



November 7, 2022

Mr. Craig Thomas
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 5
Superfund and Emergency Management Division
77 West Jackson Boulevard
Chicago, Illinois 60604

Subject: Data Validation Report
RFP Paper Mill Fire Site - ER
EPA Contract No.: 68HE0519D0005
Task Order/Task Order Line Item No.: 68HE0520F0032/0001DJ104
Document Tracking No. 1480

Dear Mr. Thomas:

Tetra Tech, Inc. (Tetra Tech) is submitting this data validation report for five air samples collected at the RFP Paper Mill Fire Site. The samples were collected on October 8th, 9th, and 10th 2022, and were analyzed for volatile organic compounds by EPA method TO-15 in selective ion monitoring (SIM) mode by ALS Environmental. The final laboratory data package was received on October 19th, 2022.

Analytical data were evaluated in general accordance with the Tetra Tech *Quality Assurance Project Plan, Superfund Technical Assessment and Response Team (START V), EPA Region 5, Revision 3* (January 2022), the *National Functional Guidelines for Organic Superfund Methods Data Review* (November 2020).

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

If you have any questions regarding this data validation report, please call me at (312)-201-7435.

Sincerely,

A handwritten signature in black ink that reads 'Taylor M. Cooper'.

Taylor Cooper
Environmental Chemist

Enclosure

cc: Chris Burns, Tetra Tech Program Manager
Katherine Cooper, Tetra Tech Project Manager
Mayra ArroyoOrtiz, Tetra Tech Project Document Control Coordinator
TO-TOLIN File

ATTACHMENT

**DATA VALIDATION REPORT
ALS ENVIRONMENTAL REPORT NOS. P2204519 AND P2204520**

**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Site Name	RFP Paper Mill Fire Site - ER	TO/TOLIN No.	68HE0520F0032/0001DJ104
Document Tracking No.	1480a	Technical Reviewer (signature and date)	<i>Bruce Welsh</i> 11/3/2022
Data Reviewer (signature and date)	<i>Taylor M Cooper</i> 10/31/2022	Laboratory	ALS Environmental – Simi Valley, CA
Laboratory Report No.	P2204519	Analyses	Volatile organic compounds (VOCs) by EPA method TO-15 in selective ion monitoring (SIM) mode
Samples and Matrix	One air sample	Collection Date(s)	October 8 th , 2022
Field Duplicate Pairs	None	Field QC Blanks	None

INTRODUCTION

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

OVERALL EVALUATION

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

Data completeness:

Within Criteria	Exceedance/Notes
Y	



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	While no qualifications were applied, the chain of custody (COC) requested EPA method TO-15, but after the COC was filled out and the samples were submitted to the laboratory it was determined EPA method TO-15 SIM was required for the project. The laboratory was instructed via email to analyze the samples by EPA method TO-15 SIM. While no qualifications were applied, the data user should note the sample canisters were received by the laboratory without custody seals.

Instrument Performance Checks:

Within Criteria	Exceedance/Notes
Y	

Initial Calibration:

Within Criteria	Exceedance/Notes
Y	

Continuing Calibration:

Within Criteria	Exceedance/Notes
N	The continuing calibration verification (CCV) percent difference for trichlorofluoromethane exceeded the Region 5 QAPP 30% acceptance limit; therefore, the trichlorofluoromethane result for sample RFP-AA-S01-221008-N was qualified as estimated (flagged J).

Calibration Verification:

Within Criteria	Exceedance/Notes
N	The initial calibration verification percent recovery for naphthalene was 61%, below the laboratory 70% acceptance limit; therefore, the naphthalene result for sample RFP-AA-S01-221008-N was qualified as estimated (flagged UJ).



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Method blanks:

Within Criteria	Exceedance/Notes
N	Method blank contains 0.035 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of toluene, which is a value greater than the method detection limit (MDL), but less than the reporting limit (RL) (identified as “MRL” in the laboratory report). The sample contained 0.19 $\mu\text{g}/\text{m}^3$ of toluene, which is a result greater than the RL, but less than ten times the concentration of toluene in the method blank; therefore, the toluene result for sample RFP-AA-S01-221008-N was qualified as estimated, possibly biased high (flagged J+).

Field blanks:

Within Criteria	Exceedance/Notes
NA	

Interference Check Samples (ICS) (ICP metals only):

Within Criteria	Exceedance/Notes
NA	

Surrogates and labeled compounds:

Within Criteria	Exceedance/Notes
N	Recovery of bromofluorobenzene in the method blank was below the lower control limit. The recovery of bromofluorobenzene in the sample is in control. No qualifications were applied because the surrogate failure in the blank was an isolated occurrence.

MS/MSDs:

Within Criteria	Exceedance/Notes
NA	



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Post digestion spikes:

Within Criteria	Exceedance/Notes
NA	

Serial dilutions:

Within Criteria	Exceedance/Notes
NA	

Laboratory duplicates:

Within Criteria	Exceedance/Notes
N	The START Region 5 QAPP requires one laboratory duplicate per extraction batch of 20 samples. However, the laboratory did not perform a laboratory duplicate analysis. While no qualifications were applied, the data user should note the QAPP requirement was not met for these samples.

Field duplicates:

Within Criteria	Exceedance/Notes
NA	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
N	Trichlorofluoromethane was detected above the upper control limit on the laboratory control sample (LCS) and the laboratory control sample duplicate (LCSD). There was a detection on sample RFP-AA-S01-221008-N for trichlorofluoromethane, therefore, result is estimated (flagged J+). The LCS/LCSD average recovery for naphthalene was less than the Region 5 QAPP acceptance criteria; therefore, the naphthalene non-detect result for sample RFP-AA-S01-221008-N was qualified as estimated (flagged UJ).



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Sample dilutions:

Within Criteria	Exceedance/Notes
Y	RFP-AA-S01-221008-N: The residual canister dilution factor was 1.30.

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

Second column confirmation (GC and HPLC analyses only):

Within Criteria	Exceedance/Notes
NA	

Internal Standards:

Within Criteria	Exceedance/Notes
Y	

Target analyte identification:

Within Criteria	Exceedance/Notes
N	The secondary ion 43 for acetone was flagged by the instrument software because the ratio exceeded the upper acceptance limit, and the q-value for acetone was 74, less than the acceptance limit of 80; therefore, the acetone sample result was raised to the RL and qualified as nondetect (flagged U).



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Analyte quantitation and MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	The laboratory PDF report reported the field sample results in units of $\mu\text{g}/\text{m}^3$ and parts per billion by volume; however, the EDD and hence the qualified data table only presented the sample results in units of $\mu\text{g}/\text{m}^3$. Detections between the MDL and the RL were reported as estimated qualified as estimated (flagged J)

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

Other [Canister certification]:

Within Criteria	Exceedance/Notes
N	<p>RFP-AA-S01-221008-N: The raw instrument data showed the canister quality control check contained chloromethane, acrolein, acetone, methylene chloride, benzene, toluene, ethylbenzene, m&p-xylene, styrene, o-xylene, 1,1,2,2-tetrachloroethane, and 1,2,4-trimethylbenzene. The raw instrument data for the sample results and the raw instrument data for the canister quality control check were compared.</p> <ul style="list-style-type: none"> • No qualifications were applied for 1,4-dioxane, 1,1,2,2-tetrachloroethane, benzene, chloromethane, methylene chloride, styrene, and trichloroethene because the raw instrument concentration of these analytes in the sample was greater than the RL and greater than ten times the concentration in the canister quality control check, or nondetect. • The raw instrument concentrations of 1,2,4-trimethylbenzene, acetone, acrolein, ethylbenzene, m,p-xylene, and o-xylene in the sample were less than the RL; therefore, the sample results for these analytes were raised to the RL and qualified as non-detect (flagged U). • The raw instrument concentration of toluene in the sample was greater than the RL, but less than ten times the raw instrument concentration of toluene in the canister quality control check; therefore, the toluene sample result was qualified as estimated, possibly biased high (flagged J+).



