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October 17, 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

**Subject: Data Validation Report  
E Palestine Site - ER  
EPA Contract No.: 68HE0519D0005  
Task Order/Task Order Line-Item No.: 68HE0520F0032/0001EB201  
Document Tracking No. 2068**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for eighty-three air samples (including eight field duplicate samples, six field blank samples, and four media blank samples) collected at the E Palestine site. The samples were collected from May 3, 2023, to May 5, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC. The final laboratory data package was received on August 22, 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 rejection of results was required for these data packages. The results may be used as qualified based on the findings of this validation effort.

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

Sincerely,

Kierra  
Johnson

Digitally signed by Kierra  
Johnson  
Date: 2023.10.17  
13:39:31 -06'00'

Kierra Johnson  
Environmental Chemist

Enclosure

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

**ATTACHMENT**

**DATA VALIDATION REPORT  
EUROFINS ANALYTICS, LLC REPORT NOS.  
B128-099, B128-100, B128-102, AND B128-105**

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	2068a	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Laboratory Report No.	B128-099		
Analyses	n-Butyl acrylate by NIOSH Method 1450M		
Samples and Matrix	32 air samples including 2 field blanks, 2 media blanks, and 3 field duplicate pairs		
Collection Date(s)	05/04/2023		
Field Duplicate Pairs	EPD-PB-CM-11-050423-2/EPD-PB-CM-111-050423-2 EPD-PB-OD-04-050423-2/EPD-PB-OD-044-050423-2 EPD-PB-OD-06-050423-2/EPD-PB-OD-066-050423-2		
Field QC Blanks	EPD-PB-FB-02-050423-2, EPD-PB-FB-03-050423-2, EPD-PB-MB-02-050423-2, and EPD-PB-MB-03-050423-2		

**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 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
N	The results for the field blank and media blank were reported in units of micrograms (µg) while the other field 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 in units of ppm in the laboratory electronic data deliverable (EDD).  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.

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

**Data completeness (continued):**

<b>Within Criteria</b>	<b>Exceedance/Notes</b>
N	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.

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

<b>Within Criteria</b>	<b>Exceedance/Notes</b>
Y	

**Method blanks:**

<b>Within Criteria</b>	<b>Exceedance/Notes</b>
Y	

**Field blanks:**

<b>Within Criteria</b>	<b>Exceedance/Notes</b>
Y	

**Surrogates and labeled compounds:**

<b>Within Criteria</b>	<b>Exceedance/Notes</b>
NA	

**MS/MSDs:**

<b>Within Criteria</b>	<b>Exceedance/Notes</b>
NA	

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

**Laboratory duplicates:**

Within Criteria	Exceedance/Notes
NA	

**Field duplicates:**

Within Criteria	Exceedance/Notes
Y	

**LCSs/LCSDs:**

Within Criteria	Exceedance/Notes
N	<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 32 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 it 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> <p>LCSD IHG230508B had percent recovery above the acceptance criteria, however the average between the LCS and LCSD percent recoveries is within the acceptance range. No qualifications were applied.</p>

**Sample dilutions:**

Within Criteria	Exceedance/Notes
NA	

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

**Re-extraction and reanalysis:**

Within Criteria	Exceedance/Notes
NA	

**MDLs/RLs:**

Within Criteria	Exceedance/Notes
Y	Method detection limits were not reported. Nondetect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the validated EDD and attached analytical results summary.

**Tentatively identified compounds:**

Within Criteria	Exceedance/Notes
NA	

**Other [None]:**

Within 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. B128-099

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-BKBA-02-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-06-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-07-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-08-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-09-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-10-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-11-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-111-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-12-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-CM-14-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-DW-D-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-FB-02-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U	2	ug	2	U
EPD-PB-FB-03-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U	2	ug	2	U
EPD-PB-MB-02-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U	2	ug	2	U
EPD-PB-MB-03-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U	2	ug	2	U
EPD-PB-OD-01-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-02-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-03-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-04-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-044-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-05-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-06-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-066-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-OD-07-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-UW-H-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-01-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-02-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-03-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-04-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-05-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	U
EPD-PB-WA-06-050423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U	0.0091	ppm	0.0091	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.	2068b	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Laboratory Report No.	B128-100	Laboratory standard operating procedure (SOP) IHGC-P029	
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 and one field duplicate pair		
Collection Date(s)	05/04/2023		
Field Duplicate Pairs	EPD-ST-8H-WA-04-050423-2/EPD-ST-8H-WA-04-050423-2		
Field QC Blanks	EPD-ST-FB-050423-2		

**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 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
N	<p>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/m3), and parts per million (ppm) (volume) in the laboratory report and only in units of ppm in the laboratory electronic data deliverable (EDD).</p> <p>Rohm &amp; Haas IH9805 is cited in the AIHA certification as “IHGC-P029” and may be cited by the abbreviation “Rohm &amp; Haas IH9805” or “IHGC-P029” interchangeably throughout the laboratory report.</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>

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

**Data completeness (continued):**

Within Criteria	Exceedance/Notes
N	EPD-ST-8H-WA-03-050423-2 was cancelled due to a pump fault.

