TETRA TECH

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August 8, 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. 1970

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting these data validation reports for seventy-nine air samples, including eight field blanks and six field duplicate pairs at the E Palestine Site. The samples were collected between May 28, 2023 and June 3, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC at their Ashland, Virginia laboratory. The final laboratory data package was received on June 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), EPA Region 5, Revision 4* (August 2022), and the *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

No rejection or qualification of results were 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 feel free to contact me.

Sincerely,

Tom Hahne
Digitally signed by Tom Hahne
Date: 2023.08.08 11:12:16 -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 REPORTS
EUROFINS ANALYTICS REPORT NOS.
B151-014, B151-015, B151-016, AND B156-109

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

Site Name	E Palestine Site - ER	**TO/TOLIN No.**	68HE0520F0032/0001EB201
Document Tracking No.	1970a		
Laboratory Report No.	B151-014	**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)	5/29/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-052923-1		

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 were 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, milligram per cubic meter (mg/m^3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD). Rohm & Haas IH9805 is referenced to the AIHA certification as IHGC-P029 and may be referred to by the abbreviation “Rohm & Haas IH9805” or “IHGC-P029” interchangeably throughout the laboratory report.

Data completeness (continued):

Within Criteria	Exceedance/Notes
Y	A unique sample ID not provided for LCSD in the laboratory EDD. Unique IDs are needed to keep from overwriting QC sample IDs when EDDs are uploaded to the client database. The LCSD ID (in the Samp_No and Lab_Samp_No fields) of the validated EDD were manually revised to match the laboratory report. The sample analysis time was reported as a default value of 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 extraction date and time information in the laboratory EDD did not match the laboratory report or was blank. During the data validation effort, the extraction times were removed in the validated EDD and the extraction date was corrected to match the preparation log of the laboratory report. The original Level IV data package did not contain a laboratory case narrative. A revised Level IV data package was issued including a case narrative. No qualifications were applied. The original chain of custody (COC) had an error in the Sample ID of the field blank. A revised COC was issued to correct the field blank Sample ID from EPD-ST-FB-052**9**23-1. No qualifications were applied.

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
Y	

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. 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 EDD and attached qualified data table.

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. B151-014

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-G-052923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-DW-G-052923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.01	U
EPD-ST-8H-UW-C-052923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.016	U		0.016	ppm	0.016	U
EPD-ST-8H-UW-C-052923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.011	U		0.011	ppm	0.011	U
EPD-ST-8H-WA-01-052923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.012	U		0.012	ppm	0.012	U
EPD-ST-8H-WA-01-052923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.008	U		0.008	ppm	0.008	U
EPD-ST-8H-WA-02-052923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.016	U		0.016	ppm	0.016	U
EPD-ST-8H-WA-02-052923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.011	U		0.011	ppm	0.011	U
EPD-ST-8H-WA-03-052923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.016	U		0.016	ppm	0.016	U
EPD-ST-8H-WA-03-052923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.01	U
EPD-ST-8H-WA-04-052923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-8H-WA-04-052923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.012	U		0.012	ppm	0.012	U
EPD-ST-8H-WA-05-052923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-05-052923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.01	U
EPD-ST-8H-WA-06-052923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-06-052923-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.009	U
EPD-ST-FB-052923-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8	ug	2.8	U
EPD-ST-FB-052923-1	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.	1970b		
Laboratory Report No.	B151-115	**Laboratory**	Eurofins Analytics, LLC – Ashland, VA
Analyses	n-Butyl Acrylate analysis by NIOSH Method 1450M		
Samples and Matrix	Thirty-two air samples, including four field blanks and three field duplicate pairs		
Collection Date(s)	5/28/2023		
Field Duplicate Pairs	EPD-PB-WA-066-052823-2/EPD-PB-WA-06-052823-2 EPD-PB-BKBA-011-052823-2/EPD-PB-BKBA-01-052823-2 EPD-PB-OD-044-052823-2/EPD-PB-OD-04-052823-2		
Field QC Blanks	EPD-PB-MB-02-052823-2, EPD-PB-MB-03-052823-2, EPD-PB-FB-02-052823-2, and EPD-PB-FB-03-052823-2		

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 were 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 were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligram per cubic meter (mg/m^3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD). A unique sample ID not provided for LCSD in the laboratory EDD. Unique IDs are needed to keep from overwriting QC sample IDs when EDDs are uploaded to the client database. The LCSD ID (in the Samp_No and Lab_Samp_No fields) of the validated EDD were manually revised to match the laboratory report.

Data completeness(continued):

Within Criteria	Exceedance/Notes
N	The sample analysis time was reported as a default value of 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 extraction date and time information in the laboratory EDD did not match the laboratory report or was blank. During data validation, the extraction times were removed in the validated EDD and the extraction date was corrected to match the preparation log of the laboratory report. The site-specific QAPP for passive badges specifies one laboratory blank, one LCS, and one LCS duplicate 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. 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.

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
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 consisting of one LRB, LMB, LCS, and LCSD, when the batch should have contained two 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 based on professional judgment 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.

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. 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 EDD and attached qualified data table.

