mercury | 0.0102 | 0.000200 | 0.01000 | 0 | 102 | 75 | 125 | 0.01041 | 1.60 | 20 | |

Qualifiers:

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

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

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28160

| Sample ID: MB-28160 | SampType: MBLK | TestCode: 6010_W | Units: mg/L | Prep Date: 10/29/2018 | RunNo: 73708 | | | | | | |
|----------------------------|------------------------|-------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: PBW | Batch ID: 28160 | TestNo: SW6010B | | Analysis Date: 10/30/2018 | SeqNo: 1843572 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | < 0.0100 | 0.0100 | | | | | | | | | |
| Barium | < 0.0100 | 0.0100 | | | | | | | | | |
| Cadmium | < 0.00500 | 0.00500 | | | | | | | | | |
| Chromium | < 0.0100 | 0.0100 | | | | | | | | | |
| Lead | < 0.0100 | 0.0100 | | | | | | | | | |
| Selenium | 0.0137 | 0.0200 | | | | | | | | | J |
| Silver | 0.000800 | 0.00500 | | | | | | | | | J |
| Sodium | < 10.0 | 10.0 | | | | | | | | | |

| Sample ID: LCS-28160 | SampType: LCS | TestCode: 6010_W | Units: mg/L | Prep Date: 10/29/2018 | RunNo: 73708 | | | | | | |
|-----------------------------|------------------------|-------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSW | Batch ID: 28160 | TestNo: SW6010B | | Analysis Date: 10/30/2018 | SeqNo: 1843573 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | 0.490 | 0.0100 | 0.5000 | 0 | 98.0 | 80 | 120 | | | | |
| Barium | 0.489 | 0.0100 | 0.5000 | 0 | 97.9 | 80 | 120 | | | | |
| Cadmium | 0.482 | 0.00500 | 0.5000 | 0 | 96.4 | 80 | 120 | | | | |
| Chromium | 0.485 | 0.0100 | 0.5000 | 0 | 96.9 | 80 | 120 | | | | |
| Lead | 0.488 | 0.0100 | 0.5000 | 0 | 97.5 | 80 | 120 | | | | |
| Selenium | 0.500 | 0.0200 | 0.5000 | 0 | 100 | 80 | 120 | | | | |
| Silver | 0.0956 | 0.00500 | 0.1000 | 0 | 95.6 | 80 | 120 | | | | |
| Sodium | 50.0 | 10.0 | 50.00 | 0 | 100 | 80 | 120 | | | | |

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



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QC SUMMARY REPORT

WO#: **18100944**
09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28160

| Sample ID: LCSD-28160 | SampType: LCSD | TestCode: 6010_W | Units: mg/L | Prep Date: 10/29/2018 | RunNo: 73708 | | | | | | |
|------------------------------|------------------------|-------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|-------|----------|------|
| Client ID: LCSS02 | Batch ID: 28160 | TestNo: SW6010B | | Analysis Date: 10/30/2018 | SeqNo: 1843574 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | 0.501 | 0.0100 | 0.5000 | 0 | 100 | 80 | 120 | 0.4901 | 2.14 | 20 | |
| Barium | 0.495 | 0.0100 | 0.5000 | 0 | 99.0 | 80 | 120 | 0.4893 | 1.12 | 20 | |
| Cadmium | 0.486 | 0.00500 | 0.5000 | 0 | 97.2 | 80 | 120 | 0.4822 | 0.785 | 20 | |
| Chromium | 0.489 | 0.0100 | 0.5000 | 0 | 97.9 | 80 | 120 | 0.4846 | 0.965 | 20 | |
| Lead | 0.496 | 0.0100 | 0.5000 | 0 | 99.2 | 80 | 120 | 0.4877 | 1.67 | 20 | |
| Selenium | 0.507 | 0.0200 | 0.5000 | 0 | 101 | 80 | 120 | 0.5002 | 1.43 | 20 | |
| Silver | 0.0963 | 0.00500 | 0.1000 | 0 | 96.3 | 80 | 120 | 0.09560 | 0.730 | 20 | |
| Sodium | 47.1 | 10.0 | 50.00 | 0 | 94.2 | 80 | 120 | 50.01 | 6.01 | 20 | |

| Sample ID: 18100889-003AMS | SampType: MS | TestCode: 6010_W | Units: mg/L | Prep Date: 10/29/2018 | RunNo: 73708 | | | | | | |
|-----------------------------------|------------------------|-------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: ZZZZZZ | Batch ID: 28160 | TestNo: SW6010B | | Analysis Date: 10/30/2018 | SeqNo: 1843578 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | 0.514 | 0.0100 | 0.5000 | 0 | 103 | 75 | 125 | | | | |
| Barium | 1.27 | 0.0100 | 0.5000 | 0.8521 | 83.8 | 75 | 125 | | | | |
| Cadmium | 0.509 | 0.00500 | 0.5000 | 0.003600 | 101 | 75 | 125 | | | | |
| Chromium | 0.481 | 0.0100 | 0.5000 | 0.01060 | 94.0 | 75 | 125 | | | | |
| Lead | 0.446 | 0.0100 | 0.5000 | 0.005300 | 88.1 | 75 | 125 | | | | |
| Selenium | 0.658 | 0.0200 | 0.5000 | 0.1699 | 97.7 | 75 | 125 | | | | |
| Silver | 0.108 | 0.00500 | 0.1000 | 0 | 108 | 75 | 125 | | | | |
| Sodium | 11,700 | 10.0 | 50.00 | 11,850 | -280 | 75 | 125 | | | | S |

