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September 6, 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. 1919**

Dear Mr. Peters:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for 76 air samples (including 4 field duplicate samples, 4 field blank samples, and 2 media blank samples) collected at the E Palestine site. The samples were collected on April 10, 11, and 14, 2023, and were analyzed for acrylates by Eurofins Analytics, LLC. The final laboratory data package was received on June 12, 2023.

Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan East Palestine Train Derailment Site East Palestine, Columbiana County, Ohio*, Revision 3 (April 2023), the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V)*, EPA Region 5, Revision 4 (August 2022), and the *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

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

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

Sincerely,

Deb Kutsal Digitally signed by Deb Kutsal
Date: 2023.09.06 11:21:20
-07'00'

Environmental Chemist

Enclosure

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

ATTACHMENT

**DATA VALIDATION REPORT
EUROFINS ANALYTICS REPORT NOS. B102-024, B102-030, B103-
010 AND B107-120**

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1919a		
Laboratory Report No.	B102-024	Laboratory	Eurofins Analytics, LLC - Ashland, VA
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Nine air samples including one field blank		
Collection Date(s)	04/10/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-041023-2		

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 qualification or rejection 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 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).</p> <p>The laboratory report includes the following note: “The method reference, Rohm & Haas IH9805 is referenced to the AIHA certification as IHGC-P029.” “Rohm & Haas IH9805” is cited in the laboratory EDD for the QC samples. The laboratory confirmed that these two citations refer to the same laboratory SOP; therefore, the method reference for QC samples was manually revised in the validated EDD to “IHGC-P029,” to match the method citation for field samples.</p> <p>The extraction date and time information in the laboratory EDD do not match the laboratory report or is blank. During the data validation effort, the extraction times were deleted from the validated EDD and the extraction date was corrected (as needed) to match those in the preparation log in the laboratory report.</p> <p>The sample analysis time is reported as a default value of 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. Since the sample analysis time for the LCSD is not required for the validated EDD, this value was not manually revised.</p> <p>A unique sample for LCSD was not provided in the laboratory EDD. Unique sample IDs are needed to avoid overwriting other QC sample data when validated EDDs are uploaded to the Scribe database. The LCSD ID in the Samp_No and Lab_Samp_No fields of the validated EDD were manually revised to match those in the laboratory report.</p>

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	<p>The laboratory report was amended on 06/08/2023 to correct the sample volumes for EPD-ST-WA-03-041023-2, EPD-ST-UW-F-041023-2, and EPD-ST-WA-04-041023-2, per client request. Both the original and corrected chain-of-custody (COC) forms are included in the revised Level II report.</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
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
Y	Method detection limits were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the validated EDD and attached analytical results summary.

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

**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. B102-024

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-ST-DW-B-041023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014 ppm	0.014	U
EPD-ST-DW-B-041023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.010	U
EPD-ST-FB-041023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8 ug	2.8	U
EPD-ST-FB-041023-2	IHGC-P029	141-32-2	n-Butyl acrylate	1.3	U		1.3 ug	1.3	U
EPD-ST-UW-F-041023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015 ppm	0.015	U
EPD-ST-UW-F-041023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.010	U
EPD-ST-WA-01-041023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015 ppm	0.015	U
EPD-ST-WA-01-041023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.010	U
EPD-ST-WA-02-041023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015 ppm	0.015	U
EPD-ST-WA-02-041023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.010	U
EPD-ST-WA-03-041023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015 ppm	0.015	U
EPD-ST-WA-03-041023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.010	U
EPD-ST-WA-04-041023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015 ppm	0.015	U
EPD-ST-WA-04-041023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.010	U
EPD-ST-WA-05-041023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.017	U		0.017 ppm	0.017	U
EPD-ST-WA-05-041023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.012	U		0.012 ppm	0.012	U
EPD-ST-WA-06-041023-2	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.015	U		0.015 ppm	0.015	U
EPD-ST-WA-06-041023-2	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.010	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.	1919b		
Laboratory Report No.	B102-030	Laboratory	Eurofins Analytics, LLC - Ashland VA
Analyses	2-Ethylhexyl acrylate and n-butyl acrylate by laboratory standard operating procedure (SOP) IHGC-P029		
Samples and Matrix	Nine air samples including one field blank		
Collection Date(s)	04/10/2023		
Field Duplicate Pairs	None		
Field QC Blanks	EPD-ST-FB-041023-1		