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. B151-015

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-BKBA-011-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-BKBA-02-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-06-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-07-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-08-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-09-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-10-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-11-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-12-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-14-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-DW-G-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-FB-02-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2	U
EPD-PB-FB-03-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2	U
EPD-PB-MB-02-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2	U
EPD-PB-MB-03-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2	U
EPD-PB-OD-01-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-02-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-03-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-04-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-044-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-05-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-06-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-07-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-UW-C-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-01-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-02-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-03-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-04-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-05-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-06-052823-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-066-052823-2	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.	1970c		
Laboratory Report No.	B151-016	**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 and one field duplicate pair		
Collection Date(s)	5/28/2023		
Field Duplicate Pairs	EPD-ST-WA-05-052823-2/EPD-ST-WA-55-052823-2		
Field QC Blanks	EPD-ST-FB-052823-2		

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 were required for this data package. The results may be used as reported by the laboratory.

Data completeness:

Within Criteria	Exceedance/Notes
Y	EPD-ST-8H-WA-03-052823-2 on the chain of custody was voided due to improper tube attachment. The results for the field blank were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligram per cubic meter (mg/m^3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD). Rohm & Haas IH9805 is referenced to the AIHA certification as IHGC-P029 and may be referred to by the abbreviation “Rohm & Haas IH9805” or “IHGC-P029” interchangeably throughout the laboratory report.

Data completeness (continued):

Within Criteria	Exceedance/Notes
Y	A unique sample ID not provided for LCSD in the laboratory EDD. Unique IDs are needed to keep from overwriting QC sample IDs when EDDs are uploaded to the client database. The LCSD ID (in the Samp_No and Lab_Samp_No fields) of the validated EDD were manually revised to match the laboratory report. The sample analysis time was reported as a default value of 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 extraction date and time information in the laboratory EDD did not match the laboratory report or was blank. During the data validation effort, the extraction times were removed in the validated EDD and the extraction date was corrected to match the preparation log of the laboratory report.

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
Y	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
Y	

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. 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 EDD and attached qualified data table.

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. B151-016

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-G-052823-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-DW-G-052823-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.01	U
EPD-ST-8H-UW-C-052823-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-UW-C-052823-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.01	U
EPD-ST-8H-WA-01-052823-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-01-052823-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.009	U
EPD-ST-8H-WA-02-052823-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-02-052823-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.01	U
EPD-ST-8H-WA-04-052823-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-04-052823-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.01	U
EPD-ST-8H-WA-05-052823-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014	ppm	0.014	U
EPD-ST-8H-WA-05-052823-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.01	U
EPD-ST-8H-WA-06-052823-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.016	U		0.016	ppm	0.016	U
EPD-ST-8H-WA-06-052823-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.011	U		0.011	ppm	0.011	U
EPD-ST-8H-WA-55-052823-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-55-052823-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.01	U
EPD-ST-FB-052823-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8	ug	2.8	U
EPD-ST-FB-052823-2	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.	1970d		
Laboratory Report No.	B156-109	**Laboratory**	Eurofins Analytics, LLC – Ashland, VA
Analyses	n-Butyl Acrylate analysis by NIOSH Method 1450M		
Samples and Matrix	Twenty-nine air samples, including two field blanks and two field duplicate pairs		
Collection Date(s)	6/3/2023		
Field Duplicate Pairs	EPD-PB-OD-01-060323-1/EPD-PB-OD-011-060323-1 EPD-PB-OD-04-060323-1/EPD-PB-OD-044-060323-1		
Field QC Blanks	EPD-PB-FB-01-060323-1 and EPD-PB-MB-01-060323-1		

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 were 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 were reported in units of micrograms (µg) while the other sample results were reported in units of µg, milligram per cubic meter (mg/m^3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD). A unique sample ID not provided for LCSD in the laboratory EDD. Unique IDs are needed to keep from overwriting QC sample IDs when EDDs are uploaded to the client database. The LCSD ID (in the Samp_No and Lab_Samp_No fields) of the validated EDD were manually revised to match the laboratory report.

Data completeness(continued):

Within Criteria	Exceedance/Notes
N	The sample analysis time was reported as a default value of 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 extraction date information in the laboratory EDD did not match the laboratory report or was blank. During data validation, the extraction times were removed in the validated EDD and the extraction date was corrected to match the preparation log of the laboratory report. The site-specific QAPP for passive badges specifies one laboratory blank, one LCS, and one LCS duplicate 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. 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.

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
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 29 field samples in one sample preparation batch consisting of one LRB, LMB, LCS, and LCSD, when the batch should have contained two 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.

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. 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 EDD and attached qualified data table.

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).
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E PALESTINE SITE - ER AIR ANALYTICAL RESULTS SUMMARY
EUROFINS ANALYTICS, LLC REPORT NO. B156-109

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-BKBA-02-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-06-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-07-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-08-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-09-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ug	0.0091	U
EPD-PB-CM-10-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-11-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-12-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-CM-14-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-DW-E-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-FB-01-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2	U
EPD-PB-MB-01-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2	ug	2	U
EPD-PB-OD-01-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-011-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-02-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-03-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-04-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-044-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-05-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-06-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-OD-07-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ug	0.0091	U
EPD-PB-UW-A-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-01-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-02-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-03-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-04-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-05-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U
EPD-PB-WA-06-060323-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091	ppm	0.0091	U