



September 7, 2023

Mr. Josh Peters  
On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 5  
Superfund and Emergency Management Division  
2565 Plymouth Road  
Ann Arbor, MI 48105

We are in the process of ensuring this document is accessible to all audiences. If you need assistance accessing this document, or any material on the EPA East Palestine, Ohio emergency response web pages, please contact the Region 5 Public Information Officer on-call at: R5\_EastPalestine@epa.gov

**Subject: Data Validation Report  
E Palestine Site - ER  
EPA Contract No.: 68HE0519D0005  
Task Order/Task Order Line Item No.: 68HE0520F0032 / 0001EB201  
Document Tracking No. 2015**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting these data validation reports for eighty air samples (including six field duplicate samples and five field blanks, and three media blanks) collected at the E Palestine site. The samples were collected on June 21, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC. The final laboratory data package was received on June 28, 2023.

Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

No qualification or rejection of results was required for these data packages. The results may be used as reported by the laboratory.

If you have any questions regarding this data validation report, please contact me via the project manager.

Sincerely,

Diane MacMillan  
Digitally signed by  
Diane MacMillan  
Date: 2023.09.07  
17:48:35 -06'00'

Chemical Engineer, P.E.

Enclosure

cc: Karl Schultz, Tetra Tech Program Manager  
Dustin Grams, Tetra Tech Project Manager  
Mayra Arroyo Ortiz, Tetra Tech Project Document Control Coordinator  
TO-TOLIN File

**ATTACHMENT**

**DATA VALIDATION REPORT  
EUROFINS ANALYTICS, LLC REPORT NOS. B174-171, B174-174,  
B174-175, B174-176**

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

|                       |  |              |                                       |
|-----------------------|--|--------------|---------------------------------------|
| Site Name             | E Palestine Site – ER  | TO/TOLIN No. | 68HE0520F0032 / 0001EB201             |
| Document Tracking No. | 2015a  |              |                                       |
| Laboratory Report No. | B174-171   | Laboratory   | Eurofins Analytics, LLC – Ashland, VA |
| Analyses              | n-Butyl acrylate analysis by NIOSH Method 1450M  |              |                                       |
| Samples and Matrix    | 32 air samples, including 3 field duplicate pairs, 2 field blanks, and 2 media blanks  |              |                                       |
| Collection Date(s)    | 06/21/2023   |              |                                       |
| Field Duplicate Pairs | EPD-PB-OD-01-062123-2 / EPD-PB-OD-011-062123-2<br>EPD-PB-WA-06-062123-2 / EPD-PB-WA-066-062123-2<br>EPD-PB-CM-09-062123-2 / EPD-PB-CM-099-062123-2 |              |                                       |
| Field QC Blanks       | EPD-PB-MB-02-062123-2, EPD-PB-MB-03-062123-2, EPD-PB-FB-02-062123-2, EPD-PB-FB-03-062123-2   |              |                                       |

**INTRODUCTION**

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

**OVERALL EVALUATION**

No rejection or qualification of results was required for this data package. The results may be used as reported by the laboratory.

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**Data completeness:**

| Within Criteria | Exceedance/Notes   |
|-----------------|--|
| Y               | <p>The results for the field blank samples were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligrams per cubic meter (mg/m3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p> <p>The sample analysis time is reported as a default value of 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. Since the sample analysis time for the LCSD is not required for the validated EDD, this value was not manually revised.</p> <p>The site-specific QAPP specifies analysis of acrylates in air by Eurofins Analytics, LLC standard operating procedure (SOP) IHGC-001-v.22-3. The laboratory confirmed that NIOSH Method 1450M, which is mentioned in the laboratory deliverables, is equivalent to SOP IHGC-001-v.22-3; therefore, these method references may be used interchangeably.</p> |

**Sample preservation, receipt, and holding times:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Method blanks:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Field blanks:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**Surrogates and labeled compounds:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**MS/MSDs:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**Laboratory duplicates:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**Field duplicates:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y                  |                  |