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: 28160

| | | | | | |
|-----------------------------|-----------------|------------------|-------------|---------------------------|----------------|
| Sample ID: 18100889-003AMSD | SampType: MSD | TestCode: 6010_W | Units: mg/L | Prep Date: 10/29/2018 | RunNo: 73708 |
| Client ID: ZZZZZZ | Batch ID: 28160 | TestNo: SW6010B | | Analysis Date: 10/30/2018 | SeqNo: 1843581 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|----------|--------|---------|-----------|-------------|------|----------|-----------|-------------|--------|----------|------|
| Arsenic | 0.522 | 0.0100 | 0.5000 | 0 | 104 | 75 | 125 | 0.5143 | 1.39 | 20 | |
| Barium | 1.38 | 0.0100 | 0.5000 | 0.8521 | 107 | 75 | 125 | 1.271 | 8.58 | 20 | |
| Cadmium | 0.514 | 0.00500 | 0.5000 | 0.003600 | 102 | 75 | 125 | 0.5093 | 0.860 | 20 | |
| Chromium | 0.489 | 0.0100 | 0.5000 | 0.01060 | 95.7 | 75 | 125 | 0.4806 | 1.79 | 20 | |
| Lead | 0.448 | 0.0100 | 0.5000 | 0.005300 | 88.6 | 75 | 125 | 0.4457 | 0.537 | 20 | |
| Selenium | 0.691 | 0.0200 | 0.5000 | 0.1699 | 104 | 75 | 125 | 0.6584 | 4.89 | 20 | |
| Silver | 0.108 | 0.00500 | 0.1000 | 0 | 108 | 75 | 125 | 0.1076 | 0.464 | 20 | |
| Sodium | 11,700 | 10.0 | 50.00 | 11,850 | -300 | 75 | 125 | 11,710 | 0.0854 | 20 | S |

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

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



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QC SUMMARY REPORT

WO#: **18100944**
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73590

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

Chloride < 0.250 0.250

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

Chloride 10.7 0.250 10.00 0 107 80 120

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

Chloride 10.2 0.250 10.00 0 102 80 120 10.67 4.51 15

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

Chloride 190 5.00 100.0 95.36 95.1 80 120

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73590

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

Qualifiers:

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

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

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



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QC SUMMARY REPORT

WO#: **18100944**
09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73610

| | | | | | | | | | | | |
|-----------------------------|-------------------------|----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MB-R73610 | SampType: MBLK | TestCode: TDS_2540C | Units: mg/L | Prep Date: | RunNo: 73610 | | | | | | |
| Client ID: PBW | Batch ID: R73610 | TestNo: SM2540C | | Analysis Date: 10/26/2018 | SeqNo: 1842735 | | | | | | |
| 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-R73610 | SampType: LCS | TestCode: TDS_2540C | Units: mg/L | Prep Date: | RunNo: 73610 | | | | | | |
| Client ID: LCSW | Batch ID: R73610 | TestNo: SM2540C | | Analysis Date: 10/26/2018 | SeqNo: 1842736 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Total Dissolved Solids (Residue, Filterable) 992 20.0 1,000 0 99.2 85 115

| | | | | | | | | | | | |
|-------------------------------|-------------------------|----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCSD-R73610 | SampType: LCSD | TestCode: TDS_2540C | Units: mg/L | Prep Date: | RunNo: 73610 | | | | | | |
| Client ID: LCSS02 | Batch ID: R73610 | TestNo: SM2540C | | Analysis Date: 10/26/2018 | SeqNo: 1842737 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Total Dissolved Solids (Residue, Filterable) 991 20.0 1,000 0 99.1 85 115 992.0 0.101 10

| | | | | | | | | | | | |
|------------------------------------|-------------------------|----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: 18100836-001BDUP | SampType: DUP | TestCode: TDS_2540C | Units: mg/L | Prep Date: | RunNo: 73610 | | | | | | |
| Client ID: ZZZZZ | Batch ID: R73610 | TestNo: SM2540C | | Analysis Date: 10/26/2018 | SeqNo: 1842740 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Total Dissolved Solids (Residue, Filterable) 15,800 2,000 16,000 1.26 10

