

ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

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JOB DESCRIPTION

East Palestine - Privileged & Confidential

JOB NUMBER

240-181074-1

Eurofins Canton

Job Notes

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Authorization



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Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	7
Sample Summary	8
Detection Summary	9
Client Sample Results	10
Surrogate Summary	45
QC Sample Results	47
QC Association Summary	64
Lab Chronicle	67
Certification Summary	70
Chain of Custody	73
Receipt Checklists	81



Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
⌘	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Job ID: 240-181074-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-181074-1

Receipt

The samples were received on 2/28/2023 8:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 13 coolers at receipt time were 0.3°C, 0.9°C, 2.6°C, 2.8°C, 3.0°C, 3.1°C, 3.2°C, 3.3°C, 3.6°C, 4.1°C, 4.2°C, 4.7°C and 4.9°C

Receipt Exceptions

One for the following sample was received broken (1 sodium sulfite preserved container): PW-207-20230228 (240-181074-6[MSD]). Client contacted

Glycol vials - All say 207 MSD - labeled 2 as MS/MSDs.

On the COC, TB has Amber 1 liter bottles marked and only received 524 vials.

On the COC, FB has no 524 vials marked and received 524 vials.

Revised COC submitted by the client. Both the original and revised COCs are linked to this job.

GC/MS VOA

Method 524.2_Pres_PREC: one vial for this sample was labeled as -7 but shows site as PW-207 and was relabeled as -6 upon receipt in South Bend. PW-207-20230228 (240-181074-6[MS])

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 525.2_PREC: Di-n-butylphthalate was detected above the minimum detection limit (MDL) but below the reporting limit (RL) in the method blank associated with preparation batch 810-49813 and analytical batch 810-49920 as well as in the following sample(s): 240-181074-1, 240-181074-2 and 240-181074-5.

Method 8270E: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: PW-201-20230228 (240-181074-1), PW-202-20230228 (240-181074-2), PW-203-20230228 (240-181074-3), PW-204-20230228 (240-181074-4), PW-205-20230228 (240-181074-5) and FB-02-20230228 (240-181074-8). These results have been reported and qualified.

Method 8270E: Surrogate recovery for the following sample,ms and msd were outside control limits: PW-207-20230228 (240-181074-6[MS]) and PW-207-20230228 (240-181074-6[MSD]). Demonstrated matrix interference is present (sample,ms and msd); therefore, re-extraction and/or re-analysis was not performed.

Method 8270E: The spike for the following compounds was omitted in the ms/msd 2,4-Dinitrotoluene, 3 & 4 Methylphenol, 3,3'-Dichlorobenzidine, Benzoic acid, Phenol and 4-Nitrophenol. However, since these compounds were recovered in the associated Laboratory Control Sample (LCS) no corrective action was performed for the following sample: PW-207-20230228 (240-181074-6[MS]) and PW-207-20230228 (240-181074-6[MSD]).

Method 8270E: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following laboratory control sample contained an allowable number of surrogate compounds outside limits: (LCS 240-563809/12-A). These results have been reported and qualified.

Method 8270E: Acid surrogate recoveries for the following sample were outside control limits: DUP-03-20230228 (240-181074-7). Re-extraction and re-analysis was performed and acid surrogate recoveries again were outside control limits demonstrating matrix interference. The initial results have been reported.

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Job ID: 240-181074-1 (Continued)

Laboratory: Eurofins Canton (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	EA SB
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA SB
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8015D	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	EET PEN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
525.2	Extraction of Semivolatile Compounds	EPA	EA SB

Protocol References:

EPA = US Environmental Protection Agency

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-181074-1	PW-201-20230228	Water	02/28/23 09:38	02/28/23 20:00
240-181074-2	PW-202-20230228	Water	02/28/23 10:24	02/28/23 20:00
240-181074-3	PW-203-20230228	Water	02/28/23 11:05	02/28/23 20:00
240-181074-4	PW-204-20230228	Water	02/28/23 11:53	02/28/23 20:00
240-181074-5	PW-205-20230228	Water	02/28/23 12:38	02/28/23 20:00
240-181074-6	PW-207-20230228	Water	02/28/23 13:38	02/28/23 20:00
240-181074-7	DUP-03-20230228	Water	02/28/23 08:00	02/28/23 20:00
240-181074-8	FB-02-20230228	Water	02/28/23 15:00	02/28/23 20:00
240-181074-9	TB-02-20230228	Water	02/28/23 09:00	02/28/23 20:00

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-201-20230228

Lab Sample ID: 240-181074-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Di-n-butyl phthalate	0.46	J B	2.0	0.068	ug/L	1		525.2	Total/NA

Client Sample ID: PW-202-20230228

Lab Sample ID: 240-181074-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Di-n-butyl phthalate	0.20	J B	2.0	0.069	ug/L	1		525.2	Total/NA

Client Sample ID: PW-203-20230228

Lab Sample ID: 240-181074-3

No Detections.

Client Sample ID: PW-204-20230228

Lab Sample ID: 240-181074-4

No Detections.

Client Sample ID: PW-205-20230228

Lab Sample ID: 240-181074-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Di-n-butyl phthalate	0.39	J B	2.0	0.068	ug/L	1		525.2	Total/NA
Fluorene	0.012	J	0.098	0.0098	ug/L	1		525.2	Total/NA

Client Sample ID: PW-207-20230228

Lab Sample ID: 240-181074-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromodichloromethane	1.1		0.50	0.10	ug/L	1		524.2	Total/NA
Bromoform	0.22	J	0.50	0.20	ug/L	1		524.2	Total/NA
Chloroform	0.99		0.50	0.20	ug/L	1		524.2	Total/NA
Dibromochloromethane	0.83		0.50	0.10	ug/L	1		524.2	Total/NA

Client Sample ID: DUP-03-20230228

Lab Sample ID: 240-181074-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromodichloromethane	0.98		0.50	0.10	ug/L	1		524.2	Total/NA
Bromoform	0.22	J	0.50	0.20	ug/L	1		524.2	Total/NA
Chloroform	0.93		0.50	0.20	ug/L	1		524.2	Total/NA
Dibromochloromethane	0.77		0.50	0.10	ug/L	1		524.2	Total/NA
Fluorene	0.015	J	0.10	0.010	ug/L	1		525.2	Total/NA

Client Sample ID: FB-02-20230228

Lab Sample ID: 240-181074-8

No Detections.

Client Sample ID: TB-02-20230228

Lab Sample ID: 240-181074-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	37		5.0	2.0	ug/L	1		524.2	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-201-20230228

Lab Sample ID: 240-181074-1

Date Collected: 02/28/23 09:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/05/23 16:15	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/05/23 16:15	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/05/23 16:15	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/05/23 16:15	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/05/23 16:15	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/05/23 16:15	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/05/23 16:15	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 16:15	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/05/23 16:15	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/05/23 16:15	1
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 10:14	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/05/23 16:15	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/05/23 16:15	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/05/23 16:15	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/05/23 16:15	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 10:14	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/05/23 16:15	1
Acetone	2.0	U	5.0	2.0	ug/L			03/05/23 16:15	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 10:14	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 10:14	1
Benzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/05/23 16:15	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/05/23 16:15	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 16:15	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Bromodichloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 16:15	1
Bromoform	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/05/23 16:15	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/05/23 16:15	1
Chloroacetoneitrile	2.0	U	5.0	2.0	ug/L			03/05/23 10:14	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-201-20230228

Lab Sample ID: 240-181074-1

Date Collected: 02/28/23 09:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Chloroform	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/05/23 16:15	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/05/23 16:15	1
Dibromochloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 16:15	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/05/23 16:15	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/05/23 16:15	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/05/23 16:15	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/05/23 16:15	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/05/23 16:15	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 10:14	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 10:14	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/05/23 16:15	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/05/23 16:15	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 10:14	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/05/23 16:15	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/05/23 16:15	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 10:14	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 10:14	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 10:14	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/05/23 16:15	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/05/23 16:15	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/05/23 16:15	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/05/23 16:15	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 10:14	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 10:14	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Styrene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/05/23 16:15	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/05/23 16:15	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/05/23 16:15	1
Toluene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 10:14	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:15	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/05/23 16:15	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-201-20230228

Lab Sample ID: 240-181074-1

Date Collected: 02/28/23 09:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/05/23 16:15	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/05/23 16:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	95		70 - 130		03/05/23 10:14	1
1,2-Dichlorobenzene-d4 (Surr)	95		70 - 130		03/05/23 16:15	1
1,2-Dichlorobenzene-d4 (Surr)	100		70 - 130		03/05/23 16:15	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		03/05/23 10:14	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		03/05/23 16:15	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 130		03/05/23 16:15	1
4-Bromofluorobenzene (Surr)	97		70 - 130		03/05/23 10:14	1
4-Bromofluorobenzene (Surr)	92		70 - 130		03/05/23 16:15	1
4-Bromofluorobenzene (Surr)	94		70 - 130		03/05/23 16:15	1
Toluene-d8 (Surr)	94		70 - 130		03/05/23 10:14	1
Toluene-d8 (Surr)	96		70 - 130		03/05/23 16:15	1
Toluene-d8 (Surr)	97		70 - 130		03/05/23 16:15	1

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.020	U	0.098	0.020	ug/L		03/01/23 10:12	03/02/23 02:33	1
2,6-Dinitrotoluene	0.039	U	0.098	0.039	ug/L		03/01/23 10:12	03/02/23 02:33	1
2-Methylnaphthalene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Acenaphthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Acenaphthylene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Benzo[a]anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Benzo[a]pyrene	0.012	U	0.020	0.012	ug/L		03/01/23 10:12	03/02/23 02:33	1
Benzo[b]fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Benzo[g,h,i]perylene	0.020	U	0.098	0.020	ug/L		03/01/23 10:12	03/02/23 02:33	1
Benzo[k]fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Butylbenzylphthalate	0.020	U	0.98	0.020	ug/L		03/01/23 10:12	03/02/23 02:33	1
Chrysene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Di (2-ethylhexyl)phthalate	0.098	U	0.59	0.098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Dibenz(a,h)anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Diethylphthalate	0.020	U	0.98	0.020	ug/L		03/01/23 10:12	03/02/23 02:33	1
Dimethylphthalate	0.29	U	0.98	0.29	ug/L		03/01/23 10:12	03/02/23 02:33	1
Di-n-butyl phthalate	0.46	J B	2.0	0.068	ug/L		03/01/23 10:12	03/02/23 02:33	1
Di-n-octyl phthalate	0.020	U	2.0	0.020	ug/L		03/01/23 10:12	03/02/23 02:33	1
Fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Fluorene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Hexachlorobenzene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Hexachlorocyclopentadiene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Indeno[1,2,3-cd]pyrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Isophorone	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Naphthalene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Phenanthrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1
Pyrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 02:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	107		70 - 130	03/01/23 10:12	03/02/23 02:33	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-201-20230228

Lab Sample ID: 240-181074-1

Date Collected: 02/28/23 09:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Perylene-d12 (Surr)	92		70 - 130	03/01/23 10:12	03/02/23 02:33	1
Triphenylphosphate (Surr)	113		70 - 130	03/01/23 10:12	03/02/23 02:33	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	2.0	U	4.8	2.0	ug/L		03/01/23 07:28	03/02/23 17:31	1
3 & 4 Methylphenol	0.18	U	1.9	0.18	ug/L		03/01/23 07:28	03/02/23 17:31	1
3,3'-Dichlorobenzidine	1.1	U	4.8	1.1	ug/L		03/01/23 07:28	03/02/23 17:31	1
Benzoic acid	12	U	48	12	ug/L		03/01/23 07:28	03/02/23 17:31	1
Phenol	0.12	U	0.96	0.12	ug/L		03/01/23 07:28	03/02/23 17:31	1
4-Nitrophenol	2.1	U	9.6	2.1	ug/L		03/01/23 07:28	03/02/23 17:31	1
2-Butoxyethanol	0.00096	U	19	0.00096	ug/L		03/01/23 07:28	03/02/23 17:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	63		46 - 137	03/01/23 07:28	03/02/23 17:31	1
Phenol-d5 (Surr)	18	S1-	26 - 120	03/01/23 07:28	03/02/23 17:31	1
Nitrobenzene-d5 (Surr)	62		24 - 120	03/01/23 07:28	03/02/23 17:31	1
2-Fluorophenol (Surr)	28		19 - 120	03/01/23 07:28	03/02/23 17:31	1
2-Fluorobiphenyl (Surr)	64		33 - 120	03/01/23 07:28	03/02/23 17:31	1
2,4,6-Tribromophenol (Surr)	51		10 - 120	03/01/23 07:28	03/02/23 17:31	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propylene glycol	20	U	25	20	mg/L			03/02/23 13:37	1
di-propylene glycol	20	U	25	20	mg/L			03/02/23 13:37	1
Diethylene glycol	20	U	25	20	mg/L			03/02/23 13:37	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-202-20230228

Lab Sample ID: 240-181074-2

Date Collected: 02/28/23 10:24

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/05/23 16:38	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/05/23 16:38	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/05/23 16:38	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/05/23 16:38	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/05/23 16:38	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/05/23 16:38	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/05/23 16:38	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 16:38	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/05/23 16:38	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/05/23 16:38	1
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 10:38	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/05/23 16:38	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/05/23 16:38	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/05/23 16:38	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/05/23 16:38	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 10:38	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/05/23 16:38	1
Acetone	2.0	U	5.0	2.0	ug/L			03/05/23 16:38	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 10:38	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 10:38	1
Benzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/05/23 16:38	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/05/23 16:38	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 16:38	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Bromodichloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 16:38	1
Bromoform	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/05/23 16:38	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/05/23 16:38	1
Chloroacetoneitrile	2.0	U	5.0	2.0	ug/L			03/05/23 10:38	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-202-20230228

Lab Sample ID: 240-181074-2

Date Collected: 02/28/23 10:24

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Chloroform	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/05/23 16:38	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/05/23 16:38	1
Dibromochloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 16:38	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/05/23 16:38	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/05/23 16:38	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/05/23 16:38	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/05/23 16:38	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/05/23 16:38	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 10:38	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 10:38	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/05/23 16:38	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/05/23 16:38	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 10:38	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/05/23 16:38	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/05/23 16:38	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 10:38	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 10:38	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 10:38	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/05/23 16:38	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/05/23 16:38	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/05/23 16:38	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/05/23 16:38	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 10:38	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 10:38	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Styrene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/05/23 16:38	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/05/23 16:38	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/05/23 16:38	1
Toluene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 10:38	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/05/23 16:38	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/05/23 16:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-202-20230228

Lab Sample ID: 240-181074-2

Date Collected: 02/28/23 10:24

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/05/23 16:38	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/05/23 16:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	96		70 - 130					03/05/23 10:38	1
1,2-Dichlorobenzene-d4 (Surr)	98		70 - 130					03/05/23 16:38	1
1,2-Dichlorobenzene-d4 (Surr)	101		70 - 130					03/05/23 16:38	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130					03/05/23 10:38	1
1,2-Dichloroethane-d4 (Surr)	106		70 - 130					03/05/23 16:38	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 130					03/05/23 16:38	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/05/23 10:38	1
4-Bromofluorobenzene (Surr)	93		70 - 130					03/05/23 16:38	1
4-Bromofluorobenzene (Surr)	92		70 - 130					03/05/23 16:38	1
Toluene-d8 (Surr)	95		70 - 130					03/05/23 10:38	1
Toluene-d8 (Surr)	97		70 - 130					03/05/23 16:38	1
Toluene-d8 (Surr)	98		70 - 130					03/05/23 16:38	1

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.020	U	0.099	0.020	ug/L		03/01/23 10:12	03/02/23 02:58	1
2,6-Dinitrotoluene	0.040	U	0.099	0.040	ug/L		03/01/23 10:12	03/02/23 02:58	1
2-Methylnaphthalene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Acenaphthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Acenaphthylene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Anthracene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Benzo[a]anthracene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Benzo[a]pyrene	0.012	U	0.020	0.012	ug/L		03/01/23 10:12	03/02/23 02:58	1
Benzo[b]fluoranthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Benzo[g,h,i]perylene	0.020	U	0.099	0.020	ug/L		03/01/23 10:12	03/02/23 02:58	1
Benzo[k]fluoranthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Butylbenzylphthalate	0.020	U	0.99	0.020	ug/L		03/01/23 10:12	03/02/23 02:58	1
Chrysene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Di (2-ethylhexyl)phthalate	0.099	U	0.59	0.099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Dibenz(a,h)anthracene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Diethylphthalate	0.020	U	0.99	0.020	ug/L		03/01/23 10:12	03/02/23 02:58	1
Dimethylphthalate	0.30	U	0.99	0.30	ug/L		03/01/23 10:12	03/02/23 02:58	1
Di-n-butyl phthalate	0.20	J B	2.0	0.069	ug/L		03/01/23 10:12	03/02/23 02:58	1
Di-n-octyl phthalate	0.020	U	2.0	0.020	ug/L		03/01/23 10:12	03/02/23 02:58	1
Fluoranthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Fluorene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Hexachlorobenzene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Hexachlorocyclopentadiene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Indeno[1,2,3-cd]pyrene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Isophorone	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Naphthalene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Phenanthrene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Pyrene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 02:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	113		70 - 130				03/01/23 10:12	03/02/23 02:58	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-202-20230228

Lab Sample ID: 240-181074-2

Date Collected: 02/28/23 10:24

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Perylene-d12 (Surr)	91		70 - 130	03/01/23 10:12	03/02/23 02:58	1
Triphenylphosphate (Surr)	113		70 - 130	03/01/23 10:12	03/02/23 02:58	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	2.0	U	5.0	2.0	ug/L		03/01/23 07:28	03/02/23 16:02	1
3 & 4 Methylphenol	0.19	U	2.0	0.19	ug/L		03/01/23 07:28	03/02/23 16:02	1
3,3'-Dichlorobenzidine	1.1	U	5.0	1.1	ug/L		03/01/23 07:28	03/02/23 16:02	1
Benzoic acid	12	U	50	12	ug/L		03/01/23 07:28	03/02/23 16:02	1
Phenol	0.13	U	0.99	0.13	ug/L		03/01/23 07:28	03/02/23 16:02	1
4-Nitrophenol	2.2	U	9.9	2.2	ug/L		03/01/23 07:28	03/02/23 16:02	1
2-Butoxyethanol	0.00099	U	20	0.00099	ug/L		03/01/23 07:28	03/02/23 16:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	67		46 - 137	03/01/23 07:28	03/02/23 16:02	1
Phenol-d5 (Surr)	21	S1-	26 - 120	03/01/23 07:28	03/02/23 16:02	1
Nitrobenzene-d5 (Surr)	65		24 - 120	03/01/23 07:28	03/02/23 16:02	1
2-Fluorophenol (Surr)	33		19 - 120	03/01/23 07:28	03/02/23 16:02	1
2-Fluorobiphenyl (Surr)	68		33 - 120	03/01/23 07:28	03/02/23 16:02	1
2,4,6-Tribromophenol (Surr)	56		10 - 120	03/01/23 07:28	03/02/23 16:02	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propylene glycol	20	U	25	20	mg/L			03/02/23 14:05	1
di-propylene glycol	20	U	25	20	mg/L			03/02/23 14:05	1
Diethylene glycol	20	U	25	20	mg/L			03/02/23 14:05	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-203-20230228

