

RESORT MUNICIPALITY OF WHISTLER

2023 SUMMARY OF AIR QUALITY PROGRAM VOC SAMPLING

MARCH 21, 2024





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RESORT MUNICIPALITY OF WHISTLER

PROJECT NO.: CA-WSP-171-03296-05
DATE: MARCH 21, 2024

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March 21, 2024

File Number: CA-WSP-171-03296-05

RESORT MUNICIPALITY OF WHISTLER
4325 Blackcomb Way
Whistler, BC V0N 1B4

Attention: Andrew Tucker

Dear Mr. Tucker:

**Subject: Summary of 2023 VOC Sampling Program, Cheakamus Crossing
Neighborhood**

WSP Canada Inc. (WSP) is pleased to provide the VOC Results for the Resort Municipality of Whistler for 2023. The report outlines the VOC monitoring program conducted during 2023 and compares the data to ambient air quality criteria.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Braden Bartnik'.

Braden Bartnik, B.Sc., CPESC
Air Quality Specialist, Environment



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1 INTRODUCTION

As part of the RMOW Air Quality Program, WSP collects samples of ambient air with SUMMA canisters (negatively pressured canisters supplied by ALS labs) and determines concentrations of Volatile Organic Compounds (VOCs) in the ambient air through third-party laboratory analysis. The purpose of this analysis is to determine if nearby asphalt manufacturing operations were impacting the air quality in the Cheakamus Crossing neighbourhood.

This report summarizes data collected from the VOC sampling in 2023.

2 VOC SAMPLING

2.1 METHODS

To capture the potential impact of the asphalt plant air emissions, the VOC sampling is conducted at select locations in the Cheakamus Crossing neighbourhood on days when the asphalt plant is in operation and wind conditions are forecasted to put the community downwind from the plant. Figure 1 shows the locations for the VOC sampling points, Beta Attenuation Monitor (BAM) and asphalt plant. The BAM is a precise air quality monitor which measures concentrations of fine particulate matter (PM2.5) in the ambient air at the High-Performance Center (HPC). There are four VOC sampling locations which were each selected in consideration of air sampling best practices related to accessibility, security, shadowing by structures, proximity to the potential source and providing a range of locations in the community. As the fenceline location was the closest to the potential source it was always sampled as it had the highest chance of measuring any elevated VOC levels. Locations farther out in Cheakamus Crossing were not chosen in this study as VOCs disperse as they travel, so the most likely locations to detect them are near to the source. If VOCs were detected at high levels at any of the sampling locations, additional monitoring at other locations across the community could be considered.

VOC samples were collected for the following locations and days in 2023.

Table 1 Sampling Locations and Times for VOC tests.

Date Sampled	Location	Sampling Start Time	Sampling End Time	Time Elapsed
14-Jun-2023	Mt. Fee	9:49 AM	12:50 PM	3:01
14-Jun-2023	Fenceline	9:59 AM	1:59 PM	4:00
26-Jul-2023	Fenceline	7:05 AM	9:49 AM	2:44
26-Jul-2023	Dog Park	7:10 AM	11:08 AM	3:58
06-Sep-2023	Dog Park	10:28 AM	2:01 PM	3:33
06-Sep-2023	Fenceline	10:37 AM	2:12 PM	3:35
03-Oct-2023	Dog Park	9:55 AM	1:32 PM	3:37
03-Oct-2023	Fenceline	10:02 AM	1:52 PM	3:50



Base image retrieved from Bing Maps on May 05, 2023.

Figure 1 Map with locations for VOC sampling (blue), BAM monitor at HPC (green), PurpleAir monitors (purple) and asphalt plant (red).

SUMMA cannisters were deployed at the locations stated above for approximately four hours, and cannister pressures were checked and recorded every hour for quality control. SUMMA cannisters are stainless steel cannisters, designed for collecting air samples. They are supplied by ALS labs, negatively pressured and calibrated to draw air at a flow rate determined by the regulator over a sampling period. After deployment, the cannisters were then sent to ALS labs to be analyzed for common VOC concentrations. Figure 2 shows a SUMMA cannister and how it was deployed.