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



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

QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73610

| | | | | | | | | | | | |
|-----------------------------|------------------|---------------------|-------------|---------------------------|----------------|----------|-----------|-------------|------|----------|------|
| Sample ID: 18100836-001BDUP | SampType: DUP | TestCode: TDS_2540C | Units: mg/L | Prep Date: | RunNo: 73610 | | | | | | |
| Client ID: ZZZZZZ | Batch ID: R73610 | TestNo: SM2540C | | Analysis Date: 10/26/2018 | SeqNo: 1842740 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|------------------------------|------------------|---------------------|-------------|---------------------------|----------------|----------|-----------|-------------|------|----------|------|
| Sample ID: 18100944-001EDUP | SampType: DUP | TestCode: TDS_2540C | Units: mg/L | Prep Date: | RunNo: 73610 | | | | | | |
| Client ID: 9435Z Wynon McCla | Batch ID: R73610 | TestNo: SM2540C | | Analysis Date: 10/26/2018 | SeqNo: 1842744 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|--|-----|------|--|--|--|--|--|-------|------|----|---|
| Total Dissolved Solids (Residue, Filterable) | 501 | 20.0 | | | | | | 402.0 | 21.9 | 10 | R |
|--|-----|------|--|--|--|--|--|-------|------|----|---|

NOTES:
 R - High RPD due to suspected sample non-homogeneity. The method is in control as indicated by the LCS/LCSD.

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73611

| Sample ID: MB | SampType: MBLK | TestCode: 8260_W_REC | Units: mg/L | Prep Date: | RunNo: 73611 | | | | | | |
|-----------------------------|-------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: PBW | Batch ID: R73611 | TestNo: SW8260B | | Analysis Date: 10/25/2018 | SeqNo: 1841587 | | | | | | |
| 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: | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits | M | Matrix Interference |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | RL | Reporting Limit |
| | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit | U | Analyte not detected |
| | W | Sample container temperature is out of limit as specified at testcode | | | | |



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73611

| Sample ID: MB | SampType: MBLK | TestCode: 8260_W_REC | Units: mg/L | Prep Date: | RunNo: 73611 | | | | | | |
|-----------------------|-------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: PBW | Batch ID: R73611 | TestNo: SW8260B | | Analysis Date: 10/25/2018 | SeqNo: 1841587 | | | | | | |
| 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 | 0.0304 | | 0.03000 | | 101 | 65.1 | 136 | | | | |
| Surr: Dibromofluoromethane | 0.0309 | | 0.03000 | | 103 | 40.4 | 143 | | | | |
| Surr: Toluene-d8 | 0.0302 | | 0.03000 | | 101 | 58.2 | 127 | | | | |

| Sample ID: LCSD 17221A-7 | SampType: LCSD | TestCode: 8260_W_REC | Units: mg/L | Prep Date: | RunNo: 73611 | | | | | | |
|---------------------------------|-------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSS02 | Batch ID: R73611 | TestNo: SW8260B | | Analysis Date: 10/25/2018 | SeqNo: 1841592 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|---------------------------|--------|---------|---------|---|-----|------|-----|---------|------|----|--|
| 1,1,1,2-Tetrachloroethane | 0.0504 | 0.00500 | 0.05000 | 0 | 101 | 73.4 | 120 | 0.04772 | 5.36 | 20 | |
|---------------------------|--------|---------|---------|---|-----|------|-----|---------|------|----|--|