**LCSs/LCSDs:**

| Within<br>Criteria | Exceedance/Notes  |
|--------------------|---|
| Y                  | The site specific QAPP requires a laboratory reagent blank (LRB), laboratory media blank (LMB), LCS, and LCSD to be analyzed per batch of 20 samples. However, the laboratory analyzed 32 field samples in one sample preparation batch consisting of one LRB, LMB, LCS, and LCSD, when the batch should have contained 2 LRBs, LMBs, LCSs, and LCSDs. The laboratory was contacted about the deviation from the site specific QAPP, and moving forward the laboratory will follow the quality control (QC) sample frequency requirements in the site specific QAPP. No qualifications were applied because the QC samples met the QAPP acceptance criteria and the QC samples from previous datasets for this project have met the QAPP acceptance criteria. |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**Sample dilutions:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**Re-extraction and reanalysis:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**MDLs/RLs:**

| Within<br>Criteria | Exceedance/Notes   |
|--------------------|--|
| Y                  | Method detection limits (MDL) were not reported. Nondetect sample results are reported as less than the reporting limit (RL) in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table. |

**Tentatively identified compounds:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**Other [None]:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

## DATA VALIDATION CHECKLIST – STAGE 2A EPA REGION 5 START CONTRACT

### Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

|    |   |
|----|---|
| J  | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.  |
| J+ | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.   |
| J- | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.  |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.                    |
| R  | The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.                                 |
| U  | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).  |
| UJ | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria. |

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY  
EUROFINS ANALYTICS, LLC REPORT NO. B174-171

| Sample_ID               | Method             | CAS#     | Analyte          | Lab_Result | Lab_Qual | MDL | RL     | Units | VAL_Result | VAL_Qual |
|-------------------------|--------------------|----------|------------------|------------|----------|-----|--------|-------|------------|----------|
| EPD-PB-BKBA-01-062123-2 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-BKBA-02-062123-2 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-06-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-07-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-08-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-09-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-099-062123-2  | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-10-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-11-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-12-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-14-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-DW-G-062123-2    | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.009      | U        |     | 0.009  | ppm   | 0.009      | U        |
| EPD-PB-OD-01-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-011-062123-2  | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-02-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-03-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-04-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-05-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-06-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-07-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-UW-C-062123-2    | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-01-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-02-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-03-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-04-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-05-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-06-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-066-062123-2  | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-FB-02-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2          | U        |     | 2      | ug    | 2          | U        |
| EPD-PB-FB-03-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2          | U        |     | 2      | ug    | 2          | U        |
| EPD-PB-MB-02-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2          | U        |     | 2      | ug    | 2          | U        |
| EPD-PB-MB-03-062123-2   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2          | U        |     | 2      | ug    | 2          | U        |



**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

|                       |   |              |                                       |
|-----------------------|---|--------------|---------------------------------------|
| Site Name             | E Palestine Site – ER   | TO/TOLIN No. | 68HE0520F0032 / 0001EB201             |
| Document Tracking No. | 2015b   |              |                                       |
| Laboratory Report No. | B174-174  | Laboratory   | Eurofins Analytics, LLC – Ashland, VA |
| Analyses              | 2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029 |              |                                       |
| Samples and Matrix    | 10 air samples, including 1 field duplicate pair and 1 field blank sample                             |              |                                       |
| Collection Date(s)    | 06/21/2023  |              |                                       |
| Field Duplicate Pairs | EPD-ST-8H-WA-05-062123-2 / EPD-ST-8H-WA-55-062123-2   |              |                                       |
| Field QC Blanks       | EPD-ST-FB-062123-2  |              |                                       |

**INTRODUCTION**

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

**OVERALL EVALUATION**

No rejection or qualification of results was required for this data package. The results may be used as reported by the laboratory.

