

Memorandum

September 20, 2021

To	Peter Ramanauskas/U.S. EPA		
Copy to	Dave Favero, RACER Tom Kinney, GHD		
From	Sam Belisle, GHD/lg/3	Tel	+1 248 893 3400
Subject	Soil Gas Sampling – July 2021 RACER Trust PCC Validation Pontiac, Michigan	Project no.	11223416-MEM-3

1. Introduction

GHD is providing this memorandum on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust for the former PCC-Validation property in Pontiac, Michigan (Site). The purpose of this memorandum is to summarize the results of the soil gas sampling completed in July 2021 at the Site. The July 2021 event represents the third of four quarterly soil gas sampling events.

In July 2020, GHD installed and sampled three soil gas probes for volatile organic compounds (VOCs) along the southern perimeter of the Site. The activities were completed after SME, on behalf of M1 Concourse, found elevated trichloroethene (TCE) in soil gas samples collected north of the southern perimeter. A copy of the SME soil gas results is provided in Attachment A. The July 2020 soil gas sampling results detected elevated concentrations of TCE at one of the soil gas probes. The sampling results and proposed supplemental activities were presented to USEPA in a memorandum dated September 29, 2020. USEPA approved the supplemental activities during a follow-up call between GHD, RACER, and USEPA on October 2, 2020.

In December 2020 five additional soil gas probes were installed, two on-Site and three off-Site in the right of way on South Boulevard West and Howland Ave. The new and existing probes were sampled following the December installation activities. The results were summarized in a memorandum provided to USEPA on February 10, 2021. In that memorandum GHD proposed quarterly soil gas samples be collected from three on-Site probes (SG-02-20, SG-03-20, SG-04-20) and two off-Site probes (SG-06-20 and SG-07-20) until four consecutive rounds of sampling with no VOC exceedances have occurred. USEPA concurred with that proposal via email on February 11, 2021. The second round of quarterly sampling was completed in March 2021. The March 2021 quarterly results were provided to USEPA on April 23, 2021. The following sections present details regarding the soil gas sampling and analytical results from the July 2021 sampling event. A site plan with the soil gas probe sampling locations is presented on Figure 1.

2. Soil Gas Sampling Summary

The quarterly soil gas sampling was originally scheduled for June 2021; however, due to several rainfall events with over half an inch of precipitation, the sampling could not be completed until July 2021.

Soil gas samples were collected on July 20, 2021, from three soil gas probes, SG-02-20, SG-03-20, and SG-04-20. GHD was unable to collect samples from the two off-Site probes planned to be sampled, SG-06-20 and SG-07-20. The two probes could not be sampled due to suspected vapor lock within the sampling assembly tubing. This is expected to be due to pore spaces of the soil (primarily clay) being saturated or at least partially saturated, preventing the movement of vapors.

Samples were collected using evacuated certified clean 1-liter Summa™ canisters. The Summa™ canisters were fitted with a laboratory calibrated critical orifice flow regulation device sized to restrict the maximum soil gas sample collection flow rate to 100 milliliters per minute (mL/min). After the soil gas samples were collected, the Summa™ canisters were disconnected from the regulator and an identification tag was attached to each Summa™ canister.

Leak testing was performed as a quality control check before sample collection to ensure ambient air did not leak into the soil gas probe or sampling assembly, which may affect (i.e., dilute) the analytical results. Contaminants in ambient air can also enter the sampling system and be detected in a sample from a non-contaminated sampling probe resulting in a "false positive" result. Leak testing consisted of a vacuum test used to ensure that the tubing and fittings/valves that make up the sampling assembly are airtight and a helium tracer test to ensure that ambient air during soil gas sample collection is not drawn down the soil gas probe annulus through an incomplete seal between the subsurface materials and the soil gas probe casing. Leak testing was performed according to GHD standard operating procedures. Leaks were not detected at the probes prior to sampling.

A duplicate sample was collected using a certified clean laboratory provided duplicate T-fitting. Samples were shipped under Chain-of-Custody protocols to Pace Analytical Services, Inc. laboratory and were analyzed using Method TO-15 for VOCs. The sample analysis summary is presented on Table 1.

3. Soil Gas Results

The results were compared to the September 2020 Michigan Department of Environment, Great Lakes and Energy (EGLE) Volatilization to Indoor Air (VIAP) Screening Levels (SLs), March 2021 Media-Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSLs) for Soil Vapor, and March 2020 EGLE Site-Specific Criteria for the M1 Concourse Building 16. Documentation for the EGLE Site-specific criteria is presented in Attachment B.

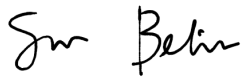
No locations exceeded screening levels or criteria during the July 2021 event. The soil gas results for TCE from July 2020 through July 2021 are presented on Figure 2. Comprehensive results compared to the screening levels and criteria outlined above are provided on Table 2. The Laboratory Analytical Report is presented in Attachment C.

4. Discussion

The July 2021 event was the third quarter of sampling with no VOC exceedances detected in the soil gas probes. Two probes could not be sampled this quarter apparently due to soil (primarily clay) pore spaces being saturated or at least partially saturated, preventing the movement of vapors. This is a positive finding indicating very limited vapor movement through soils in that area during wet periods and therefore less opportunity for a

complete vapor intrusion pathway. In accordance with the proposed activities in the February 2021 memorandum, another round of quarterly soil gas samples will be collected in September 2021 from SG-02-20, SG-03-20, SG-04-20, SG-06-20, and SG-07-20. The quarterly sampling is scheduled to continue at these locations until four consecutive rounds of sampling with no VOC exceedances have occurred, provided it is possible to collect a sample from the probes. The results and any recommendations related to this investigation will continue to be submitted in quarterly reports to USEPA.

Regards,

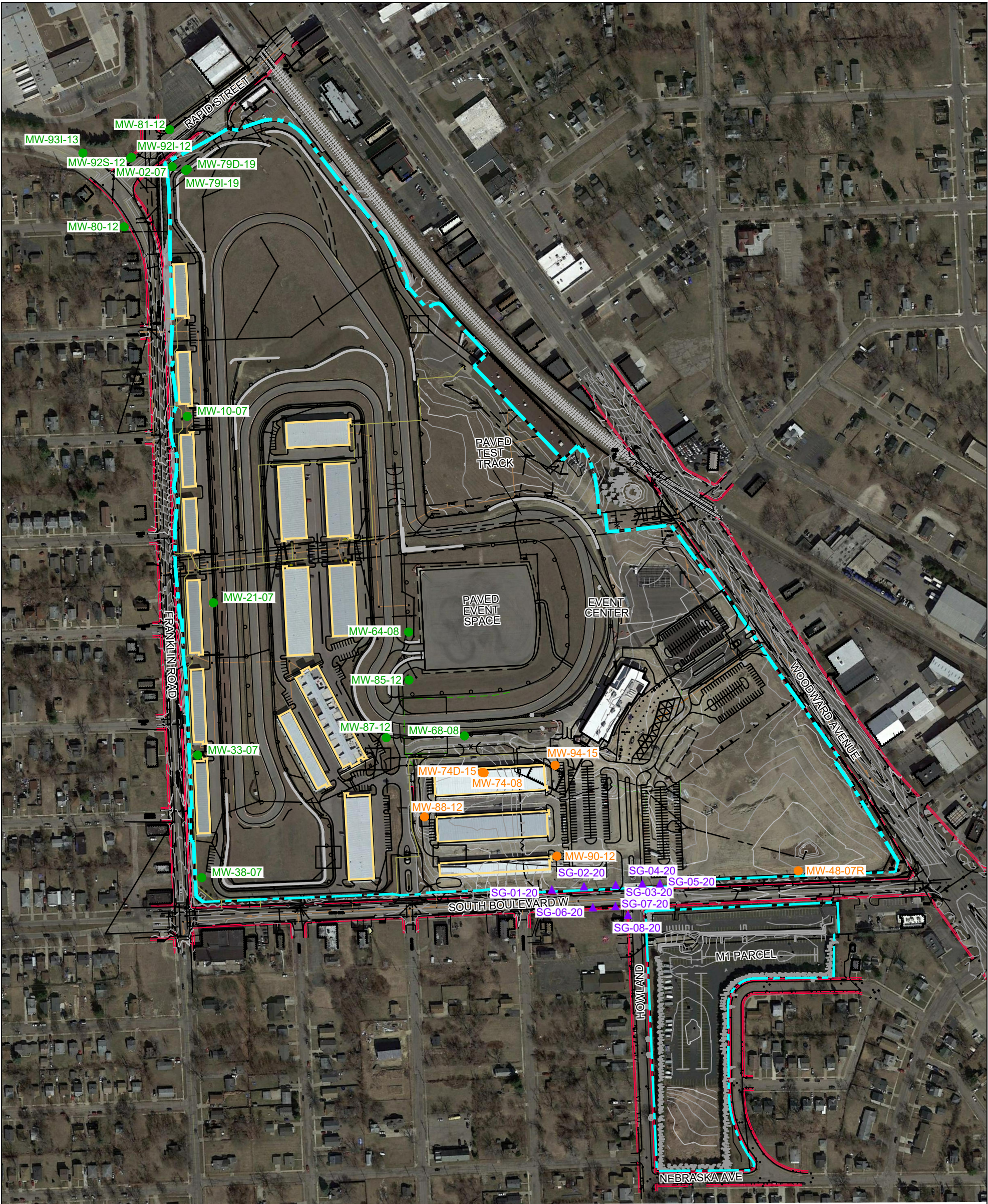


Sam Belisle
Engineer

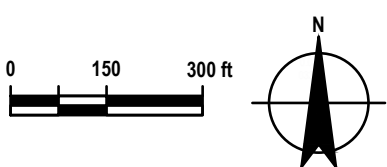
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Encl:	Figure 1:	Site Plan with Current and Proposed Monitoring Locations
	Figure 2:	Soil Gas Results – Trichloroethene
	Table 1:	Sample Analysis Summary
	Table 2:	Soil Gas Analytical Results – July 2020 through July 2021
	Attachment A:	SME Soil Gas Sampling Results
	Attachment B:	M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation – March 2020
	Attachment C:	Laboratory Analytical Report

Figures



- LEGEND**
- APPROXIMATE PROPERTY BOUNDARY
 - RAILROAD
 - MW-80-12 ACTIVE MONITORING WELL LOCATION
 - MW-90-12 PROPOSED MONITORING WELL LOCATION
 - ▲ SG-01-20 SOIL GAS PROBE LOCATION
 - PRIVATE NON-RESIDENTIAL GARAGES

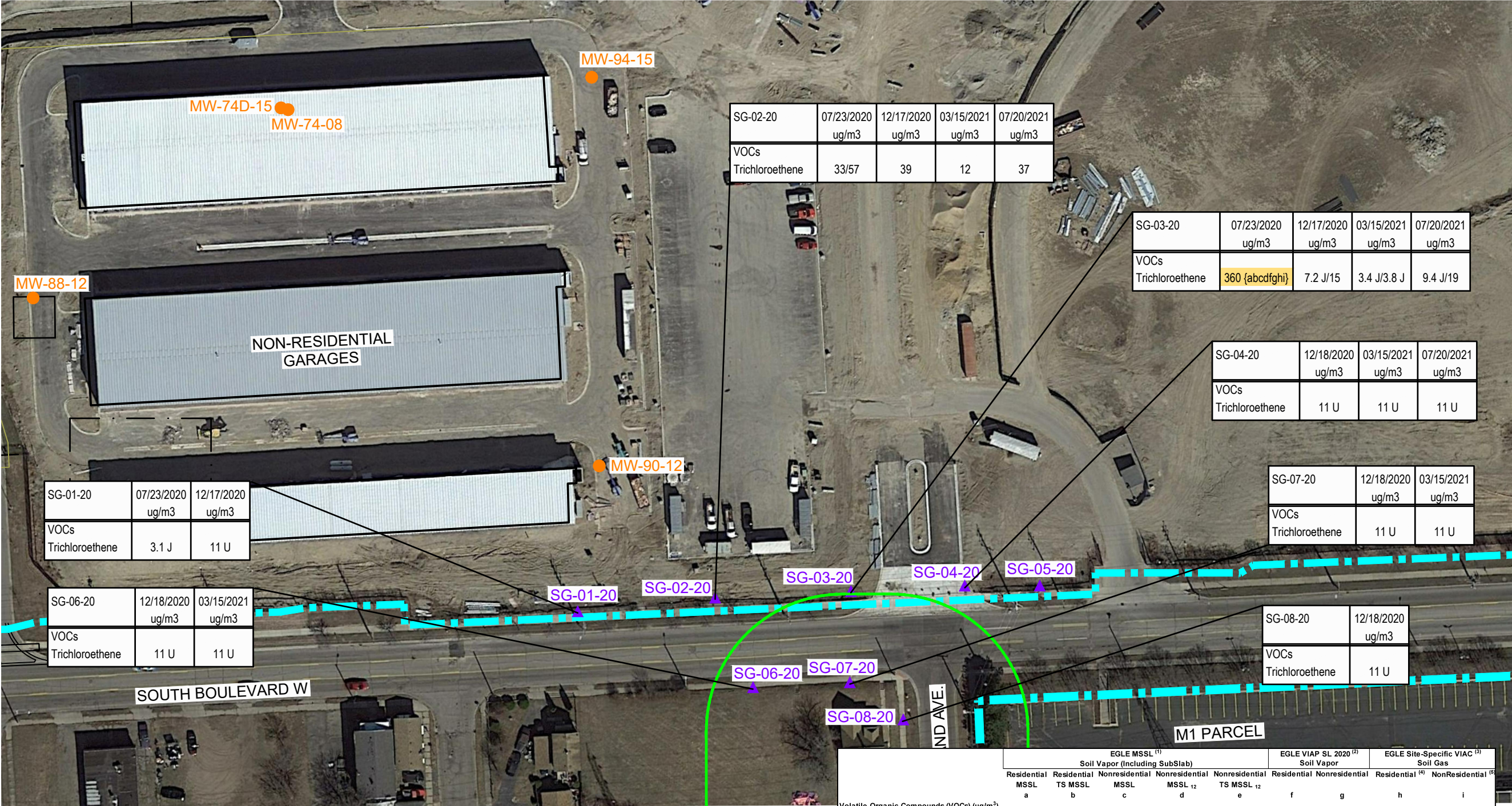


RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

Project No. 11223416
Date August 2021

SITE PLAN WITH CURRENT AND
PROPOSED MONITORING LOCATIONS

FIGURE 1



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MW-90-12 PROPOSED MONITORING WELL LOCATION
- ▲ SG-01-20 SOIL GAS PROBE LOCATION
- 100 FT INCLUSION ZONE FROM EDGE OF STRUCTURE

	EGLE MSSSL ⁽¹⁾					EGLE VIAP SL 2020 ⁽²⁾		EGLE Site-Specific VIAC ⁽³⁾	
	Soil Vapor (Including SubSlab)					Soil Vapor		Soil Gas	
	Residential MSSSL	Residential TS MSSSL	Nonresidential MSSSL	Nonresidential MSSSL ₁₂	Nonresidential TS MSSSL ₁₂	Residential	Nonresidential	Residential ⁽⁴⁾	NonResidential ⁽⁵⁾
	a	b	c	d	e	f	g	h	i
Volatle Organic Compounds (VOCs) (ug/m ³)									
Trichloroethene	67	200	67	130	400	67	67	67	67

Notes:
(1) EGLE MSSSL - Michigan Department of Environment, Great Lakes and Energy (EGLE) Media-Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSSL) - March 2021
(2) EGLE VIAP SL: Michigan Department of Environment, Great Lakes and Energy (EGLE) Volatilization to Indoor Air (VIAP) Screening Levels (SL), September 2020
(3) EGLE Site-Specific Volatilization to Indoor Air Criteria (VIAC) for M1 Concourse Phase 4 - Building 16, March 2020
(4) Unrestricted site-specific criteria that apply to a residential house with a basement, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of sand.
(5) Restricted site-specific criteria that apply to a nonresidential structure < 50,000 ft2 with a slab-on-grade, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of sand.
TS MSSSL - Time Sensitive Media-Specific Volatilization to Indoor Air Interim Action Screening Levels
MSSSL ₁₂ - 12-hour workday MSSSLs
TS MSSSL ₁₂ - Time Sensitive 12-hour workday MSSSLs
U - Not detected at the associated reporting limit.
J - Estimated concentration.

04080 ft

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Project No. 11223416
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SOIL GAS RESULTS - TRICHLOROETHENE

FIGURE 2

Tables

Table 1

**Sample Analysis Summary
RACER PCC- Validation
Pontiac, Michigan**

Matrix	Sample ID	Sample Location	Date	QA/QC	Analysis
Soil Gas	SG-11223416-072021-SK-001	SG-04-20	7/20/2021	NA	TO-15 VOCs
Soil Gas	SG-11223416-072021-SK-002	SG-03-20	7/20/2021	NA	TO-15 VOCs
Soil Gas	SG-11223416-072021-SK-003	SG-03-20	7/20/2021	Duplicate	TO-15 VOCs
Soil Gas	SG-11223416-072021-SK-004	SG-02-20	7/20/2021	NA	TO-15 VOCs

Notes:

SG - Soil Gas Probe

NA - Not applicable

TO-15 VOCs - Compendium Method TO-15 for Volatile Organic Compounds

Table 2
Soil Gas Analytical Results - July 2020 through July 2021
RACER PCC - Validation
Pontiac, Michigan

Sample Location		EGLE MSSL ⁽¹⁾					EGLE VIAP SL 2020 ⁽²⁾		EGLE Site Specific ⁽³⁾		SG-01-20	SG-01-20	SG-02-20	SG-02-20	SG-02-20
Sample Identification		Soil Vapor (Including SubSlab)					Residential	Nonresidential	Table 2 - Residential	Table 1 - NonResidential	SG-17322-072320-DA-001	SG-17322-121720-SK-001	SG-17322-072320-DA-002	SG-17322-072320-DA-003	SG-17322-121720-SK-002
Sample Date		Residential	Residential	NonResidential	NonResidential	NonResidential	Soil Vapor	Soil Vapor	Volatilization to Indoor Air	Volatilization to Indoor Air	07/23/2020	12/17/2020	07/23/2020	07/23/2020	12/17/2020
Sample Type	Units	MSSL	TS MSSL	MSSL	MSSL ₁₂	TS MSSL ₁₂			Basement	<50,000 ft ² , slab-on-grade				Duplicate	
Volatile Organic Compounds (VOCs)		a	b	c	d	e	f	g	h	i					
1,1,1-Trichloroethane	ug/m3	170000	170000	230000	230000	230000	170000	230000	170000	230000	5.7 J	11 U	7.1 J	12	6.3 J
1,1,2,2-Tetrachloroethane	ug/m3						15	34	15	34	14 U	14 U	14 U	14 U	14 U
1,1,2-Trichloroethane	ug/m3						7.0	10	7.0	10	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	ug/m3	530	5300	1200	2500	25000	530	1200	530	1200	8.1 U	8.1 U	1.6 J	2.1 J	8.1 U
1,1-Dichloroethene	ug/m3	7000	21000	10000	20000	61000	7000	10000	7000	10000	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
1,2,4-Trichlorobenzene	ug/m3	70	210	100	200	610	70	100			150 U	150 U	150 U	150 U	150 U
1,2,4-Trimethylbenzene	ug/m3	2100	6300	3100	6100	18000	2100	3100	2100	3100	4.2 JB	9.8 U	3.9 JB	6.7 JB	9.8 U
1,2-Dibromoethane (Ethylene dibromide)	ug/m3						1.4	3.3	1.4	3.3	15 U	15 U	15 U	15 U	15 U
1,2-Dichlorobenzene	ug/m3						10000	15000			12 U	12 U	12 U	12 U	12 U
1,2-Dichloroethane	ug/m3						33	77	33	77	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U
1,2-Dichloropropane	ug/m3	140	420	200	410	1200	140	200			9.2 U	9.2 U	9.2 U	9.2 U	9.2 U
1,2-Dichlorotetrafluoroethane (CFC 114)	ug/m3										14 U	14 U	14 U	14 U	14 U
1,3,5-Trimethylbenzene	ug/m3	2100	6300	3100	6100	18000	2100	3100	2100	3100	0.94 J	9.8 U	9.8 U	9.8 U	9.8 U
1,3-Dichlorobenzene	ug/m3	100	310	150	310	920	100	150			12 U	12 U	12 U	12 U	12 U
1,4-Dichlorobenzene	ug/m3	220	2200	510	1000	10000	220	510			12 U	12 U	12 U	12 U	12 U
1,4-Dioxane	ug/m3	170	1700	400	800	8000	170	400			180 U	180 U	180 U	180 U	180 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/m3	170000	500000	170000	330000	1000000	170000	170000			170	29 U	11 J	15 J	29 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MII)	ug/m3	27000	27000	27000	27000	27000	27000	27000			20 U	20 U	20 U	20 U	20 U
Acetone	ug/m3	1000000	1000000	1000000	1000000	1000000	1000000	1000000			100 J	120 U	75 J	86 J	120 U
Benzene	ug/m3	110	630	260	510	1800	110	260	110	260	4.1 J	6.4 U	3.1 J	4.1 J	6.4 U
Benzyl chloride	ug/m3						17	40			41 U	41 U	41 U	41 U	41 U
Bromodichloromethane	ug/m3						48	100			13 U	13 U	13 U	13 U	13 U
Bromoform	ug/m3						770	1800			21 U	21 U	21 U	21 U	21 U
Bromomethane (Methyl bromide)	ug/m3						350	510			7.8 U	7.8 U	7.8 U	7.8 U	7.8 U
Carbon disulfide	ug/m3						24000	36000			10 J	16 U	6.9 J	8.9 J	5.2 J
Carbon tetrachloride	ug/m3	150	1500	360	710	7100	150	360			13 U	13 U	13 U	13 U	13 U
Chlorobenzene	ug/m3	1700	5200	2600	5100	15000	1700	2600	1700	2600	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U
Chloroethane	ug/m3	140000	420000	200000	410000	1200000	140000	200000	140000	200000	21 U	21 U	21 U	21 U	21 U
Chloroform (Trichloromethane)	ug/m3	37	370	87	170	37	37	87			9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
Chloromethane (Methyl chloride)	ug/m3	3100	9400	4600	9200	28000	3100	4600	3100	4600	1.2 J	10 U	1.4 J	10 U	10 U
cis-1,2-Dichloroethene	ug/m3	280	830	410	820	2500	280	410	280	410	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
cis-1,3-Dichloropropene	ug/m3										9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Cyclohexane	ug/m3						210000	310000	210000	310000	3.0 J	17 U	5.0 J	6.6 J	17 U
Dibromochloromethane	ug/m3						14	83			17 U	17 U	17 U	17 U	17 U
Dichlorodifluoromethane (CFC-12)	ug/m3						11000	17000			25 U	25 U	3.5 J	4.3 J	3.0 J
Ethylbenzene	ug/m3	340	3400	800	1600	16000	340	800	340	800	3.7 JB	1.7 J	3.9 JB	4.0 JB	1.9 J
Hexachlorobutadiene	ug/m3						39	91			210 U	210 U	210 U	210 U	210 U
Hexane	ug/m3	24000	73000	36000	72000	210000	24000	36000	24000	36000	31	28 U	14 J	15 J	28 U
Isopropyl alcohol	ug/m3						7000	10000	7000	10000	120 U	120 U	120 U	3.8 J	120 U
Isopropyl benzene	ug/m3						81	190	81	190	39 U	39 U	39 U	39 U	39 U
m&p-Xylenes	ug/m3										9.5 J	35 U	9.7 J	11 J	35 U
Methyl tert butyl ether (MTBE)	ug/m3	3300	33000	7700	15000	150000	3300	7700	3300	7700	36 U	36 U	36 U	36 U	36 U
Methylene chloride	ug/m3	21000	33000	31000	61000	97000	21000	31000			17 U	17 U	17 U	17 U	17 U
Naphthalene	ug/m3						25	59	25	59	26 U	26 U	26 U	26 U	26 U
o-Xylene	ug/m3										4.6 JB	2.1 J	4.3 JB	5.4 JB	1.0 J
Styrene	ug/m3						1500	3500	1500	3500	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U
Tetrachloroethene	ug/m3	1400	1400	1400	2700	2700	1400	1400	1400	1400	14 U	14 U	14 U	14 U	14 U
Tetrahydrofuran	ug/m3						70000	100000			150 U	150 U	150 U	150 U	150 U
Toluene	ug/m3	170000	250000	250000	250000	250000	170000	250000	170000	250000	13 B	7.5 U	8.2 B	10 B	2.1 J
trans-1,2-Dichloroethene	ug/m3	2800	8300	4100	8200	25000	2800	4100	2800	4100	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
trans-1,3-Dichloropropene	ug/m3										9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Trichloroethene	ug/m3	67	200	67	130	400	67	67	67	67	3.1 J	11 U	33	57	39
Trichlorofluoromethane (CFC-11)	ug/m3						15000	22000			870	590	240	380	250
Trifluorotrichloroethane (CFC-113)	ug/m3						660000	970000			15 U	15 U	15 U	15 U	15 U
Vinyl acetate	ug/m3	7000	21000	10000	20000	61000	7000	10000			180 U	180 U	180 U	180 U	180 U
Vinyl bromide (Bromoethene)	ug/m3										8.7 U	8.7 U	8.7 U	8.7 U	8.7 U
Vinyl chloride	ug/m3	54	540	450	910	9100	54	450	54	450	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U

Table 2
Soil Gas Analytical Results - July 2020 through July 2021
RACER PCC - Validation
Pontiac, Michigan