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



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QC SUMMARY REPORT

WO#: 18100944

09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73611

| Sample ID: LCSD 17221A-7 | SampType: LCSD | TestCode: 8260_W_REC | Units: mg/L | Prep Date: | RunNo: 73611 | | | | | | |
|-----------------------------|------------------|----------------------|-------------|---------------------------|----------------|----------|-----------|-------------|--------|----------|------|
| Client ID: LCSS02 | Batch ID: R73611 | TestNo: SW8260B | | Analysis Date: 10/25/2018 | SeqNo: 1841592 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 1,1,1-Trichloroethane | 0.0517 | 0.00500 | 0.05000 | 0 | 103 | 64.5 | 127 | 0.04779 | 7.90 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0510 | 0.000500 | 0.05000 | 0 | 102 | 63.6 | 120 | 0.04937 | 3.33 | 20 | |
| 1,1,2-Trichloroethane | 0.0496 | 0.00500 | 0.05000 | 0 | 99.3 | 74.9 | 120 | 0.04680 | 5.89 | 20 | |
| 1,1-Dichloroethane | 0.0514 | 0.00500 | 0.05000 | 0 | 103 | 67.9 | 123 | 0.04818 | 6.47 | 20 | |
| 1,1-Dichloroethene | 0.0471 | 0.00500 | 0.05000 | 0 | 94.3 | 60.3 | 135 | 0.04398 | 6.94 | 20 | |
| 1,2-Dibromo-3-chloropropane | 0.0492 | 0.00500 | 0.05000 | 0 | 98.4 | 56.6 | 132 | 0.05120 | 4.00 | 20 | |
| 1,2-Dichlorobenzene | 0.0489 | 0.0200 | 0.05000 | 0 | 97.8 | 76.4 | 120 | 0.04657 | 4.86 | 20 | |
| 1,2-Dichloroethane | 0.0515 | 0.00500 | 0.05000 | 0 | 103 | 67.5 | 124 | 0.04810 | 6.79 | 20 | |
| 1,2-Dichloroethene, Total | 0.110 | 0.00600 | 0.1000 | 0 | 110 | 72.5 | 122 | 0.1016 | 7.58 | 20 | |
| 1,2-Dichloropropane | 0.0512 | 0.00500 | 0.05000 | 0 | 102 | 77.2 | 120 | 0.04916 | 3.99 | 20 | |
| 1,3-Dichlorobenzene | 0.0486 | 0.0100 | 0.05000 | 0 | 97.1 | 75.1 | 120 | 0.04657 | 4.20 | 20 | |
| 1,4-Dichlorobenzene | 0.0484 | 0.0200 | 0.05000 | 0 | 96.9 | 76.1 | 120 | 0.04619 | 4.73 | 20 | |
| 2-Butanone | 0.0521 | 0.0100 | 0.05000 | 0 | 104 | 61 | 127 | 0.05202 | 0.230 | 20 | |
| 4-Methyl-2-pentanone | 0.0482 | 0.0100 | 0.05000 | 0 | 96.5 | 54.1 | 129 | 0.04827 | 0.0414 | 20 | |
| Acetone | 0.0919 | 0.0100 | 0.1000 | 0 | 91.9 | 52.1 | 135 | 0.08873 | 3.47 | 20 | |
| Benzene | 0.0552 | 0.00500 | 0.05000 | 0 | 110 | 67.8 | 125 | 0.05076 | 8.38 | 20 | |
| Bromodichloromethane | 0.0503 | 0.00500 | 0.05000 | 0 | 101 | 72 | 120 | 0.04898 | 2.64 | 20 | |
| Bromoform | 0.0504 | 0.00500 | 0.05000 | 0 | 101 | 70.4 | 121 | 0.04874 | 3.35 | 20 | |
| Bromomethane | 0.0528 | 0.00500 | 0.05000 | 0 | 106 | 41.6 | 157 | 0.04904 | 7.46 | 20 | |
| Carbon disulfide | 0.0494 | 0.0100 | 0.05000 | 0 | 98.9 | 52.2 | 135 | 0.04610 | 7.01 | 20 | |
| Carbon tetrachloride | 0.0477 | 0.00500 | 0.05000 | 0 | 95.4 | 65.6 | 125 | 0.04517 | 5.45 | 20 | |
| Chlorobenzene | 0.0488 | 0.00500 | 0.05000 | 0 | 97.7 | 74.5 | 120 | 0.04560 | 6.84 | 20 | |
| Chlorodibromomethane | 0.0514 | 0.00500 | 0.05000 | 0 | 103 | 75 | 120 | 0.04842 | 6.01 | 20 | |
| Chloroethane | 0.0465 | 0.0100 | 0.05000 | 0 | 93.0 | 49.5 | 146 | 0.04127 | 12.0 | 20 | |
| Chloroform | 0.0523 | 0.00500 | 0.05000 | 0 | 105 | 71 | 120 | 0.04961 | 5.36 | 20 | |
| Chloromethane | 0.0525 | 0.00500 | 0.05000 | 0 | 105 | 45.8 | 145 | 0.04871 | 7.53 | 20 | |