**Data completeness:**

| Within Criteria | Exceedance/Notes   |
|-----------------|--|
| Y               | <p>The results for the field blank sample were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligrams per cubic meter (mg/m<sup>3</sup>), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).</p> <p>The laboratory report included the following note: “The method reference, Rohm &amp; Haas IH9805 is referenced to the AIHA certification as IHGC-P029.” The method is referred to by the abbreviation “Rohm &amp; Haas IH9805” or “IHGC-P029” interchangeably.</p> |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

|  |   |
|--|---|
|  | The sample analysis time was reported as a default value of 00:00 hours for the laboratory control spike duplicate (LCSD) in the analysis date field of the electronic data deliverable (EDD). The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised. |
|--|---|

**Sample preservation, receipt, and holding times:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Method blanks:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Field blanks:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Surrogates and labeled compounds:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**MS/MSDs:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**Laboratory duplicates:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**Field duplicates:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| Y                  |                  |

**LCSs/LCSDs:**

| Within<br>Criteria | Exceedance/Notes  |
|--------------------|---|
| Y                  | The level IV laboratory report and the laboratory EDD has one or more minor discrepancies in the LCS/LCSD results (+/- 1 ug) and/or percent recoveries (+/- 1%) that were verified with the laboratory to be a significant figures issue. No qualifications were applied. |

**Sample dilutions:**

| Within<br>Criteria | Exceedance/Notes   |
|--------------------|--|
| Y                  | The laboratory control spike (LCS) and LCSD were analyzed at a ten-fold dilution; however, this dilution is only identified in the QC sample name in the report and EDD. No qualifications were applied. |

**Re-extraction and reanalysis:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**MDLs/RLs:**

| Within<br>Criteria | Exceedance/Notes   |
|--------------------|--|
| Y                  | Method detection limits (MDL) were not reported. Nondetect sample results are reported as less than the reporting limit (RL) in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table. |

**Tentatively identified compounds:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**Other [None]:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

## DATA VALIDATION CHECKLIST – STAGE 2A EPA REGION 5 START CONTRACT

### Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

|    |   |
|----|---|
| J  | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.  |
| J+ | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.   |
| J- | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.  |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.                    |
| R  | The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.                                 |
| U  | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).  |
| UJ | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria. |

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY  
EUROFINS ANALYTICS, LLC REPORT NO. B174-174

| Sample_ID                | Method    | CAS#     | Analyte               | Lab_Result | Lab_Qual | MDL | RL    | Units | VAL_Result | VAL_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-----|-------|-------|------------|----------|
| EPD-ST-8H-DW-G-062123-2  | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015      | U        |     | 0.015 | ppm   | 0.015      | U        |
| EPD-ST-8H-DW-G-062123-2  | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-8H-UW-C-062123-2  | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015      | U        |     | 0.015 | ppm   | 0.015      | U        |
| EPD-ST-8H-UW-C-062123-2  | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-8H-WA-01-062123-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015      | U        |     | 0.015 | ppm   | 0.015      | U        |
| EPD-ST-8H-WA-01-062123-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-8H-WA-02-062123-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013      | U        |     | 0.013 | ppm   | 0.013      | U        |
| EPD-ST-8H-WA-02-062123-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.009      | U        |     | 0.009 | ppm   | 0.009      | U        |
| EPD-ST-8H-WA-03-062123-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015      | U        |     | 0.015 | ppm   | 0.015      | U        |
| EPD-ST-8H-WA-03-062123-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-8H-WA-04-062123-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015      | U        |     | 0.015 | ppm   | 0.015      | U        |
| EPD-ST-8H-WA-04-062123-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-8H-WA-05-062123-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015      | U        |     | 0.015 | ppm   | 0.015      | U        |
| EPD-ST-8H-WA-05-062123-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-8H-WA-06-062123-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015      | U        |     | 0.015 | ppm   | 0.015      | U        |
| EPD-ST-8H-WA-06-062123-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-8H-WA-55-062123-2 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.015      | U        |     | 0.015 | ppm   | 0.015      | U        |
| EPD-ST-8H-WA-55-062123-2 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-FB-062123-2       | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8        | U        |     | 2.8   | ug    | 2.8        | U        |
| EPD-ST-FB-062123-2       | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 1.3        | U        |     | 1.3   | ug    | 1.3        | U        |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