Sample Location		SG-02-20	SG-02-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-04-20	SG-04-20	SG-04-20	SG-06-20	SG-06-20	SG-07-20	SG-07-20	SG-08-20
Sample Identification		SG-11223416-031521-SK-004	SG-11223416-072021-SK-001	SG-17322-072320-DA-004	SG-17322-121720-SK-003	SG-17322-121720-SK-004	SG-11223416-031521-SK-002	SG-11223416-031521-SK-003	SG-11223416-072021-SK-002	SG-11223416-072021-SK-003	SG-17322-121820-SK-005	SG-11223416-031521-SK-001	SG-11223416-072021-SK-004	SG-17322-121820-SK-006	SG-11223416-031521-SK-006	SG-17322-121820-SK-007	SG-11223416-031521-SK-005	SG-17322-121820-SK-008
Sample Date		03/15/2021	07/20/2021	07/23/2020	12/17/2020	12/17/2020	03/15/2021	03/15/2021	07/20/2021	07/20/2021	12/18/2020	03/15/2021	07/20/2021	12/18/2020	03/15/2021	12/18/2020	03/15/2021	12/18/2020
Sample Type						Duplicate		Duplicate		Duplicate								
Units																		
Volatile Organic Compounds (VOCs)																		
1,1,1-Trichloroethane	ug/m3	4.5 J	12	32 J	25	31	12 J	12 J	50	32	9.3 J	10 J	18	11 U	2.5 J	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	ug/m3	14 U	14 U	55 U	14 U	14 U	21 U	21 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U
1,1,2-Trichloroethane	ug/m3	11 U	11 U	44 U	11 U	11 U	16 U	16 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	ug/m3	8.1 U	8.1 U	32 U	8.2 U	8.2 U	12 U	12 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U
1,1-Dichloroethene	ug/m3	7.9 U	7.9 U	32 U	8.0 U	8.0 U	12 U	12 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	0.51 J	7.9 U	7.9 U
1,2,4-Trichlorobenzene	ug/m3	150 U	150 U	590 U	150 U	150 U	220 U	220 U	150 U	150 U	150 U	150 U	150 U	2.5 J	150 U	150 U	150 U	150 U
1,2,4-Trimethylbenzene	ug/m3	9.8 U	9.8 U	7.1 JB	9.9 U	9.9 U	15 U	15 U	4.1 J	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	12	9.8 U	1.1 J	9.8 U
1,2-Dibromoethane (Ethylene dibromide)	ug/m3	15 U	15 U	61 U	16 U	15 U	23 U	23 U	16 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
1,2-Dichlorobenzene	ug/m3	12 U	12 U	48 U	12 U	12 U	18 U	18 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U
1,2-Dichloroethane	ug/m3	8.1 U	8.1 U	32 U	8.2 U	8.2 U	12 U	12 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U
1,2-Dichloropropane	ug/m3	9.2 U	9.2 U	37 U	9.3 U	9.3 U	14 U	14 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U
1,2-Dichlorotetrafluoroethane (CFC 114)	ug/m3	14 U	14 U	56 U	14 U	14 U	21 U	21 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U
1,3,5-Trimethylbenzene	ug/m3	9.8 U	9.8 U	39 U	9.9 U	9.9 U	15 U	15 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	5.0 J	9.8 U	9.8 U	9.8 U
1,3-Dichlorobenzene	ug/m3	12 U	12 U	48 U	12 U	12 U	18 U	18 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U
1,4-Dichlorobenzene	ug/m3	12 U	12 U	48 U	12 U	12 U	18 U	18 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U
1,4-Dioxane	ug/m3	180 U	180 U	720 U	180 U	180 U	270 U	270 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/m3	29 U	29 U	120 U	30 U	30 U	44 U	44 U	18 J	29 U	29 U	29 U	29 U	17 J	29 U	22 J	29 U	29 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MII)	ug/m3	20 U	20 U	82 U	21 U	21 U	31 U	31 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acetone	ug/m3	22 J	120 U	480 U	120 U	120 U	34 J	180 U	120 U	120 U	120 U	24 J	120 U	120 U	400	120 U	52 J	120 U
Benzene	ug/m3	6.4 U	6.4 U	5.2 J	6.5 U	6.5 U	9.6 U	9.6 U	6.4 U	6.4 U	6.4 U	6.4 U	6.4 U	11	5.4 J	9.4	6.4 U	7.6
Benzyl chloride	ug/m3	41 U	41 U	170 U	42 U	42 U	62 U	62 U	41 U	41 U	41 U	41 U	41 U	41 U	41 U	41 U	41 U	41 U
Bromodichloromethane	ug/m3	13 U	13 U	54 U	14 U	14 U	20 U	20 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U
Bromoform	ug/m3	21 U	21 U	83 U	21 U	21 U	31 U	31 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U
Bromomethane (Methyl bromide)	ug/m3	7.8 U	7.8 U	31 U	7.8 U	7.8 U	12 U	12 U	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	3.4 J	7.8 U	7.8 U	7.8 U
Carbon disulfide	ug/m3	5.2 J	5.7 J	19 J	16 U	16 U	23 U	23 U	16 U	16 U	16 U	16 U	16 U	29	33	51	16 U	9.2 J
Carbon tetrachloride	ug/m3	13 U	13 U	50 U	13 U	13 U	19 U	19 U	13 U	13 U	13 U	13 U	13 U	13 U	1.7 J	13 U	13 U	13 U
Chlorobenzene	ug/m3	9.2 U	9.2 U	37 U	9.3 U	9.3 U	14 U	14 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U
Chloroethane	ug/m3	21 U	21 U	84 U	21 U	21 U	32 U	32 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U
Chloroform (Trichloromethane)	ug/m3	9.8 U	9.8 U	39 U	9.9 U	9.9 U	15 U	15 U	9.8 U	2.5 J	9.8 U	9.8 U	9.8 U	9.8 U	9.7 U	9.8 U	9.8 U	9.8 U
Chloromethane (Methyl chloride)	ug/m3	10 U	10 U	41 U	10 U	10 U	15 U	15 U	10 U	10 U	10 U	10 U	10 U	1.3 J	6.3 J	10 U	10 U	10 U
cis-1,2-Dichloroethene	ug/m3	7.9 U	7.9 U	9.0 J	8.0 U	8.0 U	12 U	12 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
cis-1,3-Dichloropropene	ug/m3	9.1 U	9.1 U	36 U	9.2 U	9.2 U	14 U	14 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Cyclohexane	ug/m3	21	17 U	7.5 J	17 U	17 U	7.1 J	6.5 J	17 U	17 U	17 U	17 U	17 U	3.4 J	32	4.6 J	8.0 J	6.4 J
Dibromochloromethane	ug/m3	17 U	17 U	68 U	17 U	17 U	26 U	26 U	17 U	17 U	17 U	17 U	17 U	17 U	17 U	17 U	17 U	17 U
Dichlorodifluoromethane (CFC-12)	ug/m3	3.4 J	25 U	99 U	8.7 J	8.6 J	4.5 J	5.8 J	6.1 J	25 U	3.4 J	3.3 J	25 U	24 J	25 U	5.7 J	25 U	25 U
Ethylbenzene	ug/m3	3.1 J	8.7 U	10 JB	8.8 U	2.7 J	4.1 J	2.2 J	8.7 U	8.7 U	2.1 J	2.5 J	8.7 U	8.9	21	8.0 J	8.3 J	4.8 J
Hexachlorobutadiene	ug/m3	210 U	210 U	850 U	220 U	220 U	320 U	320 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U
Hexane	ug/m3	28 U	28 U	96 J	28 U	28 U	42 U	42 U	28 U	28 U	28 U	28 U	28 U	23 J	51	23 J	4.7 J	38
Isopropyl alcohol	ug/m3	4.4 J	120 U	490 U	120 U	120 U	180 U	180 U	120 U	120 U	120 U	120 U	120 U	120 U	46 J	120 U	10 J	120 U
Isopropyl benzene	ug/m3	39 U	39 U	160 U	40 U	40 U	59 U	59 U	39 U	39 U	39 U	39 U	39 U	39 U	2.3 J	39 U	39 U	39 U
m&p-Xylenes	ug/m3	8.7 J	35 U	11 J	35 U	35 U	14 J	7.2 J	35 U	35 U	35 U	9.5 J	35 U	10 J	72	7.9 J	32 J	4.2 J
Methyl tert butyl ether (MTBE)	ug/m3	36 U	36 U	140 U	36 U	36 U	54 U	54 U	36 U	36 U	36 U	36 U	36 U	36 U	36 U	36 U	36 U	36 U
Methylene chloride	ug/m3	17 U	17 U	69 U	18 U	18 U	26 U	26 U	17 U	17 U	17 U	17 U	17 U	17 U	54	17 U	4.8 J	17 U
Naphthalene	ug/m3	26 U	26 U	100 U	26 U	26 U	39 U	39 U	26 U	26 U	26 U	26 U	26 U	26 U	26 U	26 U	26 U	26 U
o-Xylene	ug/m3	2.9 J	5.9 J	9.7 JB	8.8 U	2.7 J	4.1 J	2.6 J	7.0 J	8.7 U	3.1 J	1.5 J	8.7 U	6.5 J	26	3.3 J	11	1.4 J
Styrene	ug/m3	2.4 JB	8.5 U	34 U	8.6 U	8.6 U	1.9 J	2.3 J	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	3.7 JB	8.5 U	3.1 JB	8.5 U
Tetrachloroethene	ug/m3	14 U	14 U	8.0 J	14 U	3.3 J	20 U	20 U	15	4.8 J	14 U	14 U	14 U	14 U	3.5 J	14 U	14 U	14 U
Tetrahydrofuran	ug/m3	150 U	150 U	590 U	150 U	150 U	220 U	220 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U
Toluene	ug/m3	5.2 J	4.7 J	13 JB	3.1 J	2.5 J	2.6 J	2.8 J	3.9 J	7.5 U	1.3 J	7.5 U	7.5 U	35	18	38	4.2 J	15
trans-1,2-Dichloroethene	ug/m3	7.9 U	7.9 U	32 U	8.0 U	8.0 U	12 U	12 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
trans-1,3-Dichloropropene	ug/m3	9.1 U	9.1 U	36 U	9.2 U	9.2 U	14 U	14 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Trichloroethene	ug/m3	12	37	360 ^{abcdgghi}	7.2 J	15	3.4 J	3.8 J	19	9.4 J	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Trichlorofluoromethane (CFC-11)	ug/m3	380	470	5200	5500	5700	2600	2600	5000	4300	100	90	130	11 U	150	11 U	170	11 U
Trifluorotrichloroethane (CFC-113)	ug/m3	15 U	15 U	61 U	15 U	15 U	23 U	23 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Vinyl acetate	ug/m3	180 U	180 U	700 U	180 U	180 U	260 U	260 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U
Vinyl bromide (Bromoethene)	ug/m3	8.7 U	8.7 U	35 U	8.8 U	8.8 U	13 U	13 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U
Vinyl chloride	ug/m3	5.1 U	5.1 U	20 U	5.2 U	5.2 U	7.7 U	7.7 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U

Notes:

⁽¹⁾ EGLE MSSL - Michigan Department of Environment, Great Lakes and Energy (EGLE) Media-Specific Volatilization to Indoor Air Interim Action Screening Levels (MSSL) - March 2021

⁽²⁾ EGLE VIAP SL: Michigan Department of Environment, Great Lakes and Energy (EGLE) Volatilization to Indoor Air (VIAP) Screening Levels (SL), September 2020.

⁽³⁾ EGLE Site-Specific Volatilization to Indoor Air Criteria (VIAC) for M1 Concourse Phase 4 - Building 16, March 2020.

U - Not detected at the associated reporting limit.

J - Estimated concentration.

B - Result detected in associated method blank.

MSSL - Media-Specific Volatilization to Indoor Air Interim Action Screening Levels

TS - Time Sensitive

MSSL₁₂ - 12-hour workday MSSLs

Attachments

Attachment A

SME Soil Gas Sampling Results



TABLE 3.
SUMMARY OF ANALYTICAL RESULTS - SOIL GAS
M1 CONCOURSE - PHASE 4 DEVELOPMENT
PONTIAC, MICHIGAN
PAGE 1 OF 1

DRAFT DOCUMENT

Constituent	Chemical Abstract Service Number	Proposed Part 201 Generic Screening Levels	Media Specific Volatilization to Indoor Air Interim Action Screening Levels (RIASL)	Chemical Analytical Results											
				Sample Identification											
		Depth (feet)													
		Date Collected													
SG106	SG107	SG108	SG109	SG110	SG111	SG112	SG113	SG114	SG115	SG116					
5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	4.5-5				
1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20				
VOCs (TO-15)		ppbv	(µg/m3)	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	
Benzene	71-43-2	110	260	<21	35	<19	<19	<19	30	21	<19	<38	<19	<19	
1,3 Butadiene	106-99-0	NA	NA	<14	<0.66	<0.66	<0.66	6.6	7.3	17	1.4	<26	<0.66	<1.5	
Carbon Disulfide	75-15-0	24,000	NA	<240	<37	<37	<37	46	82	40	<37	<420	<37	56	
Carbon Tetrachloride	56-23-5	150	NA	<16	<7.5	<7.5	<7.5	<7.5	<7.5	<7.5	<7.5	<29	16	<7.5	
Chloroethane	75-00-3	140,000	200,000	63	<16	<16	<16	<16	<16	<16	<16	<47	<16	<16	
Cyclohexane	110-82-7	210,000	NA	<91	<41	<41	<41	68	110	83	<41	<160	<41	<41	
Dichlorodifluoromethane	75-71-8	11,000	NA	<380	160	<30	<30	<30	<30	<30	<30	<670	<30	<39	
1,1-Dichloroethane	75-34-3	530	1,200	750	<24	<24	<24	<24	<24	<24	<24	<47	<24	<24	
1,1-Dichloroethene	75-35-4	10,000	10,000	470	<24	<24	<24	<24	<24	<24	<24	<48	<24	120	
cis-1,2-Dichloroethene	156-59-2	280	410	490	<24	<24	<24	<24	<24	<24	<24	<47	<24	18,000	
trans-1,2-Dichloroethene	156-60-5	280	26,000	<26	<24	<24	<24	<24	<24	<24	<24	<47	<24	350	
n-Heptane	142-82-5	120,00	NA	<49	<49	<49	110	300	210	160	<49	<78	<49	<49	
n-Hexane	110-54-3	24,000	36,000	<93	<42	<42	55	880	380	290	<42	<170	<42	<42	
Tetrachloroethene	127-18-4	1,400	1,400	130	<41	<41	<41	<41	<41	<41	<41	<81	<41	<41	
Tetrahydrofuran	109-99-9	100,000	NA	<31	<3.5	47	<3.5	<3.5	<3.5	<3.5	<3.5	<55	<3.5	<3.5	
Toluene	108-88-3	250,000	250,000	<40	<23	<23	<23	<23	100	59	<23	<71	<23	<23	
1,1,1-Trichloroethane	71-55-6	NA	NA	2,800	<33	<33	<33	<33	<33	<33	<33	<100	<33	<33	
Trichloroethene	79-01-6	67	67	32,000	3.0	140	49	4.9	2.6	23	31	<25	<1.6	580	
Trichlorofluoromethane	75-69-4	15,000	NA	<37	130	<34	<34	<34	<34	65	1,200	10,000	<34	<34	
Vinyl Chloride	75-01-4	450	450	<26	<15	<15	<15	<15	<15	<15	<15	<46	<15	140	
m&p-Xylene	136777-61-2	NA	NA	<220	<52	<52	<52	<52	83	<52	<52	<400	<52	<52	
Xylenes	1330-20-7	7,600	11,000	<340	<100	<100	<100	<100	110	<100	<100	<610	<100	<100	
Other VOCs	CS	CS	CS	CS<RL	CS<RL	CS<RL	CS<RL	CS<RL	CS<RL	CS<RL	CS<RL	CS<RL	CS<RL	CS<RL	

Notes:

1. Only constituents measured at concentrations above their respective Method Reporting Limit (RL) in at least on sample are listed.
2. Concentrations are reported in micrograms per cubic meter (µg/m3).
3. Results exceeding laboratory reporting limits are bold.
4. Results exceeding Proposed Part 201 Screening Levels are shaded orange, as are the criteria exceeded. Results exceeding RIASL are shaded blue.
5. VOCs -Volatile Organic Compounds. Refer to the analytical report for the full list of VOC constituents.
6. CS - Criterion is specific to individual constituent.
7. <RL - concentrations of all non-listed constituents were below their respective Method Reporting Limits.
8. NA - No criteria available.

Attachment B

**M1 Concourse Phase 4 – Building 16
Site-Specific Criteria Evaluation –
March 2020**

DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

INTEROFFICE COMMUNICATION

TO: Matt Williams, Vapor Intrusion Specialist, RRD

FROM: Shane Morrison, Senior Toxicologist, RRD

DATE: March 6, 2020

SUBJECT: M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation

The following site-specific volatilization to indoor air criteria (VIAC) are the Michigan Department of Environment, Great Lakes, and Energy's (EGLE's) determination of values that reflect best available information regarding the toxicity and exposure risks posed by the hazardous substances present at the facility. These values are based upon the information provided with the request to develop site-specific VIAC for this facility. These values may be used provided it is documented that the conditions used to develop the site-specific criteria are met at the facility. Other values may be developed by a person consistent with the statutory provisions for development of site-specific criteria and provided for EGLE review and approval.

Correspondence transmitting these values to the submitter/consultant as part of a report, review, or other request must incorporate the appropriate sections of the volatilization to indoor air pathway (VIAP) model document language. As indicated in this document, when groundwater volatilization to indoor air inhalation criteria (GVIIC) and soil volatilization to indoor air inhalation criteria (SVIIC) are not applicable, the correspondence must include language indicating the requirement to satisfy the site-specific VIAC for all three media i.e., groundwater, soil, and soil gas. In addition, all of the following site-specific VIAC tables must be copied into the correspondence or letter as part of your response to the submitter/consultant.

Unrestricted residential site-specific criteria were included in the evaluation based on information provided and EGLE's residential conceptual site model. Exceedance of the site-specific unrestricted residential criteria will require restrictions or institutional controls for closure or aid in the determination of off-site migration.

Nonresidential site-specific criteria may be adjusted for some hazardous substances to reflect a reasonable maximum worker exposure of 12-hour per day; however, if a person does not exceed the provided nonresidential site-specific criteria, no adjustment is necessary.

The site-specific criteria were generated using the United States Department of Agriculture (USDA) soil type of sand. Other site-specific criteria can be generated using a different soil type by providing soil characterization results from department approved methods on soils collected at the site.

Additional hazardous substances were included in the site-specific evaluation that were not explicitly requested. These hazardous substances may be components of recent petroleum. The preemptive site-specific evaluation of these substances was provided to limit the potential need for future resubmittal for this facility.

Please contact me at MorrisonS5@michigan.gov or 517-284-5063 if you require any clarification of these comments and criterion or have additional questions.

cc: Eric Wildfang, Toxicology Unit Supervisor, RRD
Paul Owens, District Supervisor, RRD
Cheryl Wilson, Assistant District Supervisor, RRD
Kevin Wojciechowski, Senior Environmental Quality Analyst, RRD

Table 1. Nonresidential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (GWNIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
83329	Acenaphthene	3,900 (S) sol	3.6E+06 nc	11,000 nc
208968	Acenaphthylene	710 (CC) nc	DATA	11,000 nc
994058	t-Amyl methyl ether (TAME)	34,000 nc	600 nc	3,200 nc
120127	Anthracene	43 (S) sol	2.2E+08 nc	51,000 nc
71432	Benzene	520 ca	47 (M) ca	260 ca
56553	Benzo(a)anthracene	9.4 (S) sol	1.1E+07 ca	33 ca
75650	t-Butyl alcohol	4.0E+06 nc	57,000 nc	3,700 nc
104518	n-Butylbenzene	12,000 (S) sol	9,800 nc	10,000 nc
135988	sec-Butylbenzene	18,000 (S) sol	66,000 (C) nc (49,000)	20 nc
98066	t-Butylbenzene	31 nc	11 (M) nc	20 nc
108907	Chlorobenzene	13,000 nc	1,400 nc	2,600 nc
75003	Chloroethane	1.5E+05 nc	5,800 nc	2.0E+05 nc
67663	Chloroform	280 ca	7.4 (M) ca	87 ca
74873	Chloromethane	3,500 nc	120 (M) nc	4,600 nc
110827	Cyclohexane	25,000 nc	5,600 nc	3.1E+05 nc
75343	1,1-Dichloroethane	2,500 ca	74 ca	1,200 ca
107062	1,2-Dichloroethane	770 ca	23 (M) ca	77 ca
75354	1,1-Dichloroethylene	3,900 nc	220 nc	10,000 nc
156592	cis-1,2-Dichloroethylene	1,100 nc	37 (M) nc	410 nc
156605	trans-1,2-Dichloroethylene	4,600 nc	210 nc	4,100 nc
60297	Diethyl ether	4.2E+05 nc	6,200 nc	51,000 nc
108203	Diisopropyl ether	1.3E+05 (DD) dev	2,300 (DD) dev	23,000 (DD) dev
64175	Ethanol	9.7E+08 (EE) st	1.6E+07 (EE) st	6.3E+05 (EE) st
637923	Ethyl-tert-butyl ether (ETBE)	580 (CC) nc	DATA	19,000 nc
100414	Ethylbenzene	1,700 ca	340 ca	800 ca
106934	Ethylene dibromide	120 ca	2.1 (M) ca	3.3 ca

Table 1. Nonresidential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (GWNIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
86737	Fluorene	1,700 (S) sol	8.3E+06 nc	7,200 nc
142825	n-Heptane	3,400 (S) (GW) sol	2,300 nc	1.8E+05 nc
110543	n-Hexane	1,000 (GW) nc	440 nc	36,000 nc
67630	Isopropyl alcohol	1.1E+07 nc	1.7E+05 nc	10,000 nc
98828	Isopropyl benzene	380 ca	110 (M) ca	190 ca
Varies	Mercury (Total)	34 nc	390 nc	15 nc
1634044	Methyl-tert-butyl ether (MTBE)	1.5E+05 ca	2,100 ca	7,700 ca
96377	Methylcyclopentane	1,200 nc	510 (M) nc	36,000 nc
91576	2-Methylnaphthalene	25,000 (S) sol	30,000 nc	510 nc
91203	Naphthalene	2,900 ca	1,900 ca	59 ca
109660	Pentane	1,400 (GW) nc	630 (M) nc	51,000 nc
85018	Phenanthrene	1,200 (S) sol	29,000 nc	5.1 nc
1336363	Polychlorinated biphenyls (PCBs)	0.97 (CC) (J) ca	DATA	20 (J) ca
103651	n-Propylbenzene	52,000 (S) (DD) sol	21,000 (DD) dev	33,000 (DD) dev
129000	Pyrene	140 (S) sol	4.4E+08 nc	5,100 nc
100425	Styrene	21,000 ca	4,300 ca	3,500 ca
630206	1,1,1,2-Tetrachloroethane	2,600 ca	91 (M) ca	270 ca
79345	1,1,2,2-Tetrachloroethane	1,900 ca	77 ca	34 ca
127184	Tetrachloroethylene	1,600 (EE) st	74 (EE) st	1,400 (EE) st
108883	Toluene	5.2E+05 (EE) st	64,000 (EE) st	2.5E+05 (EE) st
71556	1,1,1-Trichloroethane	1.9E+05 (EE) st	7,500 (EE) st	2.3E+05 (EE) st
79005	1,1,2-Trichloroethane	190 nc	6.6 (M) nc	10 nc
79016	Trichloroethylene	98 (DD) dev	4.0 (M) (DD) dev	67 (DD) dev
540841	2,2,4-Trimethyl pentane	2,400 (S) (GW) sol	2,200 (M) nc	1.8E+05 nc
526738	1,2,3-Trimethylbenzene	19,000 (JT) nc	4,800 (JT) nc	3,100 (JT) nc
95636	1,2,4-Trimethylbenzene	10,000 (JT) nc	2,600 (JT) nc	3,100 (JT) nc

Table 1. Nonresidential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a nonresidential structure **< 50,000 ft²** with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (GWNIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
108678	1,3,5-Trimethylbenzene	7,400 (JT) nc	1,800 (JT) nc	3,100 (JT) nc
75014	Vinyl chloride	120 ca	8.2 (M) ca	450 ca
1330207	Xylenes	28,000 (J) nc	5,000 (J) nc	11,000 (J) nc

Table 2. Residential Volatilization to Indoor Air Criteria (VIAC). The following are unrestricted site-specific criteria that apply to a residential house with a basement, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of sand.

CAS#	Hazardous Substance	Groundwater Not In Contact (GWNIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
83329	Acenaphthene	3,900 (S) sol	2.0E+05 nc	7,300 nc
208968	Acenaphthylene	65 (CC) nc	DATA	7,300 nc
994058	t-Amyl methyl ether (TAME)	1,800 nc	34 (M) nc	2,200 nc
120127	Anthracene	43 (S) sol	1.3E+07 nc	35,000 nc
71432	Benzene	17 ca	1.7 (M) ca	110 ca
56553	Benzo(a)anthracene	9.4 (S) (MM) sol	1.6E+05 (MM) mut	5.8 (MM) mut
75650	t-Butyl alcohol	1.8E+05 nc	3,200 nc	2,500 nc
104518	n-Butylbenzene	970 nc	550 nc	7,000 nc
135988	sec-Butylbenzene	3,700 nc	3,800 nc	14 nc
98066	t-Butylbenzene	1.6 nc	0.64 (M) nc	14 nc
108907	Chlorobenzene	660 nc	82 nc	1,700 nc
75003	Chloroethane	8,000 nc	330 nc	1.4E+05 nc
67663	Chloroform	9.2 ca	0.26 (M) ca	37 ca
74873	Chloromethane	180 nc	6.9 (M) nc	3,100 nc
110827	Cyclohexane	1,300 nc	320 (M) nc	2.1E+05 nc
75343	1,1-Dichloroethane	81 ca	2.6 (M) ca	530 ca
107062	1,2-Dichloroethane	25 ca	0.82 (M) ca	33 ca
75354	1,1-Dichloroethylene	200 nc	12 (M) nc	7,000 nc
156592	cis-1,2-Dichloroethylene	58 nc	2.1 (M) nc	280 nc
156605	trans-1,2-Dichloroethylene	240 nc	12 (M) nc	2,800 nc
60297	Diethyl ether	22,000 nc	350 nc	35,000 nc
108203	Diisopropyl ether	9,700 (DD) dev	190 (M) (DD) dev	23,000 (DD) dev
64175	Ethanol	6.7E+07 (EE) st	1.3E+06 (EE) st	6.3E+05 (EE) st
637923	Ethyl-tert-butyl ether (ETBE)	22 (CC) nc	DATA	13,000 nc
100414	Ethylbenzene	55 ca	12 (M) ca	340 ca
106934	Ethylene dibromide	3.6 ca	7.4E-02 (M) ca	1.4 ca

Table 2. Residential Volatilization to Indoor Air Criteria (VIAC). The following are unrestricted site-specific criteria that apply to a residential house with a basement, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of sand.

CAS#	Hazardous Substance	Groundwater Not In Contact (GWNIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
86737	Fluorene	1,700 (S) sol	4.7E+05 nc	4,900 nc
142825	n-Heptane	150 (GW) nc	130 nc	1.2E+05 nc
110543	n-Hexane	29 (GW) nc	25 nc	24,000 nc
67630	Isopropyl alcohol	5.3E+05 nc	9,800 nc	7,000 nc
98828	Isopropyl benzene	12 ca	3.8 (M) ca	81 ca
Varies	Mercury (Total)	1.8 nc	22 nc	10 nc
1634044	Methyl-tert-butyl ether (MTBE)	4,900 ca	74 (M) ca	3,300 ca
96377	Methylcyclopentane	62 nc	29 (M) nc	24,000 nc
91576	2-Methylnaphthalene	1,600 nc	1,700 nc	350 nc
91203	Naphthalene	92 ca	67 (M) ca	25 ca
109660	Pentane	40 (M) (GW) nc	36 (M) nc	35,000 nc
85018	Phenanthrene	180 nc	1,700 nc	3.5 nc
1336363	Polychlorinated biphenyls (PCBs)	3.1E-02 (M) (CC) (J) ca	DATA	8.5 (J) ca
103651	n-Propylbenzene	5,000 (DD) dev	1,800 (DD) dev	33,000 (DD) dev
129000	Pyrene	140 (S) sol	2.5E+07 nc	3,500 nc
100425	Styrene	680 ca	150 ca	1,500 ca
630206	1,1,1,2-Tetrachloroethane	85 ca	3.2 (M) ca	110 ca
79345	1,1,2,2-Tetrachloroethane	59 ca	2.7 (M) ca	15 ca
127184	Tetrachloroethylene	120 (EE) st	6.2 (M) (EE) st	1,400 (EE) st
108883	Toluene	28,000 nc	3,700 nc	1.7E+05 nc
71556	1,1,1-Trichloroethane	11,000 (EE) st	450 (EE) st	1.7E+05 (EE) st
79005	1,1,2-Trichloroethane	9.9 nc	0.37 (M) nc	7.0 nc
79016	Trichloroethylene	7.5 (DD) dev	0.33 (M) (DD) dev	67 (DD) dev
540841	2,2,4-Trimethyl pentane	160 (GW) nc	130 (M) nc	1.2E+05 nc
526738	1,2,3-Trimethylbenzene	980 (JT) nc	270 (JT) nc	2,100 (JT) nc
95636	1,2,4-Trimethylbenzene	540 (JT) nc	150 (JT) nc	2,100 (JT) nc

Table 2. Residential Volatilization to Indoor Air Criteria (VIAC). The following are unrestricted site-specific criteria that apply to a residential house with a basement, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of sand.

CAS#	Hazardous Substance	Groundwater Not In Contact (GWNIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
108678	1,3,5-Trimethylbenzene	380 (JT) nc	100 (JT) nc	2,100 (JT) nc
75014	Vinyl chloride	1.1 (MM) mut	8.2E-02 (MM) (M) mut	54 (MM) mut
1330207	Xylenes	1,500 (J) nc	280 (J) nc	7,600 (J) nc

FOOTNOTES

**Soil gas site-specific volatilization to indoor air (SSVIAC) are applicable for all depths.

- Acceptable Air Values (AAV) endpoint basis used for SSVIAC: (**ca**) = Carcinogenic; (**nc**) = Non-Carcinogenic; (**dev**) = Developmental; (**mut**) = Mutagenic cancer; (**st**) = Short-term (i.e., less than chronic exposure).
- Footnote **(#)**: Acceptable air concentrations (AAC) cannot be adjusted to a 12-hour exposure time for hazardous substance.
- Footnote **AA**: Health-based groundwater SSVIAC are not available due to insufficient toxicological data. Dissolved-phase methane in groundwater is not explosive; however, if liberated and allowed to accumulate in an enclosed structure the principle health and safety concerns are explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable groundwater concentration is the flammability and explosivity screening level (**FESL**) of 10,000 µg/L.
- Footnote **C**: The health-based SSVIAC exceeds the chemical-specific soil saturation screening level (**Csat**). The person proposing or implementing response activity must document whether additional response activity is required to control non aqueous phase liquid (**NAPL**) to protect against risks associated with NAPL by using methods appropriate for the NAPL present.
- Footnote **CC**: Insufficient chemical-physical input parameters have been identified to allow the development of a health-based SSVIAC using standard methods. The health based SSVIAC for groundwater is developed based solely on the approach that the department uses for shallow groundwater. If groundwater detections are present, soil vapor may be the most appropriate media to evaluate risk posed from the VIAP.
- Footnote **DATA**: Insufficient physical chemical parameters to calculate a health based SSVIAC for specified media. If detections are present in specified media, health-based soil vapor SSVIAC should be used to evaluate risk.
- Footnote **DD**: Hazardous substance causes developmental effects. Residential SSVIAC are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential SSVIAC are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after an acute (i.e. short-term) or full-term exposure.
- Footnote **EE**: The acceptable air concentration (**AAC**) for the volatile hazardous substances is not derived using standard methods. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or EGLE's Air Quality Division acute initial threshold screening level (ITSL).
- Footnote **FF**: The AAC for the volatile hazardous substances are based on toxicity values that have been identified to have the potential to cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The short-term exposure for shallow groundwater health based SSVIAC are based on modification of the standard methods by the department to develop applicable shallow groundwater values.
- Footnote **GG**: Health-based SSVIAC for soil vapor are not available due to insufficient toxicological data. The soil vapor value addresses the health and safety concerns of explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable soil vapor concentration is derived based on 25% of the lower explosive level (**LEL**) for methane.
- Footnote **GW**: The calculated health based SSVIAC for a hazardous substance based upon shallow groundwater is considered protective when it is greater than the calculated value for groundwater.
- Footnote **ID**: Requires further evaluation to determine the appropriate media to sample.
- Footnote **J**: Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.
- Footnote **JT**: Hazardous substance may be present in several isomer forms. The health-based SSVIAC may be used for the individual isomer provided that it is the sole isomer detected; however, when multiple isomers are detected in a medium, the isomer-specific concentrations must be added together and compared to the most restrictive health-based SSVIAC of the detected isomers.
- Footnote **M**: The health based SSVIAC may be below target detection limits (**TDL**). In accordance with Sec. 20120a(10) when the TDL for a hazardous substance is greater than the developed health-based SSVIAC, the TDL is used to evaluate the risk posed from the pathway.
- Footnote **MM**: Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based SSVIAC are modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
- Footnote **NA**: The hazardous substance does not meet the department's definition of a volatile; therefore, no health based SSVIAC were developed.
- Footnote **NR**: The hazardous substance has not been previously evaluated by the Remediation and Redevelopment Division Toxicology Unit. The identification, collection, and evaluation of toxicological literature and chemical-physical data cannot be completed within the timeframe requested.
- Footnote **S**: Calculated health-based SSVIAC exceeds the hazardous substance-specific water solubility limit; therefore, the water solubility limit is used to evaluate the risk posed from the pathway.
- Footnote **TX**: The Remediation and Redevelopment Division Toxicology Unit has not identified an inhalation toxicity value for the hazardous substance.

Attachment C

Laboratory Analytical Report

ANALYTICAL REPORT

Eurofins TestAmerica, Burlington
530 Community Drive
Suite 11
South Burlington, VT 05403
Tel: (802)660-1990

Laboratory Job ID: 200-59373-1

Client Project/Site: 11223416, PCC Validation

For:

GHD Services Inc.
26850 Haggerty Rd.
Farmington Hills, Michigan 48331

Attn: Mr. James Abston



Authorized for release by:
7/23/2021 2:47:49 PM

Denise Heckler, Project Manager II
(330)966-9477

Denise.Heckler@Eurofinset.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
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.

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: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Job ID: 200-59373-1

Laboratory: Eurofins TestAmerica, Burlington

Narrative

Job Narrative
200-59373-1

Comments

No additional comments.

Receipt

The samples were received on 7/21/2021 10:20 AM. Unless otherwise noted below, the samples arrived in good condition.

Receipt Exceptions

During the canister pressure check performed upon receipt, it was observed that the following sample was received at an elevated residual vacuum level: SG-11223416-072021-SK-004 (200-59373-4). The associated flow controller was evaluated upon receipt and was found to be within the acceptable flow range as compared to the original set flow rate.

