TETRA TECH

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August 30, 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. 1914

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for 79 air samples (including 5 field duplicate samples, 5 field blank samples, and 3 media blanks) collected at the E Palestine ER. The samples were collected on April 17, 2023, and were analyzed for acrylates by Eurofins Analytics. 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, EPA Region 5, Revision 3* (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), Revision 4* (August 2022), and the *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

No rejection or qualification of results was required for this data package. 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,

Tom Hahne
Digitally signed by Tom Hahne
Date: 2023.08.30 10:18:25 -05'00'

Quality Reviewer

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

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ATTACHMENT

DATA VALIDATION REPORT
EUROFINS ANALYTICS REPORT NO. B109-033, B109-034, B109-035 AND B109-036

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

Site Name	E Palestine Site - ER		TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	DTN 1914a			
Laboratory Report No.	B109-033		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			
Collection Date(s)	04/17/2023			
Field Duplicate Pairs	NA			
Field QC Blanks	EPD-ST-FB-041723-1			

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, EPA Region 5, 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/m3), and parts per million (ppm) (volume) in the laboratory report and only in units of ppm in the laboratory electronic data deliverable (EDD).

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	Per email correspondence in the laboratory report, one sample ID required correction. The sample ID for EPD-ST-8H-WA-04-041623-1 was corrected to EPD-ST-8H-WA-04-041723-1 on the COC and therefore in the report/EDD.

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	

Laboratory duplicates:

Within Criteria	Exceedance/Notes
NA	

Field duplicates:

Within Criteria	Exceedance/Notes
NA	

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

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
N	The LCS recovery of n-Butyl Acrylate was below QC limits. The n-Butyl Acrylate results in all samples were not-detected and therefore qualified as estimated (flagged UJ). The LCS/LCSD in the EDD did not match the Level IV package. No qualifications were applied because a revised EDD and Level II report was received, and the LCS/LCSD in the revisions matched the Level IV data package.

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	

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.
NF	The tentatively identified compound was manually searched for but was not found in the sample.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS REPORT NO. B109-033

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-A-041723-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-DW-A-041723-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-UW-E-041723-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.013	U		0.013	ppm	0.013	U
EPD-ST-8H-UW-E-041723-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-ST-8H-WA-01-041723-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.013	U		0.013	ppm	0.013	U
EPD-ST-8H-WA-01-041723-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-ST-8H-WA-02-041723-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-02-041723-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-03-041723-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-03-041723-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-04-041723-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-04-041723-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-05-041723-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-05-041723-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-06-041723-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-06-041723-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-FB-041723-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8			2.8	ug	2.8	U
EPD-ST-FB-041723-1	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.	DTN 1914b		
Laboratory Report No.	B109-034	Laboratory	Eurofins Analytics, LLC, Ashland VA
Analyses	n-Butyl acrylate analysis by NIOSH Method 1450M		
Samples and Matrix	29 air samples including two field duplicate pairs, one field blank, and one media blank		
Collection Date(s)	04/17/2023		
Field Duplicate Pairs	EPD-PB-OD-01-041723-1/EPD-PB-OD-011-041723-1 EPD-PB-WA-05-041723-1/EPD-PB-WA-055-041723-1		
Field QC Blanks	EPD-PB-FB-01-041723-1 EPD-PB-MB-01-041723-1		

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, EPA Region 5, 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
N	A Level II data package did not contain a case narrative but otherwise was suitable to conduct Stage 2A validation. The Level IV data package case narrative was reviewed. The results for the field blanks were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligram per cubic meter (mg/m3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).

	The sample analysis time was reported as a default value of 12 AM or 00:00 hours for the LCSD in the analysis date field. The analysis date was correct. The sample analysis time for the LCSD was not required for the validated EDD; therefore, this value was not manually revised. The site-specific QAPP SOP reference for passive badges is IHGC-001-v.22-3. The laboratory confirmed that AIHA approved the laboratory SOP IHGC-001-v.22-3 may be referenced as NIOSH Method 1450M in the laboratory report. The site-specific QAPP for passive badges specifies one laboratory blank, one laboratory control sample (LCS), and one LCS duplicate (LCSD) will be prepared per batch of 20 samples. However, the laboratory was not specifying a maximum batch sample size. The laboratory was contacted and directed to follow the QC sample frequencies specified in the site-specific QAPP. No qualifications were applied because the LCS/LCSD met the QAPP acceptance criteria, and the LCS/LCSD data from previous datasets for this project have met the site-specific QAPP acceptance criteria.

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	The recoveries of n-Butyl Acrylate in the LCS/LCSD were above QC limits. The samples were unaffected because they are nondetect.