|                       |   |              |                                       |
|-----------------------|---|--------------|---------------------------------------|
| Site Name             | E Palestine Site – ER   | TO/TOLIN No. | 68HE0520F0032 / 0001EB201             |
| Document Tracking No. | 2015c   |              |                                       |
| Laboratory Report No. | B174-175  | Laboratory   | Eurofins Analytics, LLC – Ashland, VA |
| Analyses              | 2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029 |              |                                       |
| Samples and Matrix    | Nine air samples, including one field blank sample  |              |                                       |
| Collection Date(s)    | 06/21/2023  |              |                                       |
| Field Duplicate Pairs | None  |              |                                       |
| Field QC Blanks       | EPD-ST-FB-062123-1  |              |                                       |

**INTRODUCTION**

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

**OVERALL EVALUATION**

No rejection or qualification of results was required for this data package. The results may be used as reported by the laboratory.

**Data completeness:**

| Within Criteria | Exceedance/Notes  |
|-----------------|---|
| Y               | The results for the field blank sample were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligrams per cubic meter (mg/m <sup>3</sup> ), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD). |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**Data completeness continued:**

| Within Criteria | Exceedance/Notes  |
|-----------------|---|
| Y               | <p>The laboratory report included the following note: “The method reference, Rohm &amp; Haas IH9805 is referenced to the AIHA certification as IHGC-P029.” The method is referred to by the abbreviation “Rohm &amp; Haas IH9805” or “IHGC-P029” interchangeably.</p> <p>The sample analysis time was reported as a default value of 00:00 hours for the laboratory control spike duplicate (LCSD) in the analysis date field in the EDD. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised.</p> <p>For sample EPD-ST-8H-DW-G-062123-1, the laboratory report indicates analysis date of “6/27/23” while the EDD indicates date analyzed as “6/28/23 0:08”.</p> |

**Sample preservation, receipt, and holding times:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Method blanks:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Field blanks:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |



**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**Surrogates and labeled compounds:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**MS/MSDs:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**Laboratory duplicates:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**Field duplicates:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**LCSs/LCSDs:**

| Within Criteria | Exceedance/Notes  |
|-----------------|---|
| Y               | The level IV laboratory report and the laboratory EDD has one or more minor discrepancies in the LCS/LCSD results (+/- 1 ug) and/or percent recoveries (+/- 1%) that were verified with the laboratory to be a significant figures issue. No qualifications were applied. |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**Sample dilutions:**

| Within<br>Criteria | Exceedance/Notes  |
|--------------------|---|
| NA                 | The laboratory control spike (LCS) and LCSD were analyzed at a ten-fold dilution; however, the dilution is only identified in the QC sample name in the report and EDD. No qualifications were applied. |

**Re-extraction and reanalysis:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**MDLs/RLs:**

| Within<br>Criteria | Exceedance/Notes   |
|--------------------|--|
| Y                  | Method detection limits (MDL) were not reported. Nondetect sample results are reported as less than the reporting limit (RL) in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table. |

**Tentatively identified compounds:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**Other [None]:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

## DATA VALIDATION CHECKLIST – STAGE 2A EPA REGION 5 START CONTRACT

### Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

|    |   |
|----|---|
| J  | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.  |
| J+ | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.   |
| J- | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.  |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.                    |
| R  | The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.                                 |
| U  | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).  |
| UJ | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria. |