Air Toxics

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

Detection Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-001

Lab Sample ID: 200-59373-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	2.2		2.0	0.39	ppb v/v	10		TO-15	Total/NA
Carbon disulfide	1.8	J	5.0	1.3	ppb v/v	10		TO-15	Total/NA
o-Xylene	1.4	J	2.0	0.94	ppb v/v	10		TO-15	Total/NA
Toluene	1.2	J	2.0	0.93	ppb v/v	10		TO-15	Total/NA
Trichloroethene	6.8		2.0	0.24	ppb v/v	10		TO-15	Total/NA
Trichlorofluoromethane	84		2.0	0.52	ppb v/v	10		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	12		11	2.1	ug/m3	10		TO-15	Total/NA
Carbon disulfide	5.7	J	16	4.0	ug/m3	10		TO-15	Total/NA
o-Xylene	5.9	J	8.7	4.1	ug/m3	10		TO-15	Total/NA
Toluene	4.7	J	7.5	3.5	ug/m3	10		TO-15	Total/NA
Trichloroethene	37		11	1.3	ug/m3	10		TO-15	Total/NA
Trichlorofluoromethane	470		11	2.9	ug/m3	10		TO-15	Total/NA

Client Sample ID: SG-11223416-072021-SK-002

Lab Sample ID: 200-59373-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	9.1		2.0	0.39	ppb v/v	10		TO-15	Total/NA
1,2,4-Trimethylbenzene	0.83	J	2.0	0.47	ppb v/v	10		TO-15	Total/NA
2-Butanone (MEK)	6.0	J	10	1.7	ppb v/v	10		TO-15	Total/NA
Dichlorodifluoromethane	1.2	J	5.0	1.1	ppb v/v	10		TO-15	Total/NA
o-Xylene	1.6	J	2.0	0.94	ppb v/v	10		TO-15	Total/NA
Tetrachloroethene	2.3		2.0	0.27	ppb v/v	10		TO-15	Total/NA
Toluene	1.0	J	2.0	0.93	ppb v/v	10		TO-15	Total/NA
Trichloroethene	3.6		2.0	0.24	ppb v/v	10		TO-15	Total/NA
Trichlorofluoromethane	1100	E	2.0	0.52	ppb v/v	10		TO-15	Total/NA
1,1,1-Trichloroethane - DL	3.4	J	10	2.0	ppb v/v	51.9		TO-15	Total/NA
Trichlorofluoromethane - DL	880		10	2.7	ppb v/v	51.9		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	50		11	2.1	ug/m3	10		TO-15	Total/NA
1,2,4-Trimethylbenzene	4.1	J	9.8	2.3	ug/m3	10		TO-15	Total/NA
2-Butanone (MEK)	18	J	29	5.0	ug/m3	10		TO-15	Total/NA
Dichlorodifluoromethane	6.1	J	25	5.4	ug/m3	10		TO-15	Total/NA
o-Xylene	7.0	J	8.7	4.1	ug/m3	10		TO-15	Total/NA
Tetrachloroethene	15		14	1.8	ug/m3	10		TO-15	Total/NA
Toluene	3.9	J	7.5	3.5	ug/m3	10		TO-15	Total/NA
Trichloroethene	19		11	1.3	ug/m3	10		TO-15	Total/NA
Trichlorofluoromethane	6300	E	11	2.9	ug/m3	10		TO-15	Total/NA
1,1,1-Trichloroethane - DL	18	J	57	11	ug/m3	51.9		TO-15	Total/NA
Trichlorofluoromethane - DL	5000		58	15	ug/m3	51.9		TO-15	Total/NA

Client Sample ID: SG-11223416-072021-SK-003

Lab Sample ID: 200-59373-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	5.9		2.0	0.39	ppb v/v	10		TO-15	Total/NA
Chloroform	0.52	J	2.0	0.46	ppb v/v	10		TO-15	Total/NA
Tetrachloroethene	0.70	J	2.0	0.27	ppb v/v	10		TO-15	Total/NA
Trichloroethene	1.7	J	2.0	0.24	ppb v/v	10		TO-15	Total/NA
Trichlorofluoromethane	790	E	2.0	0.52	ppb v/v	10		TO-15	Total/NA
1,1,1-Trichloroethane - DL	5.9	J	8.2	1.6	ppb v/v	41		TO-15	Total/NA
Trichlorofluoromethane - DL	770		8.2	2.1	ppb v/v	41		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Burlington

Detection Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-003 (Continued)

Lab Sample ID: 200-59373-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	32		11	2.1	ug/m3	10		TO-15	Total/NA
Chloroform	2.5	J	9.8	2.2	ug/m3	10		TO-15	Total/NA
Tetrachloroethene	4.8	J	14	1.8	ug/m3	10		TO-15	Total/NA
Trichloroethene	9.4	J	11	1.3	ug/m3	10		TO-15	Total/NA
Trichlorofluoromethane	4500	E	11	2.9	ug/m3	10		TO-15	Total/NA
1,1,1-Trichloroethane - DL	32	J	45	8.7	ug/m3	41		TO-15	Total/NA
Trichlorofluoromethane - DL	4300		46	12	ug/m3	41		TO-15	Total/NA

Client Sample ID: SG-11223416-072021-SK-004

Lab Sample ID: 200-59373-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	3.4		2.0	0.39	ppb v/v	10		TO-15	Total/NA
2-Butanone (MEK)	5.6	J	10	1.7	ppb v/v	10		TO-15	Total/NA
Trichlorofluoromethane	22		2.0	0.52	ppb v/v	10		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	18		11	2.1	ug/m3	10		TO-15	Total/NA
2-Butanone (MEK)	17	J	29	5.0	ug/m3	10		TO-15	Total/NA
Trichlorofluoromethane	130		11	2.9	ug/m3	10		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-001

Lab Sample ID: 200-59373-1

Date Collected: 07/20/21 09:06

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	2.2		2.0	0.39	ppb v/v			07/22/21 16:13	10
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.43	ppb v/v			07/22/21 16:13	10
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	0.55	ppb v/v			07/22/21 16:13	10
1,1,2-Trichloroethane	2.0	U	2.0	0.34	ppb v/v			07/22/21 16:13	10
1,1-Dichloroethane	2.0	U	2.0	0.29	ppb v/v			07/22/21 16:13	10
1,1-Dichloroethene	2.0	U	2.0	0.29	ppb v/v			07/22/21 16:13	10
1,2,4-Trichlorobenzene	20	U	20	1.9	ppb v/v			07/22/21 16:13	10
1,2,4-Trimethylbenzene	2.0	U	2.0	0.47	ppb v/v			07/22/21 16:13	10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.0	U	2.0	0.55	ppb v/v			07/22/21 16:13	10
1,2-Dichlorobenzene	2.0	U	2.0	0.70	ppb v/v			07/22/21 16:13	10
1,2-Dichloroethane	2.0	U	2.0	1.5	ppb v/v			07/22/21 16:13	10
1,2-Dichloropropane	2.0	U	2.0	0.87	ppb v/v			07/22/21 16:13	10
1,3,5-Trimethylbenzene	2.0	U	2.0	0.44	ppb v/v			07/22/21 16:13	10
1,3-Dichlorobenzene	2.0	U	2.0	0.89	ppb v/v			07/22/21 16:13	10
1,4-Dichlorobenzene	2.0	U	2.0	0.95	ppb v/v			07/22/21 16:13	10
1,4-Dioxane	50	U	50	17	ppb v/v			07/22/21 16:13	10
2-Butanone (MEK)	10	U	10	1.7	ppb v/v			07/22/21 16:13	10
4-Methyl-2-pentanone (MIBK)	5.0	U	5.0	1.9	ppb v/v			07/22/21 16:13	10
Acetone	50	U	50	20	ppb v/v			07/22/21 16:13	10
Benzene	2.0	U	2.0	0.74	ppb v/v			07/22/21 16:13	10
Benzyl chloride	8.0	U	8.0	0.74	ppb v/v			07/22/21 16:13	10
Bromoform	2.0	U	2.0	0.58	ppb v/v			07/22/21 16:13	10
Bromomethane	2.0	U	2.0	0.52	ppb v/v			07/22/21 16:13	10
Carbon disulfide	1.8 J		5.0	1.3	ppb v/v			07/22/21 16:13	10
Carbon tetrachloride	2.0	U	2.0	0.32	ppb v/v			07/22/21 16:13	10
Chlorobenzene	2.0	U	2.0	0.43	ppb v/v			07/22/21 16:13	10
Dibromochloromethane	2.0	U	2.0	0.31	ppb v/v			07/22/21 16:13	10
Chloroethane	8.0	U	8.0	2.5	ppb v/v			07/22/21 16:13	10
Chloroform	2.0	U	2.0	0.46	ppb v/v			07/22/21 16:13	10
Chloromethane	5.0	U	5.0	1.2	ppb v/v			07/22/21 16:13	10
cis-1,2-Dichloroethene	2.0	U	2.0	0.33	ppb v/v			07/22/21 16:13	10
cis-1,3-Dichloropropene	2.0	U	2.0	0.20	ppb v/v			07/22/21 16:13	10
Cyclohexane	5.0	U	5.0	0.35	ppb v/v			07/22/21 16:13	10
Bromodichloromethane	2.0	U	2.0	0.40	ppb v/v			07/22/21 16:13	10
Dichlorodifluoromethane	5.0	U	5.0	1.1	ppb v/v			07/22/21 16:13	10
Ethylbenzene	2.0	U	2.0	1.0	ppb v/v			07/22/21 16:13	10
1,2-Dibromoethane (EDB)	2.0	U	2.0	0.46	ppb v/v			07/22/21 16:13	10
Hexachlorobutadiene	20	U	20	0.31	ppb v/v			07/22/21 16:13	10
Hexane	8.0	U	8.0	2.3	ppb v/v			07/22/21 16:13	10
Isopropyl alcohol	50	U	50	9.8	ppb v/v			07/22/21 16:13	10
Isopropylbenzene	8.0	U	8.0	0.37	ppb v/v			07/22/21 16:13	10
m-Xylene & p-Xylene	8.0	U	8.0	1.7	ppb v/v			07/22/21 16:13	10
Methyl tert-butyl ether	10	U	10	0.80	ppb v/v			07/22/21 16:13	10
Methylene Chloride	5.0	U	5.0	1.7	ppb v/v			07/22/21 16:13	10
Naphthalene	5.0	U	5.0	1.7	ppb v/v			07/22/21 16:13	10
o-Xylene	1.4 J		2.0	0.94	ppb v/v			07/22/21 16:13	10
Styrene	2.0	U	2.0	0.32	ppb v/v			07/22/21 16:13	10
Tetrachloroethene	2.0	U	2.0	0.27	ppb v/v			07/22/21 16:13	10

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-001

Lab Sample ID: 200-59373-1

Date Collected: 07/20/21 09:06

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	50	U	50	12	ppb v/v			07/22/21 16:13	10
Toluene	1.2	J	2.0	0.93	ppb v/v			07/22/21 16:13	10
trans-1,2-Dichloroethene	2.0	U	2.0	0.88	ppb v/v			07/22/21 16:13	10
trans-1,3-Dichloropropene	2.0	U	2.0	0.89	ppb v/v			07/22/21 16:13	10
Trichloroethene	6.8		2.0	0.24	ppb v/v			07/22/21 16:13	10
Trichlorofluoromethane	84		2.0	0.52	ppb v/v			07/22/21 16:13	10
Vinyl acetate	50	U	50	21	ppb v/v			07/22/21 16:13	10
Vinyl bromide	2.0	U	2.0	0.85	ppb v/v			07/22/21 16:13	10
Vinyl chloride	2.0	U	2.0	0.28	ppb v/v			07/22/21 16:13	10
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	12		11	2.1	ug/m3			07/22/21 16:13	10
1,1,2,2-Tetrachloroethane	14	U	14	3.0	ug/m3			07/22/21 16:13	10
1,1,2-Trichloro-1,2,2-trifluoroethane	15	U	15	4.2	ug/m3			07/22/21 16:13	10
1,1,2-Trichloroethane	11	U	11	1.9	ug/m3			07/22/21 16:13	10
1,1-Dichloroethane	8.1	U	8.1	1.2	ug/m3			07/22/21 16:13	10
1,1-Dichloroethene	7.9	U	7.9	1.1	ug/m3			07/22/21 16:13	10
1,2,4-Trichlorobenzene	150	U	150	14	ug/m3			07/22/21 16:13	10
1,2,4-Trimethylbenzene	9.8	U	9.8	2.3	ug/m3			07/22/21 16:13	10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	U	14	3.8	ug/m3			07/22/21 16:13	10
1,2-Dichlorobenzene	12	U	12	4.2	ug/m3			07/22/21 16:13	10
1,2-Dichloroethane	8.1	U	8.1	6.1	ug/m3			07/22/21 16:13	10
1,2-Dichloropropane	9.2	U	9.2	4.0	ug/m3			07/22/21 16:13	10
1,3,5-Trimethylbenzene	9.8	U	9.8	2.2	ug/m3			07/22/21 16:13	10
1,3-Dichlorobenzene	12	U	12	5.4	ug/m3			07/22/21 16:13	10
1,4-Dichlorobenzene	12	U	12	5.7	ug/m3			07/22/21 16:13	10
1,4-Dioxane	180	U	180	61	ug/m3			07/22/21 16:13	10
2-Butanone (MEK)	29	U	29	5.0	ug/m3			07/22/21 16:13	10
4-Methyl-2-pentanone (MIBK)	20	U	20	7.8	ug/m3			07/22/21 16:13	10
Acetone	120	U	120	48	ug/m3			07/22/21 16:13	10
Benzene	6.4	U	6.4	2.4	ug/m3			07/22/21 16:13	10
Benzyl chloride	41	U	41	3.8	ug/m3			07/22/21 16:13	10
Bromoform	21	U	21	6.0	ug/m3			07/22/21 16:13	10
Bromomethane	7.8	U	7.8	2.0	ug/m3			07/22/21 16:13	10
Carbon disulfide	5.7	J	16	4.0	ug/m3			07/22/21 16:13	10
Carbon tetrachloride	13	U	13	2.0	ug/m3			07/22/21 16:13	10
Chlorobenzene	9.2	U	9.2	2.0	ug/m3			07/22/21 16:13	10
Dibromochloromethane	17	U	17	2.6	ug/m3			07/22/21 16:13	10
Chloroethane	21	U	21	6.6	ug/m3			07/22/21 16:13	10
Chloroform	9.8	U	9.8	2.2	ug/m3			07/22/21 16:13	10
Chloromethane	10	U	10	2.5	ug/m3			07/22/21 16:13	10
cis-1,2-Dichloroethene	7.9	U	7.9	1.3	ug/m3			07/22/21 16:13	10
cis-1,3-Dichloropropene	9.1	U	9.1	0.91	ug/m3			07/22/21 16:13	10
Cyclohexane	17	U	17	1.2	ug/m3			07/22/21 16:13	10
Bromodichloromethane	13	U	13	2.7	ug/m3			07/22/21 16:13	10
Dichlorodifluoromethane	25	U	25	5.4	ug/m3			07/22/21 16:13	10
Ethylbenzene	8.7	U	8.7	4.3	ug/m3			07/22/21 16:13	10
1,2-Dibromoethane (EDB)	15	U	15	3.5	ug/m3			07/22/21 16:13	10
Hexachlorobutadiene	210	U	210	3.3	ug/m3			07/22/21 16:13	10

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-001

Lab Sample ID: 200-59373-1

Date Collected: 07/20/21 09:06

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexane	28	U	28	8.1	ug/m3			07/22/21 16:13	10
Isopropyl alcohol	120	U	120	24	ug/m3			07/22/21 16:13	10
Isopropylbenzene	39	U	39	1.8	ug/m3			07/22/21 16:13	10
m-Xylene & p-Xylene	35	U	35	7.4	ug/m3			07/22/21 16:13	10
Methyl tert-butyl ether	36	U	36	2.9	ug/m3			07/22/21 16:13	10
Methylene Chloride	17	U	17	5.9	ug/m3			07/22/21 16:13	10
Naphthalene	26	U	26	8.9	ug/m3			07/22/21 16:13	10
o-Xylene	5.9	J	8.7	4.1	ug/m3			07/22/21 16:13	10
Styrene	8.5	U	8.5	1.4	ug/m3			07/22/21 16:13	10
Tetrachloroethene	14	U	14	1.8	ug/m3			07/22/21 16:13	10
Tetrahydrofuran	150	U	150	35	ug/m3			07/22/21 16:13	10
Toluene	4.7	J	7.5	3.5	ug/m3			07/22/21 16:13	10
trans-1,2-Dichloroethene	7.9	U	7.9	3.5	ug/m3			07/22/21 16:13	10
trans-1,3-Dichloropropene	9.1	U	9.1	4.0	ug/m3			07/22/21 16:13	10
Trichloroethene	37		11	1.3	ug/m3			07/22/21 16:13	10
Trichlorofluoromethane	470		11	2.9	ug/m3			07/22/21 16:13	10
Vinyl acetate	180	U	180	74	ug/m3			07/22/21 16:13	10
Vinyl bromide	8.7	U	8.7	3.7	ug/m3			07/22/21 16:13	10
Vinyl chloride	5.1	U	5.1	0.72	ug/m3			07/22/21 16:13	10

Client Sample ID: SG-11223416-072021-SK-002

Lab Sample ID: 200-59373-2

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	9.1		2.0	0.39	ppb v/v			07/22/21 17:06	10
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.43	ppb v/v			07/22/21 17:06	10
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	0.55	ppb v/v			07/22/21 17:06	10
1,1,2-Trichloroethane	2.0	U	2.0	0.34	ppb v/v			07/22/21 17:06	10
1,1-Dichloroethane	2.0	U	2.0	0.29	ppb v/v			07/22/21 17:06	10
1,1-Dichloroethene	2.0	U	2.0	0.29	ppb v/v			07/22/21 17:06	10
1,2,4-Trichlorobenzene	20	U	20	1.9	ppb v/v			07/22/21 17:06	10
1,2,4-Trimethylbenzene	0.83	J	2.0	0.47	ppb v/v			07/22/21 17:06	10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.0	U	2.0	0.55	ppb v/v			07/22/21 17:06	10
1,2-Dichlorobenzene	2.0	U	2.0	0.70	ppb v/v			07/22/21 17:06	10
1,2-Dichloroethane	2.0	U	2.0	1.5	ppb v/v			07/22/21 17:06	10
1,2-Dichloropropane	2.0	U	2.0	0.87	ppb v/v			07/22/21 17:06	10
1,3,5-Trimethylbenzene	2.0	U	2.0	0.44	ppb v/v			07/22/21 17:06	10
1,3-Dichlorobenzene	2.0	U	2.0	0.89	ppb v/v			07/22/21 17:06	10
1,4-Dichlorobenzene	2.0	U	2.0	0.95	ppb v/v			07/22/21 17:06	10
1,4-Dioxane	50	U	50	17	ppb v/v			07/22/21 17:06	10
2-Butanone (MEK)	6.0	J	10	1.7	ppb v/v			07/22/21 17:06	10
4-Methyl-2-pentanone (MIBK)	5.0	U	5.0	1.9	ppb v/v			07/22/21 17:06	10
Acetone	50	U	50	20	ppb v/v			07/22/21 17:06	10
Benzene	2.0	U	2.0	0.74	ppb v/v			07/22/21 17:06	10
Benzyl chloride	8.0	U	8.0	0.74	ppb v/v			07/22/21 17:06	10
Bromoform	2.0	U	2.0	0.58	ppb v/v			07/22/21 17:06	10

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-002

Lab Sample ID: 200-59373-2

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	2.0	U	2.0	0.52	ppb v/v			07/22/21 17:06	10
Carbon disulfide	5.0	U	5.0	1.3	ppb v/v			07/22/21 17:06	10
Carbon tetrachloride	2.0	U	2.0	0.32	ppb v/v			07/22/21 17:06	10
Chlorobenzene	2.0	U	2.0	0.43	ppb v/v			07/22/21 17:06	10
Dibromochloromethane	2.0	U	2.0	0.31	ppb v/v			07/22/21 17:06	10
Chloroethane	8.0	U	8.0	2.5	ppb v/v			07/22/21 17:06	10
Chloroform	2.0	U	2.0	0.46	ppb v/v			07/22/21 17:06	10
Chloromethane	5.0	U	5.0	1.2	ppb v/v			07/22/21 17:06	10
cis-1,2-Dichloroethene	2.0	U	2.0	0.33	ppb v/v			07/22/21 17:06	10
cis-1,3-Dichloropropene	2.0	U	2.0	0.20	ppb v/v			07/22/21 17:06	10
Cyclohexane	5.0	U	5.0	0.35	ppb v/v			07/22/21 17:06	10
Bromodichloromethane	2.0	U	2.0	0.40	ppb v/v			07/22/21 17:06	10
Dichlorodifluoromethane	1.2	J	5.0	1.1	ppb v/v			07/22/21 17:06	10
Ethylbenzene	2.0	U	2.0	1.0	ppb v/v			07/22/21 17:06	10
1,2-Dibromoethane (EDB)	2.0	U	2.0	0.46	ppb v/v			07/22/21 17:06	10
Hexachlorobutadiene	20	U	20	0.31	ppb v/v			07/22/21 17:06	10
Hexane	8.0	U	8.0	2.3	ppb v/v			07/22/21 17:06	10
Isopropyl alcohol	50	U	50	9.8	ppb v/v			07/22/21 17:06	10
Isopropylbenzene	8.0	U	8.0	0.37	ppb v/v			07/22/21 17:06	10
m-Xylene & p-Xylene	8.0	U	8.0	1.7	ppb v/v			07/22/21 17:06	10
Methyl tert-butyl ether	10	U	10	0.80	ppb v/v			07/22/21 17:06	10
Methylene Chloride	5.0	U	5.0	1.7	ppb v/v			07/22/21 17:06	10
Naphthalene	5.0	U	5.0	1.7	ppb v/v			07/22/21 17:06	10
o-Xylene	1.6	J	2.0	0.94	ppb v/v			07/22/21 17:06	10
Styrene	2.0	U	2.0	0.32	ppb v/v			07/22/21 17:06	10
Tetrachloroethene	2.3		2.0	0.27	ppb v/v			07/22/21 17:06	10
Tetrahydrofuran	50	U	50	12	ppb v/v			07/22/21 17:06	10
Toluene	1.0	J	2.0	0.93	ppb v/v			07/22/21 17:06	10
trans-1,2-Dichloroethene	2.0	U	2.0	0.88	ppb v/v			07/22/21 17:06	10
trans-1,3-Dichloropropene	2.0	U	2.0	0.89	ppb v/v			07/22/21 17:06	10
Trichloroethene	3.6		2.0	0.24	ppb v/v			07/22/21 17:06	10
Trichlorofluoromethane	1100	E	2.0	0.52	ppb v/v			07/22/21 17:06	10
Vinyl acetate	50	U	50	21	ppb v/v			07/22/21 17:06	10
Vinyl bromide	2.0	U	2.0	0.85	ppb v/v			07/22/21 17:06	10
Vinyl chloride	2.0	U	2.0	0.28	ppb v/v			07/22/21 17:06	10
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	50		11	2.1	ug/m3			07/22/21 17:06	10
1,1,2,2-Tetrachloroethane	14	U	14	3.0	ug/m3			07/22/21 17:06	10
1,1,2-Trichloro-1,2,2-trifluoroethane	15	U	15	4.2	ug/m3			07/22/21 17:06	10
1,1,2-Trichloroethane	11	U	11	1.9	ug/m3			07/22/21 17:06	10
1,1-Dichloroethane	8.1	U	8.1	1.2	ug/m3			07/22/21 17:06	10
1,1-Dichloroethene	7.9	U	7.9	1.1	ug/m3			07/22/21 17:06	10
1,2,4-Trichlorobenzene	150	U	150	14	ug/m3			07/22/21 17:06	10
1,2,4-Trimethylbenzene	4.1	J	9.8	2.3	ug/m3			07/22/21 17:06	10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	U	14	3.8	ug/m3			07/22/21 17:06	10
1,2-Dichlorobenzene	12	U	12	4.2	ug/m3			07/22/21 17:06	10
1,2-Dichloroethane	8.1	U	8.1	6.1	ug/m3			07/22/21 17:06	10
1,2-Dichloropropane	9.2	U	9.2	4.0	ug/m3			07/22/21 17:06	10

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-002

Lab Sample ID: 200-59373-2

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	9.8	U	9.8	2.2	ug/m3			07/22/21 17:06	10
1,3-Dichlorobenzene	12	U	12	5.4	ug/m3			07/22/21 17:06	10
1,4-Dichlorobenzene	12	U	12	5.7	ug/m3			07/22/21 17:06	10
1,4-Dioxane	180	U	180	61	ug/m3			07/22/21 17:06	10
2-Butanone (MEK)	18	J	29	5.0	ug/m3			07/22/21 17:06	10
4-Methyl-2-pentanone (MIBK)	20	U	20	7.8	ug/m3			07/22/21 17:06	10
Acetone	120	U	120	48	ug/m3			07/22/21 17:06	10
Benzene	6.4	U	6.4	2.4	ug/m3			07/22/21 17:06	10
Benzyl chloride	41	U	41	3.8	ug/m3			07/22/21 17:06	10
Bromoform	21	U	21	6.0	ug/m3			07/22/21 17:06	10
Bromomethane	7.8	U	7.8	2.0	ug/m3			07/22/21 17:06	10
Carbon disulfide	16	U	16	4.0	ug/m3			07/22/21 17:06	10
Carbon tetrachloride	13	U	13	2.0	ug/m3			07/22/21 17:06	10
Chlorobenzene	9.2	U	9.2	2.0	ug/m3			07/22/21 17:06	10
Dibromochloromethane	17	U	17	2.6	ug/m3			07/22/21 17:06	10
Chloroethane	21	U	21	6.6	ug/m3			07/22/21 17:06	10
Chloroform	9.8	U	9.8	2.2	ug/m3			07/22/21 17:06	10
Chloromethane	10	U	10	2.5	ug/m3			07/22/21 17:06	10
cis-1,2-Dichloroethene	7.9	U	7.9	1.3	ug/m3			07/22/21 17:06	10
cis-1,3-Dichloropropene	9.1	U	9.1	0.91	ug/m3			07/22/21 17:06	10
Cyclohexane	17	U	17	1.2	ug/m3			07/22/21 17:06	10
Bromodichloromethane	13	U	13	2.7	ug/m3			07/22/21 17:06	10
Dichlorodifluoromethane	6.1	J	25	5.4	ug/m3			07/22/21 17:06	10
Ethylbenzene	8.7	U	8.7	4.3	ug/m3			07/22/21 17:06	10
1,2-Dibromoethane (EDB)	15	U	15	3.5	ug/m3			07/22/21 17:06	10
Hexachlorobutadiene	210	U	210	3.3	ug/m3			07/22/21 17:06	10
Hexane	28	U	28	8.1	ug/m3			07/22/21 17:06	10
Isopropyl alcohol	120	U	120	24	ug/m3			07/22/21 17:06	10
Isopropylbenzene	39	U	39	1.8	ug/m3			07/22/21 17:06	10
m-Xylene & p-Xylene	35	U	35	7.4	ug/m3			07/22/21 17:06	10
Methyl tert-butyl ether	36	U	36	2.9	ug/m3			07/22/21 17:06	10
Methylene Chloride	17	U	17	5.9	ug/m3			07/22/21 17:06	10
Naphthalene	26	U	26	8.9	ug/m3			07/22/21 17:06	10
o-Xylene	7.0	J	8.7	4.1	ug/m3			07/22/21 17:06	10
Styrene	8.5	U	8.5	1.4	ug/m3			07/22/21 17:06	10
Tetrachloroethene	15		14	1.8	ug/m3			07/22/21 17:06	10
Tetrahydrofuran	150	U	150	35	ug/m3			07/22/21 17:06	10
Toluene	3.9	J	7.5	3.5	ug/m3			07/22/21 17:06	10
trans-1,2-Dichloroethene	7.9	U	7.9	3.5	ug/m3			07/22/21 17:06	10
trans-1,3-Dichloropropene	9.1	U	9.1	4.0	ug/m3			07/22/21 17:06	10
Trichloroethene	19		11	1.3	ug/m3			07/22/21 17:06	10
Trichlorofluoromethane	6300	E	11	2.9	ug/m3			07/22/21 17:06	10
Vinyl acetate	180	U	180	74	ug/m3			07/22/21 17:06	10
Vinyl bromide	8.7	U	8.7	3.7	ug/m3			07/22/21 17:06	10
Vinyl chloride	5.1	U	5.1	0.72	ug/m3			07/22/21 17:06	10

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	3.4	J	10	2.0	ppb v/v			07/22/21 17:58	51.9

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-002

Lab Sample ID: 200-59373-2

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	10	U	10	2.2	ppb v/v			07/22/21 17:58	51.9
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	2.9	ppb v/v			07/22/21 17:58	51.9
1,1,2-Trichloroethane	10	U	10	1.8	ppb v/v			07/22/21 17:58	51.9
1,1-Dichloroethane	10	U	10	1.5	ppb v/v			07/22/21 17:58	51.9
1,1-Dichloroethene	10	U	10	1.5	ppb v/v			07/22/21 17:58	51.9
1,2,4-Trichlorobenzene	100	U	100	9.9	ppb v/v			07/22/21 17:58	51.9
1,2,4-Trimethylbenzene	10	U	10	2.4	ppb v/v			07/22/21 17:58	51.9
1,2-Dichloro-1,1,2,2-tetrafluoroethane	10	U	10	2.9	ppb v/v			07/22/21 17:58	51.9
1,2-Dichlorobenzene	10	U	10	3.6	ppb v/v			07/22/21 17:58	51.9
1,2-Dichloroethane	10	U	10	7.8	ppb v/v			07/22/21 17:58	51.9
1,2-Dichloropropane	10	U	10	4.5	ppb v/v			07/22/21 17:58	51.9
1,3,5-Trimethylbenzene	10	U	10	2.3	ppb v/v			07/22/21 17:58	51.9
1,3-Dichlorobenzene	10	U	10	4.6	ppb v/v			07/22/21 17:58	51.9
1,4-Dichlorobenzene	10	U	10	4.9	ppb v/v			07/22/21 17:58	51.9
1,4-Dioxane	260	U	260	88	ppb v/v			07/22/21 17:58	51.9
2-Butanone (MEK)	52	U	52	8.8	ppb v/v			07/22/21 17:58	51.9
4-Methyl-2-pentanone (MIBK)	26	U	26	9.9	ppb v/v			07/22/21 17:58	51.9
Acetone	260	U	260	100	ppb v/v			07/22/21 17:58	51.9
Benzene	10	U	10	3.8	ppb v/v			07/22/21 17:58	51.9
Benzyl chloride	42	U	42	3.8	ppb v/v			07/22/21 17:58	51.9
Bromoform	10	U	10	3.0	ppb v/v			07/22/21 17:58	51.9
Bromomethane	10	U	10	2.7	ppb v/v			07/22/21 17:58	51.9
Carbon disulfide	26	U	26	6.7	ppb v/v			07/22/21 17:58	51.9
Carbon tetrachloride	10	U	10	1.7	ppb v/v			07/22/21 17:58	51.9
Chlorobenzene	10	U	10	2.2	ppb v/v			07/22/21 17:58	51.9
Dibromochloromethane	10	U	10	1.6	ppb v/v			07/22/21 17:58	51.9
Chloroethane	42	U	42	13	ppb v/v			07/22/21 17:58	51.9
Chloroform	10	U	10	2.4	ppb v/v			07/22/21 17:58	51.9
Chloromethane	26	U	26	6.2	ppb v/v			07/22/21 17:58	51.9
cis-1,2-Dichloroethene	10	U	10	1.7	ppb v/v			07/22/21 17:58	51.9
cis-1,3-Dichloropropene	10	U	10	1.0	ppb v/v			07/22/21 17:58	51.9
Cyclohexane	26	U	26	1.8	ppb v/v			07/22/21 17:58	51.9
Bromodichloromethane	10	U	10	2.1	ppb v/v			07/22/21 17:58	51.9
Dichlorodifluoromethane	26	U	26	5.7	ppb v/v			07/22/21 17:58	51.9
Ethylbenzene	10	U	10	5.2	ppb v/v			07/22/21 17:58	51.9
1,2-Dibromoethane (EDB)	10	U	10	2.4	ppb v/v			07/22/21 17:58	51.9
Hexachlorobutadiene	100	U	100	1.6	ppb v/v			07/22/21 17:58	51.9
Hexane	42	U	42	12	ppb v/v			07/22/21 17:58	51.9
Isopropyl alcohol	260	U	260	51	ppb v/v			07/22/21 17:58	51.9
Isopropylbenzene	42	U	42	1.9	ppb v/v			07/22/21 17:58	51.9
m-Xylene & p-Xylene	42	U	42	8.8	ppb v/v			07/22/21 17:58	51.9
Methyl tert-butyl ether	52	U	52	4.2	ppb v/v			07/22/21 17:58	51.9
Methylene Chloride	26	U	26	8.8	ppb v/v			07/22/21 17:58	51.9
Naphthalene	26	U	26	8.8	ppb v/v			07/22/21 17:58	51.9
o-Xylene	10	U	10	4.9	ppb v/v			07/22/21 17:58	51.9
Styrene	10	U	10	1.7	ppb v/v			07/22/21 17:58	51.9
Tetrachloroethene	10	U	10	1.4	ppb v/v			07/22/21 17:58	51.9
Tetrahydrofuran	260	U	260	62	ppb v/v			07/22/21 17:58	51.9