Lab Sample ID: 240-181074-3

Date Collected: 02/28/23 11:05

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/05/23 17:02	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/05/23 17:02	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/05/23 17:02	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/05/23 17:02	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/05/23 17:02	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/05/23 17:02	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/05/23 17:02	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 17:02	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/05/23 17:02	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/05/23 17:02	1
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 11:03	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/05/23 17:02	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/05/23 17:02	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/05/23 17:02	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/05/23 17:02	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 11:03	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/05/23 17:02	1
Acetone	2.0	U	5.0	2.0	ug/L			03/05/23 17:02	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 11:03	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 11:03	1
Benzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/05/23 17:02	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/05/23 17:02	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 17:02	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Bromodichloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 17:02	1
Bromoform	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/05/23 17:02	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/05/23 17:02	1
Chloroacetonitrile	2.0	U	5.0	2.0	ug/L			03/05/23 11:03	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-203-20230228

Lab Sample ID: 240-181074-3

Date Collected: 02/28/23 11:05

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Chloroform	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/05/23 17:02	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/05/23 17:02	1
Dibromochloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 17:02	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/05/23 17:02	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/05/23 17:02	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/05/23 17:02	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/05/23 17:02	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/05/23 17:02	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 11:03	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 11:03	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/05/23 17:02	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/05/23 17:02	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 11:03	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/05/23 17:02	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/05/23 17:02	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 11:03	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 11:03	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 11:03	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/05/23 17:02	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/05/23 17:02	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/05/23 17:02	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/05/23 17:02	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 11:03	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 11:03	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Styrene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/05/23 17:02	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/05/23 17:02	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/05/23 17:02	1
Toluene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 11:03	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:02	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/05/23 17:02	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-203-20230228

Lab Sample ID: 240-181074-3

Date Collected: 02/28/23 11:05

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/05/23 17:02	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/05/23 17:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	98		70 - 130					03/05/23 11:03	1
1,2-Dichlorobenzene-d4 (Surr)	95		70 - 130					03/05/23 17:02	1
1,2-Dichlorobenzene-d4 (Surr)	99		70 - 130					03/05/23 17:02	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130					03/05/23 11:03	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130					03/05/23 17:02	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 130					03/05/23 17:02	1
4-Bromofluorobenzene (Surr)	99		70 - 130					03/05/23 11:03	1
4-Bromofluorobenzene (Surr)	91		70 - 130					03/05/23 17:02	1
4-Bromofluorobenzene (Surr)	93		70 - 130					03/05/23 17:02	1
Toluene-d8 (Surr)	96		70 - 130					03/05/23 11:03	1
Toluene-d8 (Surr)	98		70 - 130					03/05/23 17:02	1
Toluene-d8 (Surr)	98		70 - 130					03/05/23 17:02	1

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.020	U	0.099	0.020	ug/L		03/01/23 10:12	03/02/23 03:23	1
2,6-Dinitrotoluene	0.039	U	0.099	0.039	ug/L		03/01/23 10:12	03/02/23 03:23	1
2-Methylnaphthalene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Acenaphthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Acenaphthylene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Anthracene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Benzo[a]anthracene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Benzo[a]pyrene	0.012	U	0.020	0.012	ug/L		03/01/23 10:12	03/02/23 03:23	1
Benzo[b]fluoranthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Benzo[g,h,i]perylene	0.020	U	0.099	0.020	ug/L		03/01/23 10:12	03/02/23 03:23	1
Benzo[k]fluoranthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Butylbenzylphthalate	0.020	U	0.99	0.020	ug/L		03/01/23 10:12	03/02/23 03:23	1
Chrysene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Di (2-ethylhexyl)phthalate	0.099	U	0.59	0.099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Dibenz(a,h)anthracene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Diethylphthalate	0.020	U	0.99	0.020	ug/L		03/01/23 10:12	03/02/23 03:23	1
Dimethylphthalate	0.30	U	0.99	0.30	ug/L		03/01/23 10:12	03/02/23 03:23	1
Di-n-butyl phthalate	0.069	U	2.0	0.069	ug/L		03/01/23 10:12	03/02/23 03:23	1
Di-n-octyl phthalate	0.020	U	2.0	0.020	ug/L		03/01/23 10:12	03/02/23 03:23	1
Fluoranthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Fluorene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Hexachlorobenzene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Hexachlorocyclopentadiene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Indeno[1,2,3-cd]pyrene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Isophorone	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Naphthalene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Phenanthrene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Pyrene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 03:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	108		70 - 130				03/01/23 10:12	03/02/23 03:23	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-203-20230228

Lab Sample ID: 240-181074-3

Date Collected: 02/28/23 11:05

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Perylene-d12 (Surr)	90		70 - 130	03/01/23 10:12	03/02/23 03:23	1
Triphenylphosphate (Surr)	109		70 - 130	03/01/23 10:12	03/02/23 03:23	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	2.1	U	5.1	2.1	ug/L		03/01/23 07:28	03/02/23 16:24	1
3 & 4 Methylphenol	0.19	U	2.0	0.19	ug/L		03/01/23 07:28	03/02/23 16:24	1
3,3'-Dichlorobenzidine	1.2	U	5.1	1.2	ug/L		03/01/23 07:28	03/02/23 16:24	1
Benzoic acid	12	U	51	12	ug/L		03/01/23 07:28	03/02/23 16:24	1
Phenol	0.13	U	1.0	0.13	ug/L		03/01/23 07:28	03/02/23 16:24	1
4-Nitrophenol	2.2	U	10	2.2	ug/L		03/01/23 07:28	03/02/23 16:24	1
2-Butoxyethanol	0.0010	U	20	0.0010	ug/L		03/01/23 07:28	03/02/23 16:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	66		46 - 137	03/01/23 07:28	03/02/23 16:24	1
Phenol-d5 (Surr)	18	S1-	26 - 120	03/01/23 07:28	03/02/23 16:24	1
Nitrobenzene-d5 (Surr)	59		24 - 120	03/01/23 07:28	03/02/23 16:24	1
2-Fluorophenol (Surr)	30		19 - 120	03/01/23 07:28	03/02/23 16:24	1
2-Fluorobiphenyl (Surr)	61		33 - 120	03/01/23 07:28	03/02/23 16:24	1
2,4,6-Tribromophenol (Surr)	61		10 - 120	03/01/23 07:28	03/02/23 16:24	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propylene glycol	20	U	25	20	mg/L			03/02/23 14:33	1
di-propylene glycol	20	U	25	20	mg/L			03/02/23 14:33	1
Diethylene glycol	20	U	25	20	mg/L			03/02/23 14:33	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-204-20230228

Lab Sample ID: 240-181074-4

Date Collected: 02/28/23 11:53

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/05/23 17:26	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/05/23 17:26	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/05/23 17:26	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/05/23 17:26	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/05/23 17:26	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/05/23 17:26	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/05/23 17:26	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 17:26	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/05/23 17:26	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/05/23 17:26	1
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 11:28	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/05/23 17:26	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/05/23 17:26	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/05/23 17:26	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/05/23 17:26	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 11:28	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/05/23 17:26	1
Acetone	2.0	U	5.0	2.0	ug/L			03/05/23 17:26	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 11:28	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 11:28	1
Benzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/05/23 17:26	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/05/23 17:26	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 17:26	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Bromodichloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 17:26	1
Bromoform	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/05/23 17:26	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/05/23 17:26	1
Chloroacetonitrile	2.0	U	5.0	2.0	ug/L			03/05/23 11:28	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-204-20230228

Lab Sample ID: 240-181074-4

Date Collected: 02/28/23 11:53

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Chloroform	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/05/23 17:26	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/05/23 17:26	1
Dibromochloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 17:26	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/05/23 17:26	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/05/23 17:26	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/05/23 17:26	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/05/23 17:26	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/05/23 17:26	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 11:28	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 11:28	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/05/23 17:26	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/05/23 17:26	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 11:28	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/05/23 17:26	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/05/23 17:26	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 11:28	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 11:28	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 11:28	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/05/23 17:26	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/05/23 17:26	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/05/23 17:26	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/05/23 17:26	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 11:28	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 11:28	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Styrene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/05/23 17:26	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/05/23 17:26	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/05/23 17:26	1
Toluene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 11:28	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:26	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/05/23 17:26	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-204-20230228

Lab Sample ID: 240-181074-4

Date Collected: 02/28/23 11:53

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/05/23 17:26	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/05/23 17:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	95		70 - 130		03/05/23 11:28	1
1,2-Dichlorobenzene-d4 (Surr)	96		70 - 130		03/05/23 17:26	1
1,2-Dichlorobenzene-d4 (Surr)	100		70 - 130		03/05/23 17:26	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		03/05/23 11:28	1
1,2-Dichloroethane-d4 (Surr)	107		70 - 130		03/05/23 17:26	1
1,2-Dichloroethane-d4 (Surr)	106		70 - 130		03/05/23 17:26	1
4-Bromofluorobenzene (Surr)	98		70 - 130		03/05/23 11:28	1
4-Bromofluorobenzene (Surr)	94		70 - 130		03/05/23 17:26	1
4-Bromofluorobenzene (Surr)	93		70 - 130		03/05/23 17:26	1
Toluene-d8 (Surr)	94		70 - 130		03/05/23 11:28	1
Toluene-d8 (Surr)	99		70 - 130		03/05/23 17:26	1
Toluene-d8 (Surr)	99		70 - 130		03/05/23 17:26	1

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.020	U	0.098	0.020	ug/L		03/01/23 10:12	03/02/23 03:48	1
2,6-Dinitrotoluene	0.039	U	0.098	0.039	ug/L		03/01/23 10:12	03/02/23 03:48	1
2-Methylnaphthalene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Acenaphthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Acenaphthylene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Benzo[a]anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Benzo[a]pyrene	0.012	U	0.020	0.012	ug/L		03/01/23 10:12	03/02/23 03:48	1
Benzo[b]fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Benzo[g,h,i]perylene	0.020	U	0.098	0.020	ug/L		03/01/23 10:12	03/02/23 03:48	1
Benzo[k]fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Butylbenzylphthalate	0.020	U	0.98	0.020	ug/L		03/01/23 10:12	03/02/23 03:48	1
Chrysene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Di (2-ethylhexyl)phthalate	0.098	U	0.59	0.098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Dibenz(a,h)anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Diethylphthalate	0.020	U	0.98	0.020	ug/L		03/01/23 10:12	03/02/23 03:48	1
Dimethylphthalate	0.29	U	0.98	0.29	ug/L		03/01/23 10:12	03/02/23 03:48	1
Di-n-butyl phthalate	0.069	U	2.0	0.069	ug/L		03/01/23 10:12	03/02/23 03:48	1
Di-n-octyl phthalate	0.020	U	2.0	0.020	ug/L		03/01/23 10:12	03/02/23 03:48	1
Fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Fluorene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Hexachlorobenzene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Hexachlorocyclopentadiene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Indeno[1,2,3-cd]pyrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Isophorone	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Naphthalene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Phenanthrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1
Pyrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 03:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	110		70 - 130	03/01/23 10:12	03/02/23 03:48	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-204-20230228

Lab Sample ID: 240-181074-4

Date Collected: 02/28/23 11:53

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Perylene-d12 (Surr)	94		70 - 130	03/01/23 10:12	03/02/23 03:48	1
Triphenylphosphate (Surr)	112		70 - 130	03/01/23 10:12	03/02/23 03:48	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	2.0	U	4.9	2.0	ug/L		03/01/23 07:28	03/02/23 16:47	1
3 & 4 Methylphenol	0.19	U	1.9	0.19	ug/L		03/01/23 07:28	03/02/23 16:47	1
3,3'-Dichlorobenzidine	1.1	U	4.9	1.1	ug/L		03/01/23 07:28	03/02/23 16:47	1
Benzoic acid	12	U	49	12	ug/L		03/01/23 07:28	03/02/23 16:47	1
Phenol	0.12	U	0.97	0.12	ug/L		03/01/23 07:28	03/02/23 16:47	1
4-Nitrophenol	2.1	U	9.7	2.1	ug/L		03/01/23 07:28	03/02/23 16:47	1
2-Butoxyethanol	0.00097	U	19	0.00097	ug/L		03/01/23 07:28	03/02/23 16:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	69		46 - 137	03/01/23 07:28	03/02/23 16:47	1
Phenol-d5 (Surr)	17	S1-	26 - 120	03/01/23 07:28	03/02/23 16:47	1
Nitrobenzene-d5 (Surr)	61		24 - 120	03/01/23 07:28	03/02/23 16:47	1
2-Fluorophenol (Surr)	30		19 - 120	03/01/23 07:28	03/02/23 16:47	1
2-Fluorobiphenyl (Surr)	66		33 - 120	03/01/23 07:28	03/02/23 16:47	1
2,4,6-Tribromophenol (Surr)	65		10 - 120	03/01/23 07:28	03/02/23 16:47	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propylene glycol	20	U	25	20	mg/L			03/02/23 15:01	1
di-propylene glycol	20	U	25	20	mg/L			03/02/23 15:01	1
Diethylene glycol	20	U	25	20	mg/L			03/02/23 15:01	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-205-20230228

Lab Sample ID: 240-181074-5

Date Collected: 02/28/23 12:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/05/23 17:49	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/05/23 17:49	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/05/23 17:49	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/05/23 17:49	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/05/23 17:49	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/05/23 17:49	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/05/23 17:49	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 17:49	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/05/23 17:49	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/05/23 17:49	1
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 11:52	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/05/23 17:49	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/05/23 17:49	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/05/23 17:49	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/05/23 17:49	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 11:52	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/05/23 17:49	1
Acetone	2.0	U	5.0	2.0	ug/L			03/05/23 17:49	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 11:52	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 11:52	1
Benzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/05/23 17:49	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/05/23 17:49	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 17:49	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Bromodichloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 17:49	1
Bromoform	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/05/23 17:49	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/05/23 17:49	1
Chloroacetoneitrile	2.0	U	5.0	2.0	ug/L			03/05/23 11:52	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-205-20230228

Lab Sample ID: 240-181074-5

Date Collected: 02/28/23 12:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Chloroform	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/05/23 17:49	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/05/23 17:49	1
Dibromochloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 17:49	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/05/23 17:49	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/05/23 17:49	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/05/23 17:49	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/05/23 17:49	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/05/23 17:49	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 11:52	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 11:52	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/05/23 17:49	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/05/23 17:49	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 11:52	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/05/23 17:49	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/05/23 17:49	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 11:52	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 11:52	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 11:52	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/05/23 17:49	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/05/23 17:49	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/05/23 17:49	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/05/23 17:49	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 11:52	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 11:52	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Styrene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/05/23 17:49	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/05/23 17:49	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/05/23 17:49	1
Toluene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 11:52	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/05/23 17:49	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/05/23 17:49	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-205-20230228

Lab Sample ID: 240-181074-5

Date Collected: 02/28/23 12:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/05/23 17:49	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/05/23 17:49	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	97		70 - 130					03/05/23 11:52	1
1,2-Dichlorobenzene-d4 (Surr)	95		70 - 130					03/05/23 17:49	1
1,2-Dichlorobenzene-d4 (Surr)	100		70 - 130					03/05/23 17:49	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130					03/05/23 11:52	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130					03/05/23 17:49	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130					03/05/23 17:49	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/05/23 11:52	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/05/23 17:49	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/05/23 17:49	1
Toluene-d8 (Surr)	93		70 - 130					03/05/23 11:52	1
Toluene-d8 (Surr)	96		70 - 130					03/05/23 17:49	1
Toluene-d8 (Surr)	97		70 - 130					03/05/23 17:49	1

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.020	U	0.098	0.020	ug/L		03/01/23 10:12	03/02/23 04:13	1
2,6-Dinitrotoluene	0.039	U	0.098	0.039	ug/L		03/01/23 10:12	03/02/23 04:13	1
2-Methylnaphthalene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Acenaphthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Acenaphthylene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Benzo[a]anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Benzo[a]pyrene	0.012	U	0.020	0.012	ug/L		03/01/23 10:12	03/02/23 04:13	1
Benzo[b]fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Benzo[g,h,i]perylene	0.020	U	0.098	0.020	ug/L		03/01/23 10:12	03/02/23 04:13	1
Benzo[k]fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Butylbenzylphthalate	0.020	U	0.98	0.020	ug/L		03/01/23 10:12	03/02/23 04:13	1
Chrysene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Di (2-ethylhexyl)phthalate	0.098	U	0.59	0.098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Dibenz(a,h)anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Diethylphthalate	0.020	U	0.98	0.020	ug/L		03/01/23 10:12	03/02/23 04:13	1
Dimethylphthalate	0.29	U	0.98	0.29	ug/L		03/01/23 10:12	03/02/23 04:13	1
Di-n-butyl phthalate	0.39	J B	2.0	0.068	ug/L		03/01/23 10:12	03/02/23 04:13	1
Di-n-octyl phthalate	0.020	U	2.0	0.020	ug/L		03/01/23 10:12	03/02/23 04:13	1
Fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Fluorene	0.012	J	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Hexachlorobenzene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Hexachlorocyclopentadiene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Indeno[1,2,3-cd]pyrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Isophorone	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Naphthalene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Phenanthrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1
Pyrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 04:13	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	106		70 - 130				03/01/23 10:12	03/02/23 04:13	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-205-20230228