DATA VALIDATION CHECKLIST – STAGE 3 EPA REGION 5 START CONTRACT

Overall Qualifications:

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

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



STAGE 3 DATA VALIDATION ORGANICS CHECKLIST FOR RECALCULATIONS

Data Package Number: P2204519

Method: TO-15 SIM

Validation Element	Objective	Sample ID, Run Date, and Run Time	Results (include units) and Notes (Use check mark to indicate correct result; include hand-calculated result if performed)
Initial Calibration	Confirm (in raw data) that an initial calibration begins each analytical sequence, before all QC or env. samples are analyzed, using the correct number of standards (and calibration blank, if required).	Vinyl Chloride 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 44/45	The initial ICAL was analyzed August 25th, 2022 on instrument MS19
	Confirm (in raw data) that an initial calibration occurs at the required frequency.	Vinyl Chloride 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 44/45	Confirmed
	Confirm that initial calibration criteria are met. Spot-recalculate initial calibration results.	Vinyl Chloride 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 44/45	1.742 Calculated RRF: (Target Peak Area*IS Conc)/(IS Peak Area*Target Conc) = (1125*1000 pg)/ (31965*20.2) = 1.742
		Vinyl Chloride 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 44/45	Calculated RRF: Sum RRFs = 12.077 12.077/8 = 1.510
		Vinyl Chloride 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 44/45	Calculated %RSD 14.57 see ICAL Validation sheet

Recalculate at least one result (and %R or %D values, as appropriate) from each of the following QC samples and environmental samples, and compare your calculated results with the results the laboratory reports on their summary forms found earlier in the data package. They should agree. If they do not, then there may be problems with the package and further review is required. Note that for some QC samples, your comparison may mean simply confirming that the result reported in the summary form matches the result in the raw data – there may not be any calculation.

SHOW ALL WORK FOR RECALCULATIONS

STAGE 3 DATA VALIDATION ORGANICS CHECKLIST FOR RECALCULATIONS

Data Package Number: P2204519

Method: TO-15 SIM

Validation Element	Objective	Sample ID, Run Date, and Run Time	Results (include units) and Notes (Use check mark to indicate correct result; include hand-calculated result if performed)
Tune	Confirm BFB Percent Relative Abundance	Page 91	Percent Difference = (raw Abn of target mass 174 - Raw Abn target mass 95)*100 = (147747/192747)*100 = 76.7%
ICV	Check result	Vinyl Chloride page 44,79	(Target peak area*ISTD Conc)/(IS Peak Area*RRF) (24356*1000)/(33805*1.510) = 477.142 pg
	Recalculate one RRF	Vinyl Chloride page 44,79	(Target peak area*ISTD Conc)/(IS Peak Area*Target Conc) (24356*1000)/(33805*505) = 1.4267
	Recalculate one %R	Vinyl Chloride page 85	[Result (923.727)/Spike amount (1020.0)]*100 = 90.56%
A CCV applicable to our samples	Check result	Vinyl Chloride page 86, 88	(Target peak area* ISTD Conc)/(IS Peak Area*RRF) (42320*1000)/(28386*1.510) = 987.335 pg
	Recalculate one RRF	Vinyl Chloride page 86, 88	(Target peak area* ISTD Conc)/(IS Peak Area*Target spiked conc) (42320*1000)/(28386*1010) = 1.476
	Recalculate one %D	Vinyl Chloride page 86	[(Average RF)-CCRF]/(Average RF)*100 [(1.510-1.476)/(1.510)]*100 = 2.25%
Method Blank	Check result	Toluene page 35	(Target Peak area* ISTD Conc)/(IS Peak Area*RRF) (3847*1000)/(85736*1.277) = 35.137 pg (35.137 pg x 1 ng)/(1000 pg*1L) = 0.035137 ng/L = 0.035 ug/m3
Surrogate	Recalculate one %R	MB page 35 surrogate 1,2-Dichloroethane-d4	(1109.114/1000)*100 = 110.91%

STAGE 3 DATA VALIDATION ORGANICS CHECKLIST FOR RECALCULATIONS

Data Package Number: P2204519

Method: TO-15 SIM

Validation Element	Objective	Sample ID, Run Date, and Run Time	Results (include units) and Notes (Use check mark to indicate correct result; include hand-calculated result if performed)
MS	Check result	N/A	N/A
	Recalculate one %R	N/A	N/A
MSD	Check result	N/A	N/A
	Recalculate one %R	N/A	N/A
	Recalculate one RPD value between MS and MSD	N/A	N/A
LCS	Check result	Vinyl Chloride page 12, 38	$\frac{(\text{target response} * \text{ISTD conc})}{(\text{ISTD response} * \text{mean RRF})}$ $\frac{(40307 * 1000)}{(26994 * 1.510)} = 988.86 \text{ pg}$ $\frac{(\text{On Column Conc} * 1 \text{ ng})}{(\text{Standard Vol} * \text{ISTD Conc})}$ $\frac{(989.121 \text{ pg} * 1 \text{ ng})}{(1000 \text{ pg} * 0.050\text{L})} = 19.78 \text{ ug/m}^3$
	Recalculate one %R	Vinyl Chloride page 12	$(19.8 \text{ ug/m}^3 / 20.4 \text{ ug/m}^3) * 100 = 97.06\%$
LCSD	Check result	Vinyl Chloride page 12, 41	$\frac{(\text{target response} * \text{ISTD conc})}{(\text{ISTD response} * \text{mean RRF})}$ $\frac{(44867 * 1000)}{(28658 * 1.510)} = 1036.822 \text{ pg}$ $\frac{(\text{On Column Conc} * 1 \text{ ng})}{(\text{Standard Vol} * \text{ISTD Conc})}$ $\frac{(1037.092 \text{ pg} * 1 \text{ ng})}{(1000 \text{ pg} * 0.050\text{L})} = 20.74 \text{ ug/m}^3$
	Recalculate one %R	Vinyl Chloride page 12	$(20.7 \text{ ug/m}^3 / 20.4 \text{ ug/m}^3) * 100 = 101.47\%$
	Recalculate one RPD value between LCS and LCSD	Vinyl Chloride page 12	$[(19.8 - 20.7) / ((19.8 + 20.7) / 2)] * 100 = 4.44\%$

STAGE 3 DATA VALIDATION ORGANICS CHECKLIST FOR RECALCULATIONS

Data Package Number: P2204519

Method: TO-15 SIM

Validation Element	Objective	Sample ID, Run Date, and Run Time	Results (include units) and Notes (Use check mark to indicate correct result; include hand-calculated result if performed)
Internal Standards	Recalculate one %R	1,4-Difluorobenzene (IS) in MB page 15 and 35	$(85736/137691)*100 = 62.267\%$ - result verified
	Recalculate one delta RT	1,4-Difluorobenzene (IS) in MB page 15 and 35	$RRT = 24 \text{ HR standard RT (11.52)} - \text{Sample RT(11.53)} = 0.01$
Sample Result for tetrachloroethene	Check result	RFP-AA-S01-221008-N page 16	$\frac{[(\text{target response} * \text{IS conc} * \text{DF}) / (\text{IS response} * \text{mean RRF})]}{\text{PCE mean RRF} = 0.289}$ $= (587 * 1000) / (136760 * 0.289) = 14.8519$ $= (14.851 * 1.30) / (1 * 1000)$ $= 0.0193 \text{ ug/m}^3$
MDL for tetrachloroethene	Check result	RFP-AA-S01-221008-N page 16	$\text{MDL} * \text{DF} * (\text{standard volume} / \text{volume analyzed})$ $0.0086 \text{ ug/m}^3 * 1.30 \text{ df} * (1\text{L}/1\text{L}) = 0.01118 \text{ ug/m}^3$
RL for tetrachloroethene	Check result	RFP-AA-S01-221008-N page 16	$\text{MRL} * \text{DF} * (\text{standard volume} / \text{volume analyzed})$ $0.025 \text{ ug/m}^3 * 1.30 \text{ df} * (1\text{L}/1\text{L}) = 0.0325 \text{ ug/m}^3$
Convert $\mu\text{g}/\text{m}^3$ to ppbV (air only) for tetrachloroethene	Check result	RFP-AA-S01-221008-N page 8	$pV = nrt$ $n = pV / rt$ $n = (0.019 \text{ ug} * 1\text{g}) / (10^6 \text{ ug} * 165.83 \text{ g/mol}) = 1.14575 * 10^{-10} \text{ mol}$ $v = nrt / p$ $v = [(1.14575 * 10^{-10}) * 0.08206 * 298.15] / 1$ $v = 2.803218 * 10^{-9} \text{ L} * 10^6$ $= 0.0028 \text{ ppbV}$

Formulas:

* $\text{Conc. (mg/kg)} = \{(\text{Raw Conc. in ug/L}) \times (\text{Vol. in L}) \times \text{DF}\} / \{(\text{Sample mass in kg}) \times (\text{fractional solids}) \times (1000)\}$

** $\text{Serial dilution conc. (ug/L)} = (\text{Raw Conc. in ug/L}) \times (\text{DF, typically 5})$

*** $\%R = [(\text{Measured Value}) / (\text{True Value})] \times 100$

**** $\%R = \{(\text{Spike sample result}) - (\text{Sample result})\} / (\text{Spike added}) \times 100$

$\text{RPD} = [(A-B) / \{(A + B)/2\}] \times 100$

$\text{Percent difference} = [(\text{Original Result} - \text{Diluted Result}) / \text{Original Result}] \times 100$