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

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

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected



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 Website: www.element.com

QC SUMMARY REPORT

WO#: **18100944**
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73611

| Sample ID: | SampType: | TestCode: | Units: | Prep Date: | RunNo: | | | | | | |
|----------------------------|---------------|-------------------|-------------------|----------------|--------------|----------|-----------|-------------|------|----------|------|
| LCS D 17221A-7 | LCS D | 8260_W_REC | mg/L | | 73611 | | | | | | |
| Client ID: | Batch ID: | TestNo: | Analysis Date: | SeqNo: | | | | | | | |
| LCS S02 | R73611 | SW8260B | 10/25/2018 | 1841592 | | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| cis-1,2-Dichloroethene | 0.0573 | 0.00300 | 0.05000 | 0 | 115 | 73.8 | 124 | 0.05334 | 7.14 | 20 | |
| cis-1,3-Dichloropropene | 0.0548 | 0.00200 | 0.05000 | 0 | 110 | 80 | 120 | 0.05305 | 3.32 | 20 | |
| Ethylbenzene | 0.0529 | 0.00500 | 0.05000 | 0 | 106 | 76.9 | 118 | 0.04943 | 6.86 | 20 | |
| Isobutyl alcohol | 0.530 | 0.100 | 0.5000 | 0 | 106 | 70 | 130 | 0.5084 | 4.22 | 20 | |
| Methyl tert-butyl ether | 0.0564 | 0.00500 | 0.05000 | 0 | 113 | 62.6 | 134 | 0.05216 | 7.88 | 20 | |
| Methylene chloride | 0.0513 | 0.00500 | 0.05000 | 0 | 103 | 65.8 | 125 | 0.04756 | 7.61 | 20 | |
| Styrene | 0.0475 | 0.00500 | 0.05000 | 0 | 95.0 | 79 | 120 | 0.04428 | 7.02 | 20 | |
| Tetrachloroethene | 0.0458 | 0.00500 | 0.05000 | 0 | 91.6 | 68.6 | 152 | 0.04250 | 7.50 | 20 | |
| Toluene | 0.0492 | 0.00500 | 0.05000 | 0 | 98.4 | 73.3 | 120 | 0.04578 | 7.24 | 20 | |
| trans-1,2-Dichloroethene | 0.0523 | 0.00300 | 0.05000 | 0 | 105 | 67.7 | 124 | 0.04828 | 7.94 | 20 | |
| trans-1,3-Dichloropropene | 0.0544 | 0.00200 | 0.05000 | 0 | 109 | 79.6 | 121 | 0.05227 | 3.92 | 20 | |
| Trichloroethene | 0.0493 | 0.00500 | 0.05000 | 0 | 98.5 | 74.5 | 124 | 0.04639 | 6.00 | 20 | |
| Trichlorofluoromethane | 0.0488 | 0.00500 | 0.05000 | 0 | 97.6 | 45.2 | 142 | 0.04544 | 7.11 | 20 | |
| Vinyl chloride | 0.0525 | 0.00200 | 0.05000 | 0 | 105 | 37.4 | 174 | 0.04822 | 8.52 | 20 | |
| Xylenes, Total | 0.141 | 0.0150 | 0.1500 | 0 | 94.1 | 80 | 120 | 0.1306 | 7.73 | 20 | |
| Surr: 4-Bromofluorobenzene | 0.0345 | | 0.03000 | | 115 | 65.1 | 136 | | 0 | 20 | |
| Surr: Dibromofluoromethane | 0.0285 | | 0.03000 | | 95.1 | 40.4 | 143 | | 0 | 20 | |
| Surr: Toluene-d8 | 0.0299 | | 0.03000 | | 99.8 | 58.2 | 127 | | 0 | 20 | |

| Sample ID: | SampType: | TestCode: | Units: | Prep Date: | RunNo: | | | | | | |
|---------------------------|---------------|-------------------|-------------------|----------------|--------------|----------|-----------|-------------|------|----------|------|
| LCS S 17221A-79 | LCS S | 8260_W_REC | mg/L | | 73611 | | | | | | |
| Client ID: | Batch ID: | TestNo: | Analysis Date: | SeqNo: | | | | | | | |
| LCS W | R73611 | SW8260B | 10/25/2018 | 1841593 | | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 1,1,1,2-Tetrachloroethane | 0.0477 | 0.00500 | 0.05000 | 0 | 95.4 | 73.4 | 120 | | | | |
| 1,1,1-Trichloroethane | 0.0478 | 0.00500 | 0.05000 | 0 | 95.6 | 64.5 | 127 | | | | |

Qualifiers:

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73611

| Sample ID: LCS 17221A-79 | SampType: LCS | TestCode: 8260_W_REC | Units: mg/L | Prep Date: | RunNo: 73611 | | | | | | |
|-----------------------------|------------------|----------------------|-------------|---------------------------|----------------|----------|-----------|-------------|------|----------|------|
| Client ID: LCSW | Batch ID: R73611 | TestNo: SW8260B | | Analysis Date: 10/25/2018 | SeqNo: 1841593 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 1,1,2,2-Tetrachloroethane | 0.0494 | 0.000500 | 0.05000 | 0 | 98.7 | 63.6 | 120 | | | | |
| 1,1,2-Trichloroethane | 0.0468 | 0.00500 | 0.05000 | 0 | 93.6 | 74.9 | 120 | | | | |
| 1,1-Dichloroethane | 0.0482 | 0.00500 | 0.05000 | 0 | 96.4 | 67.9 | 123 | | | | |
| 1,1-Dichloroethene | 0.0440 | 0.00500 | 0.05000 | 0 | 88.0 | 60.3 | 135 | | | | |
| 1,2-Dibromo-3-chloropropane | 0.0512 | 0.00500 | 0.05000 | 0 | 102 | 56.6 | 132 | | | | |
| 1,2-Dichlorobenzene | 0.0466 | 0.0200 | 0.05000 | 0 | 93.1 | 76.4 | 120 | | | | |
| 1,2-Dichloroethane | 0.0481 | 0.00500 | 0.05000 | 0 | 96.2 | 67.5 | 124 | | | | |
| 1,2-Dichloroethene, Total | 0.102 | 0.00600 | 0.1000 | 0 | 102 | 72.5 | 122 | | | | |
| 1,2-Dichloropropane | 0.0492 | 0.00500 | 0.05000 | 0 | 98.3 | 77.2 | 120 | | | | |
| 1,3-Dichlorobenzene | 0.0466 | 0.0100 | 0.05000 | 0 | 93.1 | 75.1 | 120 | | | | |
| 1,4-Dichlorobenzene | 0.0462 | 0.0200 | 0.05000 | 0 | 92.4 | 76.1 | 120 | | | | |
| 2-Butanone | 0.0520 | 0.0100 | 0.05000 | 0 | 104 | 61 | 127 | | | | |
| 4-Methyl-2-pentanone | 0.0483 | 0.0100 | 0.05000 | 0 | 96.5 | 54.1 | 129 | | | | |
| Acetone | 0.0887 | 0.0100 | 0.1000 | 0 | 88.7 | 52.1 | 135 | | | | |
| Benzene | 0.0508 | 0.00500 | 0.05000 | 0 | 102 | 67.8 | 125 | | | | |
| Bromodichloromethane | 0.0490 | 0.00500 | 0.05000 | 0 | 98.0 | 72 | 120 | | | | |
| Bromoform | 0.0487 | 0.00500 | 0.05000 | 0 | 97.5 | 70.4 | 121 | | | | |
| Bromomethane | 0.0490 | 0.00500 | 0.05000 | 0 | 98.1 | 41.6 | 157 | | | | |
| Carbon disulfide | 0.0461 | 0.0100 | 0.05000 | 0 | 92.2 | 52.2 | 135 | | | | |
| Carbon tetrachloride | 0.0452 | 0.00500 | 0.05000 | 0 | 90.3 | 65.6 | 125 | | | | |
| Chlorobenzene | 0.0456 | 0.00500 | 0.05000 | 0 | 91.2 | 74.5 | 120 | | | | |
| Chlorodibromomethane | 0.0484 | 0.00500 | 0.05000 | 0 | 96.8 | 75 | 120 | | | | |
| Chloroethane | 0.0413 | 0.0100 | 0.05000 | 0 | 82.5 | 49.5 | 146 | | | | |
| Chloroform | 0.0496 | 0.00500 | 0.05000 | 0 | 99.2 | 71 | 120 | | | | |
| Chloromethane | 0.0487 | 0.00500 | 0.05000 | 0 | 97.4 | 45.8 | 145 | | | | |
| cis-1,2-Dichloroethene | 0.0533 | 0.00300 | 0.05000 | 0 | 107 | 73.8 | 124 | | | | |