Lab Sample ID: 240-181074-5

Date Collected: 02/28/23 12:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Perylene-d12 (Surr)	91		70 - 130	03/01/23 10:12	03/02/23 04:13	1
Triphenylphosphate (Surr)	115		70 - 130	03/01/23 10:12	03/02/23 04:13	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	2.1	U	5.0	2.1	ug/L		03/01/23 07:28	03/02/23 17:09	1
3 & 4 Methylphenol	0.19	U	2.0	0.19	ug/L		03/01/23 07:28	03/02/23 17:09	1
3,3'-Dichlorobenzidine	1.2	U	5.0	1.2	ug/L		03/01/23 07:28	03/02/23 17:09	1
Benzoic acid	12	U	50	12	ug/L		03/01/23 07:28	03/02/23 17:09	1
Phenol	0.13	U	1.0	0.13	ug/L		03/01/23 07:28	03/02/23 17:09	1
4-Nitrophenol	2.2	U	10	2.2	ug/L		03/01/23 07:28	03/02/23 17:09	1
2-Butoxyethanol	0.0010	U	20	0.0010	ug/L		03/01/23 07:28	03/02/23 17:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	66		46 - 137	03/01/23 07:28	03/02/23 17:09	1
Phenol-d5 (Surr)	18	S1-	26 - 120	03/01/23 07:28	03/02/23 17:09	1
Nitrobenzene-d5 (Surr)	54		24 - 120	03/01/23 07:28	03/02/23 17:09	1
2-Fluorophenol (Surr)	28		19 - 120	03/01/23 07:28	03/02/23 17:09	1
2-Fluorobiphenyl (Surr)	60		33 - 120	03/01/23 07:28	03/02/23 17:09	1
2,4,6-Tribromophenol (Surr)	52		10 - 120	03/01/23 07:28	03/02/23 17:09	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propylene glycol	20	U	25	20	mg/L			03/02/23 15:28	1
di-propylene glycol	20	U	25	20	mg/L			03/02/23 15:28	1
Diethylene glycol	20	U	25	20	mg/L			03/02/23 15:28	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-207-20230228

Lab Sample ID: 240-181074-6

Date Collected: 02/28/23 13:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/05/23 19:00	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/05/23 19:00	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/05/23 19:00	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/05/23 19:00	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/05/23 19:00	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/05/23 19:00	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/05/23 19:00	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 19:00	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/05/23 19:00	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/05/23 19:00	1
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 12:17	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/05/23 19:00	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/05/23 19:00	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/05/23 19:00	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/05/23 19:00	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 12:17	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/05/23 19:00	1
Acetone	2.0	U	5.0	2.0	ug/L			03/05/23 19:00	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 12:17	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 12:17	1
Benzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/05/23 19:00	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/05/23 19:00	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 19:00	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Bromodichloromethane	1.1		0.50	0.10	ug/L			03/05/23 19:00	1
Bromoform	0.22	J	0.50	0.20	ug/L			03/05/23 19:00	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/05/23 19:00	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/05/23 19:00	1
Chloroacetonitrile	2.0	U	5.0	2.0	ug/L			03/05/23 12:17	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-207-20230228

Lab Sample ID: 240-181074-6

Date Collected: 02/28/23 13:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Chloroform	0.99		0.50	0.20	ug/L			03/05/23 19:00	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/05/23 19:00	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/05/23 19:00	1
Dibromochloromethane	0.83		0.50	0.10	ug/L			03/05/23 19:00	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/05/23 19:00	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/05/23 19:00	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/05/23 19:00	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/05/23 19:00	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/05/23 19:00	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 12:17	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 12:17	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/05/23 19:00	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/05/23 19:00	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 12:17	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/05/23 19:00	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/05/23 19:00	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 12:17	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 12:17	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 12:17	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/05/23 19:00	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/05/23 19:00	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/05/23 19:00	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/05/23 19:00	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 12:17	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 12:17	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Styrene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/05/23 19:00	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/05/23 19:00	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/05/23 19:00	1
Toluene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 12:17	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/05/23 19:00	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/05/23 19:00	1

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Job ID: 240-181074-1

Client Sample ID: PW-207-20230228

Lab Sample ID: 240-181074-6

Date Collected: 02/28/23 13:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/05/23 19:00	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/05/23 19:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	96		70 - 130		03/05/23 12:17	1
1,2-Dichlorobenzene-d4 (Surr)	94		70 - 130		03/05/23 19:00	1
1,2-Dichlorobenzene-d4 (Surr)	97		70 - 130		03/05/23 19:00	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		03/05/23 12:17	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 130		03/05/23 19:00	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		03/05/23 19:00	1
4-Bromofluorobenzene (Surr)	96		70 - 130		03/05/23 12:17	1
4-Bromofluorobenzene (Surr)	92		70 - 130		03/05/23 19:00	1
4-Bromofluorobenzene (Surr)	94		70 - 130		03/05/23 19:00	1
Toluene-d8 (Surr)	96		70 - 130		03/05/23 12:17	1
Toluene-d8 (Surr)	96		70 - 130		03/05/23 19:00	1
Toluene-d8 (Surr)	97		70 - 130		03/05/23 19:00	1

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.020	U	0.099	0.020	ug/L		03/01/23 10:12	03/02/23 04:39	1
2,6-Dinitrotoluene	0.040	U	0.099	0.040	ug/L		03/01/23 10:12	03/02/23 04:39	1
2-Methylnaphthalene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Acenaphthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Acenaphthylene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Anthracene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Benzo[a]anthracene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Benzo[a]pyrene	0.012	U	0.020	0.012	ug/L		03/01/23 10:12	03/02/23 04:39	1
Benzo[b]fluoranthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Benzo[g,h,i]perylene	0.020	U	0.099	0.020	ug/L		03/01/23 10:12	03/02/23 04:39	1
Benzo[k]fluoranthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Butylbenzylphthalate	0.020	U	0.99	0.020	ug/L		03/01/23 10:12	03/02/23 04:39	1
Chrysene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Di (2-ethylhexyl)phthalate	0.099	U	0.60	0.099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Dibenz(a,h)anthracene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Diethylphthalate	0.020	U	0.99	0.020	ug/L		03/01/23 10:12	03/02/23 04:39	1
Dimethylphthalate	0.30	U	0.99	0.30	ug/L		03/01/23 10:12	03/02/23 04:39	1
Di-n-butyl phthalate	0.070	U	2.0	0.070	ug/L		03/01/23 10:12	03/02/23 04:39	1
Di-n-octyl phthalate	0.020	U	2.0	0.020	ug/L		03/01/23 10:12	03/02/23 04:39	1
Fluoranthene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Fluorene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Hexachlorobenzene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Hexachlorocyclopentadiene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Indeno[1,2,3-cd]pyrene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Isophorone	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Naphthalene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Phenanthrene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1
Pyrene	0.0099	U	0.099	0.0099	ug/L		03/01/23 10:12	03/02/23 04:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	105		70 - 130	03/01/23 10:12	03/02/23 04:39	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-207-20230228

Lab Sample ID: 240-181074-6

Date Collected: 02/28/23 13:38

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Perylene-d12 (Surr)	99		70 - 130	03/01/23 10:12	03/02/23 04:39	1
Triphenylphosphate (Surr)	112		70 - 130	03/01/23 10:12	03/02/23 04:39	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	2.1	U	5.1	2.1	ug/L		03/01/23 07:28	03/02/23 14:53	1
3 & 4 Methylphenol	0.19	U	2.0	0.19	ug/L		03/01/23 07:28	03/02/23 14:53	1
3,3'-Dichlorobenzidine	1.2	U	5.1	1.2	ug/L		03/01/23 07:28	03/02/23 14:53	1
Benzoic acid	12	U	51	12	ug/L		03/01/23 07:28	03/02/23 14:53	1
Phenol	0.13	U	1.0	0.13	ug/L		03/01/23 07:28	03/02/23 14:53	1
4-Nitrophenol	2.2	U	10	2.2	ug/L		03/01/23 07:28	03/02/23 14:53	1
2-Butoxyethanol	0.0010	U	20	0.0010	ug/L		03/01/23 07:28	03/02/23 14:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	72		46 - 137	03/01/23 07:28	03/02/23 14:53	1
Phenol-d5 (Surr)	1	S1-	26 - 120	03/01/23 07:28	03/02/23 14:53	1
Nitrobenzene-d5 (Surr)	54		24 - 120	03/01/23 07:28	03/02/23 14:53	1
2-Fluorophenol (Surr)	4	S1-	19 - 120	03/01/23 07:28	03/02/23 14:53	1
2-Fluorobiphenyl (Surr)	61		33 - 120	03/01/23 07:28	03/02/23 14:53	1
2,4,6-Tribromophenol (Surr)	25		10 - 120	03/01/23 07:28	03/02/23 14:53	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propylene glycol	20	U	25	20	mg/L			03/02/23 15:56	1
di-propylene glycol	20	U	25	20	mg/L			03/02/23 15:56	1
Diethylene glycol	20	U	25	20	mg/L			03/02/23 15:56	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: DUP-03-20230228

Lab Sample ID: 240-181074-7

Date Collected: 02/28/23 08:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/05/23 18:13	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/05/23 18:13	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/05/23 18:13	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/05/23 18:13	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/05/23 18:13	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/05/23 18:13	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/05/23 18:13	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 18:13	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/05/23 18:13	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/05/23 18:13	1
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 13:31	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/05/23 18:13	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/05/23 18:13	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/05/23 18:13	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/05/23 18:13	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 13:31	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/05/23 18:13	1
Acetone	2.0	U	5.0	2.0	ug/L			03/05/23 18:13	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 13:31	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 13:31	1
Benzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/05/23 18:13	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/05/23 18:13	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 18:13	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Bromodichloromethane	0.98		0.50	0.10	ug/L			03/05/23 18:13	1
Bromoform	0.22	J	0.50	0.20	ug/L			03/05/23 18:13	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/05/23 18:13	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/05/23 18:13	1
Chloroacetoneitrile	2.0	U	5.0	2.0	ug/L			03/05/23 13:31	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: DUP-03-20230228

Lab Sample ID: 240-181074-7

Date Collected: 02/28/23 08:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Chloroform	0.93		0.50	0.20	ug/L			03/05/23 18:13	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/05/23 18:13	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/05/23 18:13	1
Dibromochloromethane	0.77		0.50	0.10	ug/L			03/05/23 18:13	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/05/23 18:13	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/05/23 18:13	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/05/23 18:13	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/05/23 18:13	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/05/23 18:13	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 13:31	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 13:31	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/05/23 18:13	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/05/23 18:13	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 13:31	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/05/23 18:13	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/05/23 18:13	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 13:31	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 13:31	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 13:31	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/05/23 18:13	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/05/23 18:13	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/05/23 18:13	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/05/23 18:13	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 13:31	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 13:31	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Styrene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/05/23 18:13	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/05/23 18:13	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/05/23 18:13	1
Toluene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 13:31	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:13	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/05/23 18:13	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: DUP-03-20230228

Lab Sample ID: 240-181074-7

Date Collected: 02/28/23 08:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/05/23 18:13	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/05/23 18:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	97		70 - 130					03/05/23 13:31	1
1,2-Dichlorobenzene-d4 (Surr)	96		70 - 130					03/05/23 18:13	1
1,2-Dichlorobenzene-d4 (Surr)	99		70 - 130					03/05/23 18:13	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130					03/05/23 13:31	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130					03/05/23 18:13	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 130					03/05/23 18:13	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/05/23 13:31	1
4-Bromofluorobenzene (Surr)	92		70 - 130					03/05/23 18:13	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/05/23 18:13	1
Toluene-d8 (Surr)	97		70 - 130					03/05/23 13:31	1
Toluene-d8 (Surr)	98		70 - 130					03/05/23 18:13	1
Toluene-d8 (Surr)	98		70 - 130					03/05/23 18:13	1

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.020	U	0.10	0.020	ug/L		03/01/23 10:12	03/02/23 05:54	1
2,6-Dinitrotoluene	0.040	U	0.10	0.040	ug/L		03/01/23 10:12	03/02/23 05:54	1
2-Methylnaphthalene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Acenaphthene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Acenaphthylene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Anthracene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Benzo[a]anthracene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Benzo[a]pyrene	0.012	U	0.020	0.012	ug/L		03/01/23 10:12	03/02/23 05:54	1
Benzo[b]fluoranthene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Benzo[g,h,i]perylene	0.020	U	0.10	0.020	ug/L		03/01/23 10:12	03/02/23 05:54	1
Benzo[k]fluoranthene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Butylbenzylphthalate	0.020	U	1.0	0.020	ug/L		03/01/23 10:12	03/02/23 05:54	1
Chrysene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Di (2-ethylhexyl)phthalate	0.10	U	0.60	0.10	ug/L		03/01/23 10:12	03/02/23 05:54	1
Dibenz(a,h)anthracene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Diethylphthalate	0.020	U	1.0	0.020	ug/L		03/01/23 10:12	03/02/23 05:54	1
Dimethylphthalate	0.30	U	1.0	0.30	ug/L		03/01/23 10:12	03/02/23 05:54	1
Di-n-butyl phthalate	0.070	U	2.0	0.070	ug/L		03/01/23 10:12	03/02/23 05:54	1
Di-n-octyl phthalate	0.020	U	2.0	0.020	ug/L		03/01/23 10:12	03/02/23 05:54	1
Fluoranthene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Fluorene	0.015	J	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Hexachlorobenzene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Hexachlorocyclopentadiene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Indeno[1,2,3-cd]pyrene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Isophorone	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Naphthalene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Phenanthrene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Pyrene	0.010	U	0.10	0.010	ug/L		03/01/23 10:12	03/02/23 05:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	102		70 - 130				03/01/23 10:12	03/02/23 05:54	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: DUP-03-20230228

Lab Sample ID: 240-181074-7

Date Collected: 02/28/23 08:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Perylene-d12 (Surr)	95		70 - 130	03/01/23 10:12	03/02/23 05:54	1
Triphenylphosphate (Surr)	118		70 - 130	03/01/23 10:12	03/02/23 05:54	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	2.0	U	4.9	2.0	ug/L		03/01/23 07:28	03/02/23 17:56	1
3 & 4 Methylphenol	0.19	U	2.0	0.19	ug/L		03/01/23 07:28	03/02/23 17:56	1
3,3'-Dichlorobenzidine	1.1	U	4.9	1.1	ug/L		03/01/23 07:28	03/02/23 17:56	1
Benzoic acid	12	U	49	12	ug/L		03/01/23 07:28	03/02/23 17:56	1
Phenol	0.13	U	0.98	0.13	ug/L		03/01/23 07:28	03/02/23 17:56	1
4-Nitrophenol	2.1	U	9.8	2.1	ug/L		03/01/23 07:28	03/02/23 17:56	1
2-Butoxyethanol	0.00098	U	20	0.00098	ug/L		03/01/23 07:28	03/02/23 17:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	66		46 - 137	03/01/23 07:28	03/02/23 17:56	1
Phenol-d5 (Surr)	1	S1-	26 - 120	03/01/23 07:28	03/02/23 17:56	1
Nitrobenzene-d5 (Surr)	58		24 - 120	03/01/23 07:28	03/02/23 17:56	1
2-Fluorophenol (Surr)	3	S1-	19 - 120	03/01/23 07:28	03/02/23 17:56	1
2-Fluorobiphenyl (Surr)	64		33 - 120	03/01/23 07:28	03/02/23 17:56	1
2,4,6-Tribromophenol (Surr)	26		10 - 120	03/01/23 07:28	03/02/23 17:56	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propylene glycol	20	U	25	20	mg/L			03/02/23 17:20	1
di-propylene glycol	20	U	25	20	mg/L			03/02/23 17:20	1
Diethylene glycol	20	U	25	20	mg/L			03/02/23 17:20	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: FB-02-20230228

Lab Sample ID: 240-181074-8

Date Collected: 02/28/23 15:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/05/23 18:37	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/05/23 18:37	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/05/23 18:37	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/05/23 18:37	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/05/23 18:37	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/05/23 18:37	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/05/23 18:37	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 18:37	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/05/23 18:37	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/05/23 18:37	1
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 13:56	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/05/23 18:37	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/05/23 18:37	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/05/23 18:37	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/05/23 18:37	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 13:56	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/05/23 18:37	1
Acetone	2.0	U	5.0	2.0	ug/L			03/05/23 18:37	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 13:56	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 13:56	1
Benzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/05/23 18:37	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/05/23 18:37	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 18:37	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Bromodichloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 18:37	1
Bromoform	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/05/23 18:37	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/05/23 18:37	1
Chloroacetonitrile	2.0	U	5.0	2.0	ug/L			03/05/23 13:56	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: FB-02-20230228

Lab Sample ID: 240-181074-8

Date Collected: 02/28/23 15:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Chloroform	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/05/23 18:37	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/05/23 18:37	1
Dibromochloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 18:37	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/05/23 18:37	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/05/23 18:37	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/05/23 18:37	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/05/23 18:37	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/05/23 18:37	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 13:56	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 13:56	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/05/23 18:37	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/05/23 18:37	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 13:56	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/05/23 18:37	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/05/23 18:37	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 13:56	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 13:56	1
Methyl iodide	2.0	U	2.0	2.0	ug/L			03/05/23 13:56	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 13:56	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/05/23 18:37	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/05/23 18:37	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/05/23 18:37	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/05/23 18:37	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 13:56	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 13:56	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Styrene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/05/23 18:37	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/05/23 18:37	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/05/23 18:37	1
Toluene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 13:56	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/05/23 18:37	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: FB-02-20230228

Lab Sample ID: 240-181074-8

Date Collected: 02/28/23 15:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/05/23 18:37	1
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/05/23 18:37	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/05/23 18:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	93		70 - 130					03/05/23 13:56	1
1,2-Dichlorobenzene-d4 (Surr)	97		70 - 130					03/05/23 18:37	1
1,2-Dichlorobenzene-d4 (Surr)	100		70 - 130					03/05/23 18:37	1
1,2-Dichloroethane-d4 (Surr)	107		70 - 130					03/05/23 13:56	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130					03/05/23 18:37	1
1,2-Dichloroethane-d4 (Surr)	96		70 - 130					03/05/23 18:37	1
4-Bromofluorobenzene (Surr)	99		70 - 130					03/05/23 13:56	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/05/23 18:37	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/05/23 18:37	1
Toluene-d8 (Surr)	94		70 - 130					03/05/23 13:56	1
Toluene-d8 (Surr)	99		70 - 130					03/05/23 18:37	1
Toluene-d8 (Surr)	99		70 - 130					03/05/23 18:37	1