Report: P2204519

Initial Calibration - S19082522.M

Instrument: MS19

TO-15-SIM

Vinyl Chloride

Page: 44-47

Level	1	2	3	4	5	6	7	8
Vinyl Chloride Concentration (ng)*	0.0202	0.0505	0.101	0.505	1.01	5.05	10.1	25.25
Vinyl Chloride Response	1125	2513	4776	25006	45394	230910	435513	1005749
Bromochloromethane (IS) Concentration (pg)	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
Bromochloromethane (IS) Response	31965	30816	32018	29016	28193	29567	32620	37096
RRF	1.742	1.615	1.477	1.707	1.594	1.546	1.322	1.074

Std Dev: 0.2200

Mean RF: 1.510

%RSD: 14.57



Level 1 RRF Check	Response	Conc.	Units	Page
Vinyl Chloride	1125	20.2	pg	49
Bromochloromethane (IS)	31965	1000.0	pg	49

1125	x	1000.0	=	1.742	✓
31965	x	20.2			

IS = internal standard

RFP PAPER MILL FIRE SITE - AIR ANALYTICAL RESULTS SUMMARY
ALS ENVIRONMENTAL REPORT NO. P2204519

Sample ID	Method	CAS #	Analyte	Lab Result	Lab Qual	MDL	RL	Units	Val Result	Val Qual
RFP-AA-S01-221008-N	TO-15 SIM	71-55-6	1,1,1-Trichloroethane	0.033	U	0.012	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	79-34-5	1,1,2,2-Tetrachloroethane	0.033	U	0.011	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	79-00-5	1,1,2-Trichloroethane	0.13	U	0.0077	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	76-13-1	1,1,2-Trichlorotrifluoroethane	0.48		0.011	0.033	UG/M3	0.48	
RFP-AA-S01-221008-N	TO-15 SIM	75-34-3	1,1-Dichloroethane	0.033	U	0.011	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	75-35-4	1,1-Dichloroethene	0.033	U	0.011	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	120-82-1	1,2,4-Trichlorobenzene	0.065	U	0.026	0.065	UG/M3	0.065	U
RFP-AA-S01-221008-N	TO-15 SIM	95-63-6	1,2,4-Trimethylbenzene	0.036	J	0.021	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	96-12-8	1,2-Dibromo 3-Chloropropane	0.13	U	0.018	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	106-93-4	1,2-Dibromoethane	0.033	U	0.0087	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	95-50-1	1,2-Dichlorobenzene	0.033	U	0.023	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	107-06-2	1,2-Dichloroethane	0.034		0.011	0.033	UG/M3	0.034	
RFP-AA-S01-221008-N	TO-15 SIM	78-87-5	1,2-Dichloropropane	0.0081	J	0.0079	0.033	UG/M3	0.0081	J
RFP-AA-S01-221008-N	TO-15 SIM	108-67-8	1,3,5-Trimethylbenzene	0.13	U	0.018	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	106-99-0	1,3-Butadiene	0.065	U	0.01	0.065	UG/M3	0.065	U
RFP-AA-S01-221008-N	TO-15 SIM	541-73-1	1,3-Dichlorobenzene	0.033	U	0.022	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	106-46-7	1,4-Dichlorobenzene	0.033	U	0.026	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	123-91-1	1,4-Dioxane	0.13	U	0.011	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	67-64-1	Acetone	3.1	J	0.3	3.3	UG/M3	3.3	U
RFP-AA-S01-221008-N	TO-15 SIM	107-02-8	Acrolein	0.085	J	0.046	0.26	UG/M3	0.26	U
RFP-AA-S01-221008-N	TO-15 SIM	71-43-2	Benzene	0.16		0.02	0.098	UG/M3	0.16	
RFP-AA-S01-221008-N	TO-15 SIM	75-27-4	Bromodichloromethane	0.033	U	0.0075	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	74-83-9	Bromomethane	0.028	J	0.0087	0.033	UG/M3	0.028	J
RFP-AA-S01-221008-N	TO-15 SIM	56-23-5	Carbon Tetrachloride	0.47		0.0092	0.033	UG/M3	0.47	
RFP-AA-S01-221008-N	TO-15 SIM	108-90-7	Chlorobenzene	0.13	U	0.013	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	75-00-3	Chloroethane	0.033	U	0.01	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	67-66-3	Chloroform	0.069	J	0.01	0.13	UG/M3	0.069	J
RFP-AA-S01-221008-N	TO-15 SIM	74-87-3	Chloromethane	0.16		0.034	0.065	UG/M3	0.16	
RFP-AA-S01-221008-N	TO-15 SIM	156-59-2	cis-1,2-Dichloroethene	0.033	U	0.0094	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	10061-01-5	cis-1,3-Dichloropropene	0.065	U	0.0092	0.065	UG/M3	0.065	U
RFP-AA-S01-221008-N	TO-15 SIM	124-48-1	Dibromochloromethane	0.033	U	0.0083	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	75-71-8	Dichlorodifluoromethane (CFC 12)	2.5		0.011	0.065	UG/M3	2.5	
RFP-AA-S01-221008-N	TO-15 SIM	75-09-2	Dichloromethane (Methylene Chloride)	0.19		0.01	0.13	UG/M3	0.19	

RFP PAPER MILL FIRE SITE - AIR ANALYTICAL RESULTS SUMMARY
ALS ENVIRONMENTAL REPORT NO. P2204519

Sample ID	Method	CAS #	Analyte	Lab Result	Lab Qual	MDL	RL	Units	Val Result	Val Qual
RFP-AA-S01-221008-N	TO-15 SIM	100-41-4	Ethylbenzene	0.024	J	0.016	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	87-68-3	Hexachlorobutadiene	0.13	U	0.017	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	179601-23-1	m,p-Xylenes	0.073	J	0.031	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	1634-04-4	Methyl tert-Butyl Ether	0.033	U	0.016	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	91-20-3	Naphthalene	0.13	U	0.029	0.13	UG/M3	0.13	UJ
RFP-AA-S01-221008-N	TO-15 SIM	95-47-6	o-Xylene	0.031	J	0.017	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	100-42-5	Styrene	0.13	U	0.016	0.13	UG/M3	0.13	U
RFP-AA-S01-221008-N	TO-15 SIM	127-18-4	Tetrachloroethene	0.019	J	0.011	0.033	UG/M3	0.019	J
RFP-AA-S01-221008-N	TO-15 SIM	108-88-3	Toluene	0.19	B	0.016	0.13	UG/M3	0.19	J+
RFP-AA-S01-221008-N	TO-15 SIM	156-60-5	trans-1,2-Dichloroethene	0.033	U	0.014	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	10061-02-6	trans-1,3-Dichloropropene	0.065	U	0.0062	0.065	UG/M3	0.065	U
RFP-AA-S01-221008-N	TO-15 SIM	79-01-6	Trichloroethene	0.033	U	0.01	0.033	UG/M3	0.033	U
RFP-AA-S01-221008-N	TO-15 SIM	75-69-4	Trichlorofluoromethane	1.3	V	0.011	0.065	UG/M3	1.3	J+
RFP-AA-S01-221008-N	TO-15 SIM	75-01-4	Vinyl Chloride	0.033	U	0.016	0.033	UG/M3	0.033	U

**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Site Name	RFP Paper Mill Fire Site - ER	TO/TOLIN No.	68HE0520F0032/0001DJ104
Document Tracking No.	1480b	Technical Reviewer (signature and date)	<i>Bruce Welsh</i> 11/3/2022
Data Reviewer (signature and date)	<i>Taylor M Cooper</i> 10/31/2022	Laboratory	ALS Environmental – Simi Valley, CA
Laboratory Report No.	P2204520	Analyses	Volatile organic compounds (VOCs) by EPA method TO-15 in selective ion monitoring (SIM) mode
Samples and Matrix	4 air samples	Collection Date(s)	October 8 th , 9 th , and 10 th , 2022
Field Duplicate Pairs	None	Field QC Blanks	None

INTRODUCTION

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

OVERALL EVALUATION

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

Data completeness:

Within Criteria	Exceedance/Notes
N	Sample TTS0001-TTF00035 was present on the COC but no results are available for this sample because no sample volume was collected. TTS0001-TTF00035 was equipment that was submitted to the laboratory for recertification.