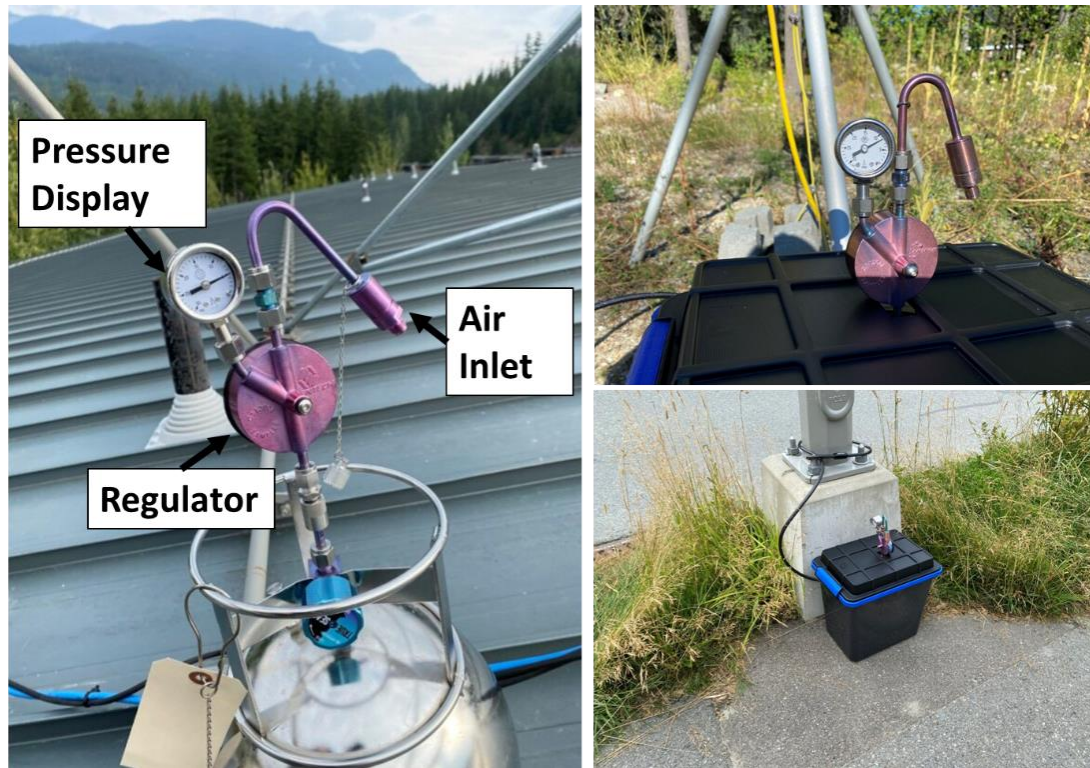


Figure 2 SUMMA cannister, enclosed by a box during deployment.

DATA PROCESSING

The laboratory analyzed the samples for 60 different VOC species and produced a report with concentrations in parts per billion volume (ppbv). This report summarizes VOC concentrations detected by the tests and compares them to Ambient Air Quality Criteria (AAQC) as an indicator of potential impacts.

Wind roses were plotted using the data collected at the HPC building for the period in which the samples were being collected. Wind data was also reviewed from a near by station to understand regional wind variation.

2.2 RESULTS

Table 2 outlines the production of the asphalt plant just before or during the four VOC sampling days. Since the plant operates intermittently, it was essential to make sure that it was running to detect any VOCs associated with its activity. During 2023, the plant operated for 64 days.

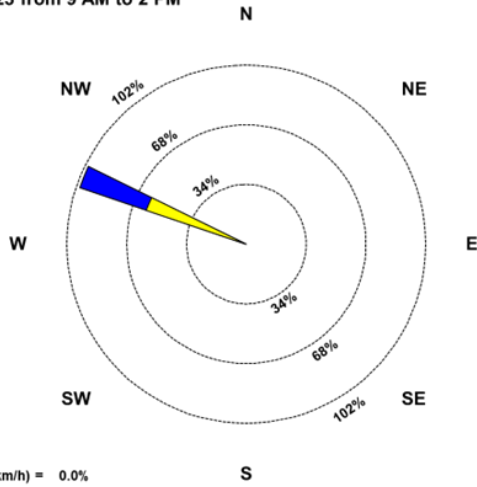
Table 2 Asphalt Plant Activities During VOC Collection Dates

Date	Start Time	End Time	Time Elapsed	Production of asphalt (tonnes)
14-Jun-23	7:30 AM	11:00 AM	3:30	412
	12:30 PM	1:30 PM	1:00	
26-Jul-23	6:45 AM	7:30 AM	0:45	171
	8:00 AM	9:30 AM	1:30	
	10:30 AM	12:00 PM	1:30	
06-Sep-23	7:30 AM	8:30 AM	1:00	590
	10:00 AM	11:45 AM	1:45	
	12:30 PM	1:45 PM	1:15	
	3:00 PM	4:00 PM	1:00	
03-Oct-23	7:30 AM	9:00 AM	1:30	257
	10:30 AM	11:30 AM	1:00	
	12:30 PM	1:30 PM	1:00	

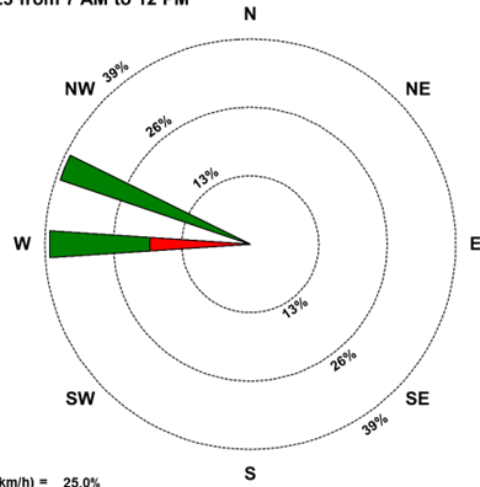
Figure 3 displays the wind roses for the periods when the VOCs were being sampled. Wind roses show the general wind direction during the sampling period. The cardinal points on wind rose show the direction the winds blew from and the length of each "spoke" around the circle shows how often the wind blew from that direction. The colors of each "spoke" represent the wind speed.

The wind speed and wind direction data were collected at the HPC building. The intension of the selected sampling times was to have forecasted winds that put the asphalt plant in an up-wind direction to the community and sampling points. A general wind direction that puts the asphalt plant upwind is southwest, however the sampling locations were selected to provide a range of points where wind from southwest to northwest may carry asphalt emissions towards the sampling locations. Despite forecasted winds from these directions, the monitored winds during the sampling events vary, but all show a westerly component that had the potential of dispersing asphalt plant emissions towards the community during the sampling events.