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.020	U	0.098	0.020	ug/L		03/01/23 10:12	03/02/23 06:19	1
2,6-Dinitrotoluene	0.039	U	0.098	0.039	ug/L		03/01/23 10:12	03/02/23 06:19	1
2-Methylnaphthalene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Acenaphthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Acenaphthylene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Benzo[a]anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Benzo[a]pyrene	0.012	U	0.020	0.012	ug/L		03/01/23 10:12	03/02/23 06:19	1
Benzo[b]fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Benzo[g,h,i]perylene	0.020	U	0.098	0.020	ug/L		03/01/23 10:12	03/02/23 06:19	1
Benzo[k]fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Butylbenzylphthalate	0.020	U	0.98	0.020	ug/L		03/01/23 10:12	03/02/23 06:19	1
Chrysene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Di (2-ethylhexyl)phthalate	0.098	U	0.59	0.098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Dibenz(a,h)anthracene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Diethylphthalate	0.020	U	0.98	0.020	ug/L		03/01/23 10:12	03/02/23 06:19	1
Dimethylphthalate	0.29	U	0.98	0.29	ug/L		03/01/23 10:12	03/02/23 06:19	1
Di-n-butyl phthalate	0.069	U	2.0	0.069	ug/L		03/01/23 10:12	03/02/23 06:19	1
Di-n-octyl phthalate	0.020	U	2.0	0.020	ug/L		03/01/23 10:12	03/02/23 06:19	1
Fluoranthene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Fluorene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Hexachlorobenzene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Hexachlorocyclopentadiene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Indeno[1,2,3-cd]pyrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Isophorone	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Naphthalene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Phenanthrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1
Pyrene	0.0098	U	0.098	0.0098	ug/L		03/01/23 10:12	03/02/23 06:19	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: FB-02-20230228

Lab Sample ID: 240-181074-8

Date Collected: 02/28/23 15:00

Matrix: Water

Date Received: 02/28/23 20:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	99		70 - 130	03/01/23 10:12	03/02/23 06:19	1
Perylene-d12 (Surr)	103		70 - 130	03/01/23 10:12	03/02/23 06:19	1
Triphenylphosphate (Surr)	108		70 - 130	03/01/23 10:12	03/02/23 06:19	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	2.1	U	5.1	2.1	ug/L		03/01/23 07:28	03/02/23 18:20	1
3 & 4 Methylphenol	0.19	U	2.0	0.19	ug/L		03/01/23 07:28	03/02/23 18:20	1
3,3'-Dichlorobenzidine	1.2	U	5.1	1.2	ug/L		03/01/23 07:28	03/02/23 18:20	1
Benzoic acid	12	U	51	12	ug/L		03/01/23 07:28	03/02/23 18:20	1
Phenol	0.13	U	1.0	0.13	ug/L		03/01/23 07:28	03/02/23 18:20	1
4-Nitrophenol	2.2	U	10	2.2	ug/L		03/01/23 07:28	03/02/23 18:20	1
2-Butoxyethanol	0.0010	U	20	0.0010	ug/L		03/01/23 07:28	03/02/23 18:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	74		46 - 137	03/01/23 07:28	03/02/23 18:20	1
Phenol-d5 (Surr)	16	S1-	26 - 120	03/01/23 07:28	03/02/23 18:20	1
Nitrobenzene-d5 (Surr)	59		24 - 120	03/01/23 07:28	03/02/23 18:20	1
2-Fluorophenol (Surr)	27		19 - 120	03/01/23 07:28	03/02/23 18:20	1
2-Fluorobiphenyl (Surr)	63		33 - 120	03/01/23 07:28	03/02/23 18:20	1
2,4,6-Tribromophenol (Surr)	43		10 - 120	03/01/23 07:28	03/02/23 18:20	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propylene glycol	20	U	25	20	mg/L			03/02/23 17:48	1
di-propylene glycol	20	U	25	20	mg/L			03/02/23 17:48	1
Diethylene glycol	20	U	25	20	mg/L			03/02/23 17:48	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: TB-02-20230228

Lab Sample ID: 240-181074-9

Date Collected: 02/28/23 09:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/06/23 16:02	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/06/23 16:02	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/06/23 16:02	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/06/23 16:02	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/06/23 16:02	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/06/23 16:02	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/06/23 16:02	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/06/23 16:02	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/06/23 16:02	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/06/23 16:02	1
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 14:21	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/06/23 16:02	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/06/23 16:02	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/06/23 16:02	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/06/23 16:02	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 14:21	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/06/23 16:02	1
Acetone	37		5.0	2.0	ug/L			03/06/23 16:02	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 14:21	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 14:21	1
Benzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/06/23 16:02	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/06/23 16:02	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/06/23 16:02	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Bromodichloromethane	0.10	U	0.50	0.10	ug/L			03/06/23 16:02	1
Bromoform	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/06/23 16:02	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/06/23 16:02	1
Chloroacetonitrile	2.0	U	5.0	2.0	ug/L			03/05/23 14:21	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: TB-02-20230228

Lab Sample ID: 240-181074-9

Date Collected: 02/28/23 09:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Chloroform	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/06/23 16:02	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/06/23 16:02	1
Dibromochloromethane	0.10	U	0.50	0.10	ug/L			03/06/23 16:02	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/06/23 16:02	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/06/23 16:02	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/06/23 16:02	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/06/23 16:02	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/06/23 16:02	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 14:21	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 14:21	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/06/23 16:02	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/06/23 16:02	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 14:21	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/06/23 16:02	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/06/23 16:02	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 14:21	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 14:21	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 14:21	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/06/23 16:02	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/06/23 16:02	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/06/23 16:02	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/06/23 16:02	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 14:21	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 14:21	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Styrene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/06/23 16:02	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/06/23 16:02	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/06/23 16:02	1
Toluene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 14:21	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/06/23 16:02	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/06/23 16:02	1

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Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: TB-02-20230228

Lab Sample ID: 240-181074-9

Date Collected: 02/28/23 09:00

Matrix: Water

Date Received: 02/28/23 20:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/06/23 16:02	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/06/23 16:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	98		70 - 130					03/05/23 14:21	1
1,2-Dichlorobenzene-d4 (Surr)	93		70 - 130					03/06/23 16:02	1
1,2-Dichlorobenzene-d4 (Surr)	96		70 - 130					03/06/23 16:02	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 130					03/05/23 14:21	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 130					03/06/23 16:02	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130					03/06/23 16:02	1
4-Bromofluorobenzene (Surr)	104		70 - 130					03/05/23 14:21	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/06/23 16:02	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/06/23 16:02	1
Toluene-d8 (Surr)	95		70 - 130					03/05/23 14:21	1
Toluene-d8 (Surr)	93		70 - 130					03/06/23 16:02	1
Toluene-d8 (Surr)	95		70 - 130					03/06/23 16:02	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)							
		DCZ (70-130)	DCZ (70-130)	DCA (70-130)	DCA (70-130)	BFB (70-130)	BFB (70-130)	TOL (70-130)	TOL (70-130)
240-181074-1	PW-201-20230228	95	95	103	103	97	97	94	94
240-181074-1	PW-201-20230228	95	95	98	98	92	92	96	96
240-181074-2	PW-202-20230228	96	96	102	102	94	94	95	95
240-181074-2	PW-202-20230228	98	98	106	106	93	93	97	97
240-181074-3	PW-203-20230228	98	98	102	102	99	99	96	96
240-181074-3	PW-203-20230228	95	95	100	100	91	91	98	98
240-181074-4	PW-204-20230228	95	95	102	102	98	98	94	94
240-181074-4	PW-204-20230228	96	96	107	107	94	94	99	99
240-181074-5	PW-205-20230228	97	97	101	101	94	94	93	93
240-181074-5	PW-205-20230228	95	95	103	103	94	94	96	96
240-181074-6	PW-207-20230228	96	96	104	104	96	96	96	96
240-181074-6	PW-207-20230228	94	94	99	99	92	92	96	96
240-181074-6 MS	PW-207-20230228	94	94	103	103	93	93	95	95
240-181074-6 MS	PW-207-20230228	106	106	108	108	102	102	99	99
240-181074-6 MS	PW-207-20230228	99	99	100	100	92	92	97	97
240-181074-6 MSD	PW-207-20230228	96	96	100	100	95	95	96	96
240-181074-6 MSD	PW-207-20230228	108	108	105	105	101	101	98	98
240-181074-6 MSD	PW-207-20230228	103	103	99	99	97	97	98	98
240-181074-7	DUP-03-20230228	97	97	103	103	94	94	97	97
240-181074-7	DUP-03-20230228	96	96	100	100	92	92	98	98
240-181074-8	FB-02-20230228	93	93	107	107	99	99	94	94
240-181074-8	FB-02-20230228	97	97	100	100	94	94	99	99
240-181074-9	TB-02-20230228	98	98	104	104	104	104	95	95
240-181074-9	TB-02-20230228	93	93	99	99	94	94	93	93
MB 810-50342/5	Method Blank	96	96	101	101	95	95	94	94
MB 810-50344/6	Method Blank	91	91	99	99	90	90	95	95
MB 810-50353/6	Method Blank	94	94	98	98	91	91	96	96
MB 810-50443/6	Method Blank	95	95	101	101	94	94	97	97
MB 810-50501/6	Method Blank	99	99	100	100	95	95	98	98

Surrogate Legend

DCZ = 1,2-Dichlorobenzene-d4 (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
240-181074-1	PW-201-20230228	107	92	113
240-181074-2	PW-202-20230228	113	91	113
240-181074-3	PW-203-20230228	108	90	109
240-181074-4	PW-204-20230228	110	94	112
240-181074-5	PW-205-20230228	106	91	115
240-181074-6	PW-207-20230228	105	99	112
240-181074-6 MS	PW-207-20230228	103	102	121
240-181074-6 MSD	PW-207-20230228	100	105	122

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Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
240-181074-7	DUP-03-20230228	102	95	118
240-181074-8	FB-02-20230228	99	103	108
LCS 810-49813/1-A	Lab Control Sample	102	104	109
LLCS 810-49813/3-A	Lab Control Sample	103	97	108
MB 810-49813/2-A	Method Blank	98	96	106

Surrogate Legend

2NMX = 2-Nitro-m-xylene (Surr)

PRY = Perylene-d12 (Surr)

TPP = Triphenylphosphate (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-181074-1	PW-201-20230228	63	18 S1-	62	28	64	51
240-181074-2	PW-202-20230228	67	21 S1-	65	33	68	56
240-181074-3	PW-203-20230228	66	18 S1-	59	30	61	61
240-181074-4	PW-204-20230228	69	17 S1-	61	30	66	65
240-181074-5	PW-205-20230228	66	18 S1-	54	28	60	52
240-181074-6	PW-207-20230228	72	1 S1-	54	4 S1-	61	25
240-181074-6 MS	PW-207-20230228	63	0.8 S1-	61	2 S1-	62	21
240-181074-6 MSD	PW-207-20230228	71	1 S1-	62	3 S1-	69	24
240-181074-7	DUP-03-20230228	66	1 S1-	58	3 S1-	64	26
240-181074-8	FB-02-20230228	74	16 S1-	59	27	63	43
LCS 240-563809/12-A	Lab Control Sample	78	21 S1-	55	31	61	54
LCS 240-563809/15-A	Lab Control Sample	89	36	83	51	83	83
MB 240-563809/11-A	Method Blank	101	26	80	42	86	72

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 810-50342/5

Matrix: Water

Analysis Batch: 50342

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Chlorobutane	0.70	U	5.0	0.70	ug/L			03/05/23 09:37	1
2-Nitropropane	0.90	U	2.0	0.90	ug/L			03/05/23 09:37	1
Acrylonitrile	0.90	U	1.0	0.90	ug/L			03/05/23 09:37	1
Allyl chloride	1.1	U	5.0	1.1	ug/L			03/05/23 09:37	1
Chloroacetonitrile	2.0	U	5.0	2.0	ug/L			03/05/23 09:37	1
Ethyl ether	0.30	U	2.0	0.30	ug/L			03/05/23 09:37	1
Ethyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 09:37	1
Hexachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 09:37	1
Methacrylonitrile	1.7	U	5.0	1.7	ug/L			03/05/23 09:37	1
Methyl acrylate	0.80	U	1.0	0.80	ug/L			03/05/23 09:37	1
Methyl iodide	2.0	U	2.0	2.0	ug/L			03/05/23 09:37	1
Methyl methacrylate	1.0	U	1.0	1.0	ug/L			03/05/23 09:37	1
Pentachloroethane	1.1	U	2.0	1.1	ug/L			03/05/23 09:37	1
Propionitrile	1.3	U	5.0	1.3	ug/L			03/05/23 09:37	1
trans-1,4-Dichloro-2-butylene	1.4	U	5.0	1.4	ug/L			03/05/23 09:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	96		70 - 130		03/05/23 09:37	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130		03/05/23 09:37	1
4-Bromofluorobenzene (Surr)	95		70 - 130		03/05/23 09:37	1
Toluene-d8 (Surr)	94		70 - 130		03/05/23 09:37	1

Lab Sample ID: 240-181074-6 MS

Matrix: Water

Analysis Batch: 50342

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Chlorobutane	0.70	U	10.0	10.8		ug/L		108	70 - 130
2-Nitropropane	0.90	U	10.0	10.8		ug/L		108	70 - 130
Acrylonitrile	0.90	U	10.0	10.6		ug/L		106	70 - 130
Allyl chloride	1.1	U	10.0	11.3		ug/L		113	70 - 130
Chloroacetonitrile	2.0	U	10.0	10.3		ug/L		103	70 - 130
Ethyl ether	0.30	U	10.0	10.5		ug/L		105	70 - 130
Ethyl methacrylate	1.0	U	10.0	10.3		ug/L		103	70 - 130
Hexachloroethane	1.1	U	10.0	11.5		ug/L		115	70 - 130
Methacrylonitrile	1.7	U	10.0	10.3		ug/L		103	70 - 130
Methyl acrylate	0.80	U	10.0	10.9		ug/L		109	70 - 130
Methyl methacrylate	1.0	U	10.0	10.4		ug/L		104	70 - 130
Pentachloroethane	1.1	U	10.0	11.8		ug/L		118	70 - 130
Propionitrile	1.3	U	10.0	10.5		ug/L		105	70 - 130
trans-1,4-Dichloro-2-butylene	1.4	U	10.0	9.25		ug/L		93	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichlorobenzene-d4 (Surr)	94		70 - 130
1,2-Dichloroethane-d4 (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	93		70 - 130
Toluene-d8 (Surr)	95		70 - 130

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-181074-6 MSD

Matrix: Water

Analysis Batch: 50342

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Chlorobutane	0.70	U	10.0	10.2		ug/L		102	70 - 130	5	20
2-Nitropropane	0.90	U	10.0	10.1		ug/L		101	70 - 130	7	20
Acrylonitrile	0.90	U	10.0	9.90		ug/L		99	70 - 130	7	20
Allyl chloride	1.1	U	10.0	10.4		ug/L		104	70 - 130	8	20
Chloroacetonitrile	2.0	U	10.0	8.88		ug/L		89	70 - 130	15	20
Ethyl ether	0.30	U	10.0	9.91		ug/L		99	70 - 130	6	20
Ethyl methacrylate	1.0	U	10.0	9.95		ug/L		99	70 - 130	4	20
Hexachloroethane	1.1	U	10.0	10.4		ug/L		104	70 - 130	10	20
Methacrylonitrile	1.7	U	10.0	9.78		ug/L		98	70 - 130	6	20
Methyl acrylate	0.80	U	10.0	10.3		ug/L		103	70 - 130	6	20
Methyl methacrylate	1.0	U	10.0	9.65		ug/L		97	70 - 130	7	20
Pentachloroethane	1.1	U	10.0	12.5		ug/L		125	70 - 130	5	20
Propionitrile	1.3	U	10.0	9.66		ug/L		97	70 - 130	8	20
trans-1,4-Dichloro-2-butylene	1.4	U	10.0	8.12		ug/L		81	70 - 130	13	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichlorobenzene-d4 (Surr)	96		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	95		70 - 130
Toluene-d8 (Surr)	96		70 - 130

Lab Sample ID: MB 810-50344/6

Matrix: Water

Analysis Batch: 50344

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/05/23 11:55	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/05/23 11:55	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/05/23 11:55	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/05/23 11:55	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/05/23 11:55	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/05/23 11:55	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 11:55	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/05/23 11:55	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 810-50344/6

Matrix: Water

Analysis Batch: 50344

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/05/23 11:55	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/05/23 11:55	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/05/23 11:55	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/05/23 11:55	1
Acetone	2.0	U	5.0	2.0	ug/L			03/05/23 11:55	1
Benzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/05/23 11:55	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Bromodichloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 11:55	1
Bromoform	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/05/23 11:55	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/05/23 11:55	1
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Chloroform	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Dibromochloromethane	0.10	U	0.50	0.10	ug/L			03/05/23 11:55	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/05/23 11:55	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/05/23 11:55	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/05/23 11:55	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/05/23 11:55	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/05/23 11:55	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/05/23 11:55	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/05/23 11:55	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/05/23 11:55	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/05/23 11:55	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/05/23 11:55	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Styrene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/05/23 11:55	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/05/23 11:55	1
Toluene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 810-50344/6

Matrix: Water

Analysis Batch: 50344

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/05/23 11:55	1
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/05/23 11:55	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/05/23 11:55	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	91		70 - 130					03/05/23 11:55	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 130					03/05/23 11:55	1
4-Bromofluorobenzene (Surr)	90		70 - 130					03/05/23 11:55	1
Toluene-d8 (Surr)	95		70 - 130					03/05/23 11:55	1

