TETRA TECH

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July 25, 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 Reports**
E Palestine Site - ER
EPA Contract No.: 68HE0519D0005
Task Order/Task Order Line Item No.: 68HE0520F0032/0001EB201
Document Tracking No. 1888

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting these data validation reports for seventy-four air samples (including four field blanks) that were collected at the E Palestine Site. The samples were collected on March 30 and April 2, 2023 and were analyzed for acrylates by Eurofins Analytics, LLC, Ashland, Virginia. The final laboratory data package was received on July 11, 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 of results was required for this data package. The results may be used as qualified based on the findings of this validation effort.

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

Sincerely,

Diane MacMillan
Digitally signed by Diane MacMillan
Date: 2023.07.25 14:43:53 -06'00'

Chemical Engineer

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

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ATTACHMENT

DATA VALIDATION REPORTS
EUROFINS ANALYTICS, LLC REPORT NOS. B093-113, B093-162, B094-175 AND B094-176

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1888a		
Laboratory Report No.	B093-113	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	Nineteen air samples, including one field blank		
Collection Date(s)	03/30/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-033023-2		

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 of results was required for this data package. The results may be used as qualified based on the findings of this validation effort.

Data completeness:

Within Criteria	Exceedance/Notes
Y	Level II SDG did not have the required QC forms, thus a level IV package was reviewed. 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/m3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD). The laboratory report included 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.

	A unique sample ID was not provided for LCSD. 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) in the EDD were manually revised to match the laboratory report. The extraction date information in the EDD did not match the laboratory report or was blank. The project management team confirmed that this information was not needed in the EDD; therefore, all extraction date information except the field header was deleted from the 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 EDD; therefore, this value was not manually revised. There was email correspondence (documented in the laboratory report) from the laboratory to the client regarding sample EPD-ST-UW-G-033023-2. This sample was received labeled with a "DW" instead of a "UW". The laboratory processed this sample with a "UW" as noted on th COC. However, this sample is located in SDG B093-162.

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	The laboratory report and the EDD have one or more minor discrepancies in the LCS/LCSD results (+/- 1 ug) and/or percent recoveries (+/- 1%) that were verified with the laboratory to be a significant figures issue. No qualification was applied.

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.
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. B093-113

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-A-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-8H-DW-A-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.013	U		0.013	ppm	0.013	U
EPD-ST-8H-WA-03-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-8H-WA-03-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.013	U		0.013	ppm	0.013	U
EPD-ST-DW-A-033023-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.032	ppm	0.032	U
EPD-ST-DW-A-033023-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.022	U		0.022	ppm	0.022	U
EPD-ST-DW-A-033023-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-DW-A-033023-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-FB-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8	ug	2.8	U
EPD-ST-FB-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U		1.3	ug	1.3	U
EPD-ST-UW-E-033023-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-UW-E-033023-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-UW-E-033023-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-UW-E-033023-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-01-033023-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-01-033023-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-01-033023-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-01-033023-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-02-033023-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-02-033023-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-02-033023-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-02-033023-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-03-033023-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-03-033023-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-03-033023-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.033	U		0.033	ppm	0.033	U
EPD-ST-WA-03-033023-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.022	U		0.022	ppm	0.022	U
EPD-ST-WA-04-033023-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-04-033023-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-04-033023-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.029	ppm	0.029	U
EPD-ST-WA-04-033023-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-WA-05-033023-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-05-033023-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-05-033023-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-05-033023-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-06-033023-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.033	U		0.033	ppm	0.033	U
EPD-ST-WA-06-033023-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.022	U		0.022	ppm	0.022	U
EPD-ST-WA-06-033023-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.035	U		0.035	ppm	0.035	U
EPD-ST-WA-06-033023-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.023	U		0.023	ppm	0.023	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.	1888b		
Laboratory Report No.	B093-162	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	Eighteen air samples, including one field blank		
Collection Date(s)	03/30/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-033023-1		

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 of results was required for this data package. The results may be used as qualified based on the findings of this validation effort. .

Data completeness:

Within Criteria	Exceedance/Notes
Y	Laboratory report was originally issued on 04/06/23 and was amended on 05/04/23 to include a corrected COC, per client request. Level II SDG did not have the required QC forms, thus a level IV package was reviewed. 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/m3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).