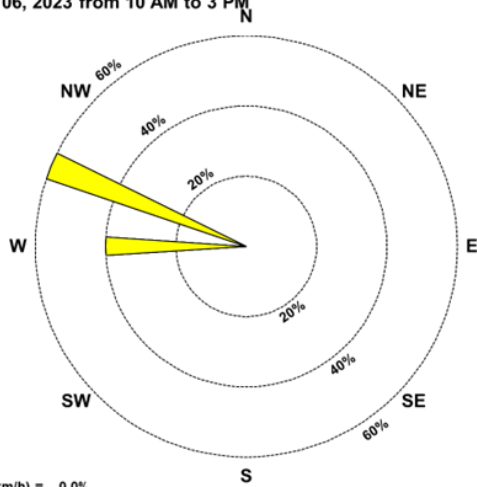
June 14, 2023 from 9 AM to 2 PM



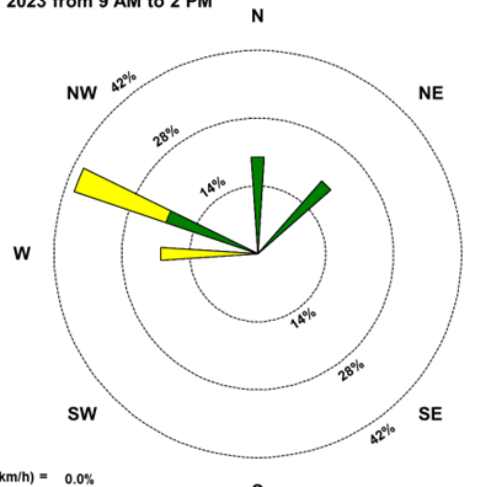
July 26, 2023 from 7 AM to 12 PM



September 06, 2023 from 10 AM to 3 PM



October 03, 2023 from 9 AM to 2 PM



■ >25 km/h □ 20 - 25 km/h ■ 15 - 20 km/h ■ 10 - 15 km/h ■ 5 - 10 km/h ■ 2 - 5 km/h

Figure 3 Wind roses during VOC sampling periods

Results from the VOC sampling (Table 3) are compared with 24-hour Ambient Air Quality Criteria (AAQCs) from Ontario (MECP 2020) (BC does not have objectives / criteria for individual VOCs) as an indicator of the potential for impacts in the neighbourhood. Only eight of sixty analyzed were detected. All detected VOC concentrations were below the AAQCs in 2023.

Figure 4 represents the percentage of the AAQCs reached by each detected VOC for every location and sampling day. Figure 5 shows a comparison for the maximum value reached (in terms of percentage of the AAQCs) for each detected VOC in 2022 and 2023. These figures show that carbon tetrachloride was the VOC with the highest measured concentrations as compared to the AAQC. The primary pollutants of concern from asphalts and asphalt paving operations are volatile organic compounds (VOC) (ref: AP-42 Vol. 1 Ch 4.5). Carbon tetrachloride, Dichloroethane, Chloromethane, and other VOC species can be used as a solvent in the asphalt production process and Benzene is known to be present in the production of asphalt. These may be a marker of asphalt emissions in the sampling. It should be confirmed with the asphalt plant whether this is a substance used in their asphalt formulation. It is also worth noting that the data shows remarkable consistency in the concentrations of carbon tetrachloride, at approximately 20% of its AAQC in 2022 and 2023, across all sampling locations. In order to determine if the asphalt plant is the source of the carbon tetrachloride, sampling events on non-production days or in non-production seasons could be carried out.

Table 3 VOCs that were detected in the analysis. Concentrations in ppbv.

VOC	DL ¹	AAQC (24-hour averaging period)	14-Jun-23		26-Jul-23		06-Sep-23		03-Oct-23		Maximum value	Maximum percentage of the AAQC
			Mt. Fee	Fenceline	Dog Park	Fenceline	Dog Park	Fenceline	Dog Park	Fenceline		
acetone ²	1.0	5,001	2.10	2.40	1.80	1.30	4.60	5.00	1.20	1.30	5.00	0.10%
chloromethane ²	0.20	155	0.50	0.50	0.53	0.51	0.53	0.58	0.50	0.48	0.58	0.37%
methyl ethyl ketone [MEK] ²	0.20	339	<0.20	<0.20	<0.20	0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.06%
toluene ²	0.10	531	<0.10	0.13	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.13	0.02%
trichlorofluoromethane ²	0.20	1,068	<0.20	<0.20	<0.20	<0.20	0.20	0.20	0.21	0.20	0.21	0.02%
carbon tetrachloride ²	0.02	0.38	0.076	0.080	0.073	0.072	0.080	0.076	0.078	0.077	0.080	21.1%
dichlorodifluoromethane ²	0.20	101,108	0.45	0.45	0.45	0.44	0.47	0.46	0.46	0.45	0.47	0.0005%
dichloroethane, 1,2- ²	0.01	0.5	0.015	0.015	<0.010	<0.010	<0.010	<0.010	0.012	0.013	0.015	3.04%

[1] Detection Limit: minimum concentration, in ppbv, that can be detected by the analysis instrument.