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	<p>While no qualifications were applied, the chain of custody (COC) requested EPA method TO-15, but after the COC was filled out and the samples were submitted to the laboratory it was determined EPA method TO-15 SIM was required for the project. The laboratory was instructed via email to analyze the samples by EPA method TO-15 SIM.</p> <p>While no qualifications were applied, the data user should note the sample canisters were received by the laboratory without custody seals.</p> <p>The COC confirmed the field-measured ending vacuum pressures for all sample canisters were within the acceptance criteria of -2 inches of mercury (“Hg) to -10 “Hg. However, upon laboratory sample receipt the laboratory-measured canister vacuum pressures for samples MPF-EH-01-221008 and MPF-AB-01-221010 were positive and greater than zero suggesting that the sample had a leak that allowed the canister to fill up to atmospheric pressure between the end of the sampling event and the time of the sample’s receipt at the laboratory. Such a leak might have contaminated the sample or diluted the sample with air unintended for sampling. The sample may have been contaminated with air from unknown locations that were not intended to be sampled from, and the results for samples MPF-EH-01-221008 and MPF-AB-01-221010 should be used with caution. No qualifications were applied.</p>

Instrument Performance Checks:

Within Criteria	Exceedance/Notes
Y	

Initial Calibration:

Within Criteria	Exceedance/Notes
Y	



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Continuing Calibration:

Within Criteria	Exceedance/Notes
N	The continuing calibration verification (CCV) percent difference for trichlorofluoromethane exceeded the Region 5 QAPP 30% acceptance limit; therefore, the trichlorofluoromethane result for all samples were qualified as estimated (flagged J).

Calibration Verification:

Within Criteria	Exceedance/Notes
N	The initial calibration verification percent recovery for naphthalene was 61%, below the laboratory 70% acceptance limit; therefore, the naphthalene results for all samples were qualified as estimated (flagged J/UJ).

Method blanks:

Within Criteria	Exceedance/Notes
N	The method blank contains 0.035 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of toluene, which is a value greater than the method detection limit (MDL), but less than the reporting limit (RL) (identified as “MRL” in the laboratory report). No qualifications were applied for samples MPF-AB-01-221010, MPF-DW-01-221009, and MPF-DW-02-221009 because the concentration of toluene was greater than the RL and greater than ten times the concentration of toluene in the method blank. The concentration of toluene in sample MPF-EH-01-221008 was greater than the RL but less than ten times the concentration of toluene in the method blank; therefore, the toluene result for sample MPF-EH-01-221008 was qualified as estimated, possibly biased high (flagged J+).

Field blanks:

Within Criteria	Exceedance/Notes
NA	



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Interference Check Samples (ICS) (ICP metals only):

Within Criteria	Exceedance/Notes
NA	

Surrogates and labeled compounds:

Within Criteria	Exceedance/Notes
N	Recovery of bromofluorobenzene in the method blank was below the lower control limit. The recovery of bromofluorobenzene in the sample is in control. No qualifications will be applied because the surrogate failure in the blank was an isolated occurrence.

MS/MSDs:

Within Criteria	Exceedance/Notes
NA	

Post digestion spikes:

Within Criteria	Exceedance/Notes
NA	

Serial dilutions:

Within Criteria	Exceedance/Notes
NA	



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Laboratory duplicates:

Within Criteria	Exceedance/Notes
N	The START Region 5 QAPP requires one laboratory duplicate per extraction batch of 20 samples. However, the laboratory did not perform a laboratory duplicate analysis. While no qualifications were applied, the data user should note the QAPP requirement was not met for these samples.

Field duplicates:

Within Criteria	Exceedance/Notes
NA	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
N	Trichlorofluoromethane was detected above the upper control limit on the laboratory control sample (LCS) and the laboratory control sample duplicate (LCSD). There was a detection on all samples for trichlorofluoromethane, therefore, result is estimated (flagged J+). The LCS/LCSD average recovery for naphthalene was less than the Region 5 QAPP acceptance criteria; therefore, the naphthalene non-detect result for sample MPF-AB-01-221010 and MPF-EH-01-221008 was qualified as estimated (flagged UJ).

Sample dilutions:

Within Criteria	Exceedance/Notes
Y	The residual canister dilution factors ranged from 1.21x to 1.35x.

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Second column confirmation (GC and HPLC analyses only):

Within Criteria	Exceedance/Notes
NA	

Internal Standards:

Within Criteria	Exceedance/Notes
Y	

Target analyte identification:

Within Criteria	Exceedance/Notes
N	<p>MPF-DW-01-221009: The secondary ion 43 for acetone was flagged by the instrument software because the ratio exceeded the upper acceptance limit; therefore, the acetone sample result was qualified as estimated (flagged J).</p> <p>MPF-DW-02-221009: The secondary ion 43 for acetone was flagged by the instrument software because the ratio exceeded the upper acceptance limit, and the q-value for acetone was 69 less than the acceptance limit of 80; therefore, the acetone sample result was raised to the RL and qualified as nondetect (flagged U) at the laboratory reported result. The secondary ion 66 for chloroethane was flagged by the instrument software because secondary ion 66 was not present, and the q-value for chloroethane was 43 less than the acceptance limit of 80; however, no qualification was applied because the chloroethane sample result was nondetect.</p> <p>MPF-EH-01-221008 and MPF-AB-01-221010: The secondary ion 43 for acetone was flagged by the instrument software because the ratio exceeded the upper acceptance limit; therefore, the acetone sample results for these two samples were qualified as estimated (flagged J).</p>

Analyte quantitation and MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

Other [Canister certification]:

Within Criteria	Exceedance/Notes
N	<p>MPF-DW-01-221009: The raw instrument data showed the canister quality control check contained dichlorodifluoromethane, chloromethane, 1,3-butadiene, acrolein, acetone, trichlorofluoromethane, methylene chloride, chloroform, benzene, 1,4-dioxane, toluene, ethylbenzene, m-&p-xylenes, styrene, o-xylene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, 1,2,4-trichlorobenzene, and naphthalene. The raw instrument data for the sample results and the raw instrument data for the canister quality control check were compared.</p> <ul style="list-style-type: none"> • The raw instrument concentrations of 1,3,5-trimethylbenzene, 1,4-dioxane, and chloroform in the sample were less than the RL; therefore, the sample results for these analytes were raised to the RL and qualified as non-detect (flagged U). • No qualifications were applied for the remaining analytes because the raw instrument concentration of the analytes in the sample was greater than the RL and greater than ten times the concentration in the canister quality control check, or nondetect. <p>MPF-DW-02-221009: The raw instrument data showed the canister quality control check contained dichlorodifluoromethane, chloromethane, acrolein, acetone, trichlorofluoromethane, dichloromethane (methylene chloride), chloroform, benzene, carbon tetrachloride, toluene, ethylbenzene, m,p-xylene, o-xylene, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene. The raw instrument data for the sample results and the raw instrument data for the canister quality control check were compared.</p> <ul style="list-style-type: none"> • The raw instrument concentration of dichloromethane (methylene chloride) in the sample was greater than the RL, but less than ten times the raw instrument concentration in the canister quality control check; therefore, the sample result was qualified as estimated, possibly biased high (flagged J+). • The raw instrument concentration of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, acrolein, chloroform, ethylbenzene, and o-xylene in the sample were less than the RL; therefore, the sample results for these analytes were raised to the RL and qualified as non-detect (flagged U). • No qualifications were applied for the remaining analytes because the raw instrument concentration of the analytes in the sample was greater than the RL and greater than ten times the concentration in the canister quality control check.



**DATA VALIDATION CHECKLIST – STAGE 3
EPA REGION 5 START CONTRACT**

Other [Canister certification] continued:

Within Criteria	Exceedance/Notes
N	<p>MPF-EH-01-221008: The raw instrument data showed the canister quality control check contained acetone, acrolein, benzene, chloroethane, chloromethane, methylene chloride, m,p-xylenes, naphthalene, o-xylene, styrene, and toluene. The raw instrument data for the sample results and the raw instrument data for the canister quality control check were compared.</p> <ul style="list-style-type: none"> • The raw instrument concentrations of chloroethane, m,p-xylenes, and o-xylene in the sample were less than the RL; therefore, the sample results for these analytes were raised to the RL and qualified as non-detect (flagged U). • The raw instrument concentration of acrolein in the sample was greater than the RL, but less than ten times the raw instrument concentration of acrolein in the canister quality control check; therefore, the acrolein sample result was qualified as estimated, possibly biased high (flagged J+). • No qualifications were applied for the remaining analytes because the raw instrument concentration of the analytes in the sample was greater than the RL and greater than ten times the concentration in the canister quality control check, or nondetect. <p>MPF-AB-01-221010: The raw instrument data showed the canister quality control check contained 1,1,1-trichloroethane, 1,2,4-trimethylbenzene, 1,2-dibromoethane, 1,2-dichloropropane, 1,3,5-trimethylbenzene, acetone, acrolein, benzene, bromomethane, carbon Tetrachloride, chloroform, chloromethane, dichlorodifluoromethane, methylene chloride, ethylbenzene, m,p-xylenes, naphthalene, o-xylene, tetrachloroethene, toluene, trans-1,2-dichloroethene, and trichlorofluoromethane. The raw instrument data for the sample results and the raw instrument data for the canister quality control check were compared.</p> <ul style="list-style-type: none"> • The raw instrument concentrations of 1,2-dichloropropane, 1,3,5-trimethylbenzene, acrolein, bromomethane, chloroform, ethylbenzene, naphthalene, and tetrachloroethene in the sample were less than the RL; therefore, the sample results for these analytes were raised to the RL and qualified as non-detect (flagged U). • No qualifications were applied for the remaining analytes because the raw instrument concentration of the analytes in the sample was greater than the RL and greater than ten times the concentration in the canister quality control check, or nondetect.