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



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

QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73611

| | | | | | |
|---------------------------------|-------------------------|-----------------------------|--------------------|----------------------------------|-----------------------|
| Sample ID: LCS 17221A-79 | SampType: LCS | TestCode: 8260_W_REC | Units: mg/L | Prep Date: | RunNo: 73611 |
| Client ID: LCSW | Batch ID: R73611 | TestNo: SW8260B | | Analysis Date: 10/25/2018 | SeqNo: 1841593 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|----------------------------|--------|---------|-----------|-------------|------|----------|-----------|-------------|------|----------|------|
| cis-1,3-Dichloropropene | 0.0530 | 0.00200 | 0.05000 | 0 | 106 | 80 | 120 | | | | |
| Ethylbenzene | 0.0494 | 0.00500 | 0.05000 | 0 | 98.9 | 76.9 | 118 | | | | |
| Isobutyl alcohol | 0.508 | 0.100 | 0.5000 | 0 | 102 | 70 | 130 | | | | |
| Methyl tert-butyl ether | 0.0522 | 0.00500 | 0.05000 | 0 | 104 | 62.6 | 134 | | | | |
| Methylene chloride | 0.0476 | 0.00500 | 0.05000 | 0 | 95.1 | 65.8 | 125 | | | | |
| Styrene | 0.0443 | 0.00500 | 0.05000 | 0 | 88.6 | 79 | 120 | | | | |
| Tetrachloroethene | 0.0425 | 0.00500 | 0.05000 | 0 | 85.0 | 68.6 | 152 | | | | |
| Toluene | 0.0458 | 0.00500 | 0.05000 | 0 | 91.6 | 73.3 | 120 | | | | |
| trans-1,2-Dichloroethene | 0.0483 | 0.00300 | 0.05000 | 0 | 96.6 | 67.7 | 124 | | | | |
| trans-1,3-Dichloropropene | 0.0523 | 0.00200 | 0.05000 | 0 | 105 | 79.6 | 121 | | | | |
| Trichloroethene | 0.0464 | 0.00500 | 0.05000 | 0 | 92.8 | 74.5 | 124 | | | | |
| Trichlorofluoromethane | 0.0454 | 0.00500 | 0.05000 | 0 | 90.9 | 45.2 | 142 | | | | |
| Vinyl chloride | 0.0482 | 0.00200 | 0.05000 | 0 | 96.4 | 37.4 | 174 | | | | |
| Xylenes, Total | 0.131 | 0.0150 | 0.1500 | 0 | 87.1 | 80 | 120 | | | | |
| Surr: 4-Bromofluorobenzene | 0.0346 | | 0.03000 | | 115 | 65.1 | 136 | | | | |
| Surr: Dibromofluoromethane | 0.0279 | | 0.03000 | | 93.0 | 40.4 | 143 | | | | |
| Surr: Toluene-d8 | 0.0294 | | 0.03000 | | 98.1 | 58.2 | 127 | | | | |