	The laboratory report included 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. A unique sample ID was not provided for LCSD. 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) in the EDD were manually revised to match the laboratory report. The extraction date information in the EDD did not match the laboratory report or was blank. The project management team confirmed that this information was not needed in the EDD; therefore, all extraction date information except the field header was deleted from the 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 EDD; therefore, this value was not manually revised. There was email correspondence documented in the laboratory report for SDG 093-113 regarding a sample in SDG 093-162, sample EPD-ST-UW-G-033023-2. However, this email correspondence should be documented in this SDG (093-162). The sample was received labeled with a "DW" instead of a "UW". The laboratory processed and reported this sample with a "UW" as noted on the COC (EPD-ST-UW-G-033023-2). As indicated on the COC, sample EPD-ST-WA-06-033022-2 was not collected because of a pump fault. In addition, the start time and average flowrate for sample EPD-ST-WA-03-033023-1 were corrected on the COC.

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	

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. B093-162

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-C-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-8H-DW-C-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.012	U		0.012	ppm	0.012	U
EPD-ST-8H-WA-04-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.016	U		0.016	ppm	0.016	U
EPD-ST-8H-WA-04-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.011	U		0.011	ppm	0.011	U
EPD-ST-DW-C-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.028	ppm	0.028	U
EPD-ST-DW-C-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-DW-C-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.028	ppm	0.028	U
EPD-ST-DW-C-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-FB-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8	ug	2.8	U
EPD-ST-FB-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U		1.3	ug	1.3	U
EPD-ST-UW-G-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.032	ppm	0.032	U
EPD-ST-UW-G-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.022	U		0.022	ppm	0.022	U
EPD-ST-UW-G-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-UW-G-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-01-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-01-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-01-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.027	U		0.027	ppm	0.027	U
EPD-ST-WA-01-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-WA-02-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.026	U		0.026	ppm	0.026	U
EPD-ST-WA-02-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.017	U		0.017	ppm	0.017	U
EPD-ST-WA-02-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-02-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-03-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.027	U		0.027	ppm	0.027	U
EPD-ST-WA-03-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-WA-03-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.027	U		0.027	ppm	0.027	U
EPD-ST-WA-03-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-WA-04-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.028	ppm	0.028	U
EPD-ST-WA-04-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-WA-04-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.034	U		0.034	ppm	0.034	U
EPD-ST-WA-04-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.023	U		0.023	ppm	0.023	U
EPD-ST-WA-05-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.028	ppm	0.028	U
EPD-ST-WA-05-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-WA-05-033023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-05-033023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-06-033023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-06-033023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	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.	1888c		
Laboratory Report No.	B094-175	Laboratory	Eurofins Analytics, LLC, Ashland VA
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Nineteen air samples, including one field blank		
Collection Date(s)	04/02/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-040223-2		

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 of results was required for this data package. The results may be used as qualified based on the findings of this validation effort.

Data completeness:

Within Criteria	Exceedance/Notes
Y	Level II SDG did not have the required QC forms, thus a level IV package was reviewed. 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/m3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD).

	The laboratory report included 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. A unique sample ID was not provided for LCSD. 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) in the EDD were manually revised to match the laboratory report. The extraction date information in the EDD did not match the laboratory report or was blank. The project management team confirmed that this information was not needed in the EDD; therefore, all extraction date information except the field header was deleted from the 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 EDD; therefore, this value was not manually revised.

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	

Method blanks:

Within Criteria	Exceedance/Notes
Y	

Field blanks:

Within Criteria	Exceedance/Notes
Y	

Surrogates and labeled compounds:

Within Criteria	Exceedance/Notes
NA	

MS/MSDs:

Within Criteria	Exceedance/Notes
NA	

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	

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. B094-175

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-D-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-8H-DW-D-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.013	U		0.013	ppm	0.013	U
EPD-ST-8H-WA-02-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-8H-WA-02-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.012	U		0.012	ppm	0.012	U
EPD-ST-DW-D-040223-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.029	ppm	0.029	U
EPD-ST-DW-D-040223-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-DW-D-040223-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.028	ppm	0.028	U
EPD-ST-DW-D-040223-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-FB-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8	ug	2.8	U
EPD-ST-FB-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U		1.3	ug	1.3	U
EPD-ST-UW-H-040223-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-UW-H-040223-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-UW-H-040223-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-UW-H-040223-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-01-040223-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-01-040223-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-01-040223-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-01-040223-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-02-040223-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.028	ppm	0.028	U
EPD-ST-WA-02-040223-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-WA-02-040223-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.023	U		0.023	ppm	0.023	U
EPD-ST-WA-02-040223-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.015	U		0.015	ppm	0.015	U
EPD-ST-WA-03-040223-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-03-040223-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-03-040223-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-03-040223-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-04-040223-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-04-040223-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-04-040223-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-04-040223-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-05-040223-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-05-040223-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-05-040223-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.032	ppm	0.032	U
EPD-ST-WA-05-040223-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-06-040223-3	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.032	ppm	0.032	U
EPD-ST-WA-06-040223-3	IHGC-P029	141-32-2	n-Butyl acrylate	0.022	U		0.022	ppm	0.022	U
EPD-ST-WA-06-040223-4	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.032	U		0.032	ppm	0.032	U
EPD-ST-WA-06-040223-4	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	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.	1888d		
Laboratory Report No.	B094-176	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	Eighteen air samples, including one field blank		
Collection Date(s)	04/02/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-040223-1		

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 of results was required for this data package. The results may be used as qualified based on the findings of this validation effort. .

Data completeness:

Within Criteria	Exceedance/Notes
Y	Level II SDG did not have the required QC forms, thus a level IV package was reviewed. 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/m3), and parts per million (ppm) (volume) in the laboratory report and only ppm in the electronic data deliverable (EDD). The laboratory report included 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.

	A unique sample ID was not provided for LCSD. 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) in the EDD were manually revised to match the laboratory report. The extraction date information in the EDD did not match the laboratory report or was blank. The project management team confirmed that this information was not needed in the EDD; therefore, all extraction date information except the field header was deleted from the 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 EDD; therefore, this value was not manually revised. There is a note on the COC for sample EPD-ST-8H-DW-C-040223-1 stating "weather impact, void sample, not shipped." However, this sample was received by the laboratory and results were reported. Also, sample EPD-ST-WA-03-040223-2 was not collected because of a broken tube, as noted on the COC. There is email correspondence between the laboratory and the client regarding an incorrect sample ID on the COC for sample EPD-ST-WA-04-040223-1. The revised COC with the correct ID is included 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
NA	

LCSs/LCSDs:

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

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.
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. B094-176

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-C-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.017	U		0.017	ppm	0.017	U
EPD-ST-8H-DW-C-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.011	U		0.011	ppm	0.011	U
EPD-ST-8H-WA-04-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.012	U		0.012	ppm	0.012	U
EPD-ST-8H-WA-04-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.008	U		0.008	ppm	0.008	U
EPD-ST-DW-C-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.029	ppm	0.029	U
EPD-ST-DW-C-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-DW-C-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.028	ppm	0.028	U
EPD-ST-DW-C-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-FB-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8	ug	2.8	U
EPD-ST-FB-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U		1.3	ug	1.3	U
EPD-ST-UW-G-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.026	U		0.026	ppm	0.026	U
EPD-ST-UW-G-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.017	U		0.017	ppm	0.017	U
EPD-ST-UW-G-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.029	ppm	0.029	U
EPD-ST-UW-G-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-WA-01-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.027	U		0.027	ppm	0.027	U
EPD-ST-WA-01-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-WA-01-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.031	U		0.031	ppm	0.031	U
EPD-ST-WA-01-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.021	U		0.021	ppm	0.021	U
EPD-ST-WA-02-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-02-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-02-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-02-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-03-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.028	ppm	0.028	U
EPD-ST-WA-03-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.018	U		0.018	ppm	0.018	U
EPD-ST-WA-04-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-04-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-04-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.029	ppm	0.029	U
EPD-ST-WA-04-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-05-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.028	U		0.028	ppm	0.028	U
EPD-ST-WA-05-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U
EPD-ST-WA-05-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.03	U		0.03	ppm	0.030	U
EPD-ST-WA-05-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.02	U		0.02	ppm	0.020	U
EPD-ST-WA-06-040223-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.024	U		0.024	ppm	0.024	U
EPD-ST-WA-06-040223-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.016	U		0.016	ppm	0.016	U
EPD-ST-WA-06-040223-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.029	U		0.029	ppm	0.029	U
EPD-ST-WA-06-040223-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.019	U		0.019	ppm	0.019	U