[2] Values in bold mean that the substance was above the detection limit. All values for 2023 are below the AAQC.

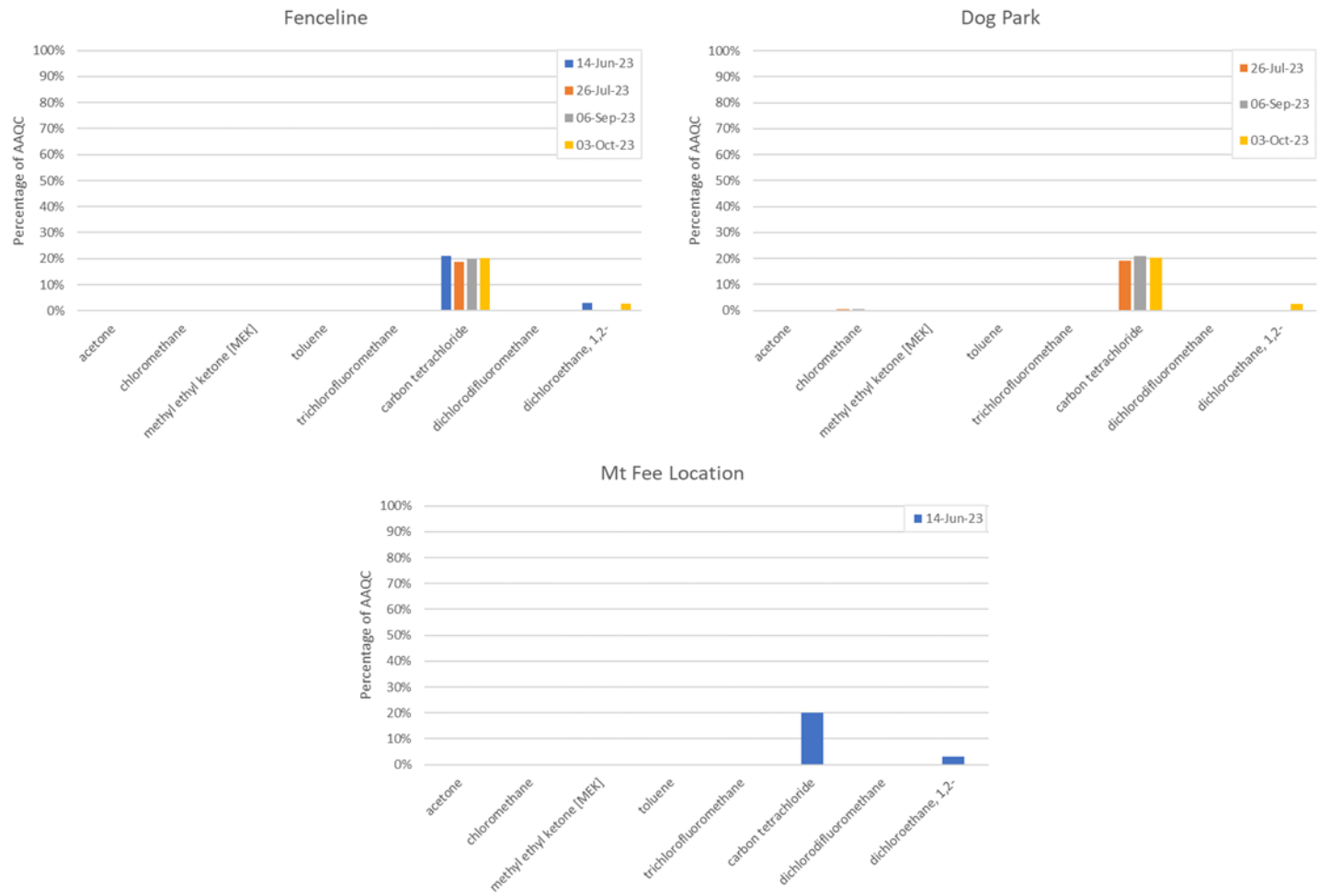


Figure 4 Detected VOCs for each sampling location and sampling date. VOCs are displayed as a percentage of their Ambient Air Quality Objective (AAQO)

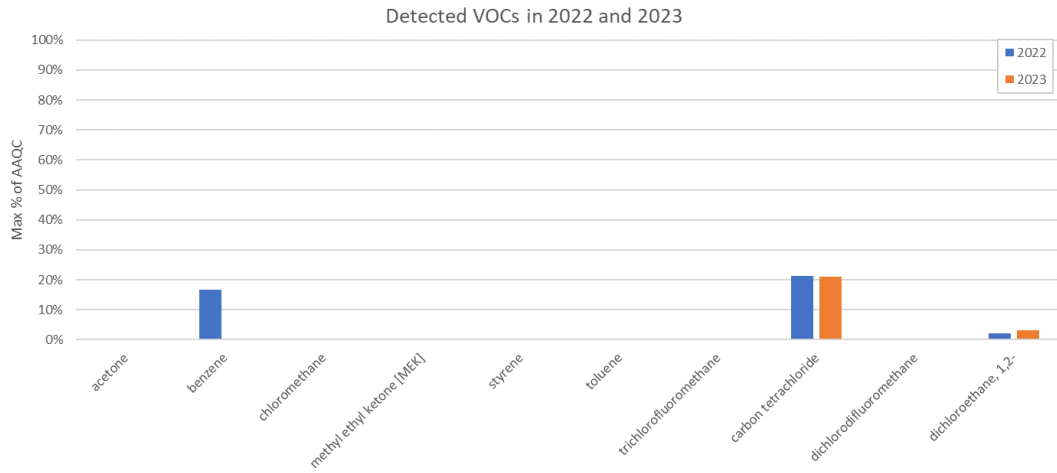


Figure 5 Maximum concentrations of VOCs detected in 2022 and 2023, displayed as a percentage of their corresponding Ambient Air Quality Objective (AAQO)