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-002

Lab Sample ID: 200-59373-2

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	10	U	10	4.8	ppb v/v			07/22/21 17:58	51.9
trans-1,2-Dichloroethene	10	U	10	4.6	ppb v/v			07/22/21 17:58	51.9
trans-1,3-Dichloropropene	10	U	10	4.6	ppb v/v			07/22/21 17:58	51.9
Trichloroethene	10	U	10	1.2	ppb v/v			07/22/21 17:58	51.9
Trichlorofluoromethane	880		10	2.7	ppb v/v			07/22/21 17:58	51.9
Vinyl acetate	260	U	260	110	ppb v/v			07/22/21 17:58	51.9
Vinyl bromide	10	U	10	4.4	ppb v/v			07/22/21 17:58	51.9
Vinyl chloride	10	U	10	1.5	ppb v/v			07/22/21 17:58	51.9
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	18	J	57	11	ug/m3			07/22/21 17:58	51.9
1,1,2,2-Tetrachloroethane	71	U	71	15	ug/m3			07/22/21 17:58	51.9
1,1,2-Trichloro-1,2,2-trifluoroethane	80	U	80	22	ug/m3			07/22/21 17:58	51.9
1,1,2-Trichloroethane	57	U	57	9.6	ug/m3			07/22/21 17:58	51.9
1,1-Dichloroethane	42	U	42	6.1	ug/m3			07/22/21 17:58	51.9
1,1-Dichloroethene	41	U	41	6.0	ug/m3			07/22/21 17:58	51.9
1,2,4-Trichlorobenzene	770	U	770	73	ug/m3			07/22/21 17:58	51.9
1,2,4-Trimethylbenzene	51	U	51	12	ug/m3			07/22/21 17:58	51.9
1,2-Dichloro-1,1,2,2-tetrafluoroethane	73	U	73	20	ug/m3			07/22/21 17:58	51.9
1,2-Dichlorobenzene	62	U	62	22	ug/m3			07/22/21 17:58	51.9
1,2-Dichloroethane	42	U	42	32	ug/m3			07/22/21 17:58	51.9
1,2-Dichloropropane	48	U	48	21	ug/m3			07/22/21 17:58	51.9
1,3,5-Trimethylbenzene	51	U	51	11	ug/m3			07/22/21 17:58	51.9
1,3-Dichlorobenzene	62	U	62	28	ug/m3			07/22/21 17:58	51.9
1,4-Dichlorobenzene	62	U	62	30	ug/m3			07/22/21 17:58	51.9
1,4-Dioxane	940	U	940	320	ug/m3			07/22/21 17:58	51.9
2-Butanone (MEK)	150	U	150	26	ug/m3			07/22/21 17:58	51.9
4-Methyl-2-pentanone (MIBK)	110	U	110	40	ug/m3			07/22/21 17:58	51.9
Acetone	620	U	620	250	ug/m3			07/22/21 17:58	51.9
Benzene	33	U	33	12	ug/m3			07/22/21 17:58	51.9
Benzyl chloride	210	U	210	20	ug/m3			07/22/21 17:58	51.9
Bromoform	110	U	110	31	ug/m3			07/22/21 17:58	51.9
Bromomethane	40	U	40	10	ug/m3			07/22/21 17:58	51.9
Carbon disulfide	81	U	81	21	ug/m3			07/22/21 17:58	51.9
Carbon tetrachloride	65	U	65	10	ug/m3			07/22/21 17:58	51.9
Chlorobenzene	48	U	48	10	ug/m3			07/22/21 17:58	51.9
Dibromochloromethane	88	U	88	14	ug/m3			07/22/21 17:58	51.9
Chloroethane	110	U	110	34	ug/m3			07/22/21 17:58	51.9
Chloroform	51	U	51	12	ug/m3			07/22/21 17:58	51.9
Chloromethane	54	U	54	13	ug/m3			07/22/21 17:58	51.9
cis-1,2-Dichloroethene	41	U	41	6.8	ug/m3			07/22/21 17:58	51.9
cis-1,3-Dichloropropene	47	U	47	4.7	ug/m3			07/22/21 17:58	51.9
Cyclohexane	89	U	89	6.3	ug/m3			07/22/21 17:58	51.9
Bromodichloromethane	70	U	70	14	ug/m3			07/22/21 17:58	51.9
Dichlorodifluoromethane	130	U	130	28	ug/m3			07/22/21 17:58	51.9
Ethylbenzene	45	U	45	23	ug/m3			07/22/21 17:58	51.9
1,2-Dibromoethane (EDB)	80	U	80	18	ug/m3			07/22/21 17:58	51.9
Hexachlorobutadiene	1100	U	1100	17	ug/m3			07/22/21 17:58	51.9
Hexane	150	U	150	42	ug/m3			07/22/21 17:58	51.9

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-002

Lab Sample ID: 200-59373-2

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl alcohol	640	U	640	130	ug/m3			07/22/21 17:58	51.9
Isopropylbenzene	200	U	200	9.4	ug/m3			07/22/21 17:58	51.9
m-Xylene & p-Xylene	180	U	180	38	ug/m3			07/22/21 17:58	51.9
Methyl tert-butyl ether	190	U	190	15	ug/m3			07/22/21 17:58	51.9
Methylene Chloride	90	U	90	31	ug/m3			07/22/21 17:58	51.9
Naphthalene	140	U	140	46	ug/m3			07/22/21 17:58	51.9
o-Xylene	45	U	45	21	ug/m3			07/22/21 17:58	51.9
Styrene	44	U	44	7.1	ug/m3			07/22/21 17:58	51.9
Tetrachloroethene	70	U	70	9.5	ug/m3			07/22/21 17:58	51.9
Tetrahydrofuran	770	U	770	180	ug/m3			07/22/21 17:58	51.9
Toluene	39	U	39	18	ug/m3			07/22/21 17:58	51.9
trans-1,2-Dichloroethene	41	U	41	18	ug/m3			07/22/21 17:58	51.9
trans-1,3-Dichloropropene	47	U	47	21	ug/m3			07/22/21 17:58	51.9
Trichloroethene	56	U	56	6.7	ug/m3			07/22/21 17:58	51.9
Trichlorofluoromethane	5000		58	15	ug/m3			07/22/21 17:58	51.9
Vinyl acetate	910	U	910	380	ug/m3			07/22/21 17:58	51.9
Vinyl bromide	45	U	45	19	ug/m3			07/22/21 17:58	51.9
Vinyl chloride	27	U	27	3.7	ug/m3			07/22/21 17:58	51.9

Client Sample ID: SG-11223416-072021-SK-003

Lab Sample ID: 200-59373-3

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.9		2.0	0.39	ppb v/v			07/22/21 18:51	10
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.43	ppb v/v			07/22/21 18:51	10
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	0.55	ppb v/v			07/22/21 18:51	10
1,1,2-Trichloroethane	2.0	U	2.0	0.34	ppb v/v			07/22/21 18:51	10
1,1-Dichloroethane	2.0	U	2.0	0.29	ppb v/v			07/22/21 18:51	10
1,1-Dichloroethene	2.0	U	2.0	0.29	ppb v/v			07/22/21 18:51	10
1,2,4-Trichlorobenzene	20	U	20	1.9	ppb v/v			07/22/21 18:51	10
1,2,4-Trimethylbenzene	2.0	U	2.0	0.47	ppb v/v			07/22/21 18:51	10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.0	U	2.0	0.55	ppb v/v			07/22/21 18:51	10
1,2-Dichlorobenzene	2.0	U	2.0	0.70	ppb v/v			07/22/21 18:51	10
1,2-Dichloroethane	2.0	U	2.0	1.5	ppb v/v			07/22/21 18:51	10
1,2-Dichloropropane	2.0	U	2.0	0.87	ppb v/v			07/22/21 18:51	10
1,3,5-Trimethylbenzene	2.0	U	2.0	0.44	ppb v/v			07/22/21 18:51	10
1,3-Dichlorobenzene	2.0	U	2.0	0.89	ppb v/v			07/22/21 18:51	10
1,4-Dichlorobenzene	2.0	U	2.0	0.95	ppb v/v			07/22/21 18:51	10
1,4-Dioxane	50	U	50	17	ppb v/v			07/22/21 18:51	10
2-Butanone (MEK)	10	U	10	1.7	ppb v/v			07/22/21 18:51	10
4-Methyl-2-pentanone (MIBK)	5.0	U	5.0	1.9	ppb v/v			07/22/21 18:51	10
Acetone	50	U	50	20	ppb v/v			07/22/21 18:51	10
Benzene	2.0	U	2.0	0.74	ppb v/v			07/22/21 18:51	10
Benzyl chloride	8.0	U	8.0	0.74	ppb v/v			07/22/21 18:51	10
Bromoform	2.0	U	2.0	0.58	ppb v/v			07/22/21 18:51	10
Bromomethane	2.0	U	2.0	0.52	ppb v/v			07/22/21 18:51	10

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-003

Lab Sample ID: 200-59373-3

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	5.0	U	5.0	1.3	ppb v/v			07/22/21 18:51	10
Carbon tetrachloride	2.0	U	2.0	0.32	ppb v/v			07/22/21 18:51	10
Chlorobenzene	2.0	U	2.0	0.43	ppb v/v			07/22/21 18:51	10
Dibromochloromethane	2.0	U	2.0	0.31	ppb v/v			07/22/21 18:51	10
Chloroethane	8.0	U	8.0	2.5	ppb v/v			07/22/21 18:51	10
Chloroform	0.52	J	2.0	0.46	ppb v/v			07/22/21 18:51	10
Chloromethane	5.0	U	5.0	1.2	ppb v/v			07/22/21 18:51	10
cis-1,2-Dichloroethene	2.0	U	2.0	0.33	ppb v/v			07/22/21 18:51	10
cis-1,3-Dichloropropene	2.0	U	2.0	0.20	ppb v/v			07/22/21 18:51	10
Cyclohexane	5.0	U	5.0	0.35	ppb v/v			07/22/21 18:51	10
Bromodichloromethane	2.0	U	2.0	0.40	ppb v/v			07/22/21 18:51	10
Dichlorodifluoromethane	5.0	U	5.0	1.1	ppb v/v			07/22/21 18:51	10
Ethylbenzene	2.0	U	2.0	1.0	ppb v/v			07/22/21 18:51	10
1,2-Dibromoethane (EDB)	2.0	U	2.0	0.46	ppb v/v			07/22/21 18:51	10
Hexachlorobutadiene	20	U	20	0.31	ppb v/v			07/22/21 18:51	10
Hexane	8.0	U	8.0	2.3	ppb v/v			07/22/21 18:51	10
Isopropyl alcohol	50	U	50	9.8	ppb v/v			07/22/21 18:51	10
Isopropylbenzene	8.0	U	8.0	0.37	ppb v/v			07/22/21 18:51	10
m-Xylene & p-Xylene	8.0	U	8.0	1.7	ppb v/v			07/22/21 18:51	10
Methyl tert-butyl ether	10	U	10	0.80	ppb v/v			07/22/21 18:51	10
Methylene Chloride	5.0	U	5.0	1.7	ppb v/v			07/22/21 18:51	10
Naphthalene	5.0	U	5.0	1.7	ppb v/v			07/22/21 18:51	10
o-Xylene	2.0	U	2.0	0.94	ppb v/v			07/22/21 18:51	10
Styrene	2.0	U	2.0	0.32	ppb v/v			07/22/21 18:51	10
Tetrachloroethene	0.70	J	2.0	0.27	ppb v/v			07/22/21 18:51	10
Tetrahydrofuran	50	U	50	12	ppb v/v			07/22/21 18:51	10
Toluene	2.0	U	2.0	0.93	ppb v/v			07/22/21 18:51	10
trans-1,2-Dichloroethene	2.0	U	2.0	0.88	ppb v/v			07/22/21 18:51	10
trans-1,3-Dichloropropene	2.0	U	2.0	0.89	ppb v/v			07/22/21 18:51	10
Trichloroethene	1.7	J	2.0	0.24	ppb v/v			07/22/21 18:51	10
Trichlorofluoromethane	790	E	2.0	0.52	ppb v/v			07/22/21 18:51	10
Vinyl acetate	50	U	50	21	ppb v/v			07/22/21 18:51	10
Vinyl bromide	2.0	U	2.0	0.85	ppb v/v			07/22/21 18:51	10
Vinyl chloride	2.0	U	2.0	0.28	ppb v/v			07/22/21 18:51	10
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	32		11	2.1	ug/m3			07/22/21 18:51	10
1,1,2,2-Tetrachloroethane	14	U	14	3.0	ug/m3			07/22/21 18:51	10
1,1,2-Trichloro-1,2,2-trifluoroethane	15	U	15	4.2	ug/m3			07/22/21 18:51	10
1,1,2-Trichloroethane	11	U	11	1.9	ug/m3			07/22/21 18:51	10
1,1-Dichloroethane	8.1	U	8.1	1.2	ug/m3			07/22/21 18:51	10
1,1-Dichloroethene	7.9	U	7.9	1.1	ug/m3			07/22/21 18:51	10
1,2,4-Trichlorobenzene	150	U	150	14	ug/m3			07/22/21 18:51	10
1,2,4-Trimethylbenzene	9.8	U	9.8	2.3	ug/m3			07/22/21 18:51	10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	U	14	3.8	ug/m3			07/22/21 18:51	10
1,2-Dichlorobenzene	12	U	12	4.2	ug/m3			07/22/21 18:51	10
1,2-Dichloroethane	8.1	U	8.1	6.1	ug/m3			07/22/21 18:51	10
1,2-Dichloropropane	9.2	U	9.2	4.0	ug/m3			07/22/21 18:51	10
1,3,5-Trimethylbenzene	9.8	U	9.8	2.2	ug/m3			07/22/21 18:51	10

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-003

Lab Sample ID: 200-59373-3

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	12	U	12	5.4	ug/m3			07/22/21 18:51	10
1,4-Dichlorobenzene	12	U	12	5.7	ug/m3			07/22/21 18:51	10
1,4-Dioxane	180	U	180	61	ug/m3			07/22/21 18:51	10
2-Butanone (MEK)	29	U	29	5.0	ug/m3			07/22/21 18:51	10
4-Methyl-2-pentanone (MIBK)	20	U	20	7.8	ug/m3			07/22/21 18:51	10
Acetone	120	U	120	48	ug/m3			07/22/21 18:51	10
Benzene	6.4	U	6.4	2.4	ug/m3			07/22/21 18:51	10
Benzyl chloride	41	U	41	3.8	ug/m3			07/22/21 18:51	10
Bromoform	21	U	21	6.0	ug/m3			07/22/21 18:51	10
Bromomethane	7.8	U	7.8	2.0	ug/m3			07/22/21 18:51	10
Carbon disulfide	16	U	16	4.0	ug/m3			07/22/21 18:51	10
Carbon tetrachloride	13	U	13	2.0	ug/m3			07/22/21 18:51	10
Chlorobenzene	9.2	U	9.2	2.0	ug/m3			07/22/21 18:51	10
Dibromochloromethane	17	U	17	2.6	ug/m3			07/22/21 18:51	10
Chloroethane	21	U	21	6.6	ug/m3			07/22/21 18:51	10
Chloroform	2.5	J	9.8	2.2	ug/m3			07/22/21 18:51	10
Chloromethane	10	U	10	2.5	ug/m3			07/22/21 18:51	10
cis-1,2-Dichloroethene	7.9	U	7.9	1.3	ug/m3			07/22/21 18:51	10
cis-1,3-Dichloropropene	9.1	U	9.1	0.91	ug/m3			07/22/21 18:51	10
Cyclohexane	17	U	17	1.2	ug/m3			07/22/21 18:51	10
Bromodichloromethane	13	U	13	2.7	ug/m3			07/22/21 18:51	10
Dichlorodifluoromethane	25	U	25	5.4	ug/m3			07/22/21 18:51	10
Ethylbenzene	8.7	U	8.7	4.3	ug/m3			07/22/21 18:51	10
1,2-Dibromoethane (EDB)	15	U	15	3.5	ug/m3			07/22/21 18:51	10
Hexachlorobutadiene	210	U	210	3.3	ug/m3			07/22/21 18:51	10
Hexane	28	U	28	8.1	ug/m3			07/22/21 18:51	10
Isopropyl alcohol	120	U	120	24	ug/m3			07/22/21 18:51	10
Isopropylbenzene	39	U	39	1.8	ug/m3			07/22/21 18:51	10
m-Xylene & p-Xylene	35	U	35	7.4	ug/m3			07/22/21 18:51	10
Methyl tert-butyl ether	36	U	36	2.9	ug/m3			07/22/21 18:51	10
Methylene Chloride	17	U	17	5.9	ug/m3			07/22/21 18:51	10
Naphthalene	26	U	26	8.9	ug/m3			07/22/21 18:51	10
o-Xylene	8.7	U	8.7	4.1	ug/m3			07/22/21 18:51	10
Styrene	8.5	U	8.5	1.4	ug/m3			07/22/21 18:51	10
Tetrachloroethene	4.8	J	14	1.8	ug/m3			07/22/21 18:51	10
Tetrahydrofuran	150	U	150	35	ug/m3			07/22/21 18:51	10
Toluene	7.5	U	7.5	3.5	ug/m3			07/22/21 18:51	10
trans-1,2-Dichloroethene	7.9	U	7.9	3.5	ug/m3			07/22/21 18:51	10
trans-1,3-Dichloropropene	9.1	U	9.1	4.0	ug/m3			07/22/21 18:51	10
Trichloroethene	9.4	J	11	1.3	ug/m3			07/22/21 18:51	10
Trichlorofluoromethane	4500	E	11	2.9	ug/m3			07/22/21 18:51	10
Vinyl acetate	180	U	180	74	ug/m3			07/22/21 18:51	10
Vinyl bromide	8.7	U	8.7	3.7	ug/m3			07/22/21 18:51	10
Vinyl chloride	5.1	U	5.1	0.72	ug/m3			07/22/21 18:51	10

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.9	J	8.2	1.6	ppb v/v			07/22/21 19:43	41
1,1,2,2-Tetrachloroethane	8.2	U	8.2	1.8	ppb v/v			07/22/21 19:43	41

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-003

Lab Sample ID: 200-59373-3

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	8.2	U	8.2	2.3	ppb v/v			07/22/21 19:43	41
1,1,2-Trichloroethane	8.2	U	8.2	1.4	ppb v/v			07/22/21 19:43	41
1,1-Dichloroethane	8.2	U	8.2	1.2	ppb v/v			07/22/21 19:43	41
1,1-Dichloroethene	8.2	U	8.2	1.2	ppb v/v			07/22/21 19:43	41
1,2,4-Trichlorobenzene	82	U	82	7.8	ppb v/v			07/22/21 19:43	41
1,2,4-Trimethylbenzene	8.2	U	8.2	1.9	ppb v/v			07/22/21 19:43	41
1,2-Dichloro-1,1,2,2-tetrafluoroethane	8.2	U	8.2	2.3	ppb v/v			07/22/21 19:43	41
1,2-Dichlorobenzene	8.2	U	8.2	2.9	ppb v/v			07/22/21 19:43	41
1,2-Dichloroethane	8.2	U	8.2	6.2	ppb v/v			07/22/21 19:43	41
1,2-Dichloropropane	8.2	U	8.2	3.6	ppb v/v			07/22/21 19:43	41
1,3,5-Trimethylbenzene	8.2	U	8.2	1.8	ppb v/v			07/22/21 19:43	41
1,3-Dichlorobenzene	8.2	U	8.2	3.6	ppb v/v			07/22/21 19:43	41
1,4-Dichlorobenzene	8.2	U	8.2	3.9	ppb v/v			07/22/21 19:43	41
1,4-Dioxane	210	U	210	70	ppb v/v			07/22/21 19:43	41
2-Butanone (MEK)	41	U	41	7.0	ppb v/v			07/22/21 19:43	41
4-Methyl-2-pentanone (MIBK)	21	U	21	7.8	ppb v/v			07/22/21 19:43	41
Acetone	210	U	210	82	ppb v/v			07/22/21 19:43	41
Benzene	8.2	U	8.2	3.0	ppb v/v			07/22/21 19:43	41
Benzyl chloride	33	U	33	3.0	ppb v/v			07/22/21 19:43	41
Bromoform	8.2	U	8.2	2.4	ppb v/v			07/22/21 19:43	41
Bromomethane	8.2	U	8.2	2.1	ppb v/v			07/22/21 19:43	41
Carbon disulfide	21	U	21	5.3	ppb v/v			07/22/21 19:43	41
Carbon tetrachloride	8.2	U	8.2	1.3	ppb v/v			07/22/21 19:43	41
Chlorobenzene	8.2	U	8.2	1.8	ppb v/v			07/22/21 19:43	41
Dibromochloromethane	8.2	U	8.2	1.3	ppb v/v			07/22/21 19:43	41
Chloroethane	33	U	33	10	ppb v/v			07/22/21 19:43	41
Chloroform	8.2	U	8.2	1.9	ppb v/v			07/22/21 19:43	41
Chloromethane	21	U	21	4.9	ppb v/v			07/22/21 19:43	41
cis-1,2-Dichloroethene	8.2	U	8.2	1.4	ppb v/v			07/22/21 19:43	41
cis-1,3-Dichloropropene	8.2	U	8.2	0.82	ppb v/v			07/22/21 19:43	41
Cyclohexane	21	U	21	1.4	ppb v/v			07/22/21 19:43	41
Bromodichloromethane	8.2	U	8.2	1.6	ppb v/v			07/22/21 19:43	41
Dichlorodifluoromethane	21	U	21	4.5	ppb v/v			07/22/21 19:43	41
Ethylbenzene	8.2	U	8.2	4.1	ppb v/v			07/22/21 19:43	41
1,2-Dibromoethane (EDB)	8.2	U	8.2	1.9	ppb v/v			07/22/21 19:43	41
Hexachlorobutadiene	82	U	82	1.3	ppb v/v			07/22/21 19:43	41
Hexane	33	U	33	9.4	ppb v/v			07/22/21 19:43	41
Isopropyl alcohol	210	U	210	40	ppb v/v			07/22/21 19:43	41
Isopropylbenzene	33	U	33	1.5	ppb v/v			07/22/21 19:43	41
m-Xylene & p-Xylene	33	U	33	7.0	ppb v/v			07/22/21 19:43	41
Methyl tert-butyl ether	41	U	41	3.3	ppb v/v			07/22/21 19:43	41
Methylene Chloride	21	U	21	7.0	ppb v/v			07/22/21 19:43	41
Naphthalene	21	U	21	7.0	ppb v/v			07/22/21 19:43	41
o-Xylene	8.2	U	8.2	3.9	ppb v/v			07/22/21 19:43	41
Styrene	8.2	U	8.2	1.3	ppb v/v			07/22/21 19:43	41
Tetrachloroethene	8.2	U	8.2	1.1	ppb v/v			07/22/21 19:43	41
Tetrahydrofuran	210	U	210	49	ppb v/v			07/22/21 19:43	41
Toluene	8.2	U	8.2	3.8	ppb v/v			07/22/21 19:43	41

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-003

Lab Sample ID: 200-59373-3

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	8.2	U	8.2	3.6	ppb v/v			07/22/21 19:43	41
trans-1,3-Dichloropropene	8.2	U	8.2	3.6	ppb v/v			07/22/21 19:43	41
Trichloroethene	8.2	U	8.2	0.98	ppb v/v			07/22/21 19:43	41
Trichlorofluoromethane	770		8.2	2.1	ppb v/v			07/22/21 19:43	41
Vinyl acetate	210	U	210	86	ppb v/v			07/22/21 19:43	41
Vinyl bromide	8.2	U	8.2	3.5	ppb v/v			07/22/21 19:43	41
Vinyl chloride	8.2	U	8.2	1.1	ppb v/v			07/22/21 19:43	41
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	32	J	45	8.7	ug/m3			07/22/21 19:43	41
1,1,2,2-Tetrachloroethane	56	U	56	12	ug/m3			07/22/21 19:43	41
1,1,2-Trichloro-1,2,2-trifluoroethane	63	U	63	17	ug/m3			07/22/21 19:43	41
1,1,2-Trichloroethane	45	U	45	7.6	ug/m3			07/22/21 19:43	41
1,1-Dichloroethane	33	U	33	4.8	ug/m3			07/22/21 19:43	41
1,1-Dichloroethene	33	U	33	4.7	ug/m3			07/22/21 19:43	41
1,2,4-Trichlorobenzene	610	U	610	58	ug/m3			07/22/21 19:43	41
1,2,4-Trimethylbenzene	40	U	40	9.5	ug/m3			07/22/21 19:43	41
1,2-Dichloro-1,1,2,2-tetrafluoroethane	57	U	57	16	ug/m3			07/22/21 19:43	41
1,2-Dichlorobenzene	49	U	49	17	ug/m3			07/22/21 19:43	41
1,2-Dichloroethane	33	U	33	25	ug/m3			07/22/21 19:43	41
1,2-Dichloropropane	38	U	38	16	ug/m3			07/22/21 19:43	41
1,3,5-Trimethylbenzene	40	U	40	8.9	ug/m3			07/22/21 19:43	41
1,3-Dichlorobenzene	49	U	49	22	ug/m3			07/22/21 19:43	41
1,4-Dichlorobenzene	49	U	49	23	ug/m3			07/22/21 19:43	41
1,4-Dioxane	740	U	740	250	ug/m3			07/22/21 19:43	41
2-Butanone (MEK)	120	U	120	21	ug/m3			07/22/21 19:43	41
4-Methyl-2-pentanone (MIBK)	84	U	84	32	ug/m3			07/22/21 19:43	41
Acetone	490	U	490	190	ug/m3			07/22/21 19:43	41
Benzene	26	U	26	9.7	ug/m3			07/22/21 19:43	41
Benzyl chloride	170	U	170	16	ug/m3			07/22/21 19:43	41
Bromoform	85	U	85	25	ug/m3			07/22/21 19:43	41
Bromomethane	32	U	32	8.3	ug/m3			07/22/21 19:43	41
Carbon disulfide	64	U	64	17	ug/m3			07/22/21 19:43	41
Carbon tetrachloride	52	U	52	8.3	ug/m3			07/22/21 19:43	41
Chlorobenzene	38	U	38	8.1	ug/m3			07/22/21 19:43	41
Dibromochloromethane	70	U	70	11	ug/m3			07/22/21 19:43	41
Chloroethane	87	U	87	27	ug/m3			07/22/21 19:43	41
Chloroform	40	U	40	9.2	ug/m3			07/22/21 19:43	41
Chloromethane	42	U	42	10	ug/m3			07/22/21 19:43	41
cis-1,2-Dichloroethene	33	U	33	5.4	ug/m3			07/22/21 19:43	41
cis-1,3-Dichloropropene	37	U	37	3.7	ug/m3			07/22/21 19:43	41
Cyclohexane	71	U	71	4.9	ug/m3			07/22/21 19:43	41
Bromodichloromethane	55	U	55	11	ug/m3			07/22/21 19:43	41
Dichlorodifluoromethane	100	U	100	22	ug/m3			07/22/21 19:43	41
Ethylbenzene	36	U	36	18	ug/m3			07/22/21 19:43	41
1,2-Dibromoethane (EDB)	63	U	63	14	ug/m3			07/22/21 19:43	41
Hexachlorobutadiene	870	U	870	14	ug/m3			07/22/21 19:43	41
Hexane	120	U	120	33	ug/m3			07/22/21 19:43	41
Isopropyl alcohol	500	U	500	99	ug/m3			07/22/21 19:43	41

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-003

Lab Sample ID: 200-59373-3

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	160	U	160	7.5	ug/m3			07/22/21 19:43	41
m-Xylene & p-Xylene	140	U	140	30	ug/m3			07/22/21 19:43	41
Methyl tert-butyl ether	150	U	150	12	ug/m3			07/22/21 19:43	41
Methylene Chloride	71	U	71	24	ug/m3			07/22/21 19:43	41
Naphthalene	110	U	110	37	ug/m3			07/22/21 19:43	41
o-Xylene	36	U	36	17	ug/m3			07/22/21 19:43	41
Styrene	35	U	35	5.6	ug/m3			07/22/21 19:43	41
Tetrachloroethene	56	U	56	7.5	ug/m3			07/22/21 19:43	41
Tetrahydrofuran	600	U	600	150	ug/m3			07/22/21 19:43	41
Toluene	31	U	31	14	ug/m3			07/22/21 19:43	41
trans-1,2-Dichloroethene	33	U	33	14	ug/m3			07/22/21 19:43	41
trans-1,3-Dichloropropene	37	U	37	17	ug/m3			07/22/21 19:43	41
Trichloroethene	44	U	44	5.3	ug/m3			07/22/21 19:43	41
Trichlorofluoromethane	4300		46	12	ug/m3			07/22/21 19:43	41
Vinyl acetate	720	U	720	300	ug/m3			07/22/21 19:43	41
Vinyl bromide	36	U	36	15	ug/m3			07/22/21 19:43	41
Vinyl chloride	21	U	21	2.9	ug/m3			07/22/21 19:43	41