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

Within Criteria	Exceedance/Notes
Y	

**Method blanks:**

Within Criteria	Exceedance/Notes
N	Laboratory method blank (LMB IHG230508C) and laboratory reagent blank (LRB IHG230508C) were reported as nondetect (flagged U) with a result of 0 ug in the laboratory EDD rather than at the reporting limit. The laboratory was contacted on August 28, 2023, and resolved the LMB and LRB results in future laboratory EDDs. No qualifications were applied.

**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 Criteria	Exceedance/Notes
NA	

**Field duplicates:**

Within Criteria	Exceedance/Notes
Y	

**LCSs/LCSDs:**

Within Criteria	Exceedance/Notes
Y	

**Sample dilutions:**

Within Criteria	Exceedance/Notes
Y	

**Re-extraction and reanalysis:**

Within Criteria	Exceedance/Notes
NA	

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

**MDLs/RLs:**

Within Criteria	Exceedance/Notes
Y	Method detection limits were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the validated EDD and attached analytical results summary.

**Tentatively identified compounds:**

Within Criteria	Exceedance/Notes
NA	

**Other [None]:**

Within Criteria	Exceedance/Notes
NA	

**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. B128-100

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-D-050423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-DW-D-050423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-UW-H-050423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-UW-H-050423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-01-050423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-01-050423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-02-050423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U	0.014	ppm	0.014	U
EPD-ST-8H-WA-02-050423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-04-050423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-04-050423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-05-050423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-05-050423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-06-050423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-06-050423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-8H-WA-44-050423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U	0.015	ppm	0.015	U
EPD-ST-8H-WA-44-050423-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U	0.01	ppm	0.01	U
EPD-ST-FB-050423-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U	2.8	ug	2.8	U
EPD-ST-FB-050423-2	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.	2068c	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Laboratory Report No.	B128-102		
Analyses	n-Butyl acrylate by NIOSH Method 1450M		
Samples and Matrix	32 air samples including 2 field blanks, 2 media blanks, and 3 field duplicate pairs		
Collection Date(s)	5/5/23		
Field Duplicate Pairs	EPD-PB-OD-033-050523-2/EPD-PB-OD-03-050523-2 EPD-PB-CM-077-050523-2/EPD-PB-CM-07-050523-2 EPD-PB-BKBA-022-050523-2/EPD-PB-BKBA-02-050523-2 EPD-PB-FB-02-050523-2, EPD-PB-FB-03-050523-2, EPD-PB-MB-02-050523-2, EPD-PB-MB-03-050523-2		
Field QC Blanks			

**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 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
N	<p>The results for the field blank and media blank were reported in units of micrograms (µg) while the other field 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 in units of ppm in the laboratory 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
N	Laboratory method blank (LMB IHG230508D) and laboratory reagent blank (LRB IHG230508D) were reported as nondetect (flagged U) with a result of 0 ug in the laboratory EDD rather than at the reporting limit in the laboratory EDD. The laboratory was contacted on August 28, 2023, and resolved the LMB and LRB results in future laboratory EDDs. No qualifications were applied.

**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
Y	

**LCSs/LCSDs:**

Within Criteria	Exceedance/Notes
N	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 32 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 it 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.

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

**Sample dilutions:**

Within Criteria	Exceedance/Notes
NA	

**Re-extraction and reanalysis:**

Within Criteria	Exceedance/Notes
NA	

**MDLs/RLs:**

Within Criteria	Exceedance/Notes
Y	Method detection limits were not reported. Nondetect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the validated EDD and attached analytical results summary.

**Tentatively identified compounds:**

Within Criteria	Exceedance/Notes
NA	

**Other [None]:**

Within 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. B128-102

Sample_ID	Method	CAS#	Analyte	Lab Result	Lab Qual	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-BKBA-02-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-BKBA-022-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-CM-06-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-CM-07-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-CM-077-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-CM-08-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-CM-09-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-CM-10-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-CM-11-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-CM-12-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-CM-14-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-DW-E-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-FB-02-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U		2	ug	2 U	
EPD-PB-FB-03-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U		2	ug	2 U	
EPD-PB-IB-02-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U		2	ug	2 U	
EPD-PB-IB-03-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2 U		2	ug	2 U	
EPD-PB-OD-01-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-OD-02-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-OD-03-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-OD-033-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-OD-04-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-OD-05-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-OD-06-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-OD-07-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-UW-A-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-WA-01-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-WA-02-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-WA-03-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-WA-04-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-WA-05-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 U	
EPD-PB-WA-06-050523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091 U		0.0091	ppm	0.0091 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.	2068d	Laboratory	Eurofins Analytics, LLC – Ashland, VA
Laboratory Report No.	B128-105	Eurofins Analytics, LLC – Ashland, VA	
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Ten air samples including one field blank and one field duplicate pair		
Collection Date(s)	05/03/2023		
Field Duplicate Pairs	EPD-ST-8H-WA-01-050323-2/EPD-ST-8H-WA-11-050323-2		
Field QC Blanks	EPD-ST-FB-050323-2		

**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 East Palestine Train Derailment Site East Palestine, Team (START V), EPA Region 5, Revision 4* (August 2022), and the EPA *National Functional Guidelines for Organic Superfund Methods Data Review* (November 2020).