3 CONCLUSION

As part of the RMOW Air Quality Program in 2023, WSP collected samples of ambient air with SUMMA canisters and determined concentrations of Volatile Organic Compounds (VOCs) in the ambient air through third-party laboratory analysis. The purpose of this analysis was to determine if nearby asphalt manufacturing operations were impacting the air quality in the Cheakamus Crossing neighbourhood.

VOC measurements taken during the year of 2023 were all below AAQC and similar to results from the VOC sampling conducted in 2022. Concentrations of carbon tetrachloride, up to 21.1% of its corresponding AAQC have been measured during sampling events in 2022 and 2023. Carbon tetrachloride can be used as a solvent in the asphalt production process. This may be a marker of asphalt emissions in the sampling. It should be confirmed with the asphalt plant whether this is a substance used in their asphalt formulation, or, to determine if the asphalt plant is the source of the carbon tetrachloride, sampling events on non-production days or in non-production seasons could be carried out.


BIBLIOGRAPHY

- ⇒ Human Toxicology and Air Standards Section, Technical Assessment and Standards Development Branch, Ontario Ministry of the Environment, Conservation and Parks (MECP). 2020. Ontario's Ambient Air Quality Criteria. MECP, Toronto, ON, Canada [Accessed Oct 3, 2023]

- ⇒ US Environmental Protection Agency (EPA), April 2004, AP42, Fifth Edition, Volume I Chapter 11.1: Mineral Products Industry – Hot Mix Asphalt Plants, <https://www.epa.gov/sites/default/files/2020-10/documents/c11s01.pdf> [Accessed November 1, 2023]

APPENDIX

A LABORATORY RESULTS





CERTIFICATE OF ANALYSIS

Work Order : **VA23B3728**
Client : **WSP Canada Inc.**
Contact : Braden Bartnik
Address : 840 Howe St., Suite 1000
 Vancouver BC Canada V6Z 2M1
Telephone : ----
Project : CA-WSP-171-03296-05
PO : ----
C-O-C number :
Sampler : ----
Site : ----
Quote number : 2023 Price List BC WSP/Golder
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 7
Laboratory : Vancouver - Environmental
Account Manager : Amber Springer
Address : 8081 Lougheed Highway
 Burnaby BC Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 15-Jun-2023 15:40
Date Analysis Commenced : 20-Jun-2023
Issue Date : 27-Jun-2023 11:23

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
David Tremblett	VOC Section Supervisor	Air Quality, Waterloo, Ontario



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
µg/m ³	micrograms per cubic metre
Inches Hg	inches of mercury
ppbv	parts per billion (volume/volume)

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Air					Client sample ID	MT. Fee	Fenceline	----	----	----
(Matrix: Air)					Client sampling date / time	14-Jun-2023 09:49	14-Jun-2023 09:59	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3728-001	VA23B3728-002	-----	-----	-----	
					Result	Result	----	----	----	
Field Tests										
ID, batch proof	----	EF001/WT	-	-	230523.105	230523.102	----	----	----	
ID, canister	----	EF001/WT	-	-	06000-0111	06000-0123	----	----	----	
ID, regulator	----	EF001/WT	-	-	CS1200-020	CS1200-005	----	----	----	
Pressure on receipt	----	EF001/WT	0.10	Inches Hg	2 -7.56	4 -6.13	----	----	----	
Volatile Organic Compounds										
Acetone	67-64-1	EC621B/WT	2.4	µg/m³	5.0	5.7	----	----	----	
Acetone	67-64-1	E621B/WT	1.0	ppbv	2.1	2.4	----	----	----	
Benzene	71-43-2	EC621B/WT	0.32	µg/m³	<0.32	<0.32	----	----	----	
Benzene	71-43-2	E621B/WT	0.10	ppbv	<0.10	<0.10	----	----	----	
Bromobenzene	108-86-1	EC621C/WT	1.3	µg/m³	<1.3	<1.3	----	----	----	
Bromobenzene	108-86-1	E621C/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Bromodichloromethane	75-27-4	EC621B/WT	1.3	µg/m³	<1.3	<1.3	----	----	----	
Bromodichloromethane	75-27-4	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Bromoform	75-25-2	EC621B/WT	2.1	µg/m³	<2.1	<2.1	----	----	----	
Bromoform	75-25-2	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Bromomethane	74-83-9	EC621B/WT	0.78	µg/m³	<0.78	<0.78	----	----	----	
Bromomethane	74-83-9	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Butadiene, 1,3-	106-99-0	EC621B/WT	0.44	µg/m³	<0.44	<0.44	----	----	----	
Butadiene, 1,3-	106-99-0	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Carbon disulfide	75-15-0	EC621B/WT	1.6	µg/m³	<1.6	<1.6	----	----	----	
Carbon disulfide	75-15-0	E621B/WT	0.50	ppbv	<0.50	<0.50	----	----	----	
Carbon tetrachloride	56-23-5	EC621B-L/WT	0.13	µg/m³	0.48	0.50	----	----	----	
Carbon tetrachloride	56-23-5	E621B-L/WT	0.020	ppbv	0.076	0.080	----	----	----	
Chlorobenzene	108-90-7	EC621B/WT	0.92	µg/m³	<0.92	<0.92	----	----	----	
Chlorobenzene	108-90-7	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Chloroethane	75-00-3	EC621B/WT	0.53	µg/m³	<0.53	<0.53	----	----	----	
Chloroethane	75-00-3	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Chloroform	67-66-3	EC621B-L/WT	0.098	µg/m³	<0.098	<0.098	----	----	----	