Client Sample ID: SG-11223416-072021-SK-004

Lab Sample ID: 200-59373-4

Date Collected: 07/20/21 10:32

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	3.4		2.0	0.39	ppb v/v			07/22/21 20:36	10
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.43	ppb v/v			07/22/21 20:36	10
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	0.55	ppb v/v			07/22/21 20:36	10
1,1,2-Trichloroethane	2.0	U	2.0	0.34	ppb v/v			07/22/21 20:36	10
1,1-Dichloroethane	2.0	U	2.0	0.29	ppb v/v			07/22/21 20:36	10
1,1-Dichloroethene	2.0	U	2.0	0.29	ppb v/v			07/22/21 20:36	10
1,2,4-Trichlorobenzene	20	U	20	1.9	ppb v/v			07/22/21 20:36	10
1,2,4-Trimethylbenzene	2.0	U	2.0	0.47	ppb v/v			07/22/21 20:36	10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.0	U	2.0	0.55	ppb v/v			07/22/21 20:36	10
1,2-Dichlorobenzene	2.0	U	2.0	0.70	ppb v/v			07/22/21 20:36	10
1,2-Dichloroethane	2.0	U	2.0	1.5	ppb v/v			07/22/21 20:36	10
1,2-Dichloropropane	2.0	U	2.0	0.87	ppb v/v			07/22/21 20:36	10
1,3,5-Trimethylbenzene	2.0	U	2.0	0.44	ppb v/v			07/22/21 20:36	10
1,3-Dichlorobenzene	2.0	U	2.0	0.89	ppb v/v			07/22/21 20:36	10
1,4-Dichlorobenzene	2.0	U	2.0	0.95	ppb v/v			07/22/21 20:36	10
1,4-Dioxane	50	U	50	17	ppb v/v			07/22/21 20:36	10
2-Butanone (MEK)	5.6	J	10	1.7	ppb v/v			07/22/21 20:36	10
4-Methyl-2-pentanone (MIBK)	5.0	U	5.0	1.9	ppb v/v			07/22/21 20:36	10
Acetone	50	U	50	20	ppb v/v			07/22/21 20:36	10
Benzene	2.0	U	2.0	0.74	ppb v/v			07/22/21 20:36	10
Benzyl chloride	8.0	U	8.0	0.74	ppb v/v			07/22/21 20:36	10
Bromoform	2.0	U	2.0	0.58	ppb v/v			07/22/21 20:36	10
Bromomethane	2.0	U	2.0	0.52	ppb v/v			07/22/21 20:36	10
Carbon disulfide	5.0	U	5.0	1.3	ppb v/v			07/22/21 20:36	10

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-004

Lab Sample ID: 200-59373-4

Date Collected: 07/20/21 10:32

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	2.0	U	2.0	0.32	ppb v/v			07/22/21 20:36	10
Chlorobenzene	2.0	U	2.0	0.43	ppb v/v			07/22/21 20:36	10
Dibromochloromethane	2.0	U	2.0	0.31	ppb v/v			07/22/21 20:36	10
Chloroethane	8.0	U	8.0	2.5	ppb v/v			07/22/21 20:36	10
Chloroform	2.0	U	2.0	0.46	ppb v/v			07/22/21 20:36	10
Chloromethane	5.0	U	5.0	1.2	ppb v/v			07/22/21 20:36	10
cis-1,2-Dichloroethene	2.0	U	2.0	0.33	ppb v/v			07/22/21 20:36	10
cis-1,3-Dichloropropene	2.0	U	2.0	0.20	ppb v/v			07/22/21 20:36	10
Cyclohexane	5.0	U	5.0	0.35	ppb v/v			07/22/21 20:36	10
Bromodichloromethane	2.0	U	2.0	0.40	ppb v/v			07/22/21 20:36	10
Dichlorodifluoromethane	5.0	U	5.0	1.1	ppb v/v			07/22/21 20:36	10
Ethylbenzene	2.0	U	2.0	1.0	ppb v/v			07/22/21 20:36	10
1,2-Dibromoethane (EDB)	2.0	U	2.0	0.46	ppb v/v			07/22/21 20:36	10
Hexachlorobutadiene	20	U	20	0.31	ppb v/v			07/22/21 20:36	10
Hexane	8.0	U	8.0	2.3	ppb v/v			07/22/21 20:36	10
Isopropyl alcohol	50	U	50	9.8	ppb v/v			07/22/21 20:36	10
Isopropylbenzene	8.0	U	8.0	0.37	ppb v/v			07/22/21 20:36	10
m-Xylene & p-Xylene	8.0	U	8.0	1.7	ppb v/v			07/22/21 20:36	10
Methyl tert-butyl ether	10	U	10	0.80	ppb v/v			07/22/21 20:36	10
Methylene Chloride	5.0	U	5.0	1.7	ppb v/v			07/22/21 20:36	10
Naphthalene	5.0	U	5.0	1.7	ppb v/v			07/22/21 20:36	10
o-Xylene	2.0	U	2.0	0.94	ppb v/v			07/22/21 20:36	10
Styrene	2.0	U	2.0	0.32	ppb v/v			07/22/21 20:36	10
Tetrachloroethene	2.0	U	2.0	0.27	ppb v/v			07/22/21 20:36	10
Tetrahydrofuran	50	U	50	12	ppb v/v			07/22/21 20:36	10
Toluene	2.0	U	2.0	0.93	ppb v/v			07/22/21 20:36	10
trans-1,2-Dichloroethene	2.0	U	2.0	0.88	ppb v/v			07/22/21 20:36	10
trans-1,3-Dichloropropene	2.0	U	2.0	0.89	ppb v/v			07/22/21 20:36	10
Trichloroethene	2.0	U	2.0	0.24	ppb v/v			07/22/21 20:36	10
Trichlorofluoromethane	22		2.0	0.52	ppb v/v			07/22/21 20:36	10
Vinyl acetate	50	U	50	21	ppb v/v			07/22/21 20:36	10
Vinyl bromide	2.0	U	2.0	0.85	ppb v/v			07/22/21 20:36	10
Vinyl chloride	2.0	U	2.0	0.28	ppb v/v			07/22/21 20:36	10
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	18		11	2.1	ug/m3			07/22/21 20:36	10
1,1,2,2-Tetrachloroethane	14	U	14	3.0	ug/m3			07/22/21 20:36	10
1,1,2-Trichloro-1,2,2-trifluoroethane	15	U	15	4.2	ug/m3			07/22/21 20:36	10
1,1,2-Trichloroethane	11	U	11	1.9	ug/m3			07/22/21 20:36	10
1,1-Dichloroethane	8.1	U	8.1	1.2	ug/m3			07/22/21 20:36	10
1,1-Dichloroethene	7.9	U	7.9	1.1	ug/m3			07/22/21 20:36	10
1,2,4-Trichlorobenzene	150	U	150	14	ug/m3			07/22/21 20:36	10
1,2,4-Trimethylbenzene	9.8	U	9.8	2.3	ug/m3			07/22/21 20:36	10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	U	14	3.8	ug/m3			07/22/21 20:36	10
1,2-Dichlorobenzene	12	U	12	4.2	ug/m3			07/22/21 20:36	10
1,2-Dichloroethane	8.1	U	8.1	6.1	ug/m3			07/22/21 20:36	10
1,2-Dichloropropane	9.2	U	9.2	4.0	ug/m3			07/22/21 20:36	10
1,3,5-Trimethylbenzene	9.8	U	9.8	2.2	ug/m3			07/22/21 20:36	10
1,3-Dichlorobenzene	12	U	12	5.4	ug/m3			07/22/21 20:36	10

Eurofins TestAmerica, Burlington

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-004

Lab Sample ID: 200-59373-4

Date Collected: 07/20/21 10:32

Matrix: Air

Date Received: 07/21/21 10:20

Sample Container: Summa Canister 1L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	12	U	12	5.7	ug/m3			07/22/21 20:36	10
1,4-Dioxane	180	U	180	61	ug/m3			07/22/21 20:36	10
2-Butanone (MEK)	17	J	29	5.0	ug/m3			07/22/21 20:36	10
4-Methyl-2-pentanone (MIBK)	20	U	20	7.8	ug/m3			07/22/21 20:36	10
Acetone	120	U	120	48	ug/m3			07/22/21 20:36	10
Benzene	6.4	U	6.4	2.4	ug/m3			07/22/21 20:36	10
Benzyl chloride	41	U	41	3.8	ug/m3			07/22/21 20:36	10
Bromoform	21	U	21	6.0	ug/m3			07/22/21 20:36	10
Bromomethane	7.8	U	7.8	2.0	ug/m3			07/22/21 20:36	10
Carbon disulfide	16	U	16	4.0	ug/m3			07/22/21 20:36	10
Carbon tetrachloride	13	U	13	2.0	ug/m3			07/22/21 20:36	10
Chlorobenzene	9.2	U	9.2	2.0	ug/m3			07/22/21 20:36	10
Dibromochloromethane	17	U	17	2.6	ug/m3			07/22/21 20:36	10
Chloroethane	21	U	21	6.6	ug/m3			07/22/21 20:36	10
Chloroform	9.8	U	9.8	2.2	ug/m3			07/22/21 20:36	10
Chloromethane	10	U	10	2.5	ug/m3			07/22/21 20:36	10
cis-1,2-Dichloroethene	7.9	U	7.9	1.3	ug/m3			07/22/21 20:36	10
cis-1,3-Dichloropropene	9.1	U	9.1	0.91	ug/m3			07/22/21 20:36	10
Cyclohexane	17	U	17	1.2	ug/m3			07/22/21 20:36	10
Bromodichloromethane	13	U	13	2.7	ug/m3			07/22/21 20:36	10
Dichlorodifluoromethane	25	U	25	5.4	ug/m3			07/22/21 20:36	10
Ethylbenzene	8.7	U	8.7	4.3	ug/m3			07/22/21 20:36	10
1,2-Dibromoethane (EDB)	15	U	15	3.5	ug/m3			07/22/21 20:36	10
Hexachlorobutadiene	210	U	210	3.3	ug/m3			07/22/21 20:36	10
Hexane	28	U	28	8.1	ug/m3			07/22/21 20:36	10
Isopropyl alcohol	120	U	120	24	ug/m3			07/22/21 20:36	10
Isopropylbenzene	39	U	39	1.8	ug/m3			07/22/21 20:36	10
m-Xylene & p-Xylene	35	U	35	7.4	ug/m3			07/22/21 20:36	10
Methyl tert-butyl ether	36	U	36	2.9	ug/m3			07/22/21 20:36	10
Methylene Chloride	17	U	17	5.9	ug/m3			07/22/21 20:36	10
Naphthalene	26	U	26	8.9	ug/m3			07/22/21 20:36	10
o-Xylene	8.7	U	8.7	4.1	ug/m3			07/22/21 20:36	10
Styrene	8.5	U	8.5	1.4	ug/m3			07/22/21 20:36	10
Tetrachloroethene	14	U	14	1.8	ug/m3			07/22/21 20:36	10
Tetrahydrofuran	150	U	150	35	ug/m3			07/22/21 20:36	10
Toluene	7.5	U	7.5	3.5	ug/m3			07/22/21 20:36	10
trans-1,2-Dichloroethene	7.9	U	7.9	3.5	ug/m3			07/22/21 20:36	10
trans-1,3-Dichloropropene	9.1	U	9.1	4.0	ug/m3			07/22/21 20:36	10
Trichloroethene	11	U	11	1.3	ug/m3			07/22/21 20:36	10
Trichlorofluoromethane	130		11	2.9	ug/m3			07/22/21 20:36	10
Vinyl acetate	180	U	180	74	ug/m3			07/22/21 20:36	10
Vinyl bromide	8.7	U	8.7	3.7	ug/m3			07/22/21 20:36	10
Vinyl chloride	5.1	U	5.1	0.72	ug/m3			07/22/21 20:36	10

Eurofins TestAmerica, Burlington

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 200-169329/4

Matrix: Air

Analysis Batch: 169329

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-Trichloroethane	0.20	U	0.20	0.039	ppb v/v			07/22/21 10:07	1
1,1,2,2-Tetrachloroethane	0.20	U	0.20	0.043	ppb v/v			07/22/21 10:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	U	0.20	0.055	ppb v/v			07/22/21 10:07	1
1,1,2-Trichloroethane	0.20	U	0.20	0.034	ppb v/v			07/22/21 10:07	1
1,1-Dichloroethane	0.20	U	0.20	0.029	ppb v/v			07/22/21 10:07	1
1,1-Dichloroethene	0.20	U	0.20	0.029	ppb v/v			07/22/21 10:07	1
1,2,4-Trichlorobenzene	2.0	U	2.0	0.19	ppb v/v			07/22/21 10:07	1
1,2,4-Trimethylbenzene	0.20	U	0.20	0.047	ppb v/v			07/22/21 10:07	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.20	U	0.20	0.055	ppb v/v			07/22/21 10:07	1
1,2-Dichlorobenzene	0.20	U	0.20	0.070	ppb v/v			07/22/21 10:07	1
1,2-Dichloroethane	0.20	U	0.20	0.15	ppb v/v			07/22/21 10:07	1
1,2-Dichloropropane	0.20	U	0.20	0.087	ppb v/v			07/22/21 10:07	1
1,3,5-Trimethylbenzene	0.20	U	0.20	0.044	ppb v/v			07/22/21 10:07	1
1,3-Dichlorobenzene	0.20	U	0.20	0.089	ppb v/v			07/22/21 10:07	1
1,4-Dichlorobenzene	0.20	U	0.20	0.095	ppb v/v			07/22/21 10:07	1
1,4-Dioxane	5.0	U	5.0	1.7	ppb v/v			07/22/21 10:07	1
2-Butanone (MEK)	1.0	U	1.0	0.17	ppb v/v			07/22/21 10:07	1
4-Methyl-2-pentanone (MIBK)	0.50	U	0.50	0.19	ppb v/v			07/22/21 10:07	1
Acetone	5.0	U	5.0	2.0	ppb v/v			07/22/21 10:07	1
Benzene	0.20	U	0.20	0.074	ppb v/v			07/22/21 10:07	1
Benzyl chloride	0.80	U	0.80	0.074	ppb v/v			07/22/21 10:07	1
Bromoform	0.20	U	0.20	0.058	ppb v/v			07/22/21 10:07	1
Bromomethane	0.20	U	0.20	0.052	ppb v/v			07/22/21 10:07	1
Carbon disulfide	0.50	U	0.50	0.13	ppb v/v			07/22/21 10:07	1
Carbon tetrachloride	0.20	U	0.20	0.032	ppb v/v			07/22/21 10:07	1
Chlorobenzene	0.20	U	0.20	0.043	ppb v/v			07/22/21 10:07	1
Dibromochloromethane	0.20	U	0.20	0.031	ppb v/v			07/22/21 10:07	1
Chloroethane	0.80	U	0.80	0.25	ppb v/v			07/22/21 10:07	1
Chloroform	0.20	U	0.20	0.046	ppb v/v			07/22/21 10:07	1
Chloromethane	0.50	U	0.50	0.12	ppb v/v			07/22/21 10:07	1
cis-1,2-Dichloroethene	0.20	U	0.20	0.033	ppb v/v			07/22/21 10:07	1
cis-1,3-Dichloropropene	0.20	U	0.20	0.020	ppb v/v			07/22/21 10:07	1
Cyclohexane	0.50	U	0.50	0.035	ppb v/v			07/22/21 10:07	1
Bromodichloromethane	0.20	U	0.20	0.040	ppb v/v			07/22/21 10:07	1
Dichlorodifluoromethane	0.50	U	0.50	0.11	ppb v/v			07/22/21 10:07	1
Ethylbenzene	0.20	U	0.20	0.10	ppb v/v			07/22/21 10:07	1
1,2-Dibromoethane (EDB)	0.20	U	0.20	0.046	ppb v/v			07/22/21 10:07	1
Hexachlorobutadiene	2.0	U	2.0	0.031	ppb v/v			07/22/21 10:07	1
Hexane	0.80	U	0.80	0.23	ppb v/v			07/22/21 10:07	1
Isopropyl alcohol	5.0	U	5.0	0.98	ppb v/v			07/22/21 10:07	1
Isopropylbenzene	0.80	U	0.80	0.037	ppb v/v			07/22/21 10:07	1
m-Xylene & p-Xylene	0.80	U	0.80	0.17	ppb v/v			07/22/21 10:07	1
Methyl tert-butyl ether	1.0	U	1.0	0.080	ppb v/v			07/22/21 10:07	1
Methylene Chloride	0.50	U	0.50	0.17	ppb v/v			07/22/21 10:07	1
Naphthalene	0.50	U	0.50	0.17	ppb v/v			07/22/21 10:07	1
o-Xylene	0.20	U	0.20	0.094	ppb v/v			07/22/21 10:07	1
Styrene	0.20	U	0.20	0.032	ppb v/v			07/22/21 10:07	1
Tetrachloroethene	0.20	U	0.20	0.027	ppb v/v			07/22/21 10:07	1

Eurofins TestAmerica, Burlington

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 200-169329/4

Matrix: Air

Analysis Batch: 169329

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	5.0	U	5.0	1.2	ppb v/v			07/22/21 10:07	1
Toluene	0.20	U	0.20	0.093	ppb v/v			07/22/21 10:07	1
trans-1,2-Dichloroethene	0.20	U	0.20	0.088	ppb v/v			07/22/21 10:07	1
trans-1,3-Dichloropropene	0.20	U	0.20	0.089	ppb v/v			07/22/21 10:07	1
Trichloroethene	0.20	U	0.20	0.024	ppb v/v			07/22/21 10:07	1
Trichlorofluoromethane	0.20	U	0.20	0.052	ppb v/v			07/22/21 10:07	1
Vinyl acetate	5.0	U	5.0	2.1	ppb v/v			07/22/21 10:07	1
Vinyl bromide	0.20	U	0.20	0.085	ppb v/v			07/22/21 10:07	1
Vinyl chloride	0.20	U	0.20	0.028	ppb v/v			07/22/21 10:07	1
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.1	U	1.1	0.21	ug/m3			07/22/21 10:07	1
1,1,2,2-Tetrachloroethane	1.4	U	1.4	0.30	ug/m3			07/22/21 10:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.5	U	1.5	0.42	ug/m3			07/22/21 10:07	1
1,1,2-Trichloroethane	1.1	U	1.1	0.19	ug/m3			07/22/21 10:07	1
1,1-Dichloroethane	0.81	U	0.81	0.12	ug/m3			07/22/21 10:07	1
1,1-Dichloroethene	0.79	U	0.79	0.11	ug/m3			07/22/21 10:07	1
1,2,4-Trichlorobenzene	15	U	15	1.4	ug/m3			07/22/21 10:07	1
1,2,4-Trimethylbenzene	0.98	U	0.98	0.23	ug/m3			07/22/21 10:07	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.4	U	1.4	0.38	ug/m3			07/22/21 10:07	1
1,2-Dichlorobenzene	1.2	U	1.2	0.42	ug/m3			07/22/21 10:07	1
1,2-Dichloroethane	0.81	U	0.81	0.61	ug/m3			07/22/21 10:07	1
1,2-Dichloropropane	0.92	U	0.92	0.40	ug/m3			07/22/21 10:07	1
1,3,5-Trimethylbenzene	0.98	U	0.98	0.22	ug/m3			07/22/21 10:07	1
1,3-Dichlorobenzene	1.2	U	1.2	0.54	ug/m3			07/22/21 10:07	1
1,4-Dichlorobenzene	1.2	U	1.2	0.57	ug/m3			07/22/21 10:07	1
1,4-Dioxane	18	U	18	6.1	ug/m3			07/22/21 10:07	1
2-Butanone (MEK)	2.9	U	2.9	0.50	ug/m3			07/22/21 10:07	1
4-Methyl-2-pentanone (MIBK)	2.0	U	2.0	0.78	ug/m3			07/22/21 10:07	1
Acetone	12	U	12	4.8	ug/m3			07/22/21 10:07	1
Benzene	0.64	U	0.64	0.24	ug/m3			07/22/21 10:07	1
Benzyl chloride	4.1	U	4.1	0.38	ug/m3			07/22/21 10:07	1
Bromoform	2.1	U	2.1	0.60	ug/m3			07/22/21 10:07	1
Bromomethane	0.78	U	0.78	0.20	ug/m3			07/22/21 10:07	1
Carbon disulfide	1.6	U	1.6	0.40	ug/m3			07/22/21 10:07	1
Carbon tetrachloride	1.3	U	1.3	0.20	ug/m3			07/22/21 10:07	1
Chlorobenzene	0.92	U	0.92	0.20	ug/m3			07/22/21 10:07	1
Dibromochloromethane	1.7	U	1.7	0.26	ug/m3			07/22/21 10:07	1
Chloroethane	2.1	U	2.1	0.66	ug/m3			07/22/21 10:07	1
Chloroform	0.98	U	0.98	0.22	ug/m3			07/22/21 10:07	1
Chloromethane	1.0	U	1.0	0.25	ug/m3			07/22/21 10:07	1
cis-1,2-Dichloroethene	0.79	U	0.79	0.13	ug/m3			07/22/21 10:07	1
cis-1,3-Dichloropropene	0.91	U	0.91	0.091	ug/m3			07/22/21 10:07	1
Cyclohexane	1.7	U	1.7	0.12	ug/m3			07/22/21 10:07	1
Bromodichloromethane	1.3	U	1.3	0.27	ug/m3			07/22/21 10:07	1
Dichlorodifluoromethane	2.5	U	2.5	0.54	ug/m3			07/22/21 10:07	1
Ethylbenzene	0.87	U	0.87	0.43	ug/m3			07/22/21 10:07	1
1,2-Dibromoethane (EDB)	1.5	U	1.5	0.35	ug/m3			07/22/21 10:07	1
Hexachlorobutadiene	21	U	21	0.33	ug/m3			07/22/21 10:07	1

Eurofins TestAmerica, Burlington

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 200-169329/4

Matrix: Air

Analysis Batch: 169329

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexane	2.8	U	2.8	0.81	ug/m3			07/22/21 10:07	1
Isopropyl alcohol	12	U	12	2.4	ug/m3			07/22/21 10:07	1
Isopropylbenzene	3.9	U	3.9	0.18	ug/m3			07/22/21 10:07	1
m-Xylene & p-Xylene	3.5	U	3.5	0.74	ug/m3			07/22/21 10:07	1
Methyl tert-butyl ether	3.6	U	3.6	0.29	ug/m3			07/22/21 10:07	1
Methylene Chloride	1.7	U	1.7	0.59	ug/m3			07/22/21 10:07	1
Naphthalene	2.6	U	2.6	0.89	ug/m3			07/22/21 10:07	1
o-Xylene	0.87	U	0.87	0.41	ug/m3			07/22/21 10:07	1
Styrene	0.85	U	0.85	0.14	ug/m3			07/22/21 10:07	1
Tetrachloroethene	1.4	U	1.4	0.18	ug/m3			07/22/21 10:07	1
Tetrahydrofuran	15	U	15	3.5	ug/m3			07/22/21 10:07	1
Toluene	0.75	U	0.75	0.35	ug/m3			07/22/21 10:07	1
trans-1,2-Dichloroethene	0.79	U	0.79	0.35	ug/m3			07/22/21 10:07	1
trans-1,3-Dichloropropene	0.91	U	0.91	0.40	ug/m3			07/22/21 10:07	1
Trichloroethene	1.1	U	1.1	0.13	ug/m3			07/22/21 10:07	1
Trichlorofluoromethane	1.1	U	1.1	0.29	ug/m3			07/22/21 10:07	1
Vinyl acetate	18	U	18	7.4	ug/m3			07/22/21 10:07	1
Vinyl bromide	0.87	U	0.87	0.37	ug/m3			07/22/21 10:07	1
Vinyl chloride	0.51	U	0.51	0.072	ug/m3			07/22/21 10:07	1

Lab Sample ID: LCS 200-169329/3

Matrix: Air

Analysis Batch: 169329

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.3	9.63		ppb v/v		93	72 - 127
1,1,2,2-Tetrachloroethane	10.3	9.23		ppb v/v		89	74 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	10.7	9.57		ppb v/v		90	70 - 121
1,1,2-Trichloroethane	10.5	8.38		ppb v/v		80	75 - 126
1,1-Dichloroethane	10.3	8.71		ppb v/v		85	66 - 130
1,1-Dichloroethene	10.2	9.08		ppb v/v		89	68 - 120
1,2,4-Trichlorobenzene	11.0	9.14		ppb v/v		83	50 - 150
1,2,4-Trimethylbenzene	10.4	9.37		ppb v/v		90	71 - 129
1,2-Dichloro-1,1,2,2-tetrafluoroethane	10.6	9.64		ppb v/v		91	71 - 141
1,2-Dichlorobenzene	10.8	8.71		ppb v/v		81	68 - 129
1,2-Dichloroethane	10.5	10.0		ppb v/v		96	68 - 135
1,2-Dichloropropane	10.3	10.1		ppb v/v		98	69 - 128
1,3,5-Trimethylbenzene	10.5	9.57		ppb v/v		91	72 - 126
1,3-Dichlorobenzene	10.2	8.67		ppb v/v		85	69 - 131
1,4-Dichlorobenzene	10.4	8.36		ppb v/v		80	67 - 132
1,4-Dioxane	10.3	11.1		ppb v/v		108	66 - 129
2-Butanone (MEK)	10.4	8.89		ppb v/v		86	72 - 124
4-Methyl-2-pentanone (MIBK)	10.2	8.80		ppb v/v		86	58 - 144
Acetone	10.4	10.3		ppb v/v		99	54 - 154
Benzene	10.4	9.10		ppb v/v		88	73 - 119
Benzyl chloride	10.2	9.05		ppb v/v		89	60 - 136
Bromoform	10.3	9.87		ppb v/v		96	53 - 149

Eurofins TestAmerica, Burlington

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 200-169329/3

Matrix: Air

Analysis Batch: 169329

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromomethane	10.4	9.70		ppb v/v		93	72 - 124
Carbon disulfide	10.4	9.59		ppb v/v		93	71 - 138
Carbon tetrachloride	10.0	9.44		ppb v/v		94	71 - 133
Chlorobenzene	10.5	8.52		ppb v/v		81	76 - 119
Dibromochloromethane	10.6	9.12		ppb v/v		86	73 - 125
Chloroethane	10.6	9.69		ppb v/v		92	68 - 130
Chloroform	10.3	8.90		ppb v/v		86	73 - 124
Chloromethane	9.94	8.98		ppb v/v		90	56 - 141
cis-1,2-Dichloroethene	10.4	9.80		ppb v/v		95	72 - 121
cis-1,3-Dichloropropene	9.94	8.18		ppb v/v		82	74 - 125
Cyclohexane	10.2	9.28		ppb v/v		91	76 - 124
Bromodichloromethane	10.3	10.1		ppb v/v		99	75 - 127
Dichlorodifluoromethane	10.6	9.70		ppb v/v		92	61 - 142
Ethylbenzene	10.2	8.96		ppb v/v		88	74 - 122
1,2-Dibromoethane (EDB)	10.7	8.90		ppb v/v		84	78 - 122
Hexachlorobutadiene	10.8	8.35		ppb v/v		77	58 - 130
Hexane	10.5	8.80		ppb v/v		84	63 - 138
Isopropyl alcohol	10.2	10.2		ppb v/v		100	53 - 142
Isopropylbenzene	10.5	9.80		ppb v/v		94	73 - 123
m-Xylene & p-Xylene	20.0	19.9		ppb v/v		100	76 - 121
Methyl tert-butyl ether	10.6	10.0		ppb v/v		95	70 - 127
Methylene Chloride	10.2	9.21		ppb v/v		90	59 - 137
Naphthalene	10.5	7.93		ppb v/v		76	50 - 150
o-Xylene	10.4	9.87		ppb v/v		95	73 - 123
Styrene	10.3	9.57		ppb v/v		93	74 - 125
Tetrachloroethene	10.5	9.21		ppb v/v		88	70 - 125
Tetrahydrofuran	9.81	9.64		ppb v/v		98	60 - 149
Toluene	10.2	8.83		ppb v/v		87	75 - 122
trans-1,2-Dichloroethene	10.3	9.82		ppb v/v		95	69 - 137
trans-1,3-Dichloropropene	9.85	7.37		ppb v/v		75	74 - 128
Trichloroethene	10.3	9.16		ppb v/v		89	73 - 122
Trichlorofluoromethane	10.4	10.2		ppb v/v		98	70 - 129
Vinyl acetate	10.1	10.1		ppb v/v		100	59 - 149
Vinyl bromide	10.0	8.38		ppb v/v		83	75 - 125
Vinyl chloride	9.99	8.79		ppb v/v		88	61 - 135
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	56	52.5		ug/m3		93	72 - 127
1,1,2,2-Tetrachloroethane	71	63.4		ug/m3		89	74 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	82	73.3		ug/m3		90	70 - 121
1,1,2-Trichloroethane	57	45.7		ug/m3		80	75 - 126
1,1-Dichloroethane	42	35.3		ug/m3		85	66 - 130
1,1-Dichloroethene	40	36.0		ug/m3		89	68 - 120
1,2,4-Trichlorobenzene	81	67.9		ug/m3		83	50 - 150
1,2,4-Trimethylbenzene	51	46.1		ug/m3		90	71 - 129
1,2-Dichloro-1,1,2,2-tetrafluoroethane	74	67.4		ug/m3		91	71 - 141
1,2-Dichlorobenzene	65	52.4		ug/m3		81	68 - 129