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



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QC SUMMARY REPORT

WO#: 18100944
 09-Nov-18

Client: Approach Environmental, LLC

Project: Approach Environmental - LDNR Residential

BatchID: R73629

| | | | | | | | | | | | |
|---------------------------|-------------------------|---------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: GAS LCS | SampType: LCS | TestCode: 8015_G_W | Units: mg/L | Prep Date: | RunNo: 73629 | | | | | | |
| Client ID: LCSW | Batch ID: R73629 | TestNo: SW8015B | | Analysis Date: 10/26/2018 | SeqNo: 1842008 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

TPH (Gasoline Range) 11.2 0.150 12.50 0 89.7 80 130

| | | | | | | | | | | | |
|----------------------------|-------------------------|---------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: GAS LCSD | SampType: LCSD | TestCode: 8015_G_W | Units: mg/L | Prep Date: | RunNo: 73629 | | | | | | |
| Client ID: LCSS02 | Batch ID: R73629 | TestNo: SW8015B | | Analysis Date: 10/26/2018 | SeqNo: 1842009 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

TPH (Gasoline Range) 11.6 0.150 12.50 0 92.9 80 130 11.21 3.50 20

| | | | | | | | | | | | |
|------------------------|-------------------------|---------------------------|--------------------|----------------------------------|-----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MBLK | SampType: MBLK | TestCode: 8015_G_W | Units: mg/L | Prep Date: | RunNo: 73629 | | | | | | |
| Client ID: PBW | Batch ID: R73629 | TestNo: SW8015B | | Analysis Date: 10/26/2018 | SeqNo: 1842010 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

TPH (Gasoline Range) 0.100 0.150
 Surr: alpha, alpha, alpha-Trifluorotoluene 0.0524 0.05000 105 70 130 J

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



Element Materials Technology Lafayette
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 Website: www.element.com

Sample Log-In Check List

Client Name: **APPROACH_ENVIRONM** Work Order Number: **18100944** RcptNo: **1**

| | | | |
|---------------|--------------------------|-------------------------------|--------------------------|
| Logged by: | Tammy Thibodeaux | 10/25/2018 8:30:00 AM | <i>Tammy Thibodeaux</i> |
| Completed By: | Tammy Thibodeaux | 10/25/2018 10:07:23 AM | <i>Tammy Thibodeaux</i> |
| Reviewed By: | Caitlin Duplantis | 10/25/2018 11:44:37 AM | <i>Caitlin Duplantis</i> |

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? FedEx
 Tracking No.: 783423488669

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 information for Trip Blank.

Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1 | 1.5 | Good | Not Present | | | |

ANALYTICAL RESULTS

PERFORMED BY

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

Report Date 11/06/2018

GCAL Report 218102647



Project 18100944

| <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

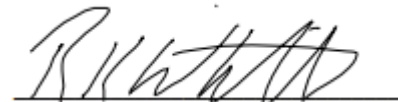
| | |
|---------------|---|
| J or I | Indicates the result is between the MDL and LOQ |
| J | DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria |
| U | Indicates the compound was analyzed for but not detected |
| B or V | Indicates the analyte was detected in the associated 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 218102647

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:** 218102647

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 |
|----------------|------------------|---------------|--------------------------|--------------------------|
| 21810264701 | 9435Z Wynon McCI | Water | 10/24/2018 16:45 | 10/26/2018 10:30 |

Sample Results

| | | | | |
|-------------------------|--------------|------------------|---------|-------------|
| 9435Z Wynon McCl | Collect Date | 10/24/2018 16:45 | GCAL ID | 21810264701 |
| | Receive Date | 10/26/2018 10:30 | Matrix | Water |

EPA RSK-175

| Prep Date | Prep Batch | Prep Method | Dilution | Analysis Date | By | Analytical Batch |
|-----------|------------|-------------|----------|------------------|-----|------------------|
| NA | NA | NA | 100 | 11/06/2018 17:22 | JAR | 647414 |

| CAS# | Parameter | Result | LOQ | Units |
|---------|-----------|--------|-----|-------|
| 74-82-8 | Methane | 2320 | 200 | 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 647414 | | Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix | MB647414 1865569 MB NA 11/06/2018 12:12 Water | LCS647414 1865570 LCS NA 11/06/2018 12:31 Water | LCSD647414 1865571 LCSD NA 11/06/2018 12:36 Water | | | | | | | |
|-----------------------------------|----------|---|--|--|--|----|---------------------|----------------|--------|----|-----|--------------|
| EPA RSK-175 | | Units Result | ug/L LOQ | Spike Added | Result | %R | Control Limits%R | Spike Added | Result | %R | RPD | RPD Limit |
| Methane | 74-82-8 | ND | 2.00 | 17.5 | 14.8 | 85 | 39 - 120 | 17.5 | 14.8 | 85 | 0 | 27 |
| Surrogate | | | | | | | | | | | | |
| Propene | 115-07-1 | 29.4 | 73 | 40.5 | 23.6 | 58 | 40 - 143 | 40.5 | 24 | 59 | NA | NA |