DATA VALIDATION CHECKLIST – STAGE 3 EPA REGION 5 START CONTRACT

Overall Qualifications:

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

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



STAGE 3 DATA VALIDATION ORGANICS CHECKLIST FOR RECALCULATIONS

Data Package Number: P2204520

Method: TO-15 SIM

Validation Element	Objective	Sample ID, Run Date, and Run Time	Results (include units) and Notes (Use check mark to indicate correct result; include hand-calculated result if performed)
Initial Calibration	Confirm (in raw data) that an initial calibration begins each analytical sequence, before all QC or env. samples are analyzed, using the correct number of standards (and calibration blank, if required).	Chloroethane 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 106/107	The initial ICAL was analyzed August 25th, 2022 on instrument MS19
	Confirm (in raw data) that an initial calibration occurs at the required frequency.	Chloroethane 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 106/107	Confirmed
	Confirm that initial calibration criteria are met. Spot-recalculate initial calibration results.	Chloroethane 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 106/107	1.742 Calculated RRF: (Target Peak Area*IS Conc)/(IS Peak Area*Target Conc) = (706*1000 pg)/ (31965*20.6) = 1.072
		Chloroethane 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 106/107	Calculated \overline{RRF}: Sum RRFs = 7.324 7.324/8 = 0.9155
Chloroethane 20pg S19082522 ICAL 08/25/2022 @ 21:18 Page 106/107		Calculated %RSD 11.63 see ICAL Validation sheet	

Recalculate at least one result (and %R or %D values, as appropriate) from each of the following QC samples and environmental samples, and compare your calculated results with the results the laboratory reports on their summary forms found earlier in the data package. They should agree. If they do not, then there may be problems with the package and further review is required. Note that for some QC samples, your comparison may mean simply confirming that the result reported in the summary form matches the result in the raw data – there may not be any calculation.

SHOW ALL WORK FOR RECALCULATIONS

STAGE 3 DATA VALIDATION ORGANICS CHECKLIST FOR RECALCULATIONS

Data Package Number: P2204520

Method: TO-15 SIM

Validation Element	Objective	Sample ID, Run Date, and Run Time	Results (include units) and Notes (Use check mark to indicate correct result; include hand-calculated result if performed)
Tune	Confirm BFB Percent Relative Abundance	Page 153	Percent Difference = (raw Abn of target mass 174 - Raw Abn target mass 95)*100 = (147747/192747)*100 = 76.7%
ICV	Check result	Chloroethane page 106/144	(Target peak area*ISTD Conc)/(IS Peak Area*RRF) (26939*1000)/(30857*0.916) = 953.086 pg
	Recalculate one RRF	Chloroethane page 106/144	(Target peak area*ISTD Conc)/(IS Peak Area*Target Conc) (26939*1000)/(30857*1030) = 0.847599
	Recalculate one %R	Chloroethane page 108	[Result (953.5)/Spike amount (1030.0)]*100 = 92.6%
A CCV applicable to our samples	Check result	Chloroethane page 108	(Target peak area* ISTD Conc)/(IS Peak Area*RRF) (28896*1000)/(28386*0.916) = 1111.317 pg
	Recalculate one RRF	Chloroethane page 108	(Target peak area* ISTD Conc)/(IS Peak Area*Target spiked conc) (28896*1000)/(28386*1030) = 0.9883
	Recalculate one %D	Chloroethane page 148	[(Average RF)-CCRF]/(Average RF)*100 [(0.916-0.988)/(0.916)]*100 = 7.86%
Method Blank	Check result	Benzene page 97	(Target Peak area* ISTD Conc)/(IS Peak Area*RRF) (1785*1000)/(25017*6.313) = 11.3023 pg
Surrogate	Recalculate one %R	MB page 97 surrogate Toluene-d8	(1055.988/1000)*100 = 105.5988%

STAGE 3 DATA VALIDATION ORGANICS CHECKLIST FOR RECALCULATIONS

Data Package Number: P2204520

Method: TO-15 SIM

Validation Element	Objective	Sample ID, Run Date, and Run Time	Results (include units) and Notes (Use check mark to indicate correct result; include hand-calculated result if performed)
MS	Check result	N/A	N/A
	Recalculate one %R	N/A	N/A
MSD	Check result	N/A	N/A
	Recalculate one %R	N/A	N/A
	Recalculate one RPD value between MS and MSD	N/A	N/A
LCS	Check result	Chloroethane page 18, 100	$\frac{(\text{target response} * \text{ISTD conc})}{(\text{ISTD response} * \text{mean RRF})}$ $\frac{(27240 * 1000)}{(26994 * 0.916)} = 1101.652 \text{ pg}$ $\frac{(\text{On Column Conc} * 1 \text{ng} * \text{DF})}{(\text{Standard Vol} * \text{ISTD Conc})}$ $\frac{(1102.173 \text{ pg} * 1 * 1)}{(0.05 \text{L} * 1000)} = 22.043 \text{ ug/m}^3$
	Recalculate one %R	Chloroethane page 18	$\frac{(22.0 \text{ ug/m}^3 / 20.8 \text{ ug/m}^3) * 100}{1} = 105.769\%$
LCSD	Check result	Chloroethane page 18, 100	$\frac{(\text{target response} * \text{ISTD conc})}{(\text{ISTD response} * \text{mean RRF})}$ $\frac{(30023 * 1000)}{(28658 * 0.916)} = 1143.7016 \text{ pg}$ $\frac{(\text{On Column Conc} * 1 \text{ng} * \text{DF})}{(\text{Standard Vol} * \text{ISTD Conc})}$ $\frac{(1144.243 \text{ pg} * 1 * 1)}{(0.05 \text{L} * 1000)} = 22.885 \text{ ug/m}^3$
	Recalculate one %R	Chloroethane page 18	$\frac{(22.9 \text{ ug/m}^3 / 20.8 \text{ ug/m}^3) * 100}{1} = 110.096\%$
	Recalculate one RPD value between LCS and LCSD	Chloroethane page 18	$\frac{[(22.0 - 22.9)]}{[(22.0 + 22.9) / 2]} * 100 = 4.0\%$

STAGE 3 DATA VALIDATION ORGANICS CHECKLIST FOR RECALCULATIONS

Data Package Number: P2204520

Method: TO-15 SIM

Validation Element	Objective	Sample ID, Run Date, and Run Time	Results (include units) and Notes (Use check mark to indicate correct result; include hand-calculated result if performed)
Internal Standards	Recalculate one %R	1,4-Difluorobenzene (IS) in MB page 15 and 97	$(85736/137691)*100 = 62.267\%$ - result verified
	Recalculate one delta RT	1,4-Difluorobenzene (IS) in MB page 15 and 97	$RRT = 24 \text{ HR standard RT (11.52)} - \text{Sample RT(11.53)} = 0.01$
Sample Result for tetrachloroethene	Check result	MPF-DW-02-221009 page 9	$\frac{[(\text{target response} * \text{IS conc} * \text{DF}) / (\text{IS response} * \text{mean RRF})]}{\text{PCE mean RRF} = 0.289}$ $= (1145 * 1000) / (139733 * 0.289) = 28.3536$ $= (28.352 * 1.35) / (1 * 1000)$ $= 0.038275 \text{ ug/m}^3$
MDL for tetrachloroethene	Check result	MPF-DW-02-221009 page 9	$\text{MDL} * \text{DF} * (\text{standard volume} / \text{volume analyzed})$ $0.0086 \text{ ug/m}^3 * 1.35 \text{ df} * (1\text{L}/1\text{L}) = 0.0116 \text{ ug/m}^3$
RL for tetrachloroethene	Check result	MPF-DW-02-221009 page 9	$\text{MRL} * \text{DF} * (\text{standard volume} / \text{volume analyzed})$ $0.025 \text{ ug/m}^3 * 1.35 \text{ df} * (1\text{L}/1\text{L}) = 0.03375 \text{ ug/m}^3$
Convert $\mu\text{g}/\text{m}^3$ to ppbV (air only) for tetrachloroethene	Check result	RFP-AA-S01-221008-N page 8	$pV = nrt$ $n = pV / rt$ $n = (0.038 \text{ ug} * 1\text{g}) / (10^6 \text{ ug} * 165.83 \text{ g/mol}) = 2.2915 * 10^{-10} \text{ mol}$ $v = nrt / p$ $v = [(2.2915 * 10^{-10}) * 0.08206 * 298.15] / 1$ $v = 5.606435 * 10^{-9} \text{ L} * 10^6$ $= 0.0056 \text{ ppbV}$

Formulas:

* $\text{Conc. (mg/kg)} = \{(\text{Raw Conc. in ug/L}) \times (\text{Vol. in L}) \times \text{DF}\} / \{(\text{Sample mass in kg}) \times (\text{fractional solids}) \times (1000)\}$

** $\text{Serial dilution conc. (ug/L)} = (\text{Raw Conc. in ug/L}) \times (\text{DF, typically 5})$

*** $\%R = [(\text{Measured Value}) / (\text{True Value})] \times 100$

**** $\%R = \{(\text{Spike sample result}) - (\text{Sample result})\} / (\text{Spike added}) \times 100$

$\text{RPD} = [(A-B) / \{(A + B)/2\}] \times 100$

$\text{Percent difference} = [(\text{Original Result} - \text{Diluted Result}) / \text{Original Result}] \times 100$

Report: P2204520

Initial Calibration - S19082522.M

Instrument: MS19

TO-15-SIM

Vinyl Chloride

Page: 106-108

Level	1	2	3	4	5	6	7	8
Chloroethane Concentration (ng)*	0.0206	0.0515	0.103	0.515	1.03	5.15	10.3	25.75
Chloroethane Response	706	1522	2877	15033	27063	141011	278139	696452
Bromochloromethane (IS) Concentration (pg)	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
Bromochloromethane (IS) Response	31965	30816	32018	29016	28193	29567	32620	37096
RRF	1.072	0.959	0.872	1.006	0.932	0.926	0.828	0.729

Std Dev: 0.1064

Mean RF: 0.916

%RSD: 11.63



Level 1 RRF Check	Response	Conc.	Units	Page
Chloroethane	706	20.6	pg	111
Bromochloromethane (IS)	31965	1000.0	pg	111

706	x	1000.0	=	1.072	
31965	x	20.6			

IS = internal standard

RFP PAPER MILL FIRE SITE – ER AIR ANALYTICAL RESULTS SUMMARY
ALS ENVIRONMENTAL REPORT NO. P2204520

Sample ID	Method	Cas #	Analyte	Lab Result	Lab Qual	MDL	RL	Units	Val Results	Val Qual
MPF-AB-01-221010	TO-15 SIM	71-55-6	1,1,1-Trichloroethane	0.031	U	0.011	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	79-34-5	1,1,2,2-Tetrachloroethane	0.031	U	0.011	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	79-00-5	1,1,2-Trichloroethane	0.12	U	0.0073	0.12	UG/M3	0.12	U
MPF-AB-01-221010	TO-15 SIM	76-13-1	1,1,2-Trichlorotrifluoroethane	0.5		0.01	0.031	UG/M3	0.50	
MPF-AB-01-221010	TO-15 SIM	75-34-3	1,1-Dichloroethane	0.031	U	0.01	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	75-35-4	1,1-Dichloroethene	0.031	U	0.011	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	120-82-1	1,2,4-Trichlorobenzene	0.062	U	0.025	0.062	UG/M3	0.062	U
MPF-AB-01-221010	TO-15 SIM	95-63-6	1,2,4-Trimethylbenzene	0.15		0.02	0.12	UG/M3	0.15	
MPF-AB-01-221010	TO-15 SIM	96-12-8	1,2-Dibromo 3-Chloropropane	0.12	U	0.017	0.12	UG/M3	0.12	U
MPF-AB-01-221010	TO-15 SIM	106-93-4	1,2-Dibromoethane	0.031	U	0.0083	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	95-50-1	1,2-Dichlorobenzene	0.031	U	0.022	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	107-06-2	1,2-Dichloroethane	0.045		0.01	0.031	UG/M3	0.045	
MPF-AB-01-221010	TO-15 SIM	78-87-5	1,2-Dichloropropane	0.012	J	0.0076	0.031	UG/M3	0.31	U
MPF-AB-01-221010	TO-15 SIM	108-67-8	1,3,5-Trimethylbenzene	0.052	J	0.017	0.12	UG/M3	0.12	U
MPF-AB-01-221010	TO-15 SIM	106-99-0	1,3-Butadiene	0.062	U	0.0098	0.062	UG/M3	0.062	U
MPF-AB-01-221010	TO-15 SIM	541-73-1	1,3-Dichlorobenzene	0.031	U	0.021	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	106-46-7	1,4-Dichlorobenzene	0.031	U	0.025	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	123-91-1	1,4-Dioxane	0.12	U	0.011	0.12	UG/M3	0.12	U
MPF-AB-01-221010	TO-15 SIM	67-64-1	Acetone	5.4		0.29	3.1	UG/M3	5.4	J
MPF-AB-01-221010	TO-15 SIM	107-02-8	Acrolein	0.11	J	0.043	0.25	UG/M3	0.25	U
MPF-AB-01-221010	TO-15 SIM	71-43-2	Benzene	0.51		0.019	0.093	UG/M3	0.51	
MPF-AB-01-221010	TO-15 SIM	75-27-4	Bromodichloromethane	0.031	U	0.0072	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	74-83-9	Bromomethane	0.027	J	0.0083	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	56-23-5	Carbon Tetrachloride	0.48		0.0088	0.031	UG/M3	0.48	
MPF-AB-01-221010	TO-15 SIM	108-90-7	Chlorobenzene	0.12	U	0.012	0.12	UG/M3	0.12	U
MPF-AB-01-221010	TO-15 SIM	75-00-3	Chloroethane	0.031	U	0.0097	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	67-66-3	Chloroform	0.093	J	0.0099	0.12	UG/M3	0.12	U
MPF-AB-01-221010	TO-15 SIM	74-87-3	Chloromethane	0.13		0.032	0.062	UG/M3	0.13	
MPF-AB-01-221010	TO-15 SIM	156-59-2	cis-1,2-Dichloroethene	0.031	U	0.0089	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	10061-01-5	cis-1,3-Dichloropropene	0.062	U	0.0088	0.062	UG/M3	0.062	U
MPF-AB-01-221010	TO-15 SIM	124-48-1	Dibromochloromethane	0.031	U	0.0079	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	75-71-8	Dichlorodifluoromethane (CFC 12)	2.5		0.011	0.062	UG/M3	2.5	
MPF-AB-01-221010	TO-15 SIM	75-09-2	Dichloromethane (Methylene Chloride)	0.49		0.0097	0.12	UG/M3	0.49	

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Sample ID	Method	Cas #	Analyte	Lab Result	Lab Qual	MDL	RL	Units	Val Results	Val Qual
MPF-AB-01-221010	TO-15 SIM	100-41-4	Ethylbenzene	0.1	J	0.015	0.12	UG/M3	0.12	U
MPF-AB-01-221010	TO-15 SIM	87-68-3	Hexachlorobutadiene	0.12	U	0.016	0.12	UG/M3	0.12	U
MPF-AB-01-221010	TO-15 SIM	179601-23-1	m,p-Xylenes	0.4		0.03	0.12	UG/M3	0.40	
MPF-AB-01-221010	TO-15 SIM	1634-04-4	Methyl tert-Butyl Ether	0.031	U	0.015	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	91-20-3	Naphthalene	0.053	J	0.027	0.12	UG/M3	0.12	UJ
MPF-AB-01-221010	TO-15 SIM	95-47-6	o-Xylene	0.16		0.016	0.12	UG/M3	0.16	
MPF-AB-01-221010	TO-15 SIM	100-42-5	Styrene	0.042	J	0.015	0.12	UG/M3	0.042	J
MPF-AB-01-221010	TO-15 SIM	127-18-4	Tetrachloroethene	0.025	J	0.011	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	108-88-3	Toluene	1.2	B	0.015	0.12	UG/M3	1.2	
MPF-AB-01-221010	TO-15 SIM	156-60-5	trans-1,2-Dichloroethene	0.1		0.014	0.031	UG/M3	0.10	
MPF-AB-01-221010	TO-15 SIM	10061-02-6	trans-1,3-Dichloropropene	0.062	U	0.006	0.062	UG/M3	0.062	U
MPF-AB-01-221010	TO-15 SIM	79-01-6	Trichloroethene	0.031	U	0.0095	0.031	UG/M3	0.031	U
MPF-AB-01-221010	TO-15 SIM	75-69-4	Trichlorofluoromethane	1.4	V	0.01	0.062	UG/M3	1.4	J+
MPF-AB-01-221010	TO-15 SIM	75-01-4	Vinyl Chloride	0.031	U	0.015	0.031	UG/M3	0.031	U
MPF-DW-01-221009	TO-15 SIM	71-55-6	1,1,1-Trichloroethane	0.033	U	0.012	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	79-34-5	1,1,2,2-Tetrachloroethane	0.033	U	0.011	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	79-00-5	1,1,2-Trichloroethane	0.13	U	0.0077	0.13	UG/M3	0.13	U
MPF-DW-01-221009	TO-15 SIM	76-13-1	1,1,2-Trichlorotrifluoroethane	0.48		0.011	0.033	UG/M3	0.48	
MPF-DW-01-221009	TO-15 SIM	75-34-3	1,1-Dichloroethane	0.033	U	0.011	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	75-35-4	1,1-Dichloroethene	0.033	U	0.011	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	120-82-1	1,2,4-Trichlorobenzene	0.065	U	0.026	0.065	UG/M3	0.065	U
MPF-DW-01-221009	TO-15 SIM	95-63-6	1,2,4-Trimethylbenzene	0.29		0.021	0.13	UG/M3	0.29	
MPF-DW-01-221009	TO-15 SIM	96-12-8	1,2-Dibromo 3-Chloropropane	0.13	U	0.018	0.13	UG/M3	0.13	U
MPF-DW-01-221009	TO-15 SIM	106-93-4	1,2-Dibromoethane	0.033	U	0.0087	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	95-50-1	1,2-Dichlorobenzene	0.033	U	0.023	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	107-06-2	1,2-Dichloroethane	0.038		0.011	0.033	UG/M3	0.038	
MPF-DW-01-221009	TO-15 SIM	78-87-5	1,2-Dichloropropane	0.0086	J	0.0079	0.033	UG/M3	0.0086	J
MPF-DW-01-221009	TO-15 SIM	108-67-8	1,3,5-Trimethylbenzene	0.11	J	0.018	0.13	UG/M3	0.13	U
MPF-DW-01-221009	TO-15 SIM	106-99-0	1,3-Butadiene	0.7		0.01	0.065	UG/M3	0.70	
MPF-DW-01-221009	TO-15 SIM	541-73-1	1,3-Dichlorobenzene	0.033	U	0.022	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	106-46-7	1,4-Dichlorobenzene	0.036		0.026	0.033	UG/M3	0.036	
MPF-DW-01-221009	TO-15 SIM	123-91-1	1,4-Dioxane	0.015	J	0.011	0.13	UG/M3	0.13	U
MPF-DW-01-221009	TO-15 SIM	67-64-1	Acetone	10		0.3	3.3	UG/M3	10	J

