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July 13, 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. 1912**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for ninety-six air samples (including nine field duplicate samples) and thirteen equipment blank samples collected at the E Palestine site. The samples were collected April 14 through 16, 2023, and were analyzed for volatile organic compounds (VOCs) by Eurofins Analytics, LLC in Ashland, Virginia. The final laboratory data package was received on June 8, 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)*, the *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (November 2020)*.

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

If you have any questions regarding this data validation report, please feel free to contact me.

Sincerely,

Deb Kutsal
Digitally signed by Deb Kutsal
Date: 2023.07.13 13:51:34 -07'00'

Deb Kutsal

Senior 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. B107-124, B108-194,
B108-196 AND B108-197**

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

Site Name	E Palestine Site	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1912a	Laboratory	Eurofins Analytics, LLC/ Ashland, VA
Laboratory Report No.	B107-124		
Analyses	n-Butyl Acrylate analysis by NIOSH Method 1450M (Modified GC/FID)		
Samples and Matrix	Thirty-two air samples, including three field duplicates and four field QC blanks		
Collection Date(s)	04/14/2023		
Field Duplicate Pairs	EPD-PB-BKBA-02-041423-2/EPD-PB-BKBA-022-041423-2 EPD-PB-CM-06-041423-2/EPD-PB-CM-066-041423-2 EPD-PB-BKBA-01-041423-2/EPD-PB-BKBA-011-041423-2 EPD-PB-FB-02-041423-2 EPD-PB-FB-03-041423-2 EPD-PB-MB-02-041423-2 EPD-PB-MB-03-041423-2		
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 (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 received from the laboratory.

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

Data completeness:

Within Criteria	Exceedance/Notes
N	<p>The Level II laboratory report does not have required QC results; therefore, the Level IV package was used for validation.</p> <p>The results for the field blanks are reported in units of micrograms (µg) while the other sample results are 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).</p> <p>A unique sample ID was not provided for the 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.</p> <p>The extraction date information in the laboratory EDD did not match the laboratory report or was blank. The client project management team confirmed that this information is not needed in the validated EDD; therefore, all extraction date information except the field header was deleted from the validated EDD.</p> <p>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 is not required for the validated EDD; therefore, this value was left as is.</p>

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	The second page of the chain-of-custody (COC) form did not have a signature/date/time for sample receipt at the laboratory. No qualifications were applied for this laboratory oversight.

Method blanks:

Within Criteria	Exceedance/Notes
Y	

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

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 LCS/LCSD recovery values provided in the EDD did not match those in the laboratory report. The laboratory was contacted to verify that the values in the laboratory report were correct. The LCS/LCSD recovery values in the EDD were manually revised to match the laboratory report.

**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
N	Method detection limits were not provided in the laboratory report or EDD. 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, therefore, in the 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.
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, LLC REPORT NO. B107-124

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-BKBA-011-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-BKBA-02-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-BKBA-022-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-06-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-066-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-07-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-08-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-09-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-10-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-11-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-12-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-14-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-DW-A-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-FB-02-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate		2 U			2 ug		2.0 U
EPD-PB-FB-03-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate		2 U			2 ug		2.0 U
EPD-PB-MB-02-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate		2 U			2 ug		2.0 U
EPD-PB-MB-03-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate		2 U			2 ug		2.0 U
EPD-PB-OD-01-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-02-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-03-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-04-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-05-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-06-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-07-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-UW-E-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-01-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-02-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-03-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-04-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-05-041423-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-06-041423-2	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	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1912b	Laboratory	Eurofins Analytics, LLC/Ashland, VA
Laboratory Report No.	B108-194		
Analyses	n-Butyl Acrylate analysis by NIOSH Method 1450M (Modified GC/FID)		
Samples and Matrix	Thirty-two air samples, including three field duplicates and four field QC blanks		
Collection Date(s)	04/16/2023		
Field Duplicate Pairs	EPD-PB-WA-01-041623-2/EPD-PB-WA-011-041623-2 EPD-PB-OD-02-041623-2/EPD-PB-OD-022-041623-2 EPD-PB-OD-05-041623-2/EPD-PB-OD-055-041623-2		
Field QC Blanks	EPD-PB-FB-02-041623-2 EPD-PB-MB-02-041623-2 EPD-PB-FB-03-041623-2 EPD-PB-MB-03-041623-2		

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), Revision 4* (August 2022), and the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

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

Data completeness:

Within Criteria	Exceedance/Notes
N	The Level II laboratory report did not have required QC results; therefore, the Level IV laboratory report was used for this validation.