Eurofins TestAmerica, Burlington

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 200-169329/3

Matrix: Air

Analysis Batch: 169329

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane	42	40.6		ug/m3		96	68 - 135
1,2-Dichloropropane	48	46.8		ug/m3		98	69 - 128
1,3,5-Trimethylbenzene	52	47.0		ug/m3		91	72 - 126
1,3-Dichlorobenzene	61	52.1		ug/m3		85	69 - 131
1,4-Dichlorobenzene	63	50.3		ug/m3		80	67 - 132
1,4-Dioxane	37	40.1		ug/m3		108	66 - 129
2-Butanone (MEK)	31	26.2		ug/m3		86	72 - 124
4-Methyl-2-pentanone (MIBK)	42	36.1		ug/m3		86	58 - 144
Acetone	25	24.4		ug/m3		99	54 - 154
Benzene	33	29.1		ug/m3		88	73 - 119
Benzyl chloride	53	46.9		ug/m3		89	60 - 136
Bromoform	110	102		ug/m3		96	53 - 149
Bromomethane	40	37.7		ug/m3		93	72 - 124
Carbon disulfide	32	29.9		ug/m3		93	71 - 138
Carbon tetrachloride	63	59.4		ug/m3		94	71 - 133
Chlorobenzene	48	39.2		ug/m3		81	76 - 119
Dibromochloromethane	90	77.7		ug/m3		86	73 - 125
Chloroethane	28	25.6		ug/m3		92	68 - 130
Chloroform	50	43.5		ug/m3		86	73 - 124
Chloromethane	21	18.6		ug/m3		90	56 - 141
cis-1,2-Dichloroethene	41	38.9		ug/m3		95	72 - 121
cis-1,3-Dichloropropene	45	37.1		ug/m3		82	74 - 125
Cyclohexane	35	31.9		ug/m3		91	76 - 124
Bromodichloromethane	69	68.0		ug/m3		99	75 - 127
Dichlorodifluoromethane	52	48.0		ug/m3		92	61 - 142
Ethylbenzene	44	38.9		ug/m3		88	74 - 122
1,2-Dibromoethane (EDB)	82	68.4		ug/m3		84	78 - 122
Hexachlorobutadiene	120	89.0		ug/m3		77	58 - 130
Hexane	37	31.0		ug/m3		84	63 - 138
Isopropyl alcohol	25	25.0		ug/m3		100	53 - 142
Isopropylbenzene	51	48.2		ug/m3		94	73 - 123
m-Xylene & p-Xylene	87	86.5		ug/m3		100	76 - 121
Methyl tert-butyl ether	38	36.1		ug/m3		95	70 - 127
Methylene Chloride	36	32.0		ug/m3		90	59 - 137
Naphthalene	55	41.6		ug/m3		76	50 - 150
o-Xylene	45	42.8		ug/m3		95	73 - 123
Styrene	44	40.8		ug/m3		93	74 - 125
Tetrachloroethene	71	62.5		ug/m3		88	70 - 125
Tetrahydrofuran	29	28.4		ug/m3		98	60 - 149
Toluene	38	33.3		ug/m3		87	75 - 122
trans-1,2-Dichloroethene	41	38.9		ug/m3		95	69 - 137
trans-1,3-Dichloropropene	45	33.5		ug/m3		75	74 - 128
Trichloroethene	55	49.2		ug/m3		89	73 - 122
Trichlorofluoromethane	58	57.1		ug/m3		98	70 - 129
Vinyl acetate	35	35.6		ug/m3		100	59 - 149
Vinyl bromide	44	36.7		ug/m3		83	75 - 125
Vinyl chloride	26	22.5		ug/m3		88	61 - 135

Eurofins TestAmerica, Burlington

QC Association Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Air - GC/MS VOA

Analysis Batch: 169329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-59373-1	SG-11223416-072021-SK-001	Total/NA	Air	TO-15	
200-59373-2	SG-11223416-072021-SK-002	Total/NA	Air	TO-15	
200-59373-2 - DL	SG-11223416-072021-SK-002	Total/NA	Air	TO-15	
200-59373-3	SG-11223416-072021-SK-003	Total/NA	Air	TO-15	
200-59373-3 - DL	SG-11223416-072021-SK-003	Total/NA	Air	TO-15	
200-59373-4	SG-11223416-072021-SK-004	Total/NA	Air	TO-15	
MB 200-169329/4	Method Blank	Total/NA	Air	TO-15	
LCS 200-169329/3	Lab Control Sample	Total/NA	Air	TO-15	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Client Sample ID: SG-11223416-072021-SK-001

Lab Sample ID: 200-59373-1

Date Collected: 07/20/21 09:06

Matrix: Air

Date Received: 07/21/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		10	169329	07/22/21 16:13	A1B	TAL BUR

Client Sample ID: SG-11223416-072021-SK-002

Lab Sample ID: 200-59373-2

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		10	169329	07/22/21 17:06	A1B	TAL BUR
Total/NA	Analysis	TO-15	DL	51.9	169329	07/22/21 17:58	A1B	TAL BUR

Client Sample ID: SG-11223416-072021-SK-003

Lab Sample ID: 200-59373-3

Date Collected: 07/20/21 09:53

Matrix: Air

Date Received: 07/21/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		10	169329	07/22/21 18:51	A1B	TAL BUR
Total/NA	Analysis	TO-15	DL	41	169329	07/22/21 19:43	A1B	TAL BUR

Client Sample ID: SG-11223416-072021-SK-004

Lab Sample ID: 200-59373-4

Date Collected: 07/20/21 10:32

Matrix: Air

Date Received: 07/21/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		10	169329	07/22/21 20:36	A1B	TAL BUR

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Laboratory: Eurofins TestAmerica, Burlington

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-23
Connecticut	State	PH-0751	09-30-21
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-17-22
Florida	NELAP	E87467	06-30-22
Minnesota	NELAP	050-999-436	12-31-21
New Hampshire	NELAP	2006	12-18-21
New Jersey	NELAP	VT972	06-30-22
New York	NELAP	10391	04-01-22
Pennsylvania	NELAP	68-00489	04-30-22
Rhode Island	State	LAO00298	12-30-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00272	10-30-23
Vermont	State	VT4000	02-10-22
Virginia	NELAP	460209	12-14-21
Wisconsin	State	399133350	08-31-21

Method Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job ID: 200-59373-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	TAL BUR

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

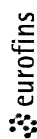
Job ID: 200-59373-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
200-59373-1	SG-11223416-072021-SK-001	Air	07/20/21 09:06	07/21/21 10:20	Air Canister (1-Liter) #34002416
200-59373-2	SG-11223416-072021-SK-002	Air	07/20/21 09:53	07/21/21 10:20	Air Canister (1-Liter) #34002390
200-59373-3	SG-11223416-072021-SK-003	Air	07/20/21 09:53	07/21/21 10:20	Air Canister (1-Liter) #11863
200-59373-4	SG-11223416-072021-SK-004	Air	07/20/21 10:32	07/21/21 10:20	Air Canister (1-Liter) #5858

Eurofins TestAmerica, Burlington
530 Community Drive
Suite 11
South Burlington, VT 05403-6809
phone 802.660.1990 fax 802.660.1919

Canister Samples Chain of Custody Record

TestAmerica Laboratories, Inc. assumes no liability with respect to the collection and shipment of these samples.



Environment Testing
America

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact Information Company Name: <u>GHD</u> Address: <u>26850 Haggerty Rd.</u> City/State/Zip: <u>Farmington Hills, MI</u> Phone: <u>(248) 893-3400</u> FAX: <u>Chem-det @ ghd.com</u> Project Name: <u>PCC Validation</u> Site/Location: <u>Pontiac, MI</u> PO # <u>SSOW</u>				Client Project Manager: <u>Tom Kinney</u> Phone: <u>(248) 877-1742</u> Email: <u>Tom. Kinney @ ghd.com</u> Site Contact: <u>Scott Kippen</u> Tel/Fax: <u>(248) 756-7587</u> Analysis Turnaround Time (Standard (Specify):) Rush (Specify):				Samples Collected By: <u>Scott Kippen</u> COC No.: <u>1</u> of <u>1</u> COCs TALS Project #: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.: (See below for Add'l Items)																							
Sample Identification		Sample Start Date	Time Start	Sample End Date	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-14/15 (Standard / Low Level)										EPA 3C	EPA 25C	ASTM D-1946	EPA 15/16	Other (Please specify in notes section)	Sample Type	Indoor Air/Ambient Air	Sub-Slab	Soil Gas	Soil Vapor Extraction (SVE)	Landfill Gas	Other (Please specify in notes section)
556-11223416-072021-SK-001		7-20-21	8:56	7-20-21	9:06	-28	-4	3747	3400246	X										X	X	X	X	X	X	X	X	X	X	X	X
556-11223416-072021-SK-002		7-20-21	9:44	7-20-21	9:53	-28	-4	4734	34002390	X										X	X	X	X	X	X	X	X	X	X	X	
556-11223416-072021-SK-003		7-20-21	9:44	7-20-21	9:53	-25	-4	4757	11863	X										X	X	X	X	X	X	X	X	X	X	X	
556-11223416-072021-SK-004		7-20-21	10:24	7-20-21	10:32	-25	-4	5201	5858	X										X	X	X	X	X	X	X	X	X	X	X	
556-11223416-072021-SK-005		7-20-21	11:14	7-20-21	12:14	-30	-30	5191	34001246	X										X	X	X	X	X	X	X	X	X	X	X	
556-11223416-072021-SK-006		7-20-21	11:29	7-20-21	12:29	-21	-21	5175	5841	X										X	X	X	X	X	X	X	X	X	X	X	
556-11223416-072021-SK-007		7-20-21	11:29	7-20-21	12:29	-21	-21	5175	5841	X										X	X	X	X	X	X	X	X	X	X	X	X
556-11223416-072021-SK-008		7-20-21	11:29	7-20-21	12:29	-21	-21	5175	5841	X										X	X	X	X	X	X	X	X	X	X	X	X
556-11223416-072021-SK-009		7-20-21	11:29	7-20-21	12:29	-21	-21	5175	5841	X										X	X	X	X	X	X	X	X	X	X	X	X
556-11223416-072021-SK-010		7-20-21	11:29	7-20-21	12:29	-21	-21	5175	5841	X										X	X	X	X	X	X	X	X	X	X	X	X
556-11223416-072021-SK-011		7-20-21	11:29	7-20-21	12:29	-21																									

Form No. CA-C-WI-003, Rev. 2.27, dated 12/15/2020

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Environment Testing
TestAmerica

ORIGIN ID: BTVA (802) 923-1058
SCOTT KIPPEN
GHD SERVICES INC.
26850 HAGGERTY RD.

FARMINGTON HILLS, MI 48331
UNITED STATES US

SHIP DATE: 22JUN21
ACTWGT: 10.00 LB MAN
CAD: 000890364/CAFE3504

TO **SAMPLE MANAGEMENT**
EUROFINS TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 923-1058

REF: S240-84189

RMA: ||| ||| |||



FedEx
TRK# 5077 2018 6670
0221

WED - 21 JUL 10:30A
PRIORITY OVERNIGHT

XH BTVA

05403
VT-US BTV



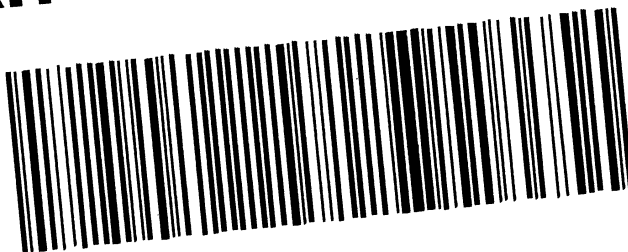
#245756 07/20 56DJ2/0265/FE4A

FedEx
TRK# 5077 2018 6670
0221

WED - 21 JUL 10:30A
PRIORITY OVERNIGHT

XH BTVA

05403
VT-US BTV



#245756 07/20 56DJ2/0265/FE4A

EXP 01/22

EXP 12/21

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 200-59373-1

Login Number: 59373

List Number: 1

Creator: Lavigne, Scott M

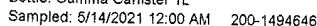
List Source: Eurofins TestAmerica, Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	N/A	Thermal preservation not required.
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.	N/A	
Sample Preservation Verified.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Canister Cleaning & Pre-Shipment Leak Test

³ Difference = Final Pressure - Initial Pressure. Acceptance Criteria: (1) The difference must be less than or equal to + 0.25psi. (2) Pressure readings must be at least 24 hours apart.

Page 35 of 61 7/23/2021



Air-Storage

Dup Tees/Vac gauges (enter IDs if included):

Comments: _____

Canister Cleaning & Pre-Shipment Leak Test

Batch Certification: The reading is taken on the "batch" canister and this value is used as the initial pressure for all canisters in the batch.

³ Difference = Final Pressure - Initial Pressure . Acceptance Criteria: (1) The difference must be less than or equal to + 0.25psi. (2) Pressure readings must be at least 24 hours apart.

If time frame was not met, the PM must authorize shipment of canister

Clean Canister Certification Analysis & Authorization of Release to Inventory

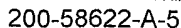
Inventory Level 1: Individual Canister Certification (TO15LL 0.01).
Inventory Level 2: Individual or Batch Certification (TO15 0.04 ppbv).
Inventory Level 3: Individual or Batch Certification (TO15 0.2 ppbv).
Inventory Level Limited: Canisters may only be used for certain projects.

Dup Tees/Vac gauges (enter IDs if included):

Form ID: FA1023:12

Revision Date: 12/18/2018

- 1
- 2
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- 14
- 15
- 16



34002005

Location: Air-Storage

Bottle: Summa Canister 1L

Sampled: 5/25/2021 12:00 AM: 200-1497944

Loc: 200

58622

#5 A

Air-Storage

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Burlington Job No.: 200-58486-1
 SDG No.: _____
 Client Sample ID: 3576 Lab Sample ID: 200-58486-2
 Matrix: Air Lab File ID: 200-45992-005.D
 Analysis Method: TO-15 Date Collected: 05/14/2021 00:00
 Sample wt/vol: 200 (mL) Date Analyzed: 05/17/2021 12:28
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-624 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 166916 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
115-07-1	Propylene	5.0	U	5.0	5.0
75-71-8	Dichlorodifluoromethane	0.50	U	0.50	0.50
75-45-6	Freon 22	0.50	U	0.50	0.50
76-14-2	1,2-Dichlorotetrafluoroethane	0.20	U	0.20	0.20
74-87-3	Chloromethane	0.50	U	0.50	0.50
106-97-8	n-Butane	0.50	U	0.50	0.50
75-01-4	Vinyl chloride	0.20	U	0.20	0.20
106-99-0	1,3-Butadiene	0.20	U	0.20	0.20
74-83-9	Bromomethane	0.20	U	0.20	0.20
75-00-3	Chloroethane	0.50	U	0.50	0.50
593-60-2	Bromoethene (Vinyl Bromide)	0.20	U	0.20	0.20
75-69-4	Trichlorofluoromethane	0.20	U	0.20	0.20
64-17-5	Ethanol	5.0	U	5.0	5.0
76-13-1	Freon TF	0.20	U	0.20	0.20
75-35-4	1,1-Dichloroethene	0.20	U	0.20	0.20
67-64-1	Acetone	5.0	U	5.0	5.0
67-63-0	Isopropyl alcohol	5.0	U	5.0	5.0
75-15-0	Carbon disulfide	0.50	U	0.50	0.50
107-05-1	3-Chloropropene	0.50	U	0.50	0.50
75-09-2	Methylene Chloride	0.50	U	0.50	0.50
75-65-0	tert-Butyl alcohol	5.0	U	5.0	5.0
1634-04-4	Methyl tert-butyl ether	0.20	U	0.20	0.20
156-60-5	trans-1,2-Dichloroethene	0.20	U	0.20	0.20
110-54-3	n-Hexane	0.50	U	0.50	0.50
75-34-3	1,1-Dichloroethane	0.20	U	0.20	0.20
108-05-4	Vinyl acetate	5.0	U	5.0	5.0
141-78-6	Ethyl acetate	5.0	U	5.0	5.0
78-93-3	Methyl Ethyl Ketone	0.50	U	0.50	0.50
156-59-2	cis-1,2-Dichloroethene	0.20	U	0.20	0.20
540-59-0	1,2-Dichloroethene, Total	0.40	U	0.40	0.40
67-66-3	Chloroform	0.20	U	0.20	0.20
109-99-9	Tetrahydrofuran	5.0	U	5.0	5.0
71-55-6	1,1,1-Trichloroethane	0.20	U	0.20	0.20
110-82-7	Cyclohexane	0.20	U	0.20	0.20
56-23-5	Carbon tetrachloride	0.20	U	0.20	0.20
540-84-1	2,2,4-Trimethylpentane	0.20	U	0.20	0.20

FORM I
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 Soil Extract Vol.: _____ GC Column: RTX-624 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 166916 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
71-43-2	Benzene	0.20	U	0.20	0.20
107-06-2	1,2-Dichloroethane	0.20	U	0.20	0.20
142-82-5	n-Heptane	0.20	U	0.20	0.20
79-01-6	Trichloroethene	0.20	U	0.20	0.20
80-62-6	Methyl methacrylate	0.50	U	0.50	0.50
78-87-5	1,2-Dichloropropane	0.20	U	0.20	0.20
123-91-1	1,4-Dioxane	5.0	U	5.0	5.0
75-27-4	Bromodichloromethane	0.20	U	0.20	0.20
10061-01-5	cis-1,3-Dichloropropene	0.20	U	0.20	0.20
108-10-1	methyl isobutyl ketone	0.50	U	0.50	0.50
108-88-3	Toluene	0.20	U	0.20	0.20
10061-02-6	trans-1,3-Dichloropropene	0.20	U	0.20	0.20
79-00-5	1,1,2-Trichloroethane	0.20	U	0.20	0.20
127-18-4	Tetrachloroethene	0.20	U	0.20	0.20
591-78-6	Methyl Butyl Ketone (2-Hexanone)	0.50	U	0.50	0.50
124-48-1	Dibromochloromethane	0.20	U	0.20	0.20
106-93-4	1,2-Dibromoethane	0.20	U	0.20	0.20
108-90-7	Chlorobenzene	0.20	U	0.20	0.20
100-41-4	Ethylbenzene	0.20	U	0.20	0.20
179601-23-1	m,p-Xylene	0.50	U	0.50	0.50
95-47-6	Xylene, o-	0.20	U	0.20	0.20
1330-20-7	Xylene (total)	0.70	U	0.70	0.70
100-42-5	Styrene	0.20	U	0.20	0.20
75-25-2	Bromoform	0.20	U	0.20	0.20
98-82-8	Cumene	0.20	U	0.20	0.20
79-34-5	1,1,2,2-Tetrachloroethane	0.20	U	0.20	0.20
103-65-1	n-Propylbenzene	0.20	U	0.20	0.20
622-96-8	4-Ethyltoluene	0.20	U	0.20	0.20
108-67-8	1,3,5-Trimethylbenzene	0.20	U	0.20	0.20
95-49-8	2-Chlorotoluene	0.20	U	0.20	0.20
98-06-6	tert-Butylbenzene	0.20	U	0.20	0.20
95-63-6	1,2,4-Trimethylbenzene	0.20	U	0.20	0.20
135-98-8	sec-Butylbenzene	0.20	U	0.20	0.20
99-87-6	4-Isopropyltoluene	0.20	U	0.20	0.20
541-73-1	1,3-Dichlorobenzene	0.20	U	0.20	0.20
106-46-7	1,4-Dichlorobenzene	0.20	U	0.20	0.20

FORM I
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 SDG No.: _____
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 Sample wt/vol: 200 (mL) Date Analyzed: 05/17/2021 12:28
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-624 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 166916 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
100-44-7	Benzyl chloride	0.20	U	0.20	0.20
104-51-8	n-Butylbenzene	0.20	U	0.20	0.20
95-50-1	1,2-Dichlorobenzene	0.20	U	0.20	0.20
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.50	0.50
87-68-3	Hexachlorobutadiene	0.20	U	0.20	0.20
91-20-3	Naphthalene	0.50	U	0.50	0.50

Eurofins TestAmerica, Burlington
Target Compound Quantitation Report

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D
 Lims ID: 200-58486-A-2
 Client ID: 3576
 Sample Type: Client
 Inject. Date: 17-May-2021 12:28:30 ALS Bottle#: 4 Worklist Smp#: 5
 Purge Vol: 200.000 mL Dil. Factor: 1.0000
 Sample Info: 200-0045992-005
 Operator ID: ggg Instrument ID: CHG.i
 Method: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\TO15_MasterMethod_(v1)_G.m
 Limit Group: AI_TO15_ICAL
 Last Update: 18-May-2021 09:16:34 Calib Date: 30-Apr-2021 01:36:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromfs\Burlington\ChromData\CHG.i\20210429-45776.b\200-45776-013.D
 Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
 Process Host: CTX1659

First Level Reviewer: puangmaleek

Date:

18-May-2021 09:16:34

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
1 Propene	41		3.038				ND	
2 Dichlorodifluoromethane	85		3.091				ND	
3 Chlorodifluoromethane	51		3.107				ND	U
4 1,2-Dichloro-1,1,2,2-tetrafluoro	85		3.295				ND	
5 Chloromethane	50		3.364				ND	7
7 Vinyl chloride	62		3.551				ND	
6 Butane	43		3.562				ND	7
8 Butadiene	54		3.626				ND	7
10 Bromomethane	94		4.081				ND	
11 Chloroethane	64		4.263				ND	
13 Vinyl bromide	106		4.573				ND	
14 Trichlorofluoromethane	101		4.707				ND	
17 Ethanol	45		4.916				ND	7
21 1,1-Dichloroethene	96		5.552				ND	
22 Acetone	43		5.568				ND	7
20 1,1,2-Trichloro-1,2,2-trifluoro	101		5.595				ND	U
24 Isopropyl alcohol	45		5.809				ND	7
23 Carbon disulfide	76		5.932				ND	7
25 3-Chloro-1-propene	41		6.151				ND	7
27 Methylene Chloride	49		6.344				ND	7
28 2-Methyl-2-propanol	59		6.510				ND	
31 trans-1,2-Dichloroethene	61		6.847				ND	
29 Methyl tert-butyl ether	73		6.868				ND	7
33 Hexane	57		7.376				ND	
34 1,1-Dichloroethane	63		7.553				ND	
35 Vinyl acetate	43		7.569				ND	7
38 2-Butanone (MEK)	72		8.473				ND	
37 cis-1,2-Dichloroethene	96		8.516				ND	7
39 Ethyl acetate	88		8.585				ND	
* 40 Chlorobromomethane	128	8.917	8.917	0.000	80	110308	10.0	
41 Tetrahydrofuran	42		8.997				ND	7
42 Chloroform	83		9.099				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
44 1,1,1-Trichloroethane	97		9.441				ND	
43 Cyclohexane	84		9.623				ND	
S 30 1,2-Dichloroethene, Total	61		9.665				ND	7
45 Carbon tetrachloride	117		9.752				ND	7
47 Benzene	78		10.083				ND	7
48 1,2-Dichloroethane	62		10.131				ND	
46 Isooctane	57		10.383				ND	
49 n-Heptane	43		10.731				ND	7
* 50 1,4-Difluorobenzene	114	10.881	10.886	-0.005	95	589628	10.0	
53 Trichloroethene	95		11.373				ND	7
54 1,2-Dichloropropane	63		11.854				ND	
55 Methyl methacrylate	69		11.993				ND	
57 Dibromomethane	174		12.015				ND	
56 1,4-Dioxane	88		12.015				ND	
58 Dichlorobromomethane	83		12.368				ND	
60 cis-1,3-Dichloropropene	75		13.272				ND	
61 4-Methyl-2-pentanone (MIBK)	43		13.561				ND	
65 Toluene	92		13.994				ND	U
66 trans-1,3-Dichloropropene	75		14.411				ND	
67 1,1,2-Trichloroethane	83		14.807				ND	
68 Tetrachloroethene	166		15.080				ND	
69 2-Hexanone	43		15.278				ND	7
71 Chlorodibromomethane	129		15.594				ND	
72 Ethylene Dibromide	107		15.845				ND	
* 74 Chlorobenzene-d5	117	16.845	16.840	0.005	88	534518	10.0	
75 Chlorobenzene	112		16.904				ND	
76 Ethylbenzene	91	17.140	17.140	0.000	1	3027	0.0574	M
78 m-Xylene & p-Xylene	106		17.423				ND	7
79 o-Xylene	106	18.226	18.226	0.000	1	568	0.0290	
80 Styrene	104		18.252				ND	
81 Bromoform	173		18.595				ND	
82 Isopropylbenzene	105		19.017				ND	
84 1,1,2,2-Tetrachloroethane	83		19.558				ND	7
S 73 Xylenes, Total	106				0		0.0290	
85 N-Propylbenzene	91		19.825				ND	7
89 2-Chlorotoluene	91		19.964				ND	7
88 4-Ethyltoluene	105		20.044				ND	7
90 1,3,5-Trimethylbenzene	105		20.151				ND	7
92 tert-Butylbenzene	119		20.676				ND	7
93 1,2,4-Trimethylbenzene	105		20.767				ND	U
94 sec-Butylbenzene	105		21.023				ND	7
96 1,3-Dichlorobenzene	146		21.184				ND	U
95 4-Isopropyltoluene	119		21.264				ND	U
97 1,4-Dichlorobenzene	146		21.334				ND	7
98 Benzyl chloride	91		21.478				ND	U
101 1,2-Dichlorobenzene	146		21.831				ND	U
100 n-Butylbenzene	91		21.837				ND	7
103 1,2,4-Trichlorobenzene	180		24.223				ND	U
104 Hexachlorobutadiene	225		24.495				ND	
105 Naphthalene	128	24.667	24.667	0.000	1	1462	0.0228	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Review Flags

M - Manually Integrated

U - Marked Undetected

Reagents:

ATTO15GIS_00017

Amount Added: 20.00

Units: mL

Run Reagent

1

2

3

4

5

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Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D

Injection Date: 17-May-2021 12:28:30

Instrument ID: CHG.i

Operator ID: ggg

Lims ID: 200-58486-A-2

Lab Sample ID: 200-58486-2

Worklist Smp#: 5

Client ID: 3576

Purge Vol: 200.000 mL

Dil. Factor: 1.0000

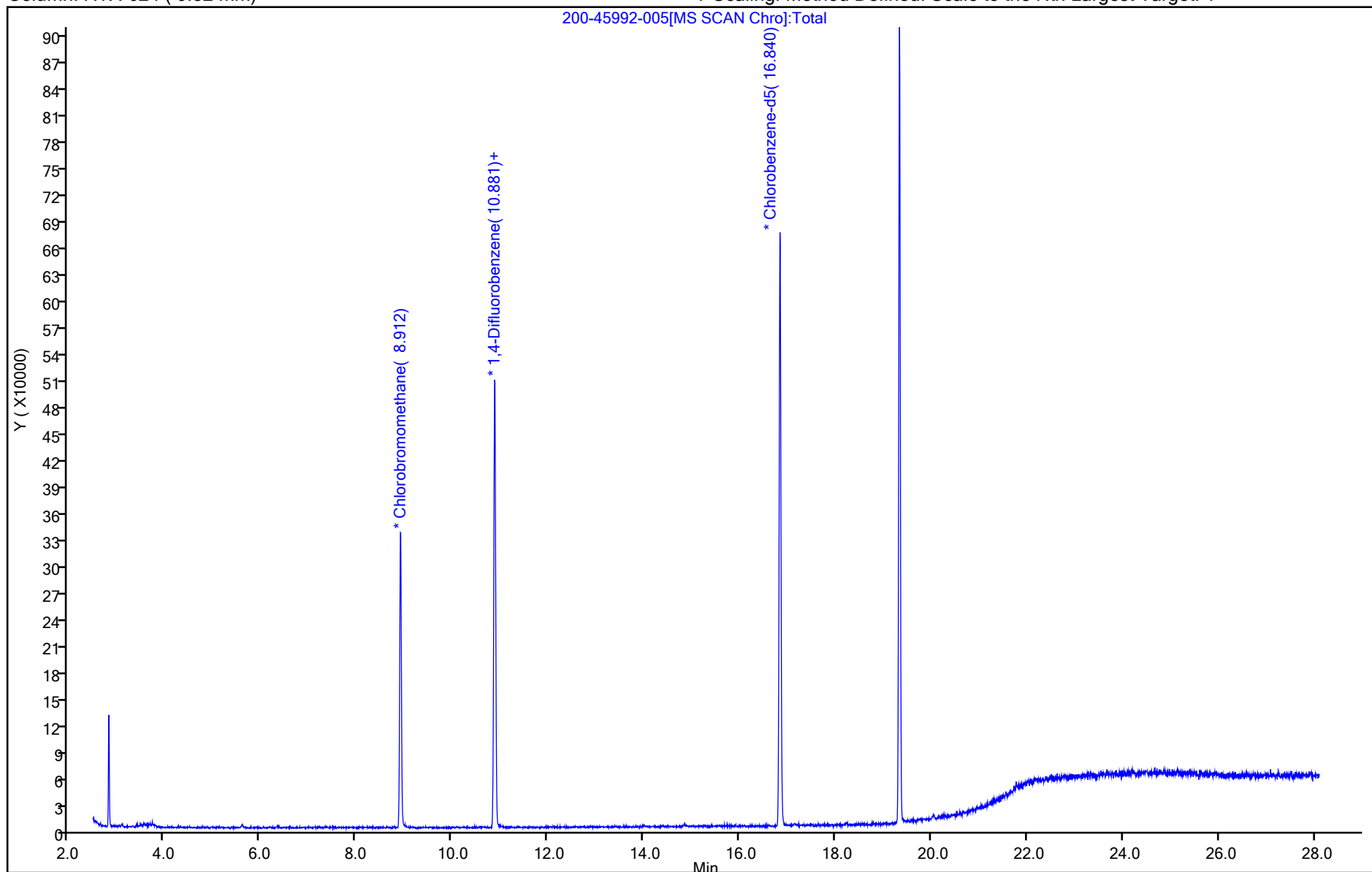
ALS Bottle#: 4

Method: TO15_MasterMethod_(v1)_G

Limit Group: AI_TO15_ICAL

Column: RTX-624 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

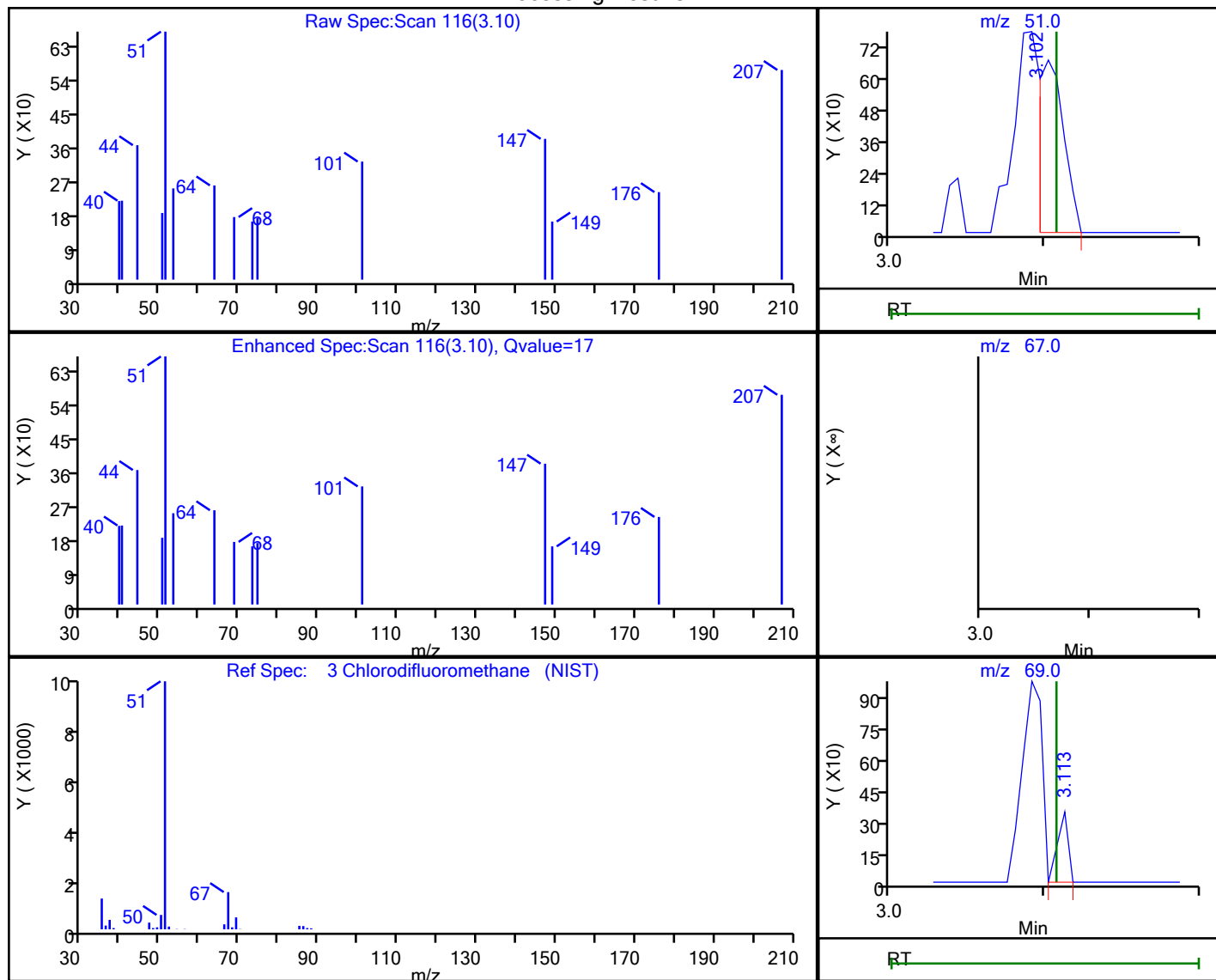


Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D
Injection Date: 17-May-2021 12:28:30 Instrument ID: CHG.i
Lims ID: 200-58486-A-2 Lab Sample ID: 200-58486-2
Client ID: 3576
Operator ID: ggg ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_MasterMethod_(v1)_G Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector: MS SCAN