Analytical Results

Sub-Matrix: Air					Client sample ID	MT. Fee	Fenceline	----	----	----
(Matrix: Air)					Client sampling date / time	14-Jun-2023 09:49	14-Jun-2023 09:59	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3728-001	VA23B3728-002	-----	-----	-----	
					Result	Result	----	----	----	
Volatile Organic Compounds										
Chloroform	67-66-3	E621B-L/WT	0.020	ppbv	<0.020	<0.020	----	----	----	
Chloromethane	74-87-3	EC621B/WT	0.41	µg/m³	1.03	1.03	----	----	----	
Chloromethane	74-87-3	E621B/WT	0.20	ppbv	0.50	0.50	----	----	----	
Chlorophenol, 2-	95-57-8	EC621C/WT	1.0	µg/m³	<1.0	<1.0	----	----	----	
Chlorophenol, 2-	95-57-8	E621C/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Cyclohexane	110-82-7	EC621B/WT	0.69	µg/m³	<0.69	<0.69	----	----	----	
Cyclohexane	110-82-7	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Decane, n-	124-18-5	EC621C/WT	2.9	µg/m³	<2.9	<2.9	----	----	----	
Decane, n-	124-18-5	E621C/WT	0.50	ppbv	<0.50	<0.50	----	----	----	
Dibromochloromethane	124-48-1	EC621B/WT	1.7	µg/m³	<1.7	<1.7	----	----	----	
Dibromochloromethane	124-48-1	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Dibromoethane, 1,2-	106-93-4	EC621B-L/WT	0.077	µg/m³	<0.077	<0.077	----	----	----	
Dibromoethane, 1,2-	106-93-4	E621B-L/WT	0.010	ppbv	<0.010	<0.010	----	----	----	
Dichlorobenzene, 1,2-	95-50-1	EC621B/WT	1.2	µg/m³	<1.2	<1.2	----	----	----	
Dichlorobenzene, 1,2-	95-50-1	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichlorobenzene, 1,3-	541-73-1	EC621B/WT	1.2	µg/m³	<1.2	<1.2	----	----	----	
Dichlorobenzene, 1,3-	541-73-1	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichlorobenzene, 1,4-	106-46-7	EC621B/WT	1.2	µg/m³	<1.2	<1.2	----	----	----	
Dichlorobenzene, 1,4-	106-46-7	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichlorodifluoromethane	75-71-8	EC621B/WT	1.0	µg/m³	2.2	2.2	----	----	----	
Dichlorodifluoromethane	75-71-8	E621B/WT	0.20	ppbv	0.45	0.45	----	----	----	
Dichloroethane, 1,1-	75-34-3	EC621B-L/WT	0.081	µg/m³	<0.081	<0.081	----	----	----	
Dichloroethane, 1,1-	75-34-3	E621B-L/WT	0.020	ppbv	<0.020	<0.020	----	----	----	
Dichloroethane, 1,2-	107-06-2	EC621B-L/WT	0.040	µg/m³	0.061	0.061	----	----	----	
Dichloroethane, 1,2-	107-06-2	E621B-L/WT	0.010	ppbv	0.015	0.015	----	----	----	
Dichloroethylene, 1,1-	75-35-4	EC621B-L/WT	0.079	µg/m³	<0.079	<0.079	----	----	----	
Dichloroethylene, 1,1-	75-35-4	E621B-L/WT	0.020	ppbv	<0.020	<0.020	----	----	----	
Dichloroethylene, cis-1,2-	156-59-2	EC621B/WT	0.79	µg/m³	<0.79	<0.79	----	----	----	
Dichloroethylene, cis-1,2-	156-59-2	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichloroethylene, trans-1,2-	156-60-5	EC621B/WT	0.79	µg/m³	<0.79	<0.79	----	----	----	