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, 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 qualification or rejection 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 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).</p> <p>The laboratory report includes the following note: “The method reference, Rohm & Haas IH9805 is referenced to the AIHA certification as IHGC-P029.” “Rohm & Haas IH9805” is cited in the laboratory EDD for the QC samples. The laboratory confirmed that these two citations refer to the same laboratory SOP; therefore, the method reference for QC samples was manually revised in the validated EDD to “IHGC-P029,” to match the method citation for field samples.</p> <p>The extraction date and time information in the laboratory EDD do not match the laboratory report or is blank. During the data validation effort, the extraction times were deleted from the validated EDD and the extraction date was corrected (as needed) to match those in the preparation log in the laboratory report.</p> <p>The sample analysis time is reported as a default value of 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. Since the sample analysis time for the LCSD is not required for the validated EDD, this value was not manually revised.</p> <p>A unique sample for LCSD was not provided in the laboratory EDD. Unique sample IDs are needed to avoid overwriting other QC sample data when validated EDDs are uploaded to the Scribe database. The LCSD ID in the Samp_No and Lab_Samp_No fields of the validated EDD were manually revised to match those in the laboratory report.</p>

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	<p>The laboratory report was amended 06/08/2023 to correct the sample volume for EPD-ST-8H-DW-F-041023-1, per client request. Both the original and corrected chain-of-custody (COC) forms are included in the Level II laboratory report.</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
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
Y	Method detection limits were not reported. Non-detect sample results are reported as less than the reporting limit in the laboratory report and at the reporting limit (flagged U) in the validated EDD and attached analytical results summary.

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

**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. B102-030

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-ST-8H-DW-F-041023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014 ppm	0.014	U
EPD-ST-8H-DW-F-041023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.010	U
EPD-ST-8H-UW-B-041023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014 ppm	0.014	U
EPD-ST-8H-UW-B-041023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.01	U		0.01 ppm	0.010	U
EPD-ST-8H-WA-01-041023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.014	U		0.014 ppm	0.014	U
EPD-ST-8H-WA-01-041023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-ST-8H-WA-02-041023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.013	U		0.013 ppm	0.013	U
EPD-ST-8H-WA-02-041023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-ST-8H-WA-03-041023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.013	U		0.013 ppm	0.013	U
EPD-ST-8H-WA-03-041023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-ST-8H-WA-04-041023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.012	U		0.012 ppm	0.012	U
EPD-ST-8H-WA-04-041023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.008	U		0.008 ppm	0.008	U
EPD-ST-8H-WA-05-041023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.011	U		0.011 ppm	0.011	U
EPD-ST-8H-WA-05-041023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.008	U		0.008 ppm	0.0080	U
EPD-ST-8H-WA-06-041023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	0.013	U		0.013 ppm	0.013	U
EPD-ST-8H-WA-06-041023-1	IHGC-P029	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-ST-FB-041023-1	IHGC-P029	103-11-7	2-Ethylhexyl acrylate	2.8	U		2.8 ug	2.8	U
EPD-ST-FB-041023-1	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.	1919c		
Laboratory Report No.	B103-010	Laboratory	Eurofins Analytics, LLC - Ashland, VA
Analyses	n-Butyl Acrylate by NIOSH Method 1450M		
Samples and Matrix	Twenty-nine air samples including one field blank, one media blank, and two field duplicate pairs		
Collection Date(s)	04/11/2023		
Field Duplicate Pairs	EPD-PB-CM-11-041123-1/EPD-PB-CM-111-041123-1 EPD-PB-CM-12-041123-1/EPD-PB-CM-122-041123-1		
Field QC Blanks	EPD-PB-FB-01-041123-1 EPD-PB-MB-01-041123-1		

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, 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 qualification or rejection 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 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).</p> <p>The extraction date and time information in the laboratory EDD do not match the laboratory report or is blank. During the data validation effort, extraction times were deleted from the validated EDD and the extraction dates were corrected (as needed) to match those in the preparation log in the laboratory report.</p> <p>The sample analysis time is reported as a default value of 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. Since the sample analysis time for the LCSD is not required for the validated EDD, this value was not manually revised.</p> <p>A unique sample ID for the LCSD was not provided in the laboratory EDD. Unique sample IDs are needed to avoid overwriting other QC sample data when validated EDDs are uploaded to the Scribe database. The LCSD ID in the Samp_No and Lab_Samp_No fields of the validated EDD were manually revised to match those in the laboratory report.</p>

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	<p>The second page of the chain-of-custody (COC) form does not have a signature/date/time for sample receipt at the laboratory. No qualifications were applied.</p> <p>The laboratory report was amended on 06/09/2023 to correct the sampling times for EPD-PB-OD-07-041123-1, EPD-PB-CM-08-041123-1, and EPD-PB-CM-07-041123-1, per client request. The original and the corrected COC form are included in the Level II laboratory report.</p> <p>The laboratory report was amended again on 08/01/2023 to correct the sample ID for EPD-PB-BKBA-01-041123-1, which was reported incorrectly due to a transcription error by the laboratory.</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
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 validated EDD and attached analytical results summary.