3 Chlorodifluoromethane, CAS: 75-45-6

Processing Results



RT	Mass	Response	Amount
3.10	51.00	763	0.058266
3.11	67.00	0	
3.11	69.00	164	

Reviewer: puangmaleek, 18-May-2021 09:15:31

Audit Action: Marked Compound Undetected

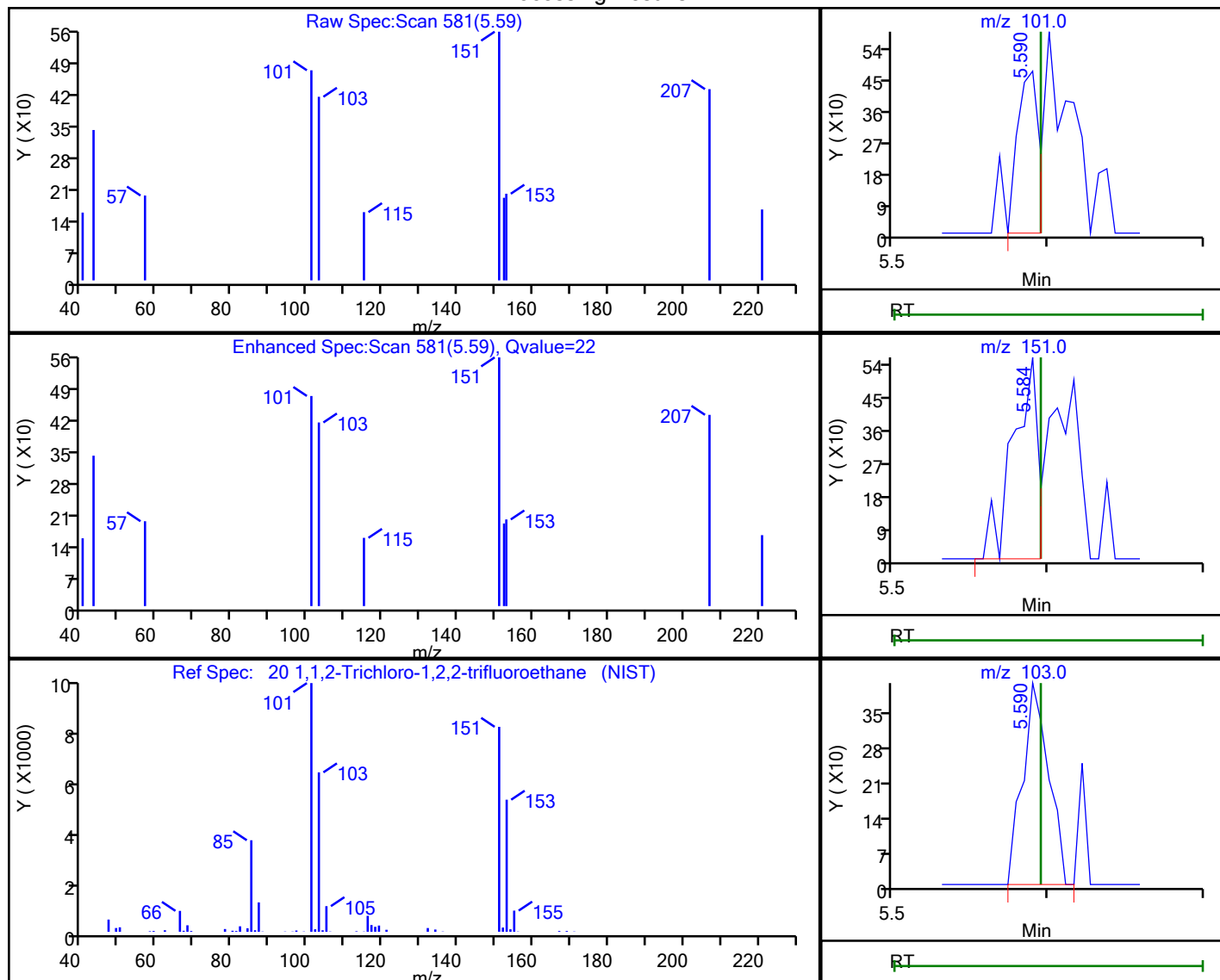
Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D
Injection Date: 17-May-2021 12:28:30 Instrument ID: CHG.i
Lims ID: 200-58486-A-2 Lab Sample ID: 200-58486-2
Client ID: 3576
Operator ID: ggg ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_MasterMethod_(v1)_G Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector: MS SCAN

20 1,1,2-Trichloro-1,2,2-trifluoroethane, CAS: 76-13-1

Processing Results



RT	Mass	Response	Amount
5.59	101.00	454	0.023158
5.58	151.00	625	
5.59	103.00	476	

Reviewer: puangmaleek, 18-May-2021 09:15:38

Audit Action: Marked Compound Undetected

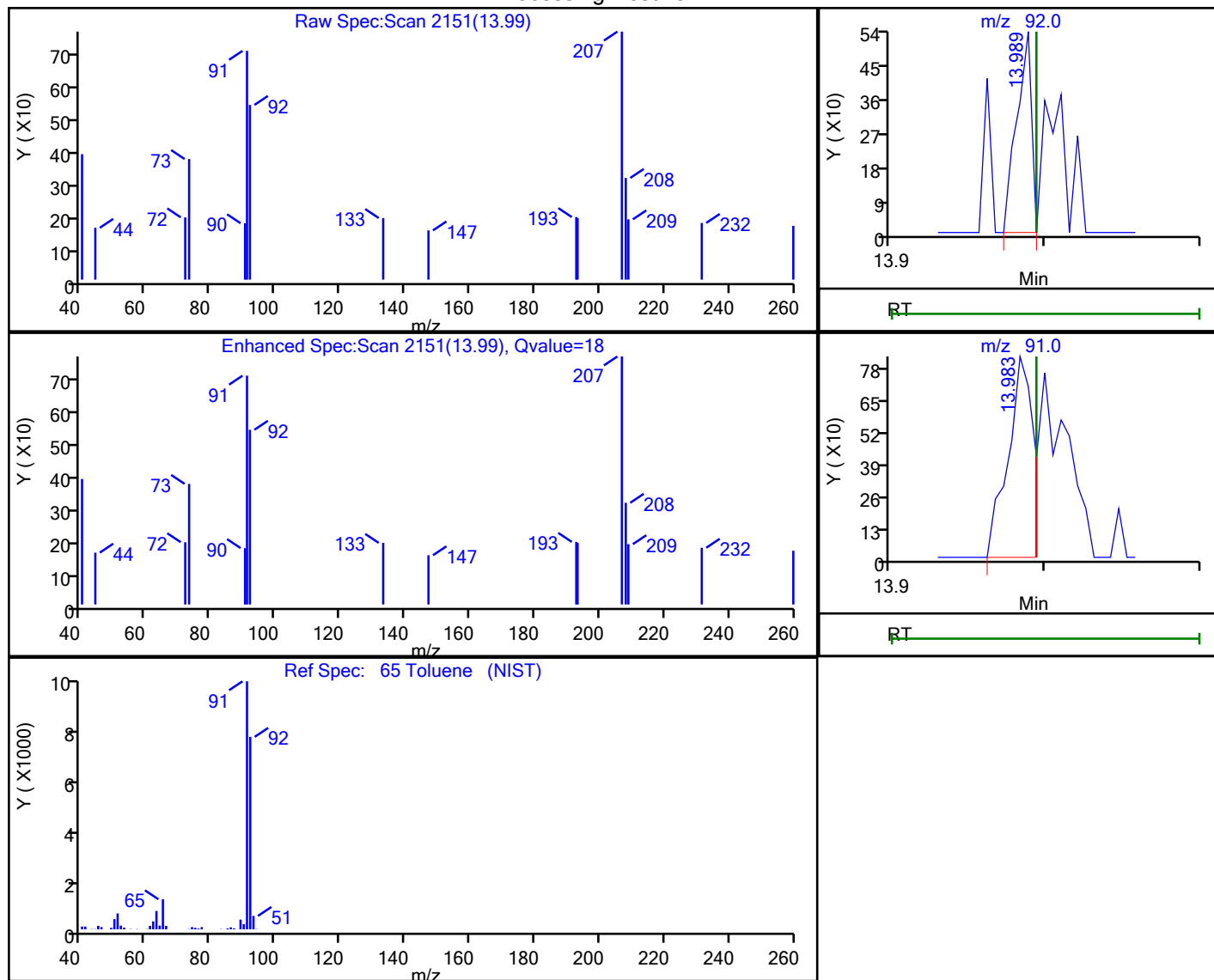
Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D
Injection Date: 17-May-2021 12:28:30 Instrument ID: CHG.i
Lims ID: 200-58486-A-2 Lab Sample ID: 200-58486-2
Client ID: 3576
Operator ID: ggg ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_MasterMethod_(v1)_G Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector: MS SCAN

65 Toluene, CAS: 108-88-3

Processing Results



RT	Mass	Response	Amount
13.99	92.00	357	0.015613
13.98	91.00	948	

Reviewer: puangmaleek, 18-May-2021 09:15:55

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Burlington

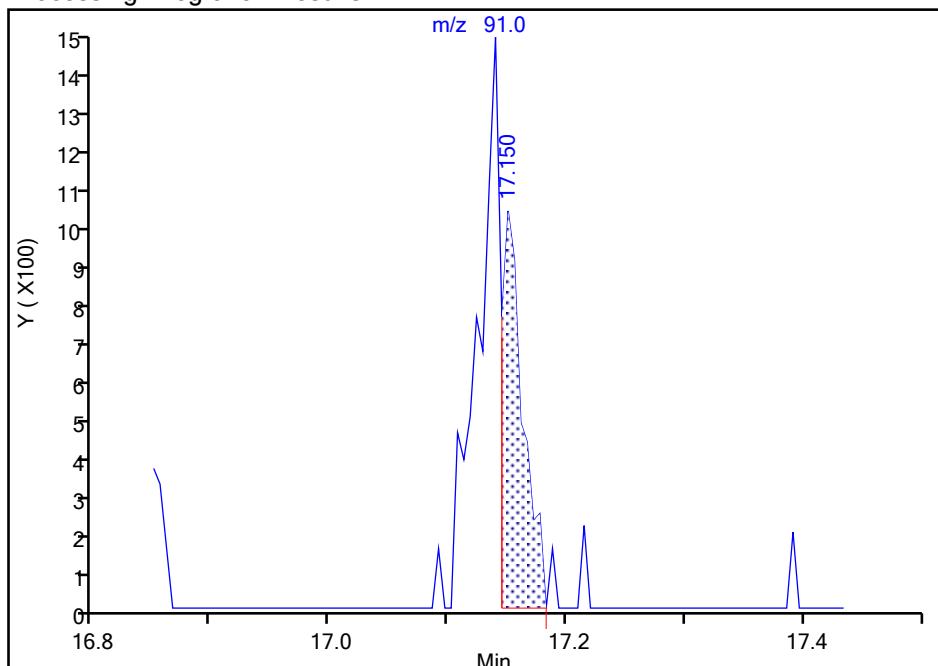
Data File:	\\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D		
Injection Date:	17-May-2021 12:28:30	Instrument ID:	CHG.i
Lims ID:	200-58486-A-2	Lab Sample ID:	200-58486-2
Client ID:	3576		
Operator ID:	ggg	ALS Bottle#:	4
Purge Vol:	200.000 mL	Dil. Factor:	1.0000
Method:	TO15_MasterMethod_(v1)_G	Limit Group:	AI_TO15_ICAL
Column:	RTX-624 (0.32 mm)	Detector:	MS SCAN
		Worklist Smp#:	5

76 Ethylbenzene, CAS: 100-41-4

Signal: 1

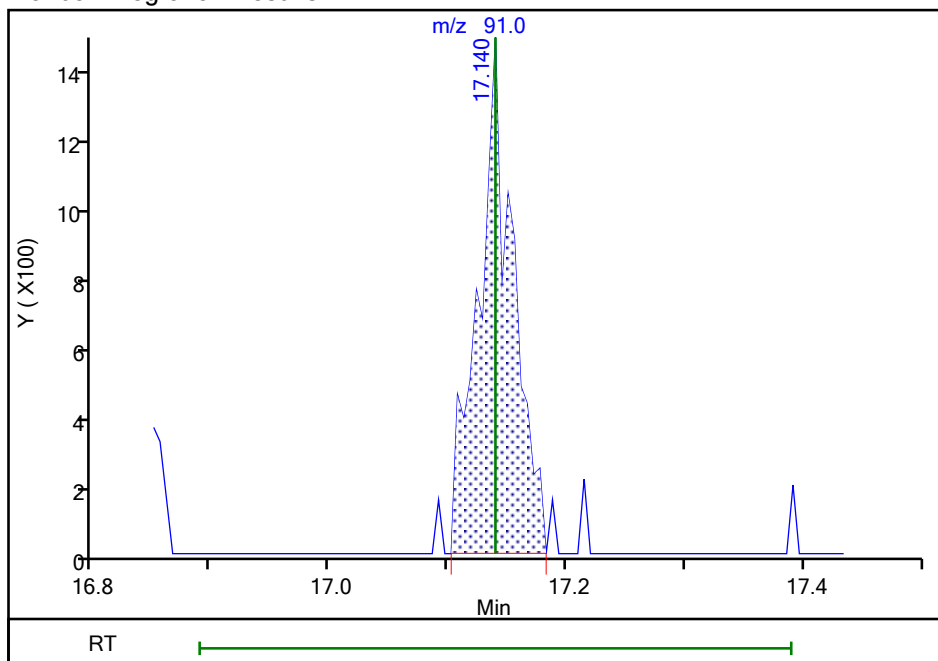
RT: 17.15
Area: 1313
Amount: 0.024895
Amount Units: ppb v/v

Processing Integration Results



RT: 17.14
Area: 3027
Amount: 0.057393
Amount Units: ppb v/v

Manual Integration Results



Reviewer: puangmaleek, 18-May-2021 09:16:09

Audit Action: Manually Integrated

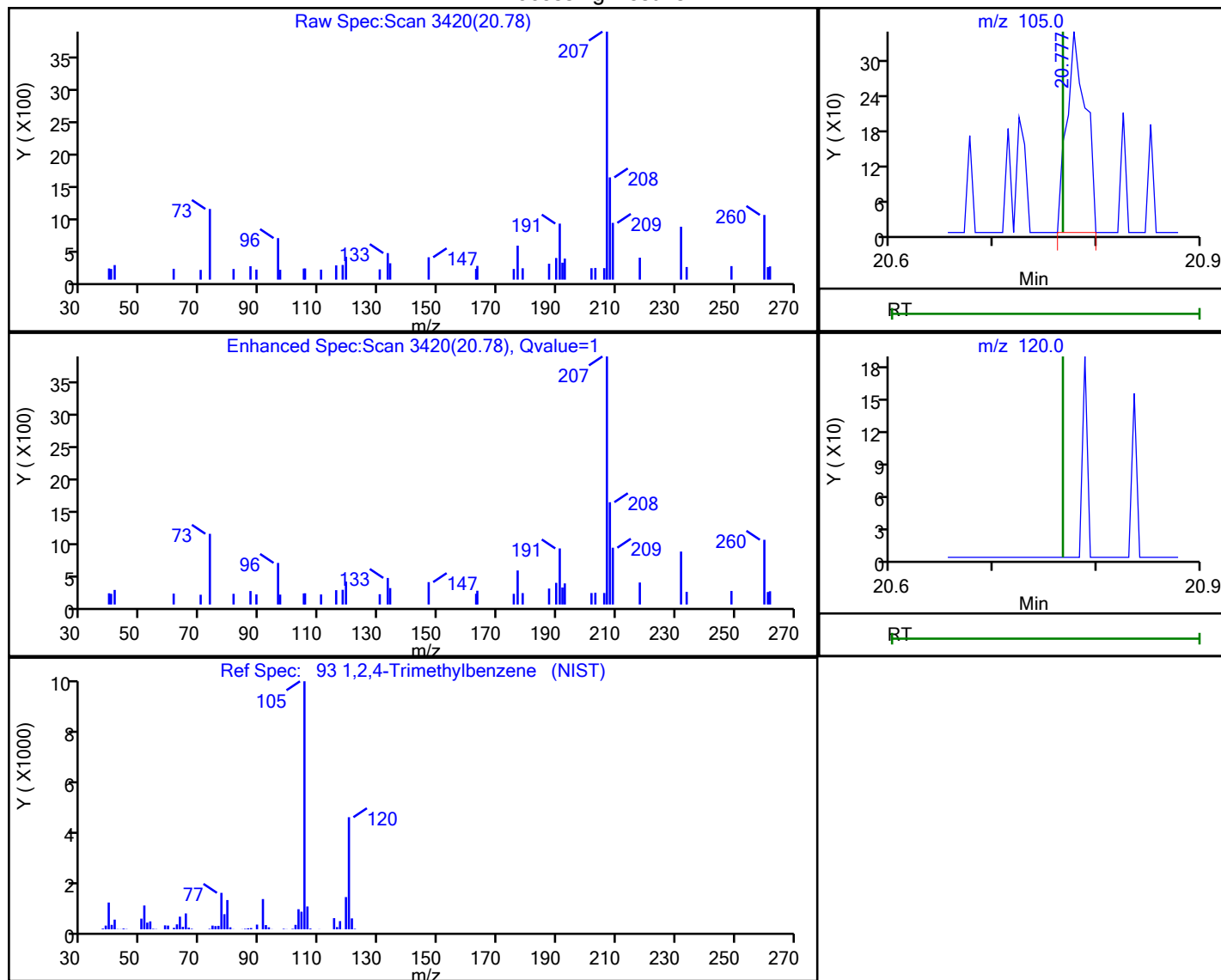
Audit Reason: Assign Peak

Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D
Injection Date: 17-May-2021 12:28:30 Instrument ID: CHG.i
Lims ID: 200-58486-A-2 Lab Sample ID: 200-58486-2
Client ID: 3576
Operator ID: ggg ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_MasterMethod_(v1)_G Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector: MS SCAN

93 1,2,4-Trimethylbenzene, CAS: 95-63-6

Processing Results



RT	Mass	Response	Amount
20.78	105.00	438	0.008976
20.77	120.00	0	

Reviewer: puangmaleek, 18-May-2021 09:16:20

Audit Action: Marked Compound Undetected

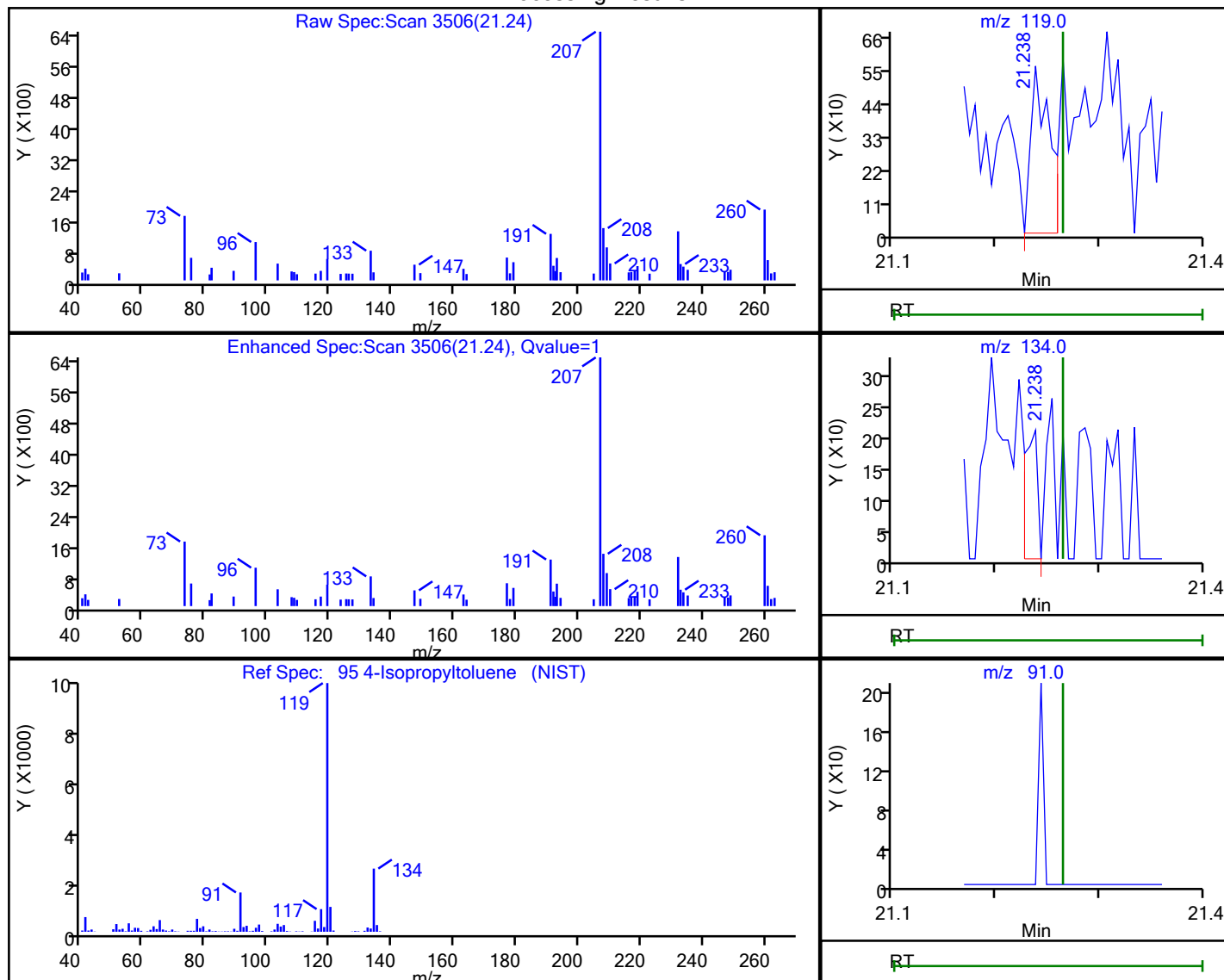
Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.\20210517-45992.b\200-45992-005.D
Injection Date: 17-May-2021 12:28:30 Instrument ID: CHG.i
Lims ID: 200-58486-A-2 Lab Sample ID: 200-58486-2
Client ID: 3576
Operator ID: ggg ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_MasterMethod_(v1)_G Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector: MS SCAN

95 4-Isopropyltoluene, CAS: 99-87-6

Processing Results



RT	Mass	Response	Amount
21.24	119.00	707	0.012012
21.24	134.00	182	
21.26	91.00	0	

Reviewer: puangmaleek, 18-May-2021 09:16:24

Audit Action: Marked Compound Undetected

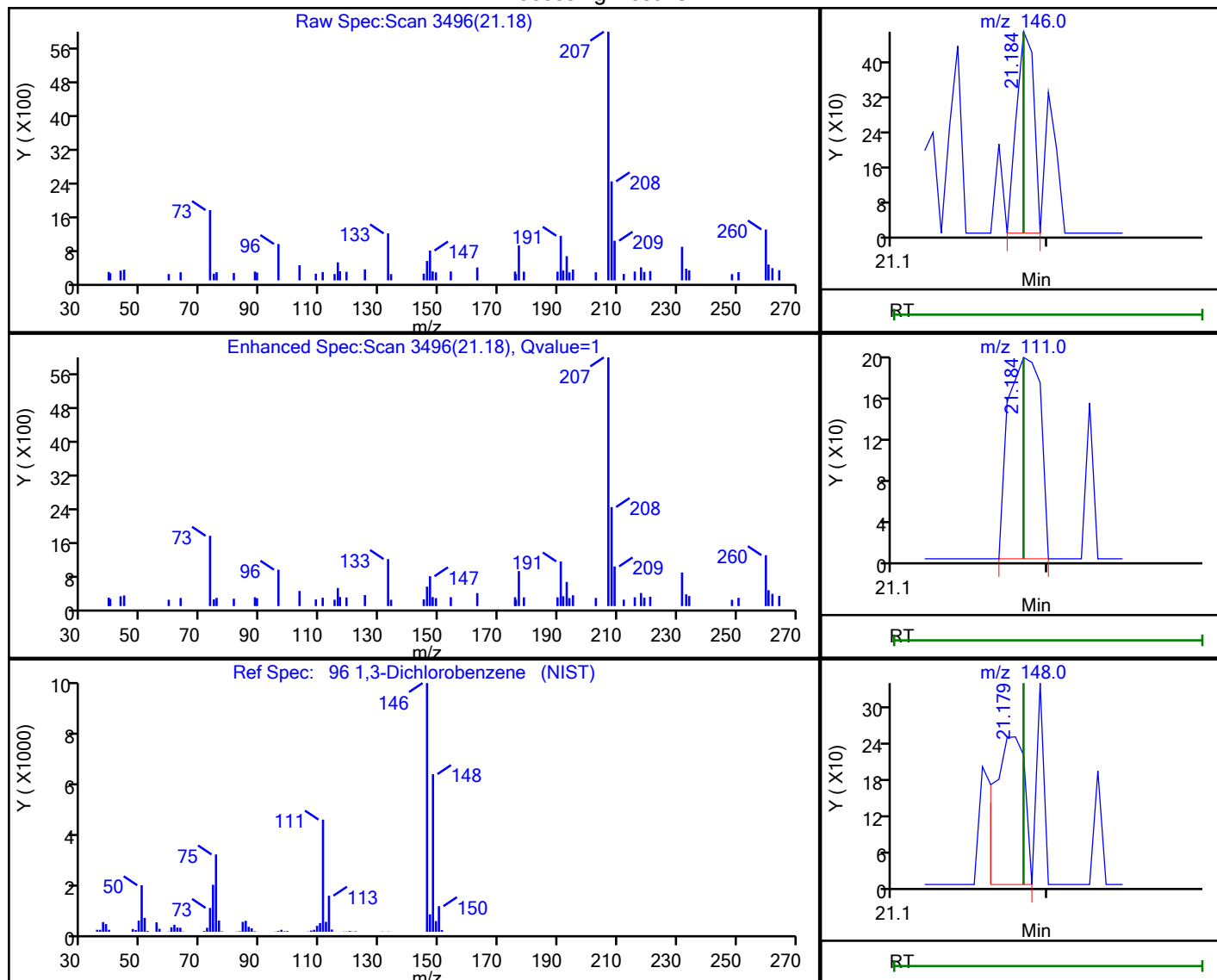
Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D
Injection Date: 17-May-2021 12:28:30 Instrument ID: CHG.i
Lims ID: 200-58486-A-2 Lab Sample ID: 200-58486-2
Client ID: 3576
Operator ID: ggg ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_MasterMethod_(v1)_G Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector: MS SCAN

96 1,3-Dichlorobenzene, CAS: 541-73-1

Processing Results



RT	Mass	Response	Amount
21.18	146.00	364	0.010408
21.18	111.00	289	
21.18	148.00	337	