**OVERALL EVALUATION**

No rejection of results was required for this data package. The results may be used as qualified based on this validation effort.

**Data completeness:**

Within Criteria	Exceedance/Notes
N	<p>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/m3), and parts per million (ppm) (volume) in the laboratory report and only in units of ppm in the laboratory electronic data deliverable (EDD).</p> <p>Rohm &amp; Haas IH9805 is cited in the AIHA certification as “IHGC-P029” and may be cited by the abbreviation “Rohm &amp; Haas IH9805” or “IHGC-P029” interchangeably throughout the laboratory report.</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>

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

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

Within Criteria	Exceedance/Notes
Y	

**Method blanks:**

Within Criteria	Exceedance/Notes
N	Laboratory method blank (LMB IHG230508H) and laboratory reagent blank (LRB IHG230508H) were reported as nondetect (flagged U) with a result of 0 ug in the laboratory EDD rather than at the reporting limit. The laboratory was contacted on August 28, 2023, and resolved the LMB and LRB results in future laboratory EDDs. No qualifications were applied.

**Field blanks:**

Within Criteria	Exceedance/Notes
Y	

**Surrogates and labeled compounds:**

Within Criteria	Exceedance/Notes
NA	

**MS/MSDs:**

Within Criteria	Exceedance/Notes
NA	

**Laboratory duplicates:**

Within Criteria	Exceedance/Notes
NA	

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

**Field duplicates:**

Within Criteria	Exceedance/Notes
Y	

**LCSS/LCSDs:**

Within Criteria	Exceedance/Notes
N	The laboratory control spike duplicate (LCSD) percent recovery for n-Butyl acrylate was below the acceptance criteria. N-butyl acrylate results in all samples were qualified as estimated with possible low bias (flagged UJ).

**Sample dilutions:**

Within Criteria	Exceedance/Notes
Y	

**Re-extraction and reanalysis:**

Within Criteria	Exceedance/Notes
NA	

**MDLs/RLs:**

Within Criteria	Exceedance/Notes
Y	Method detection limits were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the validated EDD and attached analytical results summary.

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

**Tentatively identified compounds:**

Within Criteria	Exceedance/Notes
NA	

**Other [None]:**

Within Criteria	Exceedance/Notes
NA	

**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.
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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. B128-105

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-D-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014 U	U	0.014	ppm	0.014 U	U
EPD-ST-8H-DW-D-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01 U	U	0.01	ppm	0.01 UJ	UJ
EPD-ST-8H-UW-H-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015 U	U	0.015	ppm	0.015 U	U
EPD-ST-8H-UW-H-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01 U	U	0.01	ppm	0.01 UJ	UJ
EPD-ST-8H-WA-01-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014 U	U	0.014	ppm	0.014 U	U
EPD-ST-8H-WA-01-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01 U	U	0.01	ppm	0.01 UJ	UJ
EPD-ST-8H-WA-02-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.017 U	U	0.017	ppm	0.017 U	U
EPD-ST-8H-WA-02-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.011 U	U	0.011	ppm	0.011 UJ	UJ
EPD-ST-8H-WA-03-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015 U	U	0.015	ppm	0.015 U	U
EPD-ST-8H-WA-03-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01 U	U	0.01	ppm	0.01 UJ	UJ
EPD-ST-8H-WA-04-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015 U	U	0.015	ppm	0.015 U	U
EPD-ST-8H-WA-04-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01 U	U	0.01	ppm	0.01 UJ	UJ
EPD-ST-8H-WA-05-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015 U	U	0.015	ppm	0.015 U	U
EPD-ST-8H-WA-05-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01 U	U	0.01	ppm	0.01 UJ	UJ
EPD-ST-8H-WA-06-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015 U	U	0.015	ppm	0.015 U	U
EPD-ST-8H-WA-06-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01 U	U	0.01	ppm	0.01 UJ	UJ
EPD-ST-8H-WA-11-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014 U	U	0.014	ppm	0.014 U	U
EPD-ST-8H-WA-11-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01 U	U	0.01	ppm	0.01 UJ	UJ
EPD-ST-FB-050323-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8 U	U	2.8	ug	2.8 U	U
EPD-ST-FB-050323-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3 U	U	1.3	ug	1.3 UJ	UJ