Lab Sample ID: 240-181074-6 MS

Matrix: Water

Analysis Batch: 50344

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	0.30	U	10.0	10.4		ug/L		104	70 - 130
1,1,1-Trichloroethane	0.20	U	10.0	10.9		ug/L		109	70 - 130
1,1,2,2-Tetrachloroethane	0.20	U	10.0	10.5		ug/L		105	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	10.0	10.9		ug/L		109	70 - 130
1,1,2-Trichloroethane	0.20	U	10.0	9.79		ug/L		98	70 - 130
1,1-Dichloroethane	0.10	U	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethene	0.20	U	10.0	11.3		ug/L		113	70 - 130
1,1-Dichloropropene	0.20	U	10.0	10.6		ug/L		106	70 - 130
1,2,3-Trichlorobenzene	0.20	U	10.0	10.6		ug/L		106	70 - 130
1,2,3-Trichloropropane	0.20	U	10.0	9.92		ug/L		99	70 - 130
1,2,3-Trimethylbenzene	0.20	U	10.0	10.0		ug/L		100	70 - 130
1,2,4-Trichlorobenzene	0.20	U	10.0	10.4		ug/L		104	70 - 130
1,2,4-Trimethylbenzene	0.20	U	10.0	9.97		ug/L		100	70 - 130
1,2-Dibromo-3-Chloropropane	0.20	U	10.0	11.1		ug/L		111	70 - 130
1,2-Dibromoethane (EDB)	0.20	U	10.0	9.91		ug/L		99	70 - 130
1,2-Dichlorobenzene	0.20	U	10.0	10.4		ug/L		104	70 - 130
1,2-Dichloroethane	0.20	U	10.0	10.3		ug/L		103	70 - 130
1,2-Dichloropropane	0.20	U	10.0	9.52		ug/L		95	70 - 130
1,3,5-Trimethylbenzene	0.20	U	10.0	9.70		ug/L		97	70 - 130
1,3-Dichlorobenzene	0.10	U	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	0.10	U	10.0	9.76		ug/L		98	70 - 130
1,3-Dichloropropene, Total	0.20	U	20.0	17.8		ug/L		89	70 - 130
1,4-Dichlorobenzene	0.20	U	10.0	10.4		ug/L		104	70 - 130
2,2-Dichloropropane	0.20	U	10.0	9.41		ug/L		94	70 - 130
2-Butanone (MEK)	2.0	U	10.0	10.4		ug/L		104	70 - 130
2-Chlorotoluene	0.10	U	10.0	9.93		ug/L		99	70 - 130
2-Hexanone	1.2	U	10.0	9.52		ug/L		95	70 - 130
4-Chlorotoluene	0.20	U	10.0	10.0		ug/L		100	70 - 130
4-Isopropyltoluene	0.20	U	10.0	10.2		ug/L		102	70 - 130
4-Methyl-2-pentanone (MIBK)	1.5	U	10.0	9.22		ug/L		92	70 - 130
Acetone	2.0	U	10.0	9.99		ug/L		100	70 - 130
Benzene	0.20	U	10.0	10.0		ug/L		100	70 - 130
Bromobenzene	0.10	U	10.0	10.2		ug/L		102	70 - 130

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-181074-6 MS

Matrix: Water

Analysis Batch: 50344

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromochloromethane	0.20	U	10.0	10.9		ug/L		109	70 - 130
Bromodichloromethane	1.1		10.0	10.9		ug/L		99	70 - 130
Bromoform	0.22	J	10.0	9.89		ug/L		97	70 - 130
Bromomethane	0.40	U	10.0	7.62		ug/L		76	70 - 130
Carbon disulfide	0.20	U	10.0	10.7		ug/L		107	70 - 130
Carbon tetrachloride	0.10	U	10.0	11.2		ug/L		112	70 - 130
Chlorobenzene	0.20	U	10.0	10.0		ug/L		100	70 - 130
Chloroethane	0.20	U	10.0	10.7		ug/L		107	70 - 130
Chloroform	0.99		10.0	11.6		ug/L		106	70 - 130
Chloromethane	0.20	U	10.0	9.34		ug/L		93	70 - 130
cis-1,2-Dichloroethylene	0.20	U	10.0	10.2		ug/L		102	70 - 130
cis-1,3-Dichloropropylene	0.20	U	10.0	8.89		ug/L		89	70 - 130
Dibromochloromethane	0.83		10.0	10.9		ug/L		101	70 - 130
Dibromomethane	0.20	U	10.0	9.95		ug/L		100	70 - 130
Dichlorodifluoromethane	0.30	U	10.0	10.4		ug/L		104	70 - 130
Dichloromethane	0.40	U	10.0	10.8		ug/L		108	70 - 130
Ethyl bromide	0.10	U	10.0	10.6		ug/L		106	70 - 130
Ethyl tert-butyl ether	0.40	U	10.0	10.0		ug/L		100	70 - 130
Ethylbenzene	0.20	U	10.0	10.0		ug/L		100	70 - 130
Hexachlorobutadiene	0.20	U	10.0	11.4		ug/L		114	70 - 130
Isopropyl ether	0.50	U	10.0	10.7		ug/L		107	70 - 130
Isopropylbenzene	0.20	U	10.0	10.0		ug/L		100	70 - 130
Methyl-tert-butyl Ether (MTBE)	0.40	U	10.0	10.0		ug/L		100	70 - 130
m-Xylene & p-Xylene	0.50	U	20.0	19.9		ug/L		99	70 - 130
Naphthalene	0.30	U	10.0	9.99		ug/L		100	70 - 130
n-Butylbenzene	0.20	U	10.0	10.2		ug/L		102	70 - 130
N-Propylbenzene	0.20	U	10.0	9.91		ug/L		99	70 - 130
o-Xylene	0.20	U	10.0	10.0		ug/L		100	70 - 130
sec-Butylbenzene	0.20	U	10.0	10.3		ug/L		103	70 - 130
Styrene	0.20	U	10.0	9.76		ug/L		98	70 - 130
t-Amyl methyl ether	0.60	U	10.0	8.81		ug/L		88	70 - 130
tert-Butylbenzene	0.20	U	10.0	10.2		ug/L		102	70 - 130
Tetrachloroethene	0.20	U	10.0	10.4		ug/L		104	70 - 130
Tetrahydrofuran	1.4	U	10.0	10.3		ug/L		103	70 - 130
Toluene	0.20	U	10.0	9.89		ug/L		99	70 - 130
trans-1,2-Dichloroethylene	0.20	U	10.0	10.7		ug/L		107	70 - 130
trans-1,3-Dichloropropylene	0.20	U	10.0	8.93		ug/L		89	70 - 130
Trichloroethylene	0.20	U	10.0	10.4		ug/L		104	70 - 130
Trichlorofluoromethane	0.20	U	10.0	11.1		ug/L		111	70 - 130
Vinyl chloride	0.20	U	10.0	10.3		ug/L		103	70 - 130
Xylenes, Total	0.50	U	30.0	29.9		ug/L		100	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichlorobenzene-d4 (Surr)	106		70 - 130						
1,2-Dichloroethane-d4 (Surr)	108		70 - 130						
4-Bromofluorobenzene (Surr)	102		70 - 130						
Toluene-d8 (Surr)	99		70 - 130						

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-181074-6 MSD

Matrix: Water

Analysis Batch: 50344

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.30	U	10.0	10.6		ug/L		106	70 - 130	1	20
1,1,1-Trichloroethane	0.20	U	10.0	10.8		ug/L		108	70 - 130	0	20
1,1,2,2-Tetrachloroethane	0.20	U	10.0	10.5		ug/L		105	70 - 130	1	20
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	10.0	11.3		ug/L		113	70 - 130	3	20
1,1,2-Trichloroethane	0.20	U	10.0	10.1		ug/L		101	70 - 130	4	20
1,1-Dichloroethane	0.10	U	10.0	10.4		ug/L		104	70 - 130	1	20
1,1-Dichloroethene	0.20	U	10.0	11.1		ug/L		111	70 - 130	2	20
1,1-Dichloropropene	0.20	U	10.0	10.8		ug/L		108	70 - 130	1	20
1,2,3-Trichlorobenzene	0.20	U	10.0	10.3		ug/L		103	70 - 130	3	20
1,2,3-Trichloropropane	0.20	U	10.0	10.1		ug/L		101	70 - 130	1	20
1,2,3-Trimethylbenzene	0.20	U	10.0	10.3		ug/L		103	70 - 130	2	20
1,2,4-Trichlorobenzene	0.20	U	10.0	10.4		ug/L		104	70 - 130	1	20
1,2,4-Trimethylbenzene	0.20	U	10.0	10.2		ug/L		102	70 - 130	2	20
1,2-Dibromo-3-Chloropropane	0.20	U	10.0	10.9		ug/L		109	70 - 130	2	20
1,2-Dibromoethane (EDB)	0.20	U	10.0	10.2		ug/L		102	70 - 130	3	20
1,2-Dichlorobenzene	0.20	U	10.0	10.6		ug/L		106	70 - 130	2	20
1,2-Dichloroethane	0.20	U	10.0	10.3		ug/L		103	70 - 130	0	20
1,2-Dichloropropane	0.20	U	10.0	9.69		ug/L		97	70 - 130	2	20
1,3,5-Trimethylbenzene	0.20	U	10.0	10.3		ug/L		103	70 - 130	6	20
1,3-Dichlorobenzene	0.10	U	10.0	10.4		ug/L		104	70 - 130	0	20
1,3-Dichloropropane	0.10	U	10.0	9.84		ug/L		98	70 - 130	1	20
1,3-Dichloropropene, Total	0.20	U	20.0	18.4		ug/L		92	70 - 130	3	20
1,4-Dichlorobenzene	0.20	U	10.0	10.9		ug/L		109	70 - 130	5	20
2,2-Dichloropropane	0.20	U	10.0	9.55		ug/L		95	70 - 130	1	20
2-Butanone (MEK)	2.0	U	10.0	10.5		ug/L		105	70 - 130	1	20
2-Chlorotoluene	0.10	U	10.0	10.2		ug/L		102	70 - 130	2	20
2-Hexanone	1.2	U	10.0	9.26		ug/L		93	70 - 130	3	20
4-Chlorotoluene	0.20	U	10.0	10.4		ug/L		104	70 - 130	3	20
4-Isopropyltoluene	0.20	U	10.0	10.4		ug/L		104	70 - 130	2	20
4-Methyl-2-pentanone (MIBK)	1.5	U	10.0	9.40		ug/L		94	70 - 130	2	20
Acetone	2.0	U	10.0	10.2		ug/L		102	70 - 130	2	20
Benzene	0.20	U	10.0	10.1		ug/L		101	70 - 130	1	20
Bromobenzene	0.10	U	10.0	10.4		ug/L		104	70 - 130	2	20
Bromochloromethane	0.20	U	10.0	10.9		ug/L		109	70 - 130	0	20
Bromodichloromethane	1.1		10.0	11.0		ug/L		99	70 - 130	1	20
Bromoform	0.22	J	10.0	9.98		ug/L		98	70 - 130	1	20
Bromomethane	0.40	U	10.0	8.73		ug/L		87	70 - 130	14	20
Carbon disulfide	0.20	U	10.0	10.8		ug/L		108	70 - 130	1	20
Carbon tetrachloride	0.10	U	10.0	11.3		ug/L		113	70 - 130	1	20
Chlorobenzene	0.20	U	10.0	10.4		ug/L		104	70 - 130	4	20
Chloroethane	0.20	U	10.0	10.5		ug/L		105	70 - 130	2	20
Chloroform	0.99		10.0	11.6		ug/L		106	70 - 130	1	20
Chloromethane	0.20	U	10.0	9.52		ug/L		95	70 - 130	2	20
cis-1,2-Dichloroethylene	0.20	U	10.0	10.4		ug/L		104	70 - 130	2	20
cis-1,3-Dichloropropylene	0.20	U	10.0	9.25		ug/L		92	70 - 130	4	20
Dibromochloromethane	0.83		10.0	11.1		ug/L		103	70 - 130	2	20
Dibromomethane	0.20	U	10.0	10.0		ug/L		100	70 - 130	1	20
Dichlorodifluoromethane	0.30	U	10.0	10.3		ug/L		103	70 - 130	0	20

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-181074-6 MSD

Matrix: Water

Analysis Batch: 50344

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichloromethane	0.40	U	10.0	10.7		ug/L		107	70 - 130	2	20
Ethyl bromide	0.10	U	10.0	10.9		ug/L		109	70 - 130	3	20
Ethyl tert-butyl ether	0.40	U	10.0	10.1		ug/L		101	70 - 130	1	20
Ethylbenzene	0.20	U	10.0	10.1		ug/L		101	70 - 130	1	20
Hexachlorobutadiene	0.20	U	10.0	11.7		ug/L		117	70 - 130	2	20
Isopropyl ether	0.50	U	10.0	10.6		ug/L		106	70 - 130	0	20
Isopropylbenzene	0.20	U	10.0	10.4		ug/L		104	70 - 130	4	20
Methyl-tert-butyl Ether (MTBE)	0.40	U	10.0	10.1		ug/L		101	70 - 130	1	20
m-Xylene & p-Xylene	0.50	U	20.0	20.6		ug/L		103	70 - 130	4	20
Naphthalene	0.30	U	10.0	9.90		ug/L		99	70 - 130	1	20
n-Butylbenzene	0.20	U	10.0	10.4		ug/L		104	70 - 130	3	20
N-Propylbenzene	0.20	U	10.0	10.1		ug/L		101	70 - 130	2	20
o-Xylene	0.20	U	10.0	10.3		ug/L		103	70 - 130	3	20
sec-Butylbenzene	0.20	U	10.0	10.6		ug/L		106	70 - 130	3	20
Styrene	0.20	U	10.0	10.2		ug/L		102	70 - 130	5	20
t-Amyl methyl ether	0.60	U	10.0	8.88		ug/L		89	70 - 130	1	20
tert-Butylbenzene	0.20	U	10.0	10.4		ug/L		104	70 - 130	3	20
Tetrachloroethene	0.20	U	10.0	10.4		ug/L		104	70 - 130	0	20
Tetrahydrofuran	1.4	U	10.0	9.99		ug/L		100	70 - 130	3	20
Toluene	0.20	U	10.0	10.2		ug/L		102	70 - 130	4	20
trans-1,2-Dichloroethylene	0.20	U	10.0	10.9		ug/L		109	70 - 130	2	20
trans-1,3-Dichloropropylene	0.20	U	10.0	9.10		ug/L		91	70 - 130	2	20
Trichloroethylene	0.20	U	10.0	10.7		ug/L		107	70 - 130	3	20
Trichlorofluoromethane	0.20	U	10.0	11.2		ug/L		112	70 - 130	1	20
Vinyl chloride	0.20	U	10.0	10.3		ug/L		103	70 - 130	0	20
Xylenes, Total	0.50	U	30.0	30.9		ug/L		103	70 - 130	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichlorobenzene-d4 (Surr)	108		70 - 130
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
4-Bromofluorobenzene (Surr)	101		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Lab Sample ID: MB 810-50353/6

Matrix: Water

Analysis Batch: 50353

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/05/23 11:55	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/05/23 11:55	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/05/23 11:55	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/05/23 11:55	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/05/23 11:55	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/05/23 11:55	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/05/23 11:55	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/05/23 11:55	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/05/23 11:55	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/05/23 11:55	1

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 810-50353/6

Matrix: Water

Analysis Batch: 50353

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/05/23 11:55	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/05/23 11:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	94		70 - 130		03/05/23 11:55	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		03/05/23 11:55	1
4-Bromofluorobenzene (Surr)	91		70 - 130		03/05/23 11:55	1
Toluene-d8 (Surr)	96		70 - 130		03/05/23 11:55	1

Lab Sample ID: 240-181074-6 MS

Matrix: Water

Analysis Batch: 50353

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Butadiene	0.50	U	10.0	10.0		ug/L		100	70 - 130
1,4-Dioxane	2.0	U	10.0	9.40		ug/L		94	50 - 150
2-Ethylhexyl acrylate	0.50	U	10.0	10.2		ug/L		102	50 - 150
Benzyl chloride	0.40	U	10.0	9.89		ug/L		99	40 - 150
Bis(2-chloroethyl)ether	0.80	U	10.0	9.50		ug/L		95	50 - 150
Chloroprene	0.40	U	10.0	10.7		ug/L		107	70 - 130
Cyclohexanone	2.0	U	10.0	8.04		ug/L		80	31 - 149
Epichlorohydrin	0.80	U	10.0	6.27		ug/L		63	35 - 170
Ethyl acrylate	0.40	U	10.0	8.78		ug/L		88	70 - 130
n-Butyl acrylate	0.50	U	20.0	17.0		ug/L		85	50 - 150
tert-Butyl alcohol	0.60	U	10.0	9.38		ug/L		94	60 - 130
Vinyl acetate	2.0	U	10.0	9.44		ug/L		94	45 - 160

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichlorobenzene-d4 (Surr)	99		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	92		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Lab Sample ID: 240-181074-6 MSD

Matrix: Water

Analysis Batch: 50353

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,3-Butadiene	0.50	U	10.0	10.8		ug/L		108	70 - 130	8	20
1,4-Dioxane	2.0	U	10.0	10.4		ug/L		104	50 - 150	10	20
2-Ethylhexyl acrylate	0.50	U	10.0	11.2		ug/L		112	50 - 150	9	20
Benzyl chloride	0.40	U	10.0	10.5		ug/L		105	40 - 150	6	20
Bis(2-chloroethyl)ether	0.80	U	10.0	10.8		ug/L		108	50 - 150	12	20
Chloroprene	0.40	U	10.0	11.3		ug/L		113	70 - 130	5	20
Cyclohexanone	2.0	U	10.0	9.52		ug/L		95	31 - 149	17	20
Epichlorohydrin	0.80	U	10.0	7.00		ug/L		70	35 - 170	11	20
Ethyl acrylate	0.40	U	10.0	9.31		ug/L		93	70 - 130	6	20
n-Butyl acrylate	0.50	U	20.0	18.1		ug/L		91	50 - 150	7	20

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-181074-6 MSD

Matrix: Water

Analysis Batch: 50353

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
tert-Butyl alcohol	0.60	U	10.0	9.68		ug/L		97	60 - 130	3	20
Vinyl acetate	2.0	U	10.0	10.3		ug/L		103	45 - 160	9	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichlorobenzene-d4 (Surr)	103		70 - 130
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Lab Sample ID: MB 810-50443/6