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY  
EUROFINS ANALYTICS, LLC REPORT NO. B174-175

| Sample_ID                | Method    | CAS#     | Analyte               | Lab_Result | Lab_Qual | MDL | RL    | Units | VAL_Result | VAL_Qual |
|--------------------------|-----------|----------|-----------------------|------------|----------|-----|-------|-------|------------|----------|
| EPD-ST-8H-DW-G-062123-1  | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014      | U        |     | 0.014 | ppm   | 0.014      | U        |
| EPD-ST-8H-DW-G-062123-1  | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.009      | U        |     | 0.009 | ppm   | 0.009      | U        |
| EPD-ST-8H-UW-C-062123-1  | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014      | U        |     | 0.014 | ppm   | 0.014      | U        |
| EPD-ST-8H-UW-C-062123-1  | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.009      | U        |     | 0.009 | ppm   | 0.009      | U        |
| EPD-ST-8H-WA-01-062123-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013      | U        |     | 0.013 | ppm   | 0.013      | U        |
| EPD-ST-8H-WA-01-062123-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.009      | U        |     | 0.009 | ppm   | 0.009      | U        |
| EPD-ST-8H-WA-02-062123-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013      | U        |     | 0.013 | ppm   | 0.013      | U        |
| EPD-ST-8H-WA-02-062123-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.009      | U        |     | 0.009 | ppm   | 0.009      | U        |
| EPD-ST-8H-WA-03-062123-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014      | U        |     | 0.014 | ppm   | 0.014      | U        |
| EPD-ST-8H-WA-03-062123-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-8H-WA-04-062123-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.013      | U        |     | 0.013 | ppm   | 0.013      | U        |
| EPD-ST-8H-WA-04-062123-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.009      | U        |     | 0.009 | ppm   | 0.009      | U        |
| EPD-ST-8H-WA-05-062123-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014      | U        |     | 0.014 | ppm   | 0.014      | U        |
| EPD-ST-8H-WA-05-062123-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.01       | U        |     | 0.01  | ppm   | 0.01       | U        |
| EPD-ST-8H-WA-06-062123-1 | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 0.014      | U        |     | 0.014 | ppm   | 0.014      | U        |
| EPD-ST-8H-WA-06-062123-1 | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 0.009      | U        |     | 0.009 | ppm   | 0.009      | U        |
| EPD-ST-FB-062123-1       | IHGC-P029 | 103-11-7 | 2-Ethylhexyl acrylate | 2.8        | U        |     | 2.8   | ug    | 2.8        | U        |
| EPD-ST-FB-062123-1       | IHGC-P029 | 141-32-2 | n-Butyl acrylate      | 1.3        | U        |     | 1.3   | ug    | 1.3        | U        |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

|                       |   |              |                                       |
|-----------------------|---|--------------|---------------------------------------|
| Site Name             | E Palestine Site – ER   | TO/TOLIN No. | 68HE0520F0032 / 0001EB201             |
| Document Tracking No. | 2015d   |              |                                       |
| Laboratory Report No. | B174-176  | Laboratory   | Eurofins Analytics, LLC – Ashland, VA |
| Analyses              | n-Butyl acrylate analysis by NIOSH Method 1450M   |              |                                       |
| Samples and Matrix    | 29 air samples, including 2 field duplicate pairs, 1 field blank, and 1 media blank             |              |                                       |
| Collection Date(s)    | 06/21/2023  |              |                                       |
| Field Duplicate Pairs | EPD-PB-WA-02-062123-1 / EPD-PB-WA-022-062123-1<br>EPD-PB-WA-01-062123-1 / PD-PB-WA-011-062123-1 |              |                                       |
| Field QC Blanks       | EPD-ST-MB-01-062123-1, EPD-PB-FB-01-062123-1  |              |                                       |

**INTRODUCTION**

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, East Palestine Train Derailment Site, East Palestine, Columbiana County, Ohio, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

**OVERALL EVALUATION**

No rejection or qualification of results was required for this data package. The results may be used as reported by the laboratory.