CHAIN OF CUSTODY RECORD

Omega COCID 7737 PAGE: 1 OF: 1

Client ID: 4462 - Element Materials Technology
 SDG: 218102647
 PM: JLM



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

| 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 EMAIL: | | | | | |
| ACCOUNT #: | | | | | | | |
| dissolved methane by RSK175//PO ELA01972PO | | | | | | | |
| 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 | 18100944-001G METHANE_SUB (RSK-175) | 9435Z Wynon McCl | VOAU | Water | 10/24/2018 4:45:00 PM | 2 | |

| | | | | | | |
|--|------------------|------------|---------------------------------|----------------|------------|--|
| Relinquished By: <i>[Signature]</i> | Date: 10/25/2018 | Time: 1730 | Received By: <i>[Signature]</i> | Date: 10/25/18 | Time: 1730 | REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE 45CPM FOR LAB USE ONLY Temp of samples <u>0.8</u> °C Attempt to Cool? <u>ice</u> Comments: _____ |
| Relinquished By: <i>[Signature]</i> | Date: 10/26/18 | Time: 1030 | Received By: <i>[Signature]</i> | Date: 10/26/18 | Time: 1030 | |
| Relinquished By: | Date: | Time: | Received By: | Date: | Time: | |
| TAT: Standard <input type="checkbox"/> RUSH Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/> Note: RUSH requests will incur surcharges! | | | | | | |



SAMPLE RECEIVING CHECKLIST



| SAMPLE DELIVERY GROUP 218102647 | | | 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 Haydel, Daria L. | COC relinquished and complete (including sampleIDs, collect times, and sampler)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| | | | All containers received in good condition and within hold time? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| Line Item(s) 1 - Water | | Receive Date(s) 10/26/18 | 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 0.8 | None | None | | |
| | | | | | | |
| NOTES | | | | | | |



element

Chain of Custody

Laboratory Number: 1810094X ⁴

| | | | | | |
|---|--|-------------------------------------|--|---|--|
| Company Name: Contact Name: Address: City, State Zip: Phone Number: Fax Number: E-mail Address: | Client Information: <u>Approach Env</u> <u>Mark Moore</u> <u>1000 Grinnett Dr</u> | Billing Information: <u>same</u> | PO Number: | Project Name/Number: <u>LDNR</u> <u>Residential wpt's</u> | Page <u>3</u> of <u>3</u> ¹² |
| | <u>Shrewport, La 71107</u> | | Quote Number: | Sampler's Signature: | Matrix Code <u>48</u> |
| | <u>3184649191</u> Ext: _____ | | Required QC Level: | Shipping Method: UPS / <u>FedEx</u> / NOW DHL / Element / Hand / Mail | 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 |
| | <u>drmoore@approachenv.com</u> | | Bill Monthly: <input type="checkbox"/> Yes <input type="checkbox"/> No | | |

| Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC | Drinking Water <input type="checkbox"/> Distribution <input type="checkbox"/> Special <input type="checkbox"/> State <input type="checkbox"/> Other | Turn Time <input type="checkbox"/> Standard RUSH <input type="checkbox"/> 1 Day <input checked="" type="checkbox"/> 2 Day <input type="checkbox"/> Other | (Rush turn times will incur a surcharge and must be pre-approved by lab.) | Container | Pres. | Requested Tests | | | | | | | | | | Comments | |
|--|---|---|---|------------|-----------|-----------------|---------------------------------------|---|----------|-------------|-------------|----------|------------------------|------------------|----------|----------|--|
| | | | | | | Quantity | Type P=Plastic, G=Glass, V=Vial | HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃ | VOC 8260 | Semivol 826 | RCRA Metals | TPS | TPH-G, D ₅₀ | Dissolved Metals | Sodium | | chlorides |
| Sample ID/Description | Date | Time | Grab / Composite | Matrix | | | | | | | | | | | | | |
| <u>1435Z Wynon Mchry</u> | <u>10/24/18</u> | <u>1645</u> | <u>G</u> | <u>W</u> | <u>13</u> | <u>P, L</u> | <u>HCl</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | 48-hr Rush on VOC's Method detection Limit Required <u>78342348869</u> |
| <u>Trip Blank</u> | <u>10/24/18</u> | <u>1645</u> | <u>-</u> | <u>AgS</u> | <u>4</u> | <u>V</u> | <u>HCl/AgS</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | <u>X</u> | |
| | | | | | | | | | | | | | | | | | |

| | Relinquished by | Date/Time | Received by | Date/Time | Field Notes: |
|---|-----------------|----------------------|-------------|----------------------|---|
| 1 | | <u>10/24/18 1845</u> | | <u>10/24/18 1845</u> | |
| 2 | <u>FedEx</u> | <u>10/25/18 0830</u> | | <u>10/25/18 0830</u> | Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: <u>1.5</u> |
| 3 | | | | | |

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.

8800 North US 31
Columbus, IN
47201 USA
P 812-375-0531
F 812-375-0731

328 Ley Road, Suite 100
Fort Wayne, IN
46825 USA
P 260-471-7000
F 260-471-7777

909 Executive Dr
Warsaw, IN
46580 USA
P 574-267-3305
F 574-269-6569

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

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