Analytical Results

Sub-Matrix: Air					Client sample ID	MT. Fee	Fenceline	----	----	----
(Matrix: Air)					Client sampling date / time	14-Jun-2023 09:49	14-Jun-2023 09:59	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3728-001	VA23B3728-002	-----	-----	-----	
					Result	Result	----	----	----	
Volatile Organic Compounds										
Dichloroethylene, trans-1,2-	156-60-5	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichloromethane	75-09-2	EC621B/WT	0.69	µg/m³	<0.69	<0.69	----	----	----	
Dichloromethane	75-09-2	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichloropropane, 1,2-	78-87-5	EC621B-L/WT	0.14	µg/m³	<0.14	<0.14	----	----	----	
Dichloropropane, 1,2-	78-87-5	E621B-L/WT	0.030	ppbv	<0.030	<0.030	----	----	----	
Dichloropropylene, cis-1,3-	10061-01-5	EC621B/WT	0.9	µg/m³	<0.9	<0.9	----	----	----	
Dichloropropylene, cis-1,3-	10061-01-5	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichloropropylene, trans-1,3-	10061-02-6	EC621B/WT	0.9	µg/m³	<0.9	<0.9	----	----	----	
Dichloropropylene, trans-1,3-	10061-02-6	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Ethyl acetate	141-78-6	EC621B/WT	0.72	µg/m³	<0.72	<0.72	----	----	----	
Ethyl acetate	141-78-6	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Ethylbenzene	100-41-4	EC621B/WT	0.43	µg/m³	<0.43	<0.43	----	----	----	
Ethylbenzene	100-41-4	E621B/WT	0.10	ppbv	<0.10	<0.10	----	----	----	
Hexachlorobutadiene	87-68-3	EC621B-L/WT	0.11	µg/m³	<0.11	<0.11	----	----	----	
Hexachlorobutadiene	87-68-3	E621B-L/WT	0.010	ppbv	<0.010	<0.010	----	----	----	
Hexane, n-	110-54-3	EC621B/WT	0.70	µg/m³	<0.70	<0.70	----	----	----	
Hexane, n-	110-54-3	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Hexanone, 2-	591-78-6	EC621B/WT	4.10	µg/m³	<4.10	<4.10	----	----	----	
Hexanone, 2-	591-78-6	E621B/WT	1.0	ppbv	<1.0	<1.0	----	----	----	
Isopropylbenzene	98-82-8	EC621B/WT	1.0	µg/m³	<1.0	<1.0	----	----	----	
Isopropylbenzene	98-82-8	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Methyl ethyl ketone [MEK]	78-93-3	EC621B/WT	0.59	µg/m³	<0.59	<0.59	----	----	----	
Methyl ethyl ketone [MEK]	78-93-3	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Methyl isobutyl ketone [MIBK]	108-10-1	EC621B/WT	0.82	µg/m³	<0.82	<0.82	----	----	----	
Methyl isobutyl ketone [MIBK]	108-10-1	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Methylcyclohexane	108-87-2	EC621C/WT	0.80	µg/m³	<0.80	<0.80	----	----	----	
Methylcyclohexane	108-87-2	E621C/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Methyl-tert-butyl ether [MTBE]	1634-04-4	EC621B/WT	0.72	µg/m³	<0.72	<0.72	----	----	----	
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Naphthalene	91-20-3	EC621B/WT	0.52	µg/m³	<0.52	<0.52	----	----	----	



Analytical Results

Sub-Matrix: Air					Client sample ID	MT. Fee	Fenceline	----	----	----
(Matrix: Air)					Client sampling date / time	14-Jun-2023 09:49	14-Jun-2023 09:59	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3728-001	VA23B3728-002	-----	-----	-----	
					Result	Result	----	----	----	
Volatile Organic Compounds										
Naphthalene	91-20-3	E621B/WT	0.10	ppbv	<0.10	<0.10	----	----	----	
Styrene	100-42-5	EC621B/WT	0.85	µg/m ³	<0.85	<0.85	----	----	----	
Styrene	100-42-5	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Tetrachloroethane, 1,1,1,2-	630-20-6	EC621B-L/WT	0.14	µg/m ³	<0.14	<0.14	----	----	----	
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L/WT	0.020	ppbv	<0.020	<0.020	----	----	----	
Tetrachloroethane, 1,1,2,2-	79-34-5	EC621B-L/WT	0.069	µg/m ³	<0.069	<0.069	----	----	----	
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L/WT	0.010	ppbv	<0.010	<0.010	----	----	----	
Tetrachloroethylene	127-18-4	EC621B/WT	1.4	µg/m ³	<1.4	<1.4	----	----	----	
Tetrachloroethylene	127-18-4	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Toluene	108-88-3	EC621B/WT	0.38	µg/m ³	<0.38	0.49	----	----	----	
Toluene	108-88-3	E621B/WT	0.10	ppbv	<0.10	0.13	----	----	----	
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	EC621B/WT	1.5	µg/m ³	<1.5	<1.5	----	----	----	
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Trichlorobenzene, 1,2,4-	120-82-1	EC621B/WT	1.5	µg/m ³	<1.5	<1.5	----	----	----	
Trichlorobenzene, 1,2,4-	120-82-1	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Trichloroethane, 1,1,1-	71-55-6	EC621B/WT	1.1	µg/m ³	<1.1	<1.1	----	----	----	
Trichloroethane, 1,1,1-	71-55-6	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Trichloroethane, 1,1,2-	79-00-5	EC621B-L/WT	0.055	µg/m ³	<0.054	<0.054	----	----	----	
Trichloroethane, 1,1,2-	79-00-5	E621B-L/WT	0.010	ppbv	<0.010	<0.010	----	----	----	
Trichloroethylene	79-01-6	EC621B-L/WT	0.11	µg/m ³	<0.11	<0.11	----	----	----	
Trichloroethylene	79-01-6	E621B-L/WT	0.020	ppbv	<0.020	<0.020	----	----	----	
Trichlorofluoromethane	75-69-4	EC621B/WT	1.1	µg/m ³	<1.1	<1.1	----	----	----	
Trichlorofluoromethane	75-69-4	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Trimethylbenzene, 1,2,4-	95-63-6	EC621B/WT	1.0	µg/m ³	<1.0	<1.0	----	----	----	
Trimethylbenzene, 1,2,4-	95-63-6	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Trimethylbenzene, 1,3,5-	108-67-8	EC621B/WT	1.0	µg/m ³	<1.0	<1.0	----	----	----	
Trimethylbenzene, 1,3,5-	108-67-8	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Vinyl chloride	75-01-4	EC621B-L/WT	0.051	µg/m ³	<0.051	<0.051	----	----	----	