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

Data completeness:

Within Criteria	Exceedance/Notes
N	<p>The results for the field blanks are reported in units of micrograms (µg) while the other sample results are 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).</p> <p>A unique sample ID was not provided for the 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.</p> <p>The extraction date information in the laboratory EDD did not match the laboratory report or was blank. The client project management team confirmed that this information is not needed in the validated EDD; therefore, all extraction date information except the field header was deleted from the validated EDD.</p> <p>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 is not required for the validated EDD; therefore, this value was left as is.</p>

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	The second page of the chain-of-custody (COC) form did not have a signature/date/time for sample receipt at the laboratory. No qualifications were applied for this laboratory oversight.

Method blanks:

Within Criteria	Exceedance/Notes
Y	

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

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	

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

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
N	<p>The recoveries of n-Butyl Acrylate in the LCS and LCSD were above QC limits. The sample results are nondetect and were therefore not qualified.</p> <p>The LCS and LCSD recovery values provided in the EDD did not match the laboratory report. The laboratory was contacted to verify that the values in the laboratory report were correct. The LCS and LCSD recovery values in the EDD were manually revised to match those in the laboratory report.</p>

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
N	Method detection limits were not provided in either the laboratory report or EDD. 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, therefore, in the attached qualified data table.

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

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

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, LLC REPORT NO. B108-194

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-BKBA-02-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-CM-06-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-CM-07-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-CM-08-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-CM-09-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-CM-10-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-CM-11-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-CM-12-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-CM-14-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-DW-A-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-FB-02-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			ug	2.0	U
EPD-PB-FB-03-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			ug	2.0	U
EPD-PB-MB-02-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			ug	2.0	U
EPD-PB-MB-03-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			ug	2.0	U
EPD-PB-OD-01-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-OD-02-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-OD-022-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-OD-03-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-OD-04-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-OD-05-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-OD-055-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-OD-06-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-OD-07-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-UW-E-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-WA-01-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-WA-011-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-WA-02-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-WA-03-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-WA-04-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-WA-05-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U
EPD-PB-WA-06-041623-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			ppm	0.0091	U

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

Site Name	E Palestine Site	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1912c	Laboratory	Eurofins Analytics, LLC./Ashland, VA
Laboratory Report No.	B108-196	by laboratory standard operating procedure (SOP) IHGC-P029 (GC/FID)	
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029 (GC/FID)		
Samples and Matrix	Nine air samples including one field QC blank		
Collection Date(s)	04/15/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-041523-2		

INTRODUCTION

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

OVERALL EVALUATION

No rejection or qualification of results was required for this data package. The results may be used as received from 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 blanks are reported in units of micrograms µg) while the other sample results are 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).</p> <p>The laboratory report includes the following note: “The method reference, Rohm & Haas IH9805 is referenced to the AIHA certification as “IHGC-P029” and “Rohm & Haas IH9805” was listed in the EDD for QC samples. The laboratory confirmed that these refer to the same laboratory SOP; therefore, the method reference for QC samples in the EDD was manually revised to “IHGC-P029” to match the method reference for field samples.</p> <p>A unique sample ID was not provided for the 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.</p> <p>The extraction date information in the laboratory EDD did not match the laboratory report or was blank. The client project management team confirmed that this information is not needed in the validated EDD; therefore, all extraction date information except the field header was deleted from the validated EDD.</p> <p>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 is not required for the validated EDD; therefore, this value was left as is.</p>

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	

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

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
Y	

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
N	Method detection limits were not reported in the laboratory report or EDD. 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, therefore, in the 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.
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, LLC REPORT NO. B108-196