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	

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.
NF	The tentatively identified compound was manually searched for but was not found in the sample.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS REPORT NO. B109-034

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-BKBA-02-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-06-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-07-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-08-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-09-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-10-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-11-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-12-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-14-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-DW-A-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0087	U		0.0087	ppm	0.0087	U
EPD-PB-FB-01-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2.0	U
EPD-PB-MB-01-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2.0	U
EPD-PB-OD-01-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-OD-011-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-OD-02-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-OD-03-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-04-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-05-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-06-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-07-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-UW-E-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0088	U		0.0088	ppm	0.0088	U
EPD-PB-WA-01-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-02-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-03-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-04-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-05-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-055-041723-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-06-041723-1	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.	DTN 1914c		
Laboratory Report No.	B109-035	Laboratory	Eurofins Analytics, LLC, Ashland VA
Analyses	n-Butyl acrylate by NIOSH Method 1450M		
Samples and Matrix	32 air samples, including three field duplicate pairs, two media blanks, and two field blanks		
Collection Date(s)	04/17/2023		
Field Duplicate Pairs	EPD-PB-CM-11-041723-2/EPD-PB-CM-111-041723-2 EPD-PB-WA-06-041723-2/EPD-PB-WA-066-041723-2 EPD-PB-CM-088-041723-2/EPD-PB-CM-08-041723-2		
Field QC Blanks	EPD-PB-MB-03-041723-2 EPD-PB-MB-02-041723-2 EPD-PB-FB-03-041723-2 EPD-PB-FB-02-041723-2		

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, EPA Region 5, 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	

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

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	The second page of the chain of custody (COC) did not have signature/date/time for sample relinquishment from the sampling team nor did it have signature/date/time for sample receipt at the laboratory. A revision was not requested because the first page had the signature/date/time for sample relinquishment and receipt.

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	

Laboratory duplicates:

Within Criteria	Exceedance/Notes
NA	

Field duplicates:

Within Criteria	Exceedance/Notes
Y	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
Y	The recoveries of n-Butyl Acrylate in the LCS/LCSD were above QC limits. The samples were unaffected because they were nondetect. The EDD's LCS/LCSD results did not match the Level IV data package. No qualifications were applied because a revised EDD and Level II report was received, and the LCS/LCSD in the revisions matched the Level IV data package.

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	

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.
NF	The tentatively identified compound was manually searched for but was not found in the sample.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS REPORT NO. B109-035

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0089	U		0.0089	ppm	0.0089	U
EPD-PB-BKBA-02-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-06-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-07-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-08-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-088-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-09-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-10-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-11-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-111-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-12-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-CM-14-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-DW-B-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-FB-02-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2.0	U
EPD-PB-FB-03-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2.0	U
EPD-PB-MB-02-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2.0	U
EPD-PB-MB-03-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2.0	U
EPD-PB-OD-01-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-OD-02-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0155	U		0.0155	ppm	0.0155	U
EPD-PB-OD-03-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-04-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-OD-05-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0089	U		0.0089	ppm	0.0089	U
EPD-PB-OD-06-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-OD-07-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-UW-F-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0089	U		0.0089	ppm	0.0089	U
EPD-PB-WA-01-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-02-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-WA-03-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-WA-04-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-05-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-WA-06-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-PB-WA-066-041723-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	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.	DTN 1914d		
Laboratory Report No.	B109-036	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		
Collection Date(s)	04/17/2023		
Field Duplicate Pairs	NA		
Field QC Blanks	EPD-ST-FB-041723-2		

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, EPA Region 5, 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/m3), and parts per million (ppm) (volume) in the laboratory report and only in units of ppm in the laboratory electronic data deliverable (EDD).

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	

Laboratory duplicates:

Within Criteria	Exceedance/Notes
NA	

Field duplicates:

Within Criteria	Exceedance/Notes
NA	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
N	The LCS recovery of n-Butyl Acrylate was below QC limits; however, no qualifications were applied because the average n-Butyl Acrylate percent recovery was within the acceptance criteria. Also, the LCS/LCSD results reported in the EDD did not match the Level IV data package. No qualifications were applied because a revised EDD and Level II report was received, and the LCS/LCSD in the revisions matched the Level IV data package.

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	

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.
NF	The tentatively identified compound was manually searched for but was not found in the sample.

E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS REPORT NO. B109-036

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-B-041723-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.013	U		0.013	ppm	0.013	U
EPD-ST-8H-DW-B-041723-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-ST-8H-UW-F-041723-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-UW-F-041723-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-01-041723-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-01-041723-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-02-041723-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-02-041723-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-03-041723-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-03-041723-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-04-041723-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-04-041723-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-05-041723-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.016	U		0.016	ppm	0.016	U
EPD-ST-8H-WA-05-041723-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.011	U		0.011	ppm	0.011	U
EPD-ST-8H-WA-06-041723-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-06-041723-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-FB-041723-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8	ug	2.8	U
EPD-ST-FB-041723-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U		1.3	ug	1.3	U