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

Other [none]:

Within Criteria	Exceedance/Notes
NA	

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

Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J+	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.
J-	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.
R	The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).
UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria.
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. B103-010

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-02-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-BKBA-01-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U
EPD-PB-CM-06-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U
EPD-PB-CM-07-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-CM-08-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U
EPD-PB-CM-09-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-CM-10-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-CM-11-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-CM-111-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-CM-12-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-CM-122-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-CM-14-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-DW-B-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U
EPD-PB-FB-01-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2 ug		2 U
EPD-PB-MB-01-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U		2 ug		2 U
EPD-PB-OD-01-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U
EPD-PB-OD-02-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U
EPD-PB-OD-03-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U
EPD-PB-OD-04-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-OD-05-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-OD-06-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-OD-07-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-UW-F-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U
EPD-PB-WA-01-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-WA-02-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-WA-03-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U
EPD-PB-WA-04-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-WA-05-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U		0.009 ppm	0.0090	U
EPD-PB-WA-06-041123-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U		0.0091 ppm	0.0091	U

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

Site Name	E Palestine Site - ER	TO/TOLIN No.	68HE0520F0032/0001EB201
Document Tracking No.	1919d		
Laboratory Report No.	B107-120	Laboratory	Eurofins Analytics, LLC - Ashland VA
Analyses	n-Butyl Acrylate by NIOSH Method 1450M		
Samples and Matrix	Twenty-nine air samples including one field blank, one media blank, and two field duplicate pairs		
Collection Date(s)	04/14/2023		
Field Duplicate Pairs	EPD-PB-OD-05-041423-1/EPD-PB-OD-055-041423-1 EPD-PB-OD-06-041423-1/EPD-PB-OD-066-041423-1		
Field QC Blanks	EPD-PB-FB-01-041423-1 EPD-PB-MB-01-041423-1		

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

Data completeness:

Within Criteria	Exceedance/Notes
N	<p>The results for the field blank were reported in units of micrograms (µg) while the other sample results were reported in units of µg, 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 extraction date and time information in the laboratory EDD do not match the laboratory report or is blank. During the data validation effort, extraction times were deleted from the validated EDD and the extraction dates were corrected (as needed) to match those in the preparation log in the laboratory report.</p> <p>The sample analysis time is reported as a default value of 00:00 hours for the LCSD in the analysis date field of the laboratory EDD. Since the sample analysis time for the LCSD is not required for the validated EDD, this value was not manually revised.</p> <p>A unique sample ID for the LCSD was not provided in the laboratory EDD. Unique sample IDs are needed to avoid overwriting other QC sample data when validated EDDs are uploaded to the Scribe database. The LCSD ID in the Samp_No and Lab_Samp_No fields of the validated EDD were manually revised to match those in the laboratory report.</p>

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	<p>The second page of the chain-of-custody (COC) form does not have a signature/date/time for sample receipt at the laboratory. No qualifications were applied.</p> <p>The laboratory report was amended on 06/09/23 to correct the sampling times for EPD-PB-CM-11-041423-1, EPD-PB-OD-03-041423-1, EPD-PB-OD-066-041423-1, and EPD-PB-BKBA-02-041423-1, per client request. The original and the corrected COC forms are included in the Level II laboratory report.</p>

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

Method blanks:

Within Criteria	Exceedance/Notes
N	n-Butyl acrylate was detected in method blank sample LMB IHG230414I at a concentration below the RL. All associated sample results were non-detect for this analyte; therefore, no qualifications were applied.

Field blanks:

Within Criteria	Exceedance/Notes
Y	

Surrogates and labeled compounds:

Within Criteria	Exceedance/Notes
NA	

MS/MSDs:

Within Criteria	Exceedance/Notes
NA	

Laboratory duplicates:

Within Criteria	Exceedance/Notes
NA	

Field duplicates:

Within Criteria	Exceedance/Notes
Y	

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

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

Other [none]:

Within Criteria	Exceedance/Notes
NA	

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 REPORT NO. B107-120

Sample_ID	Method	CAS#	Analyte	Lab_Result	Lab_Qual	MDL	RL	Units	VAL_Result	VAL_Qual
EPD-PB-BKBA-01-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U			0.009 ppm	0.0090	U
EPD-PB-BKBA-02-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U			0.009 ppm	0.0090	U
EPD-PB-CM-06-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U			0.009 ppm	0.0090	U
EPD-PB-CM-07-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-08-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-09-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-10-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-11-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-12-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-CM-14-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-DW-C-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0089	U			0.0089 ppm	0.0089	U
EPD-PB-FB-01-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			2 ug	2	U
EPD-PB-MB-01-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	2	U			2 ug	2	U
EPD-PB-OD-01-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-02-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-03-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.009	U			0.009 ppm	0.0090	U
EPD-PB-OD-04-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-05-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-055-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-06-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-066-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-OD-07-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-UW-G-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0089	U			0.0089 ppm	0.0089	U
EPD-PB-WA-01-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-02-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-03-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-04-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-05-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U
EPD-PB-WA-06-041423-1	NIOSH Method 1450M	141-32-2	n-Butyl acrylate	0.0091	U			0.0091 ppm	0.0091	U