**Data completeness:**

| Within Criteria | Exceedance/Notes   |
|-----------------|--|
| Y               | The results for the field blank were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligrams per cubic meter (mg/m <sup>3</sup> ), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD). |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**Data completeness continued:**

| Within Criteria | Exceedance/Notes   |
|-----------------|--|
| Y               | <p>The sample analysis time was reported as a default value of 00:00 hours for the laboratory control spike duplicate (LCSD) in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the EDD; therefore, this value was not manually revised.</p> <p>The site-specific QAPP specifies analysis of acrylates in air by Eurofins Analytics, LLC standard operating procedure (SOP) IHGC-001-v.22-3. The laboratory confirmed that NIOSH Method 1450M, which is mentioned in the laboratory deliverables, is equivalent to SOP IHGC-001-v.22-3; therefore, these method references may be used interchangeably.</p> |

**Sample preservation, receipt, and holding times:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Method blanks:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Field blanks:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**Surrogates and labeled compounds:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**MS/MSDs:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**Laboratory duplicates:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**Field duplicates:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| Y               |                  |

**LCSs/LCSDs:**

| Within Criteria | Exceedance/Notes  |
|-----------------|---|
| Y               | <p>The site-specific QAPP requires a laboratory reagent blank (LRB), laboratory media blank (LMB), laboratory control sample (LCS), and LCS duplicate (LCSD) to be analyzed per batch of 20 samples. However, the laboratory analyzed 29 field samples in one sample preparation batch that included one LRB, LMB, LCS, and LCSD, when the batch should have included two LRBs, LMBs, LCSs, and LCSDs. The laboratory was contacted about this deviation from the site-specific QAPP and agreed that moving forward they would follow the quality control (QC) sample frequency requirements in the site-specific QAPP. No qualifications were applied based on professional judgment because the QC sample results met the QAPP acceptance criteria and the QC sample results from previous datasets for this project have met the QAPP acceptance criteria.</p> |

**Sample dilutions:**

| Within Criteria | Exceedance/Notes |
|-----------------|------------------|
| NA              |                  |

**DATA VALIDATION CHECKLIST – STAGE 2A  
EPA REGION 5 START CONTRACT**

**Re-extraction and reanalysis:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**MDLs/RLs:**

| Within<br>Criteria | Exceedance/Notes   |
|--------------------|--|
| Y                  | Method detection limits (MDL) were not reported. Nondetect sample results are reported as less than the reporting limit (RL) in the laboratory report and at the reporting limit (flagged U) in the EDD and attached qualified data table. |

**Tentatively identified compounds:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |

**Other [None]:**

| Within<br>Criteria | Exceedance/Notes |
|--------------------|------------------|
| NA                 |                  |



## DATA VALIDATION CHECKLIST – STAGE 2A EPA REGION 5 START CONTRACT

### Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

|    |   |
|----|---|
| J  | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.  |
| J+ | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.   |
| J- | The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.  |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.                    |
| R  | The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.                                 |
| U  | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).  |
| UJ | The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria. |

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY  
EUROFINS ANALYTICS, LLC REPORT NO. B174-176

| Sample_ID               | Method             | CAS#     | Analyte          | Lab_Result | Lab_Qual | MDL | RL     | Units | VAL_Result | VAL_Qual |
|-------------------------|--------------------|----------|------------------|------------|----------|-----|--------|-------|------------|----------|
| EPD-PB-BKBA-01-062123-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-BKBA-02-062123-1 | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-06-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-07-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-08-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-09-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-10-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-11-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-12-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-CM-14-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-DW-G-062123-1    | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-01-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-02-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-03-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-04-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-05-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-06-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-OD-07-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-UW-C-062123-1    | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-01-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-011-062123-1  | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-02-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-022-062123-1  | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-03-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-04-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-05-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-WA-06-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 0.0091     | U        |     | 0.0091 | ppm   | 0.0091     | U        |
| EPD-PB-FB-01-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2          | U        |     | 2      | ug    | 2          | U        |
| EPD-PB-MB-01-062123-1   | NIOSH Method 1450M | 141-32-2 | n-Butyl acrylate | 2          | U        |     | 2      | ug    | 2          | U        |