Reviewer: puangmaleek, 18-May-2021 09:16:23

Audit Action: Marked Compound Undetected

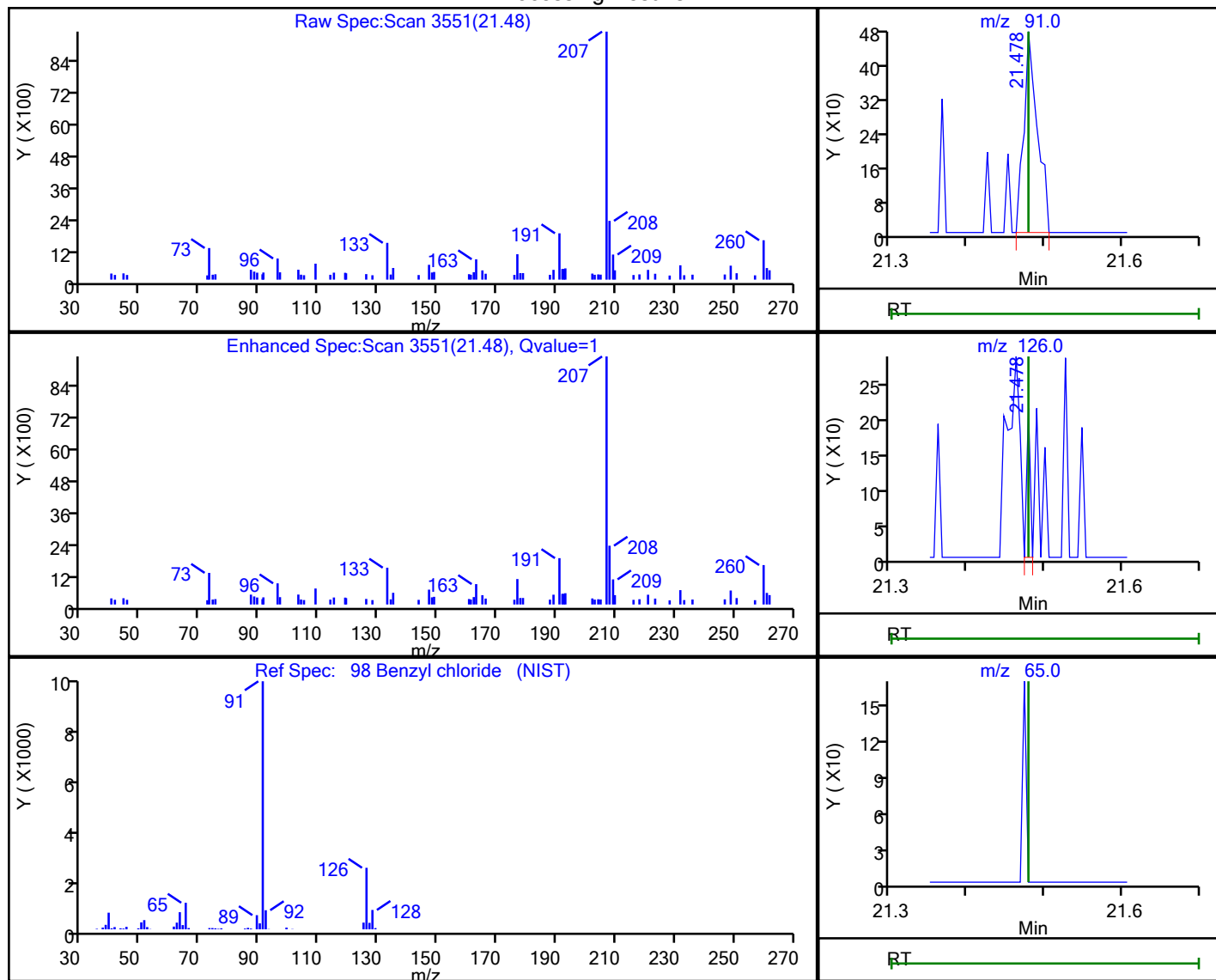
Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D
Injection Date: 17-May-2021 12:28:30 Instrument ID: CHG.i
Lims ID: 200-58486-A-2 Lab Sample ID: 200-58486-2
Client ID: 3576
Operator ID: ggg ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_MasterMethod_(v1)_G Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector: MS SCAN

98 Benzyl chloride, CAS: 100-44-7

Processing Results



RT	Mass	Response	Amount
21.48	91.00	579	0.013389
21.48	126.00	67	
21.48	65.00	0	

Reviewer: puangmaleek, 18-May-2021 09:16:27

Audit Action: Marked Compound Undetected

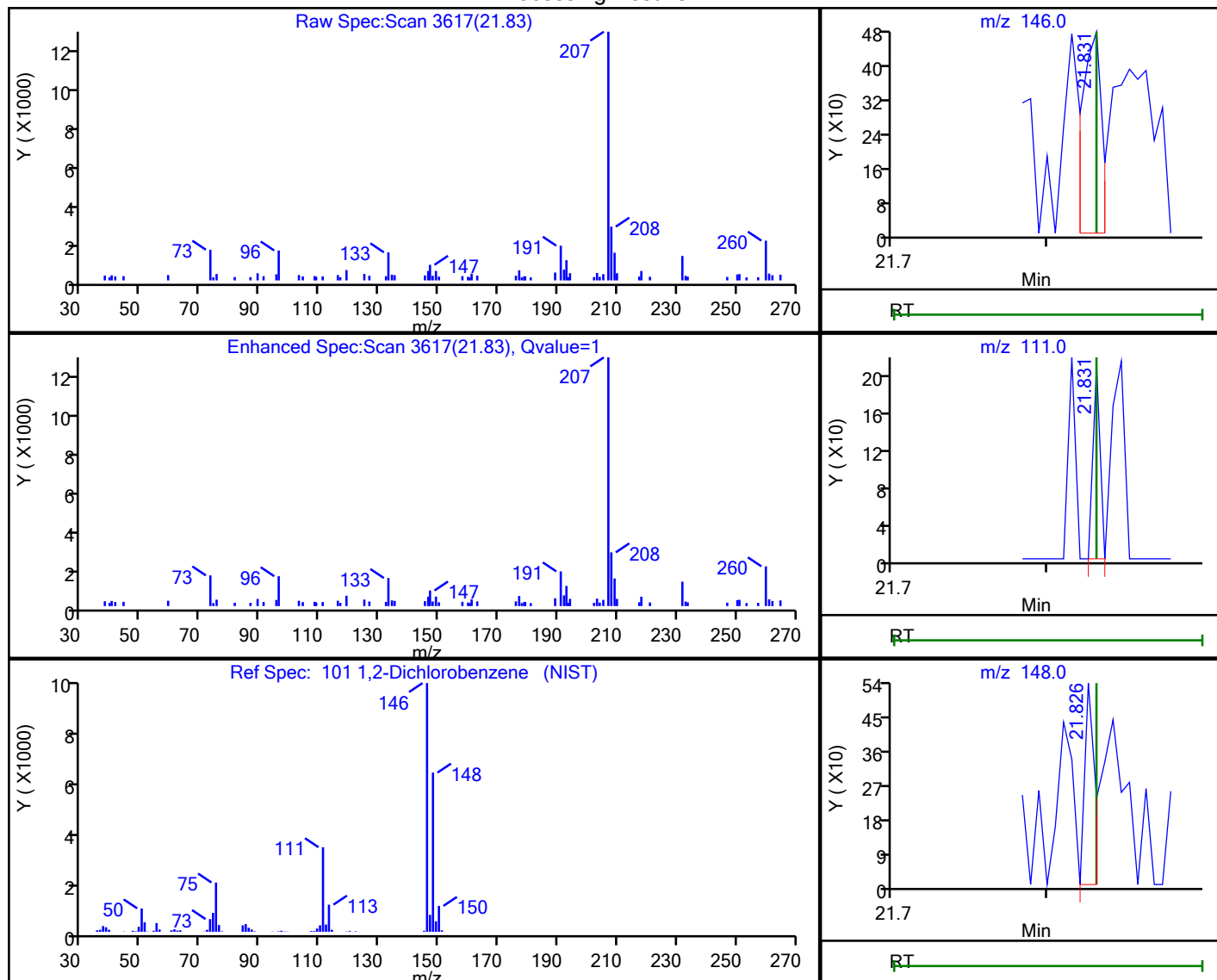
Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D
Injection Date: 17-May-2021 12:28:30 Instrument ID: CHG.i
Lims ID: 200-58486-A-2 Lab Sample ID: 200-58486-2
Client ID: 3576
Operator ID: ggg ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_MasterMethod_(v1)_G Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector: MS SCAN

101 1,2-Dichlorobenzene, CAS: 95-50-1

Processing Results



RT	Mass	Response	Amount
21.83	146.00	432	0.012220
21.83	111.00	65	
21.83	148.00	248	

Reviewer: puangmaleek, 18-May-2021 09:16:28

Audit Action: Marked Compound Undetected

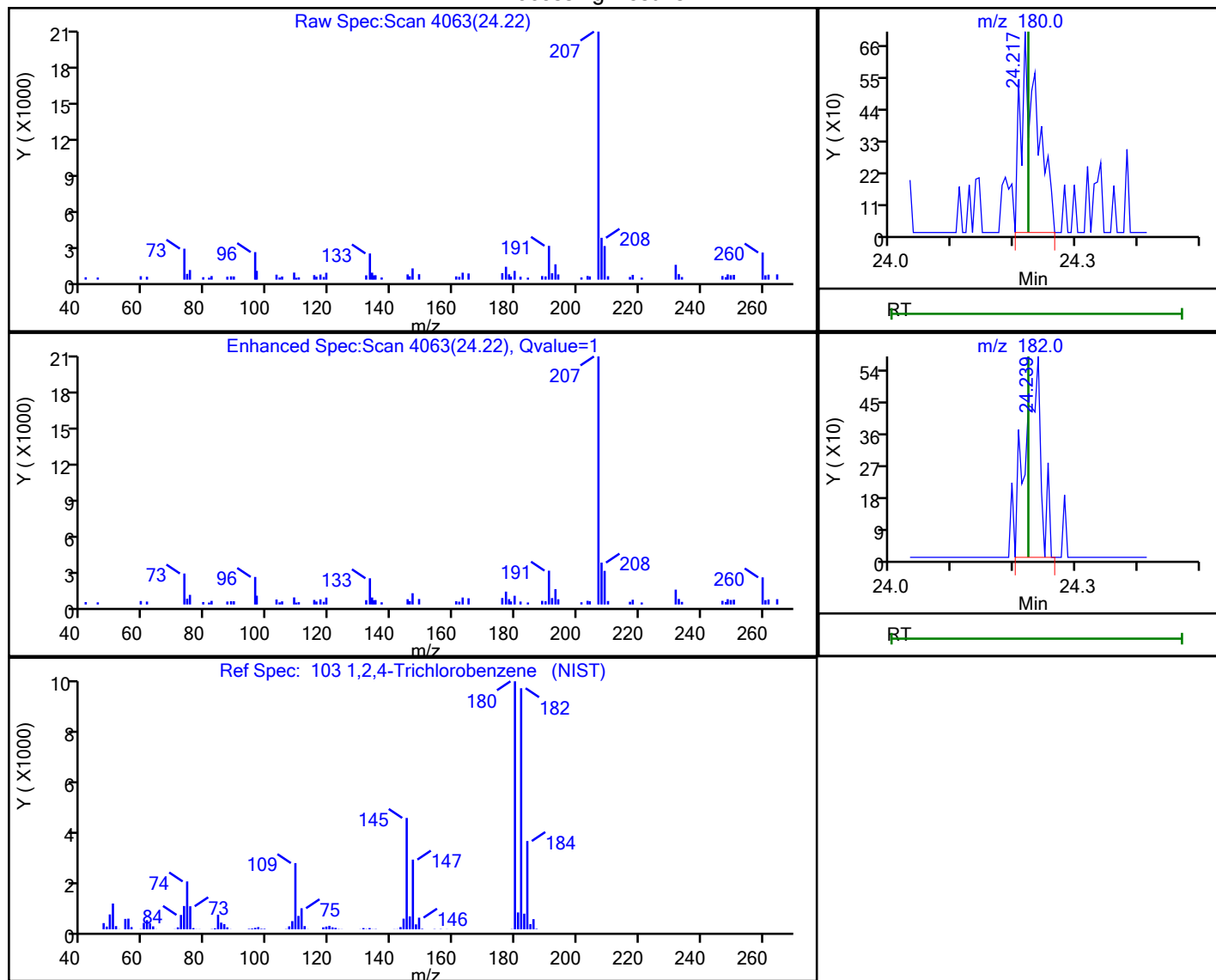
Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHG.i\20210517-45992.b\200-45992-005.D
Injection Date: 17-May-2021 12:28:30 Instrument ID: CHG.i
Lims ID: 200-58486-A-2 Lab Sample ID: 200-58486-2
Client ID: 3576
Operator ID: ggg ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_MasterMethod_(v1)_G Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector: MS SCAN

103 1,2,4-Trichlorobenzene, CAS: 120-82-1

Processing Results



RT	Mass	Response	Amount
24.22	180.00	1326	0.044294
24.24	182.00	1005	

Reviewer: puangmaleek, 18-May-2021 09:16:30

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Burlington Job No.: 200-58622-1
 SDG No.: _____
 Client Sample ID: 34002005 Lab Sample ID: 200-58622-5
 Matrix: Air Lab File ID: 46175-06.D
 Analysis Method: TO-15 Date Collected: 05/25/2021 00:00
 Sample wt/vol: 200 (mL) Date Analyzed: 05/28/2021 12:15
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-624 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 167372 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
115-07-1	Propylene	5.0	U	5.0	5.0
75-71-8	Dichlorodifluoromethane	0.50	U	0.50	0.50
75-45-6	Freon 22	0.50	U	0.50	0.50
76-14-2	1,2-Dichlorotetrafluoroethane	0.20	U	0.20	0.20
74-87-3	Chloromethane	0.50	U	0.50	0.50
106-97-8	n-Butane	0.50	U	0.50	0.50
75-01-4	Vinyl chloride	0.20	U	0.20	0.20
106-99-0	1,3-Butadiene	0.20	U	0.20	0.20
74-83-9	Bromomethane	0.20	U	0.20	0.20
75-00-3	Chloroethane	0.50	U	0.50	0.50
593-60-2	Bromoethene (Vinyl Bromide)	0.20	U	0.20	0.20
75-69-4	Trichlorofluoromethane	0.20	U	0.20	0.20
64-17-5	Ethanol	5.0	U	5.0	5.0
76-13-1	Freon TF	0.20	U	0.20	0.20
75-35-4	1,1-Dichloroethene	0.20	U	0.20	0.20
67-64-1	Acetone	5.0	U	5.0	5.0
67-63-0	Isopropyl alcohol	5.0	U	5.0	5.0
75-15-0	Carbon disulfide	0.50	U	0.50	0.50
107-05-1	3-Chloropropene	0.50	U	0.50	0.50
75-09-2	Methylene Chloride	0.50	U	0.50	0.50
75-65-0	tert-Butyl alcohol	5.0	U	5.0	5.0
1634-04-4	Methyl tert-butyl ether	0.20	U	0.20	0.20
156-60-5	trans-1,2-Dichloroethene	0.20	U	0.20	0.20
110-54-3	n-Hexane	0.50	U	0.50	0.50
75-34-3	1,1-Dichloroethane	0.20	U	0.20	0.20
108-05-4	Vinyl acetate	5.0	U	5.0	5.0
141-78-6	Ethyl acetate	5.0	U	5.0	5.0
78-93-3	Methyl Ethyl Ketone	0.50	U	0.50	0.50
156-59-2	cis-1,2-Dichloroethene	0.20	U	0.20	0.20
540-59-0	1,2-Dichloroethene, Total	0.40	U	0.40	0.40
67-66-3	Chloroform	0.20	U	0.20	0.20
109-99-9	Tetrahydrofuran	5.0	U	5.0	5.0
71-55-6	1,1,1-Trichloroethane	0.20	U	0.20	0.20
110-82-7	Cyclohexane	0.20	U	0.20	0.20
56-23-5	Carbon tetrachloride	0.20	U	0.20	0.20
540-84-1	2,2,4-Trimethylpentane	0.20	U	0.20	0.20

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Burlington Job No.: 200-58622-1
 SDG No.: _____
 Client Sample ID: 34002005 Lab Sample ID: 200-58622-5
 Matrix: Air Lab File ID: 46175-06.D
 Analysis Method: TO-15 Date Collected: 05/25/2021 00:00
 Sample wt/vol: 200 (mL) Date Analyzed: 05/28/2021 12:15
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-624 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 167372 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
71-43-2	Benzene	0.20	U	0.20	0.20
107-06-2	1,2-Dichloroethane	0.20	U	0.20	0.20
142-82-5	n-Heptane	0.20	U	0.20	0.20
79-01-6	Trichloroethene	0.20	U	0.20	0.20
80-62-6	Methyl methacrylate	0.50	U	0.50	0.50
78-87-5	1,2-Dichloropropane	0.20	U	0.20	0.20
123-91-1	1,4-Dioxane	5.0	U	5.0	5.0
75-27-4	Bromodichloromethane	0.20	U	0.20	0.20
10061-01-5	cis-1,3-Dichloropropene	0.20	U	0.20	0.20
108-10-1	methyl isobutyl ketone	0.50	U	0.50	0.50
108-88-3	Toluene	0.20	U	0.20	0.20
10061-02-6	trans-1,3-Dichloropropene	0.20	U	0.20	0.20
79-00-5	1,1,2-Trichloroethane	0.20	U	0.20	0.20
127-18-4	Tetrachloroethene	0.20	U	0.20	0.20
591-78-6	Methyl Butyl Ketone (2-Hexanone)	0.50	U	0.50	0.50
124-48-1	Dibromochloromethane	0.20	U	0.20	0.20
106-93-4	1,2-Dibromoethane	0.20	U	0.20	0.20
108-90-7	Chlorobenzene	0.20	U	0.20	0.20
100-41-4	Ethylbenzene	0.20	U	0.20	0.20
179601-23-1	m,p-Xylene	0.50	U	0.50	0.50
95-47-6	Xylene, o-	0.20	U	0.20	0.20
1330-20-7	Xylene (total)	0.70	U	0.70	0.70
100-42-5	Styrene	0.20	U	0.20	0.20
75-25-2	Bromoform	0.20	U	0.20	0.20
98-82-8	Cumene	0.20	U	0.20	0.20
79-34-5	1,1,2,2-Tetrachloroethane	0.20	U	0.20	0.20
103-65-1	n-Propylbenzene	0.20	U	0.20	0.20
622-96-8	4-Ethyltoluene	0.20	U	0.20	0.20
108-67-8	1,3,5-Trimethylbenzene	0.20	U	0.20	0.20
95-49-8	2-Chlorotoluene	0.20	U	0.20	0.20
98-06-6	tert-Butylbenzene	0.20	U	0.20	0.20
95-63-6	1,2,4-Trimethylbenzene	0.20	U	0.20	0.20
135-98-8	sec-Butylbenzene	0.20	U	0.20	0.20
99-87-6	4-Isopropyltoluene	0.20	U	0.20	0.20
541-73-1	1,3-Dichlorobenzene	0.20	U	0.20	0.20
106-46-7	1,4-Dichlorobenzene	0.20	U	0.20	0.20

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Burlington Job No.: 200-58622-1
 SDG No.: _____
 Client Sample ID: 34002005 Lab Sample ID: 200-58622-5
 Matrix: Air Lab File ID: 46175-06.D
 Analysis Method: TO-15 Date Collected: 05/25/2021 00:00
 Sample wt/vol: 200 (mL) Date Analyzed: 05/28/2021 12:15
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-624 ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 167372 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
100-44-7	Benzyl chloride	0.20	U	0.20	0.20
104-51-8	n-Butylbenzene	0.20	U	0.20	0.20
95-50-1	1,2-Dichlorobenzene	0.20	U	0.20	0.20
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.50	0.50
87-68-3	Hexachlorobutadiene	0.20	U	0.20	0.20
91-20-3	Naphthalene	0.50	U	0.50	0.50

Eurofins TestAmerica, Burlington
Target Compound Quantitation Report

Data File: \\chromfs\Burlington\ChromData\CHAH.i\20210528-46175.b\46175-06.D
 Lims ID: 200-58622-A-5
 Client ID: 34002005
 Sample Type: Client
 Inject. Date: 28-May-2021 12:15:30 ALS Bottle#: 5 Worklist Smp#: 6
 Purge Vol: 200.000 mL Dil. Factor: 1.0000
 Sample Info: 200-0046175-006
 Misc. Info.: 58622-5
 Operator ID: vtp Instrument ID: CHAH.i
 Method: \\chromfs\Burlington\ChromData\CHAH.i\20210528-46175.b\TO15_MasterMethod.CHAH.i.m
 Limit Group: AI_TO15_ICAL
 Last Update: 31-May-2021 08:54:26 Calib Date: 12-May-2021 12:00:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromfs\Burlington\ChromData\CHAH.i\20210511-45930.b\45930-19.D
 Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
 Process Host: CTX1646

First Level Reviewer: puangmaleek

Date: 31-May-2021 08:55:12

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
3 Propene	41		4.052				ND	7
4 Dichlorodifluoromethane	85		4.153				ND	
5 Chlorodifluoromethane	51		4.201				ND	
6 1,2-Dichloro-1,1,2,2-tetrafluoro	85		4.537				ND	
7 Chloromethane	50		4.655				ND	
8 Vinyl chloride	62		4.986				ND	
9 Butane	43		4.991				ND	7
10 Butadiene	54		5.108				ND	
12 Bromomethane	94		5.856				ND	
13 Chloroethane	64		6.149				ND	
15 Vinyl bromide	106		6.592				ND	
16 Trichlorofluoromethane	101		6.763				ND	
18 Ethanol	45		7.179				ND	
21 1,1-Dichloroethene	96		7.873				ND	
22 112TCTFE	101		7.916				ND	
23 Acetone	43		7.958				ND	
24 Isopropyl alcohol	45		8.262				ND	
25 Carbon disulfide	76	8.278	8.289	-0.011	98	2399	0.0707	
27 3-Chloro-1-propene	41		8.593				ND	
28 Methylene Chloride	49	8.817	8.828	-0.011	97	1545	0.1103	
29 2-Methyl-2-propanol	59		9.042				ND	
31 trans-1,2-Dichloroethene	61		9.335				ND	
32 Methyl tert-butyl ether	73		9.341				ND	
33 Hexane	57		9.853				ND	
34 1,1-Dichloroethane	63		10.120				ND	
35 Vinyl acetate	43		10.130				ND	
S 36 1,2-Dichloroethene, Total	61		10.765				ND	7
37 2-Butanone (MEK)	72		11.096				ND	
38 cis-1,2-Dichloroethene	96		11.123				ND	
39 Ethyl acetate	88		11.176				ND	
* 40 Chlorobromomethane	128	11.529	11.545	-0.016	98	74331	100.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
41 Tetrahydrofuran	42		11.577				ND	
42 Chloroform	83		11.715				ND	
43 1,1,1-Trichloroethane	97		12.025				ND	
44 Cyclohexane	84		12.164				ND	
45 Carbon tetrachloride	117		12.308				ND	
46 Benzene	78		12.660				ND	
47 1,2-Dichloroethane	62		12.735				ND	
48 Isooctane	57		12.874				ND	
50 n-Heptane	43		13.183				ND	
* 51 1,4-Difluorobenzene	114	13.391	13.397	-0.006	96	368844	100.0	
53 Trichloroethene	95		13.829				ND	
55 1,2-Dichloropropane	63		14.293				ND	
56 Methyl methacrylate	69		14.373				ND	
57 1,4-Dioxane	88		14.411				ND	
58 Dibromomethane	174		14.448				ND	
59 Dichlorobromomethane	83		14.757				ND	
61 cis-1,3-Dichloropropene	75		15.563				ND	
62 4-Methyl-2-pentanone (MIBK)	43		15.814				ND	
63 Toluene	92		16.204				ND	
65 trans-1,3-Dichloropropene	75		16.615				ND	
66 1,1,2-Trichloroethane	83		16.994				ND	
67 Tetrachloroethene	166		17.191				ND	
68 2-Hexanone	43		17.394				ND	
69 Chlorodibromomethane	129		17.730				ND	
70 Ethylene Dibromide	107		17.976				ND	
* 71 Chlorobenzene-d5	117	18.883	18.883	0.000	89	295396	100.0	
72 Chlorobenzene	112		18.942				ND	
73 Ethylbenzene	91		19.134				ND	
74 m-Xylene & p-Xylene	106		19.395				ND	
76 o-Xylene	106		20.164				ND	
77 Styrene	104		20.196				ND	
78 Bromoform	173		20.543				ND	
S 79 Xylenes, Total	106		20.700				ND	7
80 Isopropylbenzene	105		20.847				ND	
81 1,1,2,2-Tetrachloroethane	83		21.354				ND	
83 N-Propylbenzene	91		21.551				ND	
84 2-Chlorotoluene	91		21.701				ND	
85 4-Ethyltoluene	105		21.749				ND	
86 1,3,5-Trimethylbenzene	105		21.840				ND	
89 tert-Butylbenzene	119		22.315				ND	
90 1,2,4-Trimethylbenzene	105		22.400				ND	
91 sec-Butylbenzene	105		22.640				ND	
92 1,3-Dichlorobenzene	146		22.811				ND	
93 4-Isopropyltoluene	119		22.848				ND	
94 1,4-Dichlorobenzene	146		22.950				ND	
95 Benzyl chloride	91		23.094				ND	
96 n-Butylbenzene	91		23.403				ND	
97 1,2-Dichlorobenzene	146		23.435				ND	
100 1,2,4-Trichlorobenzene	180		25.874				ND	
101 Hexachlorobutadiene	225		26.120				ND	
102 Naphthalene	128		26.355				ND	

[QC Flag Legend](#)

Processing Flags

7 - Failed Limit of Detection

[Reagents:](#)

ATTO15AHISs_00001

Amount Added: 20.00

Units: mL

Run Reagent

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

Eurofins TestAmerica, Burlington

Data File: \\chromfs\Burlington\ChromData\CHAH.i\20210528-46175.b\46175-06.D

Injection Date: 28-May-2021 12:15:30

Instrument ID: CHAH.i

Operator ID: vtp

Lims ID: 200-58622-A-5

Lab Sample ID: 200-58622-5

Worklist Smp#: 6

Client ID: 34002005

Purge Vol: 200.000 mL

Dil. Factor: 1.0000

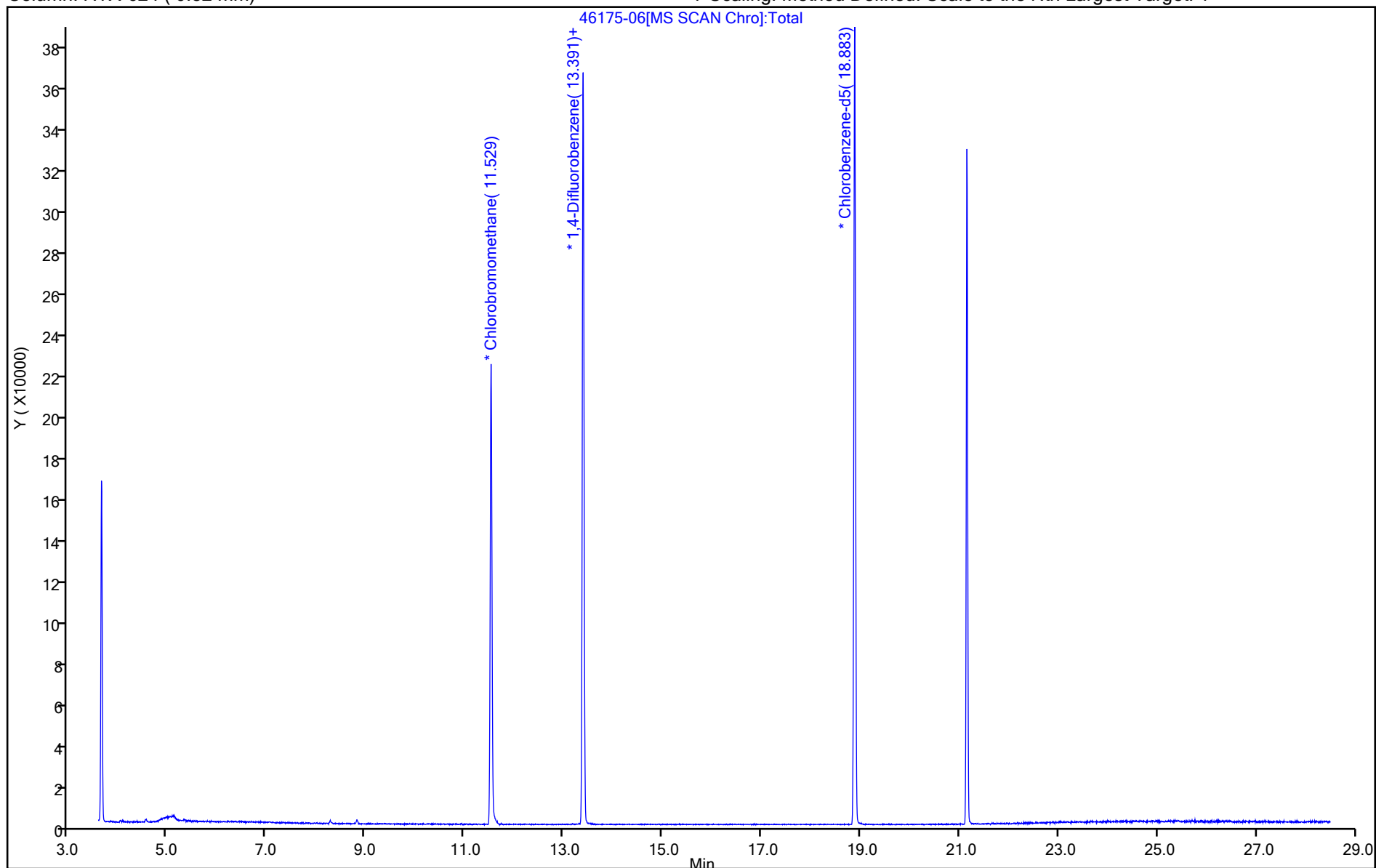
ALS Bottle#: 5

Method: TO15_MasterMethod.CHAH.i

Limit Group: AI_TO15_ICAL

Column: RTX-624 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Summa Canister Dilution Worksheet

Client: GHD Services Inc.
Project/Site: 11223416, PCC Validation

Job No.: 200-59373-1

Lab Sample ID	Canister Volume (L)	Preadjusted Pressure ("Hg)	Preadjusted Pressure (atm)	Preadjusted Volume (L)	Adjusted Pressure (psig)	Adjusted Pressure (atm)	Adjusted Volume (L)	Initial Volume (mL)	Dilution Factor	Final Dilution Factor	Pressure Gauge ID	Date	Analyst Initials
200-59373-2	1	-4.8	0.84	0.84	52.6	4.58	4.58		5.45	5.45	G23	07/22/21 11:30	TPB
200-59373-3	1	0	1.00	1.00	42.7	3.90	3.90		3.90	3.90	G23	07/22/21 11:30	TPB

Formulae:

Preadjusted Volume (L) = (Preadjusted Pressure ("Hg) + 29.92 "Hg * Vol L) / 29.92 "Hg

Adjusted Volume (L) = (Adjusted Pressure (psig) + 14.7 psig * Vol L) / 14.7 psig

Dilution Factor = Adjusted Volume (L) / Preadjusted Volume (L)

Where:

29.92 "Hg = Standard atmospheric pressure in inches of Mercury ("Hg)

14.7 psig = Standard atmospheric pressure in pounds per square inch gauge (psig)