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Sample ID	Method	Cas #	Analyte	Lab Result	Lab Qual	MDL	RL	Units	Val Results	Val Qual
MPF-DW-01-221009	TO-15 SIM	107-02-8	Acrolein	0.89		0.046	0.26	UG/M3	0.89	
MPF-DW-01-221009	TO-15 SIM	71-43-2	Benzene	3.4		0.02	0.098	UG/M3	3.4	
MPF-DW-01-221009	TO-15 SIM	75-27-4	Bromodichloromethane	0.033	U	0.0075	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	74-83-9	Bromomethane	0.034		0.0087	0.033	UG/M3	0.034	
MPF-DW-01-221009	TO-15 SIM	56-23-5	Carbon Tetrachloride	0.45		0.0092	0.033	UG/M3	0.45	
MPF-DW-01-221009	TO-15 SIM	108-90-7	Chlorobenzene	0.19		0.013	0.13	UG/M3	0.19	
MPF-DW-01-221009	TO-15 SIM	75-00-3	Chloroethane	0.014	J	0.01	0.033	UG/M3	0.014	J
MPF-DW-01-221009	TO-15 SIM	67-66-3	Chloroform	0.1	J	0.01	0.13	UG/M3	0.13	U
MPF-DW-01-221009	TO-15 SIM	74-87-3	Chloromethane	0.17		0.034	0.065	UG/M3	0.17	
MPF-DW-01-221009	TO-15 SIM	156-59-2	cis-1,2-Dichloroethene	0.033	U	0.0094	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	10061-01-5	cis-1,3-Dichloropropene	0.065	U	0.0092	0.065	UG/M3	0.065	U
MPF-DW-01-221009	TO-15 SIM	124-48-1	Dibromochloromethane	0.033	U	0.0083	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	75-71-8	Dichlorodifluoromethane (CFC 12)	2.3		0.011	0.065	UG/M3	2.3	
MPF-DW-01-221009	TO-15 SIM	75-09-2	Dichloromethane (Methylene Chloride)	0.2		0.01	0.13	UG/M3	0.20	
MPF-DW-01-221009	TO-15 SIM	100-41-4	Ethylbenzene	0.97		0.016	0.13	UG/M3	0.97	
MPF-DW-01-221009	TO-15 SIM	87-68-3	Hexachlorobutadiene	0.13	U	0.017	0.13	UG/M3	0.13	U
MPF-DW-01-221009	TO-15 SIM	179601-23-1	m,p-Xylenes	0.55		0.031	0.13	UG/M3	0.55	
MPF-DW-01-221009	TO-15 SIM	1634-04-4	Methyl tert-Butyl Ether	0.033	U	0.016	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	91-20-3	Naphthalene	0.6		0.029	0.13	UG/M3	0.60	J
MPF-DW-01-221009	TO-15 SIM	95-47-6	o-Xylene	0.28		0.017	0.13	UG/M3	0.28	
MPF-DW-01-221009	TO-15 SIM	100-42-5	Styrene	0.74		0.016	0.13	UG/M3	0.74	
MPF-DW-01-221009	TO-15 SIM	127-18-4	Tetrachloroethene	0.02	J	0.011	0.033	UG/M3	0.020	J
MPF-DW-01-221009	TO-15 SIM	108-88-3	Toluene	2.8	B	0.016	0.13	UG/M3	2.8	
MPF-DW-01-221009	TO-15 SIM	156-60-5	trans-1,2-Dichloroethene	0.033	U	0.014	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	10061-02-6	trans-1,3-Dichloropropene	0.065	U	0.0062	0.065	UG/M3	0.065	U
MPF-DW-01-221009	TO-15 SIM	79-01-6	Trichloroethene	0.033	U	0.01	0.033	UG/M3	0.033	U
MPF-DW-01-221009	TO-15 SIM	75-69-4	Trichlorofluoromethane	1.3	V	0.011	0.065	UG/M3	1.3	J+
MPF-DW-01-221009	TO-15 SIM	75-01-4	Vinyl Chloride	0.033	U	0.016	0.033	UG/M3	0.033	U
MPF-DW-02-221009	TO-15 SIM	71-55-6	1,1,1-Trichloroethane	0.034	U	0.012	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	79-34-5	1,1,2,2-Tetrachloroethane	0.034	U	0.012	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	79-00-5	1,1,2-Trichloroethane	0.14	U	0.008	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	76-13-1	1,1,2-Trichlorotrifluoroethane	0.49		0.011	0.034	UG/M3	0.49	
MPF-DW-02-221009	TO-15 SIM	75-34-3	1,1-Dichloroethane	0.034	U	0.011	0.034	UG/M3	0.034	U

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Sample ID	Method	Cas #	Analyte	Lab Result	Lab Qual	MDL	RL	Units	Val Results	Val Qual
MPF-DW-02-221009	TO-15 SIM	75-35-4	1,1-Dichloroethene	0.034	U	0.012	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	120-82-1	1,2,4-Trichlorobenzene	0.068	U	0.027	0.068	UG/M3	0.068	U
MPF-DW-02-221009	TO-15 SIM	95-63-6	1,2,4-Trimethylbenzene	0.079	J	0.022	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	96-12-8	1,2-Dibromo 3-Chloropropane	0.14	U	0.019	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	106-93-4	1,2-Dibromoethane	0.034	U	0.009	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	95-50-1	1,2-Dichlorobenzene	0.034	U	0.024	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	107-06-2	1,2-Dichloroethane	0.039		0.011	0.034	UG/M3	0.039	
MPF-DW-02-221009	TO-15 SIM	78-87-5	1,2-Dichloropropane	0.034	U	0.0082	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	108-67-8	1,3,5-Trimethylbenzene	0.02	J	0.019	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	106-99-0	1,3-Butadiene	0.068	U	0.011	0.068	UG/M3	0.068	U
MPF-DW-02-221009	TO-15 SIM	541-73-1	1,3-Dichlorobenzene	0.034	U	0.023	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	106-46-7	1,4-Dichlorobenzene	0.034	U	0.027	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	123-91-1	1,4-Dioxane	0.14	U	0.012	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	67-64-1	Acetone	4.6		0.31	3.4	UG/M3	4.6	U
MPF-DW-02-221009	TO-15 SIM	107-02-8	Acrolein	0.13	J	0.047	0.27	UG/M3	0.27	U
MPF-DW-02-221009	TO-15 SIM	71-43-2	Benzene	0.24		0.02	0.1	UG/M3	0.24	
MPF-DW-02-221009	TO-15 SIM	75-27-4	Bromodichloromethane	0.034	U	0.0078	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	74-83-9	Bromomethane	0.026	J	0.009	0.034	UG/M3	0.026	J
MPF-DW-02-221009	TO-15 SIM	56-23-5	Carbon Tetrachloride	0.47		0.0096	0.034	UG/M3	0.47	
MPF-DW-02-221009	TO-15 SIM	108-90-7	Chlorobenzene	0.14	U	0.013	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	75-00-3	Chloroethane	0.034	U	0.011	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	67-66-3	Chloroform	0.072	J	0.011	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	74-87-3	Chloromethane	0.14		0.035	0.068	UG/M3	0.14	
MPF-DW-02-221009	TO-15 SIM	156-59-2	cis-1,2-Dichloroethene	0.034	U	0.0097	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	10061-01-5	cis-1,3-Dichloropropene	0.068	U	0.0096	0.068	UG/M3	0.068	U
MPF-DW-02-221009	TO-15 SIM	124-48-1	Dibromochloromethane	0.034	U	0.0086	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	75-71-8	Dichlorodifluoromethane (CFC 12)	2.6		0.011	0.068	UG/M3	2.6	
MPF-DW-02-221009	TO-15 SIM	75-09-2	Dichloromethane (Methylene Chloride)	0.2		0.011	0.14	UG/M3	0.20	J+
MPF-DW-02-221009	TO-15 SIM	100-41-4	Ethylbenzene	0.07	J	0.016	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	87-68-3	Hexachlorobutadiene	0.14	U	0.018	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	179601-23-1	m,p-Xylenes	0.23		0.032	0.14	UG/M3	0.23	
MPF-DW-02-221009	TO-15 SIM	1634-04-4	Methyl tert-Butyl Ether	0.034	U	0.016	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	91-20-3	Naphthalene	0.044	J	0.03	0.14	UG/M3	0.044	J