Analytical Results

Sub-Matrix: Air					Client sample ID	MT. Fee	Fenceline	----	----	----
(Matrix: Air)					Client sampling date / time	14-Jun-2023 09:49	14-Jun-2023 09:59	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3728-001	VA23B3728-002	-----	-----	-----	
					Result	Result	----	----	----	
Volatile Organic Compounds										
Vinyl chloride	75-01-4	E621B-L/WT	0.020	ppbv	<0.020	<0.020	----	----	----	
Xylene, m+p-	179601-23-1	EC621B/WT	0.87	µg/m ³	<0.87	<0.87	----	----	----	
Xylene, m+p-	179601-23-1	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Xylene, o-	95-47-6	EC621B/WT	0.43	µg/m ³	<0.43	<0.43	----	----	----	
Xylene, o-	95-47-6	E621B/WT	0.10	ppbv	<0.10	<0.10	----	----	----	
Xylenes, total	1330-20-7	EC621B/WT	1.3	µg/m ³	<1.3	<1.3	----	----	----	
Xylenes, total	1330-20-7	E621B/WT	0.30	ppbv	<0.30	<0.30	----	----	----	
BTEX, total	----	EC621B/WT	1.2	µg/m ³	<2.4	<2.4	----	----	----	
BTEX, total	----	E621B/WT	0.30	ppbv	<0.30	<0.30	----	----	----	
Hydrocarbons										
VHv (C10-C13)	----	E593B/WT	50	µg/m ³	<50	56	----	----	----	
VHv (C6-C10)	----	E593B/WT	50	µg/m ³	<50	110	----	----	----	
VHv (C6-C13)	----	E593B/WT	71	µg/m ³	<71	166	----	----	----	
VPHv	----	EC592B/WT	100	µg/m ³	<100	170	----	----	----	
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E621B/WT	0.20	%	92.6	92.6	----	----	----	
Bromofluorobenzene, 4-	460-00-4	E621B-L/WT	0.20	%	97.3	96.5	----	----	----	
Bromofluorobenzene, 4-	460-00-4	E621C/WT	0.20	%	92.6	92.6	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA23B3728</p> <p>Client : WSP Canada Inc.</p> <p>Contact : Braden Bartnik</p> <p>Address : 840 Howe St., Suite 1000 Vancouver BC Canada V6Z 2M1</p> <p>Telephone : ----</p> <p>Project : CA-WSP-171-03296-05</p> <p>PO : ----</p> <p>C-O-C number :</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : 2023 Price List BC WSP/Golder</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 6</p> <p>Laboratory : Vancouver - Environmental</p> <p>Account Manager : Amber Springer</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 15-Jun-2023 15:40</p> <p>Issue Date : 27-Jun-2023 11:25</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Air

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Air Canister Information										
Canister Fenceline	EF001	14-Jun-2023	----	----	----		20-Jun-2023	----	----	
Field Tests : Air Canister Information										
Canister MT. Fee	EF001	14-Jun-2023	----	----	----		20-Jun-2023	----	----	
Hydrocarbons : TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)										
Canister Fenceline	E593B	14-Jun-2023	----	----	----		22-Jun-2023	30 days	8 days	✓
Hydrocarbons : TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)										
Canister MT. Fee	E593B	14-Jun-2023	----	----	----		22-Jun-2023	30 days	8 days	✓
Volatile Organic Compounds : VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fenceline	E621B	14-Jun-2023	----	----	----		22-Jun-2023	30 days	8 days	✓
Volatile Organic Compounds : VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister MT. Fee	E621B	14-Jun-2023	----	----	----		22-Jun-2023	30 days	8 days	✓
Volatile Organic Compounds : VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fenceline	E621B-L	14-Jun-2023	----	----	----		22-Jun-2023	30 days	8 days	✓



Matrix: Air

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Volatile Organic Compounds : VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister MT. Fee	E621B-L	14-Jun-2023	----	----	----		22-Jun-2023	30 days	8 days	✔
Volatile Organic Compounds : VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fenceline	E621C	14-Jun-2023	----	----	----		22-Jun-2023	30 days	8 days	✔
Volatile Organic Compounds : VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister MT. Fee	E621C	14-Jun-2023	----	----	----		22-Jun-2023	30 days	8 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: Air

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1002422	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1002426	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1002421	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1002427	1	2	50.0	5.0	✔
Laboratory Control Samples (LCS)							
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1002422	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1002426	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1002421	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1002427	1	2	50.0	5.0	✔
Method Blanks (MB)							
Air Canister Information	EF001	998292	1	14	