Matrix: Water

Analysis Batch: 50443

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.30	U	0.50	0.30	ug/L			03/06/23 15:34	1
1,1,1-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,1,2,2-Tetrachloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.30	U	0.50	0.30	ug/L			03/06/23 15:34	1
1,1,2-Trichloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,1-Dichloroethane	0.10	U	0.50	0.10	ug/L			03/06/23 15:34	1
1,1-Dichloroethene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,1-Dichloropropene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,2,3-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,2,3-Trichloropropane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,2,3-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,2,4-Trichlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,2,4-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,2-Dibromo-3-Chloropropane	0.20	U	0.20	0.20	ug/L			03/06/23 15:34	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.20	ug/L			03/06/23 15:34	1
1,2-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,2-Dichloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,2-Dichloropropane	0.20	U	0.25	0.20	ug/L			03/06/23 15:34	1
1,3,5-Trimethylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,3-Dichlorobenzene	0.10	U	0.50	0.10	ug/L			03/06/23 15:34	1
1,3-Dichloropropane	0.10	U	0.50	0.10	ug/L			03/06/23 15:34	1
1,3-Dichloropropene, Total	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
1,4-Dichlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
2,2-Dichloropropane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
2-Butanone (MEK)	2.0	U	5.0	2.0	ug/L			03/06/23 15:34	1
2-Chlorotoluene	0.10	U	0.50	0.10	ug/L			03/06/23 15:34	1
2-Hexanone	1.2	U	5.0	1.2	ug/L			03/06/23 15:34	1
4-Chlorotoluene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
4-Isopropyltoluene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
4-Methyl-2-pentanone (MIBK)	1.5	U	2.0	1.5	ug/L			03/06/23 15:34	1
Acetone	2.0	U	5.0	2.0	ug/L			03/06/23 15:34	1
Benzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Bromobenzene	0.10	U	0.50	0.10	ug/L			03/06/23 15:34	1
Bromochloromethane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 810-50443/6

Matrix: Water

Analysis Batch: 50443

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.10	U	0.50	0.10	ug/L			03/06/23 15:34	1
Bromoform	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Bromomethane	0.40	U	0.50	0.40	ug/L			03/06/23 15:34	1
Carbon disulfide	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Carbon tetrachloride	0.10	U	0.50	0.10	ug/L			03/06/23 15:34	1
Chlorobenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Chloroethane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Chloroform	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Chloromethane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
cis-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
cis-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Dibromochloromethane	0.10	U	0.50	0.10	ug/L			03/06/23 15:34	1
Dibromomethane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Dichlorodifluoromethane	0.30	U	0.50	0.30	ug/L			03/06/23 15:34	1
Dichloromethane	0.40	U	0.50	0.40	ug/L			03/06/23 15:34	1
Ethyl bromide	0.10	U	0.50	0.10	ug/L			03/06/23 15:34	1
Ethyl tert-butyl ether	0.40	U	2.0	0.40	ug/L			03/06/23 15:34	1
Ethylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Hexachlorobutadiene	0.20	U	0.25	0.20	ug/L			03/06/23 15:34	1
Isopropyl ether	0.50	U	0.50	0.50	ug/L			03/06/23 15:34	1
Isopropylbenzene	0.20	U	0.25	0.20	ug/L			03/06/23 15:34	1
Methyl-tert-butyl Ether (MTBE)	0.40	U	0.50	0.40	ug/L			03/06/23 15:34	1
m-Xylene & p-Xylene	0.50	U	0.50	0.50	ug/L			03/06/23 15:34	1
Naphthalene	0.30	U	0.50	0.30	ug/L			03/06/23 15:34	1
n-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
N-Propylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
o-Xylene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
sec-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Styrene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
t-Amyl methyl ether	0.60	U	3.0	0.60	ug/L			03/06/23 15:34	1
tert-Butylbenzene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Tetrachloroethene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Tetrahydrofuran	1.4	U	5.0	1.4	ug/L			03/06/23 15:34	1
Toluene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
trans-1,2-Dichloroethylene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
trans-1,3-Dichloropropylene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Trichloroethylene	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Trichlorofluoromethane	0.20	U	0.50	0.20	ug/L			03/06/23 15:34	1
Vinyl chloride	0.20	U	0.20	0.20	ug/L			03/06/23 15:34	1
Xylenes, Total	0.50	U	0.50	0.50	ug/L			03/06/23 15:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	95		70 - 130		03/06/23 15:34	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130		03/06/23 15:34	1
4-Bromofluorobenzene (Surr)	94		70 - 130		03/06/23 15:34	1
Toluene-d8 (Surr)	97		70 - 130		03/06/23 15:34	1

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 810-50501/6

Matrix: Water

Analysis Batch: 50501

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Butadiene	0.50	U	5.0	0.50	ug/L			03/06/23 15:34	1
1,4-Dioxane	2.0	U	5.0	2.0	ug/L			03/06/23 15:34	1
2-Ethylhexyl acrylate	0.50	U	0.50	0.50	ug/L			03/06/23 15:34	1
Benzyl chloride	0.40	U	0.50	0.40	ug/L			03/06/23 15:34	1
Bis(2-chloroethyl)ether	0.80	U	2.0	0.80	ug/L			03/06/23 15:34	1
Chloroprene	0.40	U	5.0	0.40	ug/L			03/06/23 15:34	1
Cyclohexanone	2.0	U	5.0	2.0	ug/L			03/06/23 15:34	1
Epichlorohydrin	0.80	U	1.0	0.80	ug/L			03/06/23 15:34	1
Ethyl acrylate	0.40	U	1.0	0.40	ug/L			03/06/23 15:34	1
n-Butyl acrylate	0.50	U	1.0	0.50	ug/L			03/06/23 15:34	1
tert-Butyl alcohol	0.60	U	2.0	0.60	ug/L			03/06/23 15:34	1
Vinyl acetate	2.0	U	5.0	2.0	ug/L			03/06/23 15:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene-d4 (Surr)	99		70 - 130		03/06/23 15:34	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		03/06/23 15:34	1
4-Bromofluorobenzene (Surr)	95		70 - 130		03/06/23 15:34	1
Toluene-d8 (Surr)	98		70 - 130		03/06/23 15:34	1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 810-49813/2-A

Matrix: Water

Analysis Batch: 49920

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 49813

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.019	U	0.097	0.019	ug/L		03/01/23 10:12	03/02/23 02:08	1
2,6-Dinitrotoluene	0.039	U	0.097	0.039	ug/L		03/01/23 10:12	03/02/23 02:08	1
2-Methylnaphthalene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Acenaphthene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Acenaphthylene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Anthracene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Benzo[a]anthracene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Benzo[a]pyrene	0.012	U	0.019	0.012	ug/L		03/01/23 10:12	03/02/23 02:08	1
Benzo[b]fluoranthene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Benzo[g,h,i]perylene	0.019	U	0.097	0.019	ug/L		03/01/23 10:12	03/02/23 02:08	1
Benzo[k]fluoranthene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Butylbenzylphthalate	0.019	U	0.97	0.019	ug/L		03/01/23 10:12	03/02/23 02:08	1
Chrysene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Di (2-ethylhexyl)phthalate	0.097	U	0.58	0.097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Dibenz(a,h)anthracene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Diethylphthalate	0.019	U	0.97	0.019	ug/L		03/01/23 10:12	03/02/23 02:08	1
Dimethylphthalate	0.29	U	0.97	0.29	ug/L		03/01/23 10:12	03/02/23 02:08	1
Di-n-butyl phthalate	0.207	J	1.9	0.068	ug/L		03/01/23 10:12	03/02/23 02:08	1
Di-n-octyl phthalate	0.019	U	1.9	0.019	ug/L		03/01/23 10:12	03/02/23 02:08	1
Fluoranthene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Fluorene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Hexachlorobenzene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 810-49813/2-A

Matrix: Water

Analysis Batch: 49920

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 49813

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Indeno[1,2,3-cd]pyrene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Isophorone	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Naphthalene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Phenanthrene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1
Pyrene	0.0097	U	0.097	0.0097	ug/L		03/01/23 10:12	03/02/23 02:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	98		70 - 130	03/01/23 10:12	03/02/23 02:08	1
Perylene-d12 (Surr)	96		70 - 130	03/01/23 10:12	03/02/23 02:08	1
Triphenylphosphate (Surr)	106		70 - 130	03/01/23 10:12	03/02/23 02:08	1

Lab Sample ID: LCS 810-49813/1-A

Matrix: Water

Analysis Batch: 49920

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 49813

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.94	1.94		ug/L		100	70 - 130
2,6-Dinitrotoluene	1.94	1.52		ug/L		78	70 - 130
2-Methylnaphthalene	1.94	1.91		ug/L		98	70 - 130
Acenaphthene	1.94	1.77		ug/L		92	70 - 130
Acenaphthylene	1.94	1.98		ug/L		102	70 - 130
Anthracene	1.94	1.82		ug/L		94	70 - 130
Benzo[a]anthracene	1.94	2.11		ug/L		109	70 - 130
Benzo[a]pyrene	1.94	1.98		ug/L		102	70 - 130
Benzo[b]fluoranthene	1.94	2.19		ug/L		113	70 - 130
Benzo[g,h,i]perylene	1.94	2.13		ug/L		110	70 - 130
Benzo[k]fluoranthene	1.94	2.01		ug/L		104	70 - 130
Butylbenzylphthalate	1.94	2.24		ug/L		116	70 - 130
Chrysene	1.94	1.71		ug/L		88	70 - 130
Di (2-ethylhexyl)phthalate	1.94	2.02		ug/L		104	70 - 130
Dibenz(a,h)anthracene	1.94	2.08		ug/L		107	70 - 130
Diethylphthalate	1.94	1.96		ug/L		101	70 - 130
Dimethylphthalate	1.94	1.92		ug/L		99	70 - 130
Di-n-butyl phthalate	1.94	2.23		ug/L		115	70 - 130
Di-n-octyl phthalate	1.94	1.97		ug/L		102	60 - 122
Fluoranthene	1.94	2.16		ug/L		111	70 - 130
Fluorene	1.94	1.90		ug/L		98	70 - 130
Hexachlorobenzene	1.94	1.91		ug/L		99	70 - 130
Hexachlorocyclopentadiene	1.94	1.59		ug/L		82	70 - 130
Indeno[1,2,3-cd]pyrene	1.94	2.06		ug/L		106	70 - 130
Isophorone	1.94	1.94		ug/L		100	70 - 130
Naphthalene	1.94	1.87		ug/L		96	70 - 130
Phenanthrene	1.94	1.87		ug/L		97	70 - 130
Pyrene	1.94	2.20		ug/L		114	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene (Surr)	102		70 - 130

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 810-49813/1-A

Matrix: Water

Analysis Batch: 49920

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 49813

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Perylene-d12 (Surr)	104		70 - 130
Triphenylphosphate (Surr)	109		70 - 130

Lab Sample ID: LLCS 810-49813/3-A

Matrix: Water

Analysis Batch: 49920

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 49813

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[a]pyrene	0.0195	0.0171	J	ug/L		88	50 - 150
Di (2-ethylhexyl)phthalate	0.584	0.590		ug/L		101	50 - 150
Hexachlorobenzene	0.0973	0.0815	J	ug/L		84	50 - 150
Hexachlorocyclopentadiene	0.0973	0.0681	J	ug/L		70	50 - 150

	LLCS	LLCS	
Surrogate	%Recovery	Qualifier	Limits
2-Nitro-m-xylene (Surr)	103		70 - 130
Perylene-d12 (Surr)	97		70 - 130
Triphenylphosphate (Surr)	108		70 - 130

Lab Sample ID: 240-181074-6 MS

Matrix: Water

Analysis Batch: 49920

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Prep Batch: 49813

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.020	U	2.02	1.98		ug/L		98	70 - 130
2,6-Dinitrotoluene	0.040	U	2.02	1.80		ug/L		89	70 - 130
2-Methylnaphthalene	0.0099	U	2.02	2.02		ug/L		100	70 - 130
Acenaphthene	0.0099	U	2.02	1.83		ug/L		91	70 - 130
Acenaphthylene	0.0099	U	2.02	2.06		ug/L		102	70 - 130
Anthracene	0.0099	U	2.02	1.43		ug/L		71	70 - 130
Benzo[a]anthracene	0.0099	U	2.02	2.18		ug/L		108	70 - 130
Benzo[a]pyrene	0.012	U	2.02	2.01		ug/L		100	70 - 130
Benzo[b]fluoranthene	0.0099	U	2.02	2.38		ug/L		118	70 - 130
Benzo[g,h,i]perylene	0.020	U	2.02	2.14		ug/L		106	70 - 130
Benzo[k]fluoranthene	0.0099	U	2.02	2.06		ug/L		102	70 - 130
Butylbenzylphthalate	0.020	U	2.02	2.48		ug/L		123	70 - 130
Chrysene	0.0099	U	2.02	1.73		ug/L		86	70 - 130
Di (2-ethylhexyl)phthalate	0.099	U	2.02	2.20		ug/L		109	70 - 130
Dibenz(a,h)anthracene	0.0099	U	2.02	2.08		ug/L		103	70 - 130
Diethylphthalate	0.020	U	2.02	2.04		ug/L		101	70 - 130
Dimethylphthalate	0.30	U	2.02	2.06		ug/L		102	70 - 130
Di-n-butyl phthalate	0.070	U	2.02	2.34		ug/L		116	70 - 130
Di-n-octyl phthalate	0.020	U	2.02	2.19		ug/L		109	60 - 122
Fluoranthene	0.0099	U	2.02	2.21		ug/L		110	70 - 130
Fluorene	0.0099	U	2.02	1.94		ug/L		96	70 - 130
Hexachlorobenzene	0.0099	U	2.02	1.90		ug/L		94	70 - 130
Hexachlorocyclopentadiene	0.0099	U	2.02	1.66		ug/L		83	70 - 130
Indeno[1,2,3-cd]pyrene	0.0099	U	2.02	2.12		ug/L		105	70 - 130
Isophorone	0.0099	U	2.02	1.98		ug/L		98	70 - 130

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-181074-6 MS

Matrix: Water

Analysis Batch: 49920

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Prep Batch: 49813

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Phenanthrene	0.0099	U	2.02	1.90		ug/L		94	70 - 130
Pyrene	0.0099	U	2.02	2.32		ug/L		115	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Nitro-m-xylene (Surr)	103		70 - 130
Perylene-d12 (Surr)	102		70 - 130
Triphenylphosphate (Surr)	121		70 - 130

Lab Sample ID: 240-181074-6 MSD

Matrix: Water

Analysis Batch: 49920

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Prep Batch: 49813

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
1-Methylnaphthalene	0.020	U	2.03	2.03		ug/L		100	70 - 130	2	20
2,6-Dinitrotoluene	0.040	U	2.03	1.89		ug/L		93	70 - 130	5	30
2-Methylnaphthalene	0.0099	U	2.03	2.03		ug/L		100	70 - 130	1	20
Acenaphthene	0.0099	U	2.03	1.88		ug/L		93	70 - 130	3	31
Acenaphthylene	0.0099	U	2.03	2.09		ug/L		103	70 - 130	1	34
Anthracene	0.0099	U	2.03	1.52		ug/L		75	70 - 130	6	52
Benzo[a]anthracene	0.0099	U	2.03	2.28		ug/L		112	70 - 130	5	14
Benzo[a]pyrene	0.012	U	2.03	2.03		ug/L		100	70 - 130	1	26
Benzo[b]fluoranthene	0.0099	U	2.03	2.34		ug/L		115	70 - 130	1	20
Benzo[g,h,i]perylene	0.020	U	2.03	2.13		ug/L		105	70 - 130	0	14
Benzo[k]fluoranthene	0.0099	U	2.03	2.14		ug/L		105	70 - 130	4	20
Butylbenzylphthalate	0.020	U	2.03	2.53		ug/L		125	70 - 130	2	23
Chrysene	0.0099	U	2.03	1.79		ug/L		88	70 - 130	3	12
Di (2-ethylhexyl)phthalate	0.099	U	2.03	2.22		ug/L		110	70 - 130	1	18
Dibenz(a,h)anthracene	0.0099	U	2.03	2.18		ug/L		107	70 - 130	4	19
Diethylphthalate	0.020	U	2.03	2.15		ug/L		106	70 - 130	5	21
Dimethylphthalate	0.30	U	2.03	2.03		ug/L		100	70 - 130	1	20
Di-n-butyl phthalate	0.070	U	2.03	2.31		ug/L		114	70 - 130	1	20
Di-n-octyl phthalate	0.020	U	2.03	2.16		ug/L		106	60 - 122	1	20
Fluoranthene	0.0099	U	2.03	2.15		ug/L		106	70 - 130	3	13
Fluorene	0.0099	U	2.03	2.07		ug/L		102	70 - 130	6	25
Hexachlorobenzene	0.0099	U	2.03	1.94		ug/L		96	70 - 130	2	14
Hexachlorocyclopentadiene	0.0099	U	2.03	1.75		ug/L		86	70 - 130	5	29
Indeno[1,2,3-cd]pyrene	0.0099	U	2.03	2.13		ug/L		105	70 - 130	1	25
Isophorone	0.0099	U	2.03	1.84		ug/L		91	70 - 130	7	44
Phenanthrene	0.0099	U	2.03	1.91		ug/L		94	70 - 130	1	14
Pyrene	0.0099	U	2.03	2.30		ug/L		113	70 - 130	1	15

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Nitro-m-xylene (Surr)	100		70 - 130
Perylene-d12 (Surr)	105		70 - 130
Triphenylphosphate (Surr)	122		70 - 130

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-563809/11-A

Matrix: Water

Analysis Batch: 563984

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 563809

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	2.1	U	5.0	2.1	ug/L		03/01/23 07:28	03/02/23 10:48	1
3 & 4 Methylphenol	0.19	U	2.0	0.19	ug/L		03/01/23 07:28	03/02/23 10:48	1
3,3'-Dichlorobenzidine	1.2	U	5.0	1.2	ug/L		03/01/23 07:28	03/02/23 10:48	1
Benzoic acid	12	U	50	12	ug/L		03/01/23 07:28	03/02/23 10:48	1
Phenol	0.13	U	1.0	0.13	ug/L		03/01/23 07:28	03/02/23 10:48	1
4-Nitrophenol	2.2	U	10	2.2	ug/L		03/01/23 07:28	03/02/23 10:48	1
2-Butoxyethanol	0.0010	U	20	0.0010	ug/L		03/01/23 07:28	03/02/23 10:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	101		46 - 137	03/01/23 07:28	03/02/23 10:48	1
Phenol-d5 (Surr)	26		26 - 120	03/01/23 07:28	03/02/23 10:48	1
Nitrobenzene-d5 (Surr)	80		24 - 120	03/01/23 07:28	03/02/23 10:48	1
2-Fluorophenol (Surr)	42		19 - 120	03/01/23 07:28	03/02/23 10:48	1
2-Fluorobiphenyl (Surr)	86		33 - 120	03/01/23 07:28	03/02/23 10:48	1
2,4,6-Tribromophenol (Surr)	72		10 - 120	03/01/23 07:28	03/02/23 10:48	1