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Sample ID	Method	Cas #	Analyte	Lab Result	Lab Qual	MDL	RL	Units	Val Results	Val Qual
MPF-DW-02-221009	TO-15 SIM	95-47-6	o-Xylene	0.086	J	0.018	0.14	UG/M3	0.14	U
MPF-DW-02-221009	TO-15 SIM	100-42-5	Styrene	0.02	J	0.016	0.14	UG/M3	0.020	J
MPF-DW-02-221009	TO-15 SIM	127-18-4	Tetrachloroethene	0.038		0.012	0.034	UG/M3	0.038	
MPF-DW-02-221009	TO-15 SIM	108-88-3	Toluene	0.75	B	0.016	0.14	UG/M3	0.75	
MPF-DW-02-221009	TO-15 SIM	156-60-5	trans-1,2-Dichloroethene	0.034	U	0.015	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	10061-02-6	trans-1,3-Dichloropropene	0.068	U	0.0065	0.068	UG/M3	0.068	U
MPF-DW-02-221009	TO-15 SIM	79-01-6	Trichloroethene	0.034	U	0.01	0.034	UG/M3	0.034	U
MPF-DW-02-221009	TO-15 SIM	75-69-4	Trichlorofluoromethane	1.4	V	0.011	0.068	UG/M3	1.4	J+
MPF-DW-02-221009	TO-15 SIM	75-01-4	Vinyl Chloride	0.034	U	0.016	0.034	UG/M3	0.034	U
MPF-EH-01-221008	TO-15 SIM	71-55-6	1,1,1-Trichloroethane	0.03	U	0.011	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	79-34-5	1,1,2,2-Tetrachloroethane	0.03	U	0.011	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	79-00-5	1,1,2-Trichloroethane	0.12	U	0.0071	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	76-13-1	1,1,2-Trichlorotrifluoroethane	0.48		0.0098	0.03	UG/M3	0.48	
MPF-EH-01-221008	TO-15 SIM	75-34-3	1,1-Dichloroethane	0.03	U	0.0099	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	75-35-4	1,1-Dichloroethene	0.03	U	0.011	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	120-82-1	1,2,4-Trichlorobenzene	0.061	U	0.024	0.061	UG/M3	0.061	U
MPF-EH-01-221008	TO-15 SIM	95-63-6	1,2,4-Trimethylbenzene	0.12	U	0.019	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	96-12-8	1,2-Dibromo 3-Chloropropane	0.12	U	0.017	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	106-93-4	1,2-Dibromoethane	0.03	U	0.0081	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	95-50-1	1,2-Dichlorobenzene	0.03	U	0.022	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	107-06-2	1,2-Dichloroethane	0.035		0.01	0.03	UG/M3	0.035	
MPF-EH-01-221008	TO-15 SIM	78-87-5	1,2-Dichloropropane	0.0074	J	0.0074	0.03	UG/M3	0.0074	J
MPF-EH-01-221008	TO-15 SIM	108-67-8	1,3,5-Trimethylbenzene	0.12	U	0.017	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	106-99-0	1,3-Butadiene	0.061	U	0.0096	0.061	UG/M3	0.061	U
MPF-EH-01-221008	TO-15 SIM	541-73-1	1,3-Dichlorobenzene	0.03	U	0.021	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	106-46-7	1,4-Dichlorobenzene	0.03	U	0.024	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	123-91-1	1,4-Dioxane	0.12	U	0.011	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	67-64-1	Acetone	4.4		0.28	3	UG/M3	4.4	J
MPF-EH-01-221008	TO-15 SIM	107-02-8	Acrolein	0.25		0.042	0.24	UG/M3	0.25	J+
MPF-EH-01-221008	TO-15 SIM	71-43-2	Benzene	0.13		0.018	0.091	UG/M3	0.13	
MPF-EH-01-221008	TO-15 SIM	75-27-4	Bromodichloromethane	0.03	U	0.007	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	74-83-9	Bromomethane	0.026	J	0.0081	0.03	UG/M3	0.026	J
MPF-EH-01-221008	TO-15 SIM	56-23-5	Carbon Tetrachloride	0.46		0.0086	0.03	UG/M3	0.46	

RFP PAPER MILL FIRE SITE – ER AIR ANALYTICAL RESULTS SUMMARY
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Sample ID	Method	Cas #	Analyte	Lab Result	Lab Qual	MDL	RL	Units	Val Results	Val Qual
MPF-EH-01-221008	TO-15 SIM	108-90-7	Chlorobenzene	0.12	U	0.012	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	75-00-3	Chloroethane	0.012	J	0.0094	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	67-66-3	Chloroform	0.072	J	0.0097	0.12	UG/M3	0.072	J
MPF-EH-01-221008	TO-15 SIM	74-87-3	Chloromethane	0.14		0.031	0.061	UG/M3	0.14	
MPF-EH-01-221008	TO-15 SIM	156-59-2	cis-1,2-Dichloroethene	0.03	U	0.0087	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	10061-01-5	cis-1,3-Dichloropropene	0.061	U	0.0086	0.061	UG/M3	0.061	U
MPF-EH-01-221008	TO-15 SIM	124-48-1	Dibromochloromethane	0.03	U	0.0077	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	75-71-8	Dichlorodifluoromethane (CFC 12)	2.4		0.01	0.061	UG/M3	2.4	
MPF-EH-01-221008	TO-15 SIM	75-09-2	Dichloromethane (Methylene Chloride)	0.2		0.0094	0.12	UG/M3	0.20	
MPF-EH-01-221008	TO-15 SIM	100-41-4	Ethylbenzene	0.016	J	0.015	0.12	UG/M3	0.016	J
MPF-EH-01-221008	TO-15 SIM	87-68-3	Hexachlorobutadiene	0.12	U	0.016	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	179601-23-1	m,p-Xylenes	0.041	J	0.029	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	1634-04-4	Methyl tert-Butyl Ether	0.03	U	0.015	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	91-20-3	Naphthalene	0.12	U	0.027	0.12	UG/M3	0.12	UJ
MPF-EH-01-221008	TO-15 SIM	95-47-6	o-Xylene	0.021	J	0.016	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	100-42-5	Styrene	0.12	U	0.015	0.12	UG/M3	0.12	U
MPF-EH-01-221008	TO-15 SIM	127-18-4	Tetrachloroethene	0.013	J	0.01	0.03	UG/M3	0.013	J
MPF-EH-01-221008	TO-15 SIM	108-88-3	Toluene	0.21	B	0.015	0.12	UG/M3	0.21	J+
MPF-EH-01-221008	TO-15 SIM	156-60-5	trans-1,2-Dichloroethene	0.03	U	0.013	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	10061-02-6	trans-1,3-Dichloropropene	0.061	U	0.0058	0.061	UG/M3	0.061	U
MPF-EH-01-221008	TO-15 SIM	79-01-6	Trichloroethene	0.03	U	0.0093	0.03	UG/M3	0.030	U
MPF-EH-01-221008	TO-15 SIM	75-69-4	Trichlorofluoromethane	1.3	V	0.0098	0.061	UG/M3	1.3	J+
MPF-EH-01-221008	TO-15 SIM	75-01-4	Vinyl Chloride	0.03	U	0.015	0.03	UG/M3	0.030	U