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-C-041523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-DW-C-041523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-UW-G-041523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-UW-G-041523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-01-041523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-01-041523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-02-041523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.013	U		0.013	ppm	0.013	U
EPD-ST-8H-WA-02-041523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009	ppm	0.0090	U
EPD-ST-8H-WA-03-041523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-03-041523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-04-041523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-04-041523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-05-041523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-8H-WA-05-041523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-8H-WA-06-041523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.016	U		0.016	ppm	0.016	U
EPD-ST-8H-WA-06-041523-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01	ppm	0.010	U
EPD-ST-FB-041523-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8	ug	2.8	U
EPD-ST-FB-041523-2	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	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1912d	Laboratory	Eurofins Analytics, LLC/Ashland, VA
Laboratory Report No.	B108-197		
Analyses	n-Butyl Acrylate analysis by NIOSH Method 1450M (Modified GC/FID)		
Samples and Matrix	Thirty-two air samples, including three field duplicates and four field QC blanks		
Collection Date(s)	04/15/2023		
Field Duplicate Pairs	EPD-PB-WA-04-041523-2/EPD-PB-WA-044-041523-2 EPD-PB-WA-06-041523-2/EPD-PB-WA-066-041523-2 EPD-PB-BKBA-01-041523-2/EPD-PB-BKBA-011-041523-2		
Field QC Blanks	EPD-PB-FB-02-041523-2 EPD-PB-MB-02-041523-2 EPD-PB-FB-03-041523-2 EPD-PB-MB-03-041523-2		

INTRODUCTION

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

OVERALL EVALUATION

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

Data completeness:

Within Criteria	Exceedance/Notes
N	Level II laboratory report did not have required QC forms; therefore, the Level IV laboratory report was used for this validation.

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

Data completeness(continued):

Within Criteria	Exceedance/Notes
N	<p>The results for the field blanks are reported in units of micrograms µg) while the other sample results are 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).</p> <p>The laboratory report includes the following note: “The method reference, Rohm & Haas IH9805 is referenced to the AIHA certification as “IHGC-P029” and “Rohm & Haas IH9805” was listed in the EDD for QC samples. The laboratory confirmed that these refer to the same laboratory SOP; therefore, the method reference for QC samples in the EDD was manually revised to “IHGC-P029” to match the method reference for field samples.</p> <p>A unique sample ID was not provided for the 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.</p> <p>The extraction date information in the laboratory EDD did not match the laboratory report or was blank. The client project management team confirmed that this information is not needed in the validated EDD; therefore, all extraction date information except the field header was deleted from the validated EDD.</p> <p>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 is not required for the validated EDD; therefore, this value was left as is.</p>

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	<p>The second page of the chain-of-custody (COC) form did not have a signature/date/time for sample receipt at the laboratory. No qualifications were applied for this laboratory oversight.</p>

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

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	

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

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
N	<p>The recovery of n-Butyl Acrylate was above laboratory control limits. All associated results are nondetect; therefore, no results were qualified.</p> <p>The LCS and LCSD recovery values provided in the EDD did not match those in the laboratory report. The laboratory was contacted to verify that the values in the laboratory report were correct. The LCS and LCSD recovery values in the EDD were manually revised to match the laboratory report.</p>

Sample dilutions:

Within Criteria	Exceedance/Notes
NA	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
N	Method detection limits were not provided in the laboratory report or EDDd. 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, therefore, in the attached qualified data table.

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

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

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.
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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.
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, LLC REPORT NO. B108-197

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-BKBA-011-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-BKBA-02-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-06-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-07-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-08-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-09-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-10-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-11-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-12-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-14-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-DW-C-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U			0.009 ppm	0.0090	U
EPD-PB-FB-02-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			2 ug	2.0	U
EPD-PB-FB-03-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			2 ug	2.0	U
EPD-PB-MB-02-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			2 ug	2.0	U
EPD-PB-MB-03-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			2 ug	2.0	U
EPD-PB-OD-01-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-02-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-03-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-04-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-05-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-06-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-07-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-UW-G-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-01-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-02-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-03-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-04-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-044-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-05-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-06-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-066-041523-2	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U