Lab Sample ID: LCS 240-563809/12-A

Matrix: Water

Analysis Batch: 563984

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 563809

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butoxyethanol	20.0	8.10	J	ug/L		40	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	78		46 - 137
Phenol-d5 (Surr)	21	S1-	26 - 120
Nitrobenzene-d5 (Surr)	55		24 - 120
2-Fluorophenol (Surr)	31		19 - 120
2-Fluorobiphenyl (Surr)	61		33 - 120
2,4,6-Tribromophenol (Surr)	54		10 - 120

Lab Sample ID: LCS 240-563809/15-A

Matrix: Water

Analysis Batch: 563984

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 563809

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	20.0	18.5		ug/L		93	58 - 125
3 & 4 Methylphenol	20.0	12.6		ug/L		63	40 - 120
3,3'-Dichlorobenzidine	40.0	32.3		ug/L		81	51 - 154
Benzoic acid	40.0	12	U	ug/L		27	10 - 120
Phenol	20.0	7.07		ug/L		35	10 - 120
4-Nitrophenol	40.0	20.2		ug/L		50	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	89		46 - 137
Phenol-d5 (Surr)	36		26 - 120
Nitrobenzene-d5 (Surr)	83		24 - 120

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563809/15-A

Matrix: Water

Analysis Batch: 563984

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 563809

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorophenol (Surr)	51		19 - 120
2-Fluorobiphenyl (Surr)	83		33 - 120
2,4,6-Tribromophenol (Surr)	83		10 - 120

Lab Sample ID: 240-181074-6 MS

Matrix: Water

Analysis Batch: 563984

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Prep Batch: 563809

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butoxyethanol	0.0010	U	19.4	5.53	J	ug/L		28	10 - 120

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14 (Surr)	63		46 - 137
Phenol-d5 (Surr)	0.8	S1-	26 - 120
Nitrobenzene-d5 (Surr)	61		24 - 120
2-Fluorophenol (Surr)	2	S1-	19 - 120
2-Fluorobiphenyl (Surr)	62		33 - 120
2,4,6-Tribromophenol (Surr)	21		10 - 120

Lab Sample ID: 240-181074-6 MSD

Matrix: Water

Analysis Batch: 563984

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Prep Batch: 563809

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
2-Butoxyethanol	0.0010	U	19.8	6.45	J	ug/L		33	10 - 120	15	35

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14 (Surr)	71		46 - 137
Phenol-d5 (Surr)	1	S1-	26 - 120
Nitrobenzene-d5 (Surr)	62		24 - 120
2-Fluorophenol (Surr)	3	S1-	19 - 120
2-Fluorobiphenyl (Surr)	69		33 - 120
2,4,6-Tribromophenol (Surr)	24		10 - 120

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Lab Sample ID: MB 400-614634/4

Matrix: Water

Analysis Batch: 614634

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propylene glycol	20	U	25	20	mg/L			03/02/23 12:41	1
di-propylene glycol	20	U	25	20	mg/L			03/02/23 12:41	1
Diethylene glycol	20	U	25	20	mg/L			03/02/23 12:41	1

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QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

Lab Sample ID: LCS 400-614634/5

Matrix: Water

Analysis Batch: 614634

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Propylene glycol	103	103		mg/L		100	80 - 126
di-propylene glycol	100	101		mg/L		101	70 - 130
Diethylene glycol	99.4	101		mg/L		102	70 - 130

Lab Sample ID: 240-181074-6 MS

Matrix: Water

Analysis Batch: 614634

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Propylene glycol	20	U	103	98.8		mg/L		96	70 - 130
di-propylene glycol	20	U	100	110		mg/L		110	70 - 130
Diethylene glycol	20	U	99.4	110		mg/L		111	70 - 130

Lab Sample ID: 240-181074-6 MSD

Matrix: Water

Analysis Batch: 614634

Client Sample ID: PW-207-20230228

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Propylene glycol	20	U	103	87.0		mg/L		84	70 - 130	13	50
di-propylene glycol	20	U	100	102		mg/L		102	70 - 130	8	50
Diethylene glycol	20	U	99.4	108		mg/L		108	70 - 130	2	50

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

GC/MS VOA

Analysis Batch: 50342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-1	PW-201-20230228	Total/NA	Water	524.2	
240-181074-2	PW-202-20230228	Total/NA	Water	524.2	
240-181074-3	PW-203-20230228	Total/NA	Water	524.2	
240-181074-4	PW-204-20230228	Total/NA	Water	524.2	
240-181074-5	PW-205-20230228	Total/NA	Water	524.2	
240-181074-6	PW-207-20230228	Total/NA	Water	524.2	
240-181074-7	DUP-03-20230228	Total/NA	Water	524.2	
240-181074-8	FB-02-20230228	Total/NA	Water	524.2	
240-181074-9	TB-02-20230228	Total/NA	Water	524.2	
MB 810-50342/5	Method Blank	Total/NA	Water	524.2	
240-181074-6 MS	PW-207-20230228	Total/NA	Water	524.2	
240-181074-6 MSD	PW-207-20230228	Total/NA	Water	524.2	

Analysis Batch: 50344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-1	PW-201-20230228	Total/NA	Water	524.2	
240-181074-2	PW-202-20230228	Total/NA	Water	524.2	
240-181074-3	PW-203-20230228	Total/NA	Water	524.2	
240-181074-4	PW-204-20230228	Total/NA	Water	524.2	
240-181074-5	PW-205-20230228	Total/NA	Water	524.2	
240-181074-6	PW-207-20230228	Total/NA	Water	524.2	
240-181074-7	DUP-03-20230228	Total/NA	Water	524.2	
240-181074-8	FB-02-20230228	Total/NA	Water	524.2	
MB 810-50344/6	Method Blank	Total/NA	Water	524.2	
240-181074-6 MS	PW-207-20230228	Total/NA	Water	524.2	
240-181074-6 MSD	PW-207-20230228	Total/NA	Water	524.2	

Analysis Batch: 50353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-1	PW-201-20230228	Total/NA	Water	524.2	
240-181074-2	PW-202-20230228	Total/NA	Water	524.2	
240-181074-3	PW-203-20230228	Total/NA	Water	524.2	
240-181074-4	PW-204-20230228	Total/NA	Water	524.2	
240-181074-5	PW-205-20230228	Total/NA	Water	524.2	
240-181074-6	PW-207-20230228	Total/NA	Water	524.2	
240-181074-7	DUP-03-20230228	Total/NA	Water	524.2	
240-181074-8	FB-02-20230228	Total/NA	Water	524.2	
MB 810-50353/6	Method Blank	Total/NA	Water	524.2	
240-181074-6 MS	PW-207-20230228	Total/NA	Water	524.2	
240-181074-6 MSD	PW-207-20230228	Total/NA	Water	524.2	

Analysis Batch: 50443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-9	TB-02-20230228	Total/NA	Water	524.2	
MB 810-50443/6	Method Blank	Total/NA	Water	524.2	

Analysis Batch: 50501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-9	TB-02-20230228	Total/NA	Water	524.2	
MB 810-50501/6	Method Blank	Total/NA	Water	524.2	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

GC/MS Semi VOA

Prep Batch: 49813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-1	PW-201-20230228	Total/NA	Water	525.2	
240-181074-2	PW-202-20230228	Total/NA	Water	525.2	
240-181074-3	PW-203-20230228	Total/NA	Water	525.2	
240-181074-4	PW-204-20230228	Total/NA	Water	525.2	
240-181074-5	PW-205-20230228	Total/NA	Water	525.2	
240-181074-6	PW-207-20230228	Total/NA	Water	525.2	
240-181074-7	DUP-03-20230228	Total/NA	Water	525.2	
240-181074-8	FB-02-20230228	Total/NA	Water	525.2	
MB 810-49813/2-A	Method Blank	Total/NA	Water	525.2	
LCS 810-49813/1-A	Lab Control Sample	Total/NA	Water	525.2	
LLCS 810-49813/3-A	Lab Control Sample	Total/NA	Water	525.2	
240-181074-6 MS	PW-207-20230228	Total/NA	Water	525.2	
240-181074-6 MSD	PW-207-20230228	Total/NA	Water	525.2	

Analysis Batch: 49920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-1	PW-201-20230228	Total/NA	Water	525.2	49813
240-181074-2	PW-202-20230228	Total/NA	Water	525.2	49813
240-181074-3	PW-203-20230228	Total/NA	Water	525.2	49813
240-181074-4	PW-204-20230228	Total/NA	Water	525.2	49813
240-181074-5	PW-205-20230228	Total/NA	Water	525.2	49813
240-181074-6	PW-207-20230228	Total/NA	Water	525.2	49813
240-181074-7	DUP-03-20230228	Total/NA	Water	525.2	49813
240-181074-8	FB-02-20230228	Total/NA	Water	525.2	49813
MB 810-49813/2-A	Method Blank	Total/NA	Water	525.2	49813
LCS 810-49813/1-A	Lab Control Sample	Total/NA	Water	525.2	49813
LLCS 810-49813/3-A	Lab Control Sample	Total/NA	Water	525.2	49813
240-181074-6 MS	PW-207-20230228	Total/NA	Water	525.2	49813
240-181074-6 MSD	PW-207-20230228	Total/NA	Water	525.2	49813

Prep Batch: 563809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-1	PW-201-20230228	Total/NA	Water	3510C	
240-181074-2	PW-202-20230228	Total/NA	Water	3510C	
240-181074-3	PW-203-20230228	Total/NA	Water	3510C	
240-181074-4	PW-204-20230228	Total/NA	Water	3510C	
240-181074-5	PW-205-20230228	Total/NA	Water	3510C	
240-181074-6	PW-207-20230228	Total/NA	Water	3510C	
240-181074-7	DUP-03-20230228	Total/NA	Water	3510C	
240-181074-8	FB-02-20230228	Total/NA	Water	3510C	
MB 240-563809/11-A	Method Blank	Total/NA	Water	3510C	
LCS 240-563809/12-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 240-563809/15-A	Lab Control Sample	Total/NA	Water	3510C	
240-181074-6 MS	PW-207-20230228	Total/NA	Water	3510C	
240-181074-6 MSD	PW-207-20230228	Total/NA	Water	3510C	

Analysis Batch: 563984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-1	PW-201-20230228	Total/NA	Water	8270E	563809
240-181074-2	PW-202-20230228	Total/NA	Water	8270E	563809
240-181074-3	PW-203-20230228	Total/NA	Water	8270E	563809

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

GC/MS Semi VOA (Continued)

Analysis Batch: 563984 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-4	PW-204-20230228	Total/NA	Water	8270E	563809
240-181074-5	PW-205-20230228	Total/NA	Water	8270E	563809
240-181074-6	PW-207-20230228	Total/NA	Water	8270E	563809
240-181074-7	DUP-03-20230228	Total/NA	Water	8270E	563809
240-181074-8	FB-02-20230228	Total/NA	Water	8270E	563809
MB 240-563809/11-A	Method Blank	Total/NA	Water	8270E	563809
LCS 240-563809/12-A	Lab Control Sample	Total/NA	Water	8270E	563809
LCS 240-563809/15-A	Lab Control Sample	Total/NA	Water	8270E	563809
240-181074-6 MS	PW-207-20230228	Total/NA	Water	8270E	563809
240-181074-6 MSD	PW-207-20230228	Total/NA	Water	8270E	563809

GC Semi VOA

Analysis Batch: 614634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181074-1	PW-201-20230228	Total/NA	Water	8015D	
240-181074-2	PW-202-20230228	Total/NA	Water	8015D	
240-181074-3	PW-203-20230228	Total/NA	Water	8015D	
240-181074-4	PW-204-20230228	Total/NA	Water	8015D	
240-181074-5	PW-205-20230228	Total/NA	Water	8015D	
240-181074-6	PW-207-20230228	Total/NA	Water	8015D	
240-181074-7	DUP-03-20230228	Total/NA	Water	8015D	
240-181074-8	FB-02-20230228	Total/NA	Water	8015D	
MB 400-614634/4	Method Blank	Total/NA	Water	8015D	
LCS 400-614634/5	Lab Control Sample	Total/NA	Water	8015D	
240-181074-6 MS	PW-207-20230228	Total/NA	Water	8015D	
240-181074-6 MSD	PW-207-20230228	Total/NA	Water	8015D	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-201-20230228

Lab Sample ID: 240-181074-1

Date Collected: 02/28/23 09:38

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50344	DC	EA SB	03/05/23 16:15
Total/NA	Analysis	524.2		1	50353	DC	EA SB	03/05/23 16:15
Total/NA	Analysis	524.2		1	50342	CM	EA SB	03/05/23 10:14
Total/NA	Prep	525.2			49813	AM	EA SB	03/01/23 10:12
Total/NA	Analysis	525.2		1	49920	TD	EA SB	03/02/23 02:33
Total/NA	Prep	3510C			563809	SDE	EET CAN	03/01/23 07:28
Total/NA	Analysis	8270E		1	563984	JMG	EET CAN	03/02/23 17:31
Total/NA	Analysis	8015D		1	614634	JAW	EET PEN	03/02/23 13:37

Client Sample ID: PW-202-20230228

Lab Sample ID: 240-181074-2

Date Collected: 02/28/23 10:24

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50344	DC	EA SB	03/05/23 16:38
Total/NA	Analysis	524.2		1	50353	DC	EA SB	03/05/23 16:38
Total/NA	Analysis	524.2		1	50342	CM	EA SB	03/05/23 10:38
Total/NA	Prep	525.2			49813	AM	EA SB	03/01/23 10:12
Total/NA	Analysis	525.2		1	49920	TD	EA SB	03/02/23 02:58
Total/NA	Prep	3510C			563809	SDE	EET CAN	03/01/23 07:28
Total/NA	Analysis	8270E		1	563984	JMG	EET CAN	03/02/23 16:02
Total/NA	Analysis	8015D		1	614634	JAW	EET PEN	03/02/23 14:05

Client Sample ID: PW-203-20230228

Lab Sample ID: 240-181074-3

Date Collected: 02/28/23 11:05

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50344	DC	EA SB	03/05/23 17:02
Total/NA	Analysis	524.2		1	50353	DC	EA SB	03/05/23 17:02
Total/NA	Analysis	524.2		1	50342	CM	EA SB	03/05/23 11:03
Total/NA	Prep	525.2			49813	AM	EA SB	03/01/23 10:12
Total/NA	Analysis	525.2		1	49920	TD	EA SB	03/02/23 03:23
Total/NA	Prep	3510C			563809	SDE	EET CAN	03/01/23 07:28
Total/NA	Analysis	8270E		1	563984	JMG	EET CAN	03/02/23 16:24
Total/NA	Analysis	8015D		1	614634	JAW	EET PEN	03/02/23 14:33

Client Sample ID: PW-204-20230228

Lab Sample ID: 240-181074-4

Date Collected: 02/28/23 11:53

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50344	DC	EA SB	03/05/23 17:26
Total/NA	Analysis	524.2		1	50353	DC	EA SB	03/05/23 17:26

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: PW-204-20230228

Lab Sample ID: 240-181074-4

Date Collected: 02/28/23 11:53

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50342	CM	EA SB	03/05/23 11:28
Total/NA	Prep	525.2			49813	AM	EA SB	03/01/23 10:12
Total/NA	Analysis	525.2		1	49920	TD	EA SB	03/02/23 03:48
Total/NA	Prep	3510C			563809	SDE	EET CAN	03/01/23 07:28
Total/NA	Analysis	8270E		1	563984	JMG	EET CAN	03/02/23 16:47
Total/NA	Analysis	8015D		1	614634	JAW	EET PEN	03/02/23 15:01

Client Sample ID: PW-205-20230228

Lab Sample ID: 240-181074-5

Date Collected: 02/28/23 12:38

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50344	DC	EA SB	03/05/23 17:49
Total/NA	Analysis	524.2		1	50353	DC	EA SB	03/05/23 17:49
Total/NA	Analysis	524.2		1	50342	CM	EA SB	03/05/23 11:52
Total/NA	Prep	525.2			49813	AM	EA SB	03/01/23 10:12
Total/NA	Analysis	525.2		1	49920	TD	EA SB	03/02/23 04:13
Total/NA	Prep	3510C			563809	SDE	EET CAN	03/01/23 07:28
Total/NA	Analysis	8270E		1	563984	JMG	EET CAN	03/02/23 17:09
Total/NA	Analysis	8015D		1	614634	JAW	EET PEN	03/02/23 15:28

Client Sample ID: PW-207-20230228

Lab Sample ID: 240-181074-6

Date Collected: 02/28/23 13:38

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50344	DC	EA SB	03/05/23 19:00
Total/NA	Analysis	524.2		1	50353	DC	EA SB	03/05/23 19:00
Total/NA	Analysis	524.2		1	50342	CM	EA SB	03/05/23 12:17
Total/NA	Prep	525.2			49813	AM	EA SB	03/01/23 10:12
Total/NA	Analysis	525.2		1	49920	TD	EA SB	03/02/23 04:39
Total/NA	Prep	3510C			563809	SDE	EET CAN	03/01/23 07:28
Total/NA	Analysis	8270E		1	563984	JMG	EET CAN	03/02/23 14:53
Total/NA	Analysis	8015D		1	614634	JAW	EET PEN	03/02/23 15:56

Client Sample ID: DUP-03-20230228

Lab Sample ID: 240-181074-7

Date Collected: 02/28/23 08:00

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50344	DC	EA SB	03/05/23 18:13
Total/NA	Analysis	524.2		1	50353	DC	EA SB	03/05/23 18:13
Total/NA	Analysis	524.2		1	50342	CM	EA SB	03/05/23 13:31

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Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Client Sample ID: DUP-03-20230228

Lab Sample ID: 240-181074-7

Date Collected: 02/28/23 08:00

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			49813	AM	EA SB	03/01/23 10:12
Total/NA	Analysis	525.2		1	49920	TD	EA SB	03/02/23 05:54
Total/NA	Prep	3510C			563809	SDE	EET CAN	03/01/23 07:28
Total/NA	Analysis	8270E		1	563984	JMG	EET CAN	03/02/23 17:56
Total/NA	Analysis	8015D		1	614634	JAW	EET PEN	03/02/23 17:20

Client Sample ID: FB-02-20230228

Lab Sample ID: 240-181074-8

Date Collected: 02/28/23 15:00

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50344	DC	EA SB	03/05/23 18:37
Total/NA	Analysis	524.2		1	50353	DC	EA SB	03/05/23 18:37
Total/NA	Analysis	524.2		1	50342	CM	EA SB	03/05/23 13:56
Total/NA	Prep	525.2			49813	AM	EA SB	03/01/23 10:12
Total/NA	Analysis	525.2		1	49920	TD	EA SB	03/02/23 06:19
Total/NA	Prep	3510C			563809	SDE	EET CAN	03/01/23 07:28
Total/NA	Analysis	8270E		1	563984	JMG	EET CAN	03/02/23 18:20
Total/NA	Analysis	8015D		1	614634	JAW	EET PEN	03/02/23 17:48

Client Sample ID: TB-02-20230228

Lab Sample ID: 240-181074-9

Date Collected: 02/28/23 09:00

Matrix: Water

Date Received: 02/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	50443	DC	EA SB	03/06/23 16:02
Total/NA	Analysis	524.2		1	50501	DC	EA SB	03/06/23 16:02
Total/NA	Analysis	524.2		1	50342	CM	EA SB	03/05/23 14:21

Laboratory References:

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Eaton Analytical South Bend

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	ISO/IEC 17025	5794.01	07-31-24
Alabama	State	40700	06-30-23
Alaska	State	IN00035	06-30-23
Arizona	State	AZ0432	07-26-23
Arkansas (DW)	State	EPA IN00035	06-30-23
California	State	2920	06-30-23
Colorado	State	IN00035	02-29-24
Connecticut	State	PH-0132	03-31-22 *
Delaware (DW)	State	IN00035	06-30-23
Florida	NELAP	E87775	06-30-23
Georgia (DW)	State	929	06-30-23
Hawaii	State	IN035	06-30-23
Idaho (DW)	State	IN00035	12-31-23
IL Dept. of Public Health (Micro)	State	17767	12-31-22 *
Illinois	NELAP	200001	09-30-23
Indiana	State	C-71-01	12-31-25
Indiana (Micro)	State	M-76-07	12-31-25
Iowa	State	IA Lab #098	11-01-23
Kansas	NELAP	E-10233	10-31-23
Kentucky (DW)	State	KY90056	12-31-22 *
Louisiana (DW)	State	LA014	12-31-23
Maine	State	IN00035	05-01-23
Maryland	State	209	03-31-23
Massachusetts	State	M-IN035	06-30-23
MI - RadChem Recognition	State	9926	06-30-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Michigan	State	9926	03-31-23
Minnesota	NELAP	1989807	12-31-23
Mississippi	State	IN00035	06-30-22 *
Missouri	State	880	09-30-24
Montana (DW)	State	CERT0026	01-02-24
Nebraska	State	NE-OS-05-04	06-30-23
Nevada	State	IN000352021-2	07-31-23
New Hampshire	NELAP	2124	11-05-23
New Jersey	NELAP	IN598	06-30-23
New Mexico	State	IN00035	06-30-23
New York	NELAP	11398	04-01-23
North Carolina (DW)	State	18700	07-31-23
North Dakota	State	R-035	06-30-23
Ohio	State	87775	06-30-23
Oklahoma	NELAP	D9508	08-31-23
Oregon	NELAP	4156	09-16-23
Pennsylvania	NELAP	68-00466	04-30-23
Puerto Rico	State	IN00035	04-01-23
Rhode Island	State	LAO00343	12-30-23
South Carolina	State	95005001	06-30-23
South Dakota (DW)	State	IN00035	12-31-22 *
Tennessee	State	TN02973	06-30-23
Texas	NELAP	T104704187-22-16	12-31-23
Texas	TCEQ Water Supply	TX207	06-30-23
USEPA Reg X SDWA	US Federal Programs	IN00035	08-20-22 *
USEPA UCMR 5	US Federal Programs	IN00035	12-31-25
Utah	NELAP	IN00035	07-31-23
Vermont	State	VT-8775	11-15-23
Virginia	NELAP	460275	03-14-23
Washington	State	C837	01-01-23 *
West Virginia (DW)	State	9927 C	12-31-23
Wisconsin	State	999766900	08-31-23
Wisconsin (Micro)	State	10121	12-31-22 *
Wyoming	State	8TMS-L	06-30-23

Laboratory: Eurofins Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-23
ANAB	ISO/IEC 17025	L2471	02-22-26
Arkansas DEQ	State	88-0689	09-01-23
California	State	2510	06-30-23
Florida	NELAP	E81010	06-30-23
Georgia	State	E81010(FL)	06-30-23
Illinois	NELAP	200041	10-09-23
Kansas	NELAP	E-10253	10-31-23
Kentucky (UST)	State	53	06-30-23
Louisiana (All)	NELAP	30976	06-30-23
Louisiana (DW)	State	LA017	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: East Palestine - Privileged & Confidential

Job ID: 240-181074-1

Laboratory: Eurofins Pensacola (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Maryland	State	233	09-30-23
Michigan	State	9912	06-30-23
North Carolina (WW/SW)	State	314	12-31-23
Oklahoma	NELAP	9810	08-31-23
Pennsylvania	NELAP	68-00467	01-31-24
South Carolina	State	96026	06-30-23
Tennessee	State	TN02907	06-30-23
Texas	NELAP	T104704286	09-30-23
US Fish & Wildlife	US Federal Programs	A22340	06-30-23
USDA	US Federal Programs	FLGNV23001	01-08-26
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-23
West Virginia DEP	State	136	03-05-23

Chain of Custody Record

645009

Environment Testing
America

Address: Accounts Payable
LEGAL CONTRACT
AECOM

TAL-8210

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact		Project Manager: <u>Steve Auttenkott</u>		Site Contact:		COC No: <u>645009</u>	
Company Name: <u>Norfolk Southern (NS)</u>		Tel/Email: <u>404-989-3899</u>		Lab Contact:		Date: <u>2-28-2023</u>	
Address: <u>1100 2-28-23</u>		Analysis Turnaround Time		Carrier: <u>VIA COURIER</u>		COCs	
City/State/Zip: <u>TRB 2-28-23</u>		☒ CALENDAR DAYS ☐ WORKING DAYS		Sampler:		For Lab Use Only:	
Phone: <u>TRB 2-28-23</u>		TAT if different from Below		Walk-in Client:		Lab Sampling:	
Fax: <u>TRB 2-28-23</u>		☐ 2 weeks		Job / SDG No.:		Sample Specific Notes:	
Project Name: <u>East Palestine</u>		☐ 1 week		Aq = <u>Aqueous</u>			
Site: <u>EP</u>		☐ 2 days					
P O # <u>60643120</u>		☒ 1 day					

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)
PW-201-20230228	2-28	938	G	Aq	8	N	N
PW-202-20230228	2-28	1024	G	Aq	8	N	N
PW-203-20230228	2-28	1105	G	Aq	8	N	N
PW-204-20230228	2-28	1153	G	Aq	8	N	N
PW-205-20230228	2-28	1238	G	Aq	8	N	N
PW-207-20230228	2-28	1330	G	Aq	8	N	N
DUP-03-20230228	2-28	800	G	Aq	8	N	N
FB-02-20230228	2-28	1500	G	Aq	8	N	N
TB-02-20230228	2-28	0900	LAB SUPPLIED	Aq	8	N	N

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other ASCORB.C

Possible Hazard Identification: 7 = Na2SO4

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Special Instructions/QC Requirements & Comments: CONTACT RUN WITH QUESTIONS: DO NOT RUN 524.2 ETHANOLIC CONTACT AND CONTACT FOR ALL SAMPLES WITH IMMEDIATE PROVED ON ICE

Custody Seals Intact: ☐ Yes ☐ No

Relinquished by: [Signature] Company: AECOM Date/Time: 2-28 2300

Relinquished by: [Signature] Company: ETNC Date/Time: 2-28 2300

Relinquished by: [Signature] Company: ETNC Date/Time: 2-28 2300

Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login #: 181074

Client Accom

Site Name NSRR-ER

Cooler unpacked by: mp

Cooler Received on 2-28-23

Opened on 2-28-23

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time

Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- Cooler temperature upon receipt ☒ See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
- Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA
- Shippers' packing slip attached to the cooler(s)? Yes No
- Did custody papers accompany the sample(s)? Yes No
- Were the custody papers relinquished & signed in the appropriate place? Yes No
- Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- Did all bottles arrive in good condition (Unbroken)? Yes No
- Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
- Were correct bottle(s) used for the test(s) indicated? Yes No
- Sufficient quantity received to perform indicated analyses? Yes No
- Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.
- Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
- Were VOAs on the COC? Yes No NA
- Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
- Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # covered Yes No
- Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page Samples processed by:

Glycol vials - Acc Say 207 MSD - 5 vials. → labeled 2 as MS/3 as MSD
bottles marked - only rec'd 524 vials. On COC TB has Amber 12
vials marked. → Received 524 vials

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) 1L Sodium Sulfite pres for 207 MSD were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

WI-NC-099 Cooler Receipt Form Page 2 - Multiple Coolers

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Address:

Accounts Payable
PETER COMPANY
ARCOM

Chain of Custody Record

645009

eurofins

Environment Testing
America

Regulatory Program:

☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact

Company Name: **Nonoik Southern (NS)**

Address: **TLB-2-28-23**

City/State/Zip: **TLB-2-28-23**

Phone: **TLB-2-28-23**

Fax: **TLB-2-28-23**

Project Name: **East Palestine**

Site: **EP**

P.O.#: **60643120**

Project Manager: **Svea Audenkenkamp**

Telephone: **404-989-3899**

Analysis Turnaround Time: **2 weeks**

Calendar Days: **1 day**

Working Days: **1 day**

Lab Contact:

Date: **7-28-2023**

Carrier: **Via courier**

COC No: **645009**

Sample:

For Lab Use Only:

Walk-in Client:

Lab Sampling:

Job / SDG No.:

Sample Specific Notes:

Sample Identification

Sample Date: **7-28-23** Sample Time: **9:38** Sample Type: **G** Matrix: **AQ** # of Cont: **3**

Sample Date: **7-28-23** Sample Time: **10:24** Sample Type: **G** Matrix: **AQ** # of Cont: **3**

Sample Date: **7-28-23** Sample Time: **11:05** Sample Type: **G** Matrix: **AQ** # of Cont: **3**

Sample Date: **7-28-23** Sample Time: **11:53** Sample Type: **G** Matrix: **AQ** # of Cont: **3**

Sample Date: **7-28-23** Sample Time: **12:38** Sample Type: **G** Matrix: **AQ** # of Cont: **3**

Sample Date: **7-28-23** Sample Time: **13:38** Sample Type: **G** Matrix: **AQ** # of Cont: **3**

Sample Date: **7-28-23** Sample Time: **8:00** Sample Type: **G** Matrix: **AQ** # of Cont: **3**

Sample Date: **7-28-23** Sample Time: **15:00** Sample Type: **G** Matrix: **AQ** # of Cont: **3**

Sample Date: **7-28-23** Sample Time: **09:00** Sample Type: **UAS** Matrix: **AQ** # of Cont: **3**



240-181074 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other: **Ascorbic**

Possible Hazard Identification: **7 = Na2SO4**

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Comments Section if the lab is to dispose of the sample.

Special Instructions/AC Requirements & Comments: **DO NOT RUN 524.2 SMOKE CONTRACT FOR ALL SAMPLES W/TE IMMEDIATELY PRIOR TO ICE**

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180 S. Van Buren Avenue

Barberton, OH 44203

Barberton, OH 44203

Phone: 330-497-9396 Fax: 330-497-0772



Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)				Lab PM: Johnson, Opal	Carrier Tracking No(s):	COC No: 240-164468.1																																																																																																				
Client Contact: Shipping/Receiving				Phone:	State of Origin: Ohio	Page: Page 1 of 2																																																																																																				
Company: Eurofins Environment Testing Southeast,				E-Mail: Opal.Johnson@et.eurofinsus.com	Job #: 240-181074-1																																																																																																					
Address: 333355 McLemore Drive,				Accreditations Required (See note):																																																																																																						
City: Pensacola				Analysis Requested 8015D_Dall (MOD) Local Method Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No) Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma L - EDA Other: Total Number of Containers																																																																																																						
PO #:																																																																																																										
WO #:																																																																																																										
Project #:																																																																																																										
SSOW#:																																																																																																										
Due Date Requested: 3/2/2023				TAT Requested (days):																																																																																																						
Sample Identification - Client ID (Lab ID) <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=comp, G=grab)</th> <th>Matrix (W=water, S=solid, O=organic, BT=biota, A=air)</th> <th>Preservation Codes:</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>8015D_Dall (MOD) Local Method</th> <th>Total Number of Containers</th> <th>Special Instructions/Note:</th> </tr> </thead> <tbody> <tr> <td>PW-201-20230228 (240-181074-1)</td> <td>2/28/23</td> <td>09:38 Eastern</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>PW-202-20230228 (240-181074-2)</td> <td>2/28/23</td> <td>10:24 Eastern</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>PW-203-20230228 (240-181074-3)</td> <td>2/28/23</td> <td>11:05 Eastern</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>PW-204-20230228 (240-181074-4)</td> <td>2/28/23</td> <td>11:53 Eastern</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>PW-205-20230228 (240-181074-5)</td> <td>2/28/23</td> <td>12:38 Eastern</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>PW-207-20230228 (240-181074-6)</td> <td>2/28/23</td> <td>13:38 Eastern</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>PW-207-20230228 (240-181074-6MS)</td> <td>2/28/23</td> <td>13:38 Eastern</td> <td>MS</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>PW-207-20230228 (240-181074-6MSD)</td> <td>2/28/23</td> <td>13:38 Eastern</td> <td>MSD</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>DUP-03-20230228 (240-181074-7)</td> <td>2/28/23</td> <td>08:00 Eastern</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> </tbody> </table>				Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=organic, BT=biota, A=air)	Preservation Codes:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015D_Dall (MOD) Local Method	Total Number of Containers	Special Instructions/Note:	PW-201-20230228 (240-181074-1)	2/28/23	09:38 Eastern	Water		X	X	X	3		PW-202-20230228 (240-181074-2)	2/28/23	10:24 Eastern	Water		X	X	X	3		PW-203-20230228 (240-181074-3)	2/28/23	11:05 Eastern	Water		X	X	X	3		PW-204-20230228 (240-181074-4)	2/28/23	11:53 Eastern	Water		X	X	X	3		PW-205-20230228 (240-181074-5)	2/28/23	12:38 Eastern	Water		X	X	X	3		PW-207-20230228 (240-181074-6)	2/28/23	13:38 Eastern	Water		X	X	X	3		PW-207-20230228 (240-181074-6MS)	2/28/23	13:38 Eastern	MS		X	X	X	3		PW-207-20230228 (240-181074-6MSD)	2/28/23	13:38 Eastern	MSD		X	X	X	3		DUP-03-20230228 (240-181074-7)	2/28/23	08:00 Eastern	Water		X	X	X	3		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months		
				Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=organic, BT=biota, A=air)	Preservation Codes:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015D_Dall (MOD) Local Method	Total Number of Containers	Special Instructions/Note:																																																																																													
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Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements:																																																																																																						
Primary Deliverable Rank: 2				Method of Shipment:																																																																																																						
Empty Kit Relinquished by: <i>[Signature]</i> Date: <i>3-1-23</i>				Received by: <i>M</i> Date/Time: <i>3-2-23 13:5</i> Company:																																																																																																						
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Relinquished by: Date/Time:				Received by: Date/Time: Company:																																																																																																						
Custody Seals Intact: <i>[Signature]</i>				Cooler Temperature(s) °C and Other Remarks: <i>3.0. 150 10</i>																																																																																																						

Phone: 330-497-9396 Fax: 330-497-0772

Eurofins Canton

180 S. Van Buren Avenue

Barberton, OH 44203

Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record



eurofins

Environment Testing

Client Information (Sub Contract Lab)		Sampler:		Lab PM: Johnson, Opal		Carrier Tracking No(s):		COC No: 240-164447.1	
Client Contact:		Phone:		E-Mail: Opal.Johnson@et.eurofinsus.com		State of Origin: Ohio		Page: Page 1 of 2	
Shipping/Receiving									
Company: Eurofins Eaton Analytical				Accreditations Required (See note):				Job #: 240-181074-1	
Address: 110 S Hill Street,		Due Date Requested: 3/2/2023		Analysis Requested Field Filtered Sample (Yes or No) ☐ Perform MS/MSD (Yes or No) ☐ 524.2_Pres_Prec/ (MOD) VOC, 524.2 Extended 525.2_Prec/525.2_Prep (MOD) Monrovia List (GML 525)		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - FDA Y - Trizma Z - other (specify)		Total Number of containers:	
City: South Bend		TAT Requested (days):							
State, Zip: IN, 46617		PO #:							
Phone: 574-233-4777(Tel) 574-233-8207(Fax)		WO #:							
Email:									
Project Name: NSEP - Privileged & Confidential		Project #: 24030748							
Site:		SSOW#:							
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	
PW-201-20230228 (240-181074-1)		2/28/23		09:38 Eastern		Water		X X	
PW-202-20230228 (240-181074-2)		2/28/23		10:24 Eastern		Water		X X	
PW-203-20230228 (240-181074-3)		2/28/23		11:05 Eastern		Water		X X	
PW-204-20230228 (240-181074-4)		2/28/23		11:53 Eastern		Water		X X	
PW-205-20230228 (240-181074-5)		2/28/23		12:38 Eastern		Water		X X	
PW-207-20230228 (240-181074-6)		2/28/23		13:38 Eastern		Water		X X	
PW-207-20230228 (240-181074-6MS)		2/28/23		13:38 Eastern		MS Water		X X	
PW-207-20230228 (240-181074-6MSD)		2/28/23		13:38 Eastern		MSD Water		X X	
DUP-03-20230228 (240-181074-7)		2/28/23		08:00 Eastern		Water		X X	
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.									
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
Unconfirmed					☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify)					Special Instructions/QC Requirements:				
Primary Deliverable Rank: 2									
Empty Kit Being Requested:					Method of Shipment:				
Requisitioned by:		Date/Time:		Company:		Received by:		Date/Time:	
Requisitioned by:		Date/Time:		Company:		Received by:		Date/Time:	
Requisitioned by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: -1.8 to 0.8°C					

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-181074-1

Login Number: 181074

List Number: 2

Creator: Spurgeon, Sheri

List Source: Eurofins Eaton Analytical South Bend

List Creation: 03/01/23 09:52 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-181074-1

Login Number: 181074

List Number: 3

Creator: Peckinpaugh, Marshall

List Source: Eurofins Pensacola

List Creation: 03/02/23 11:01 AM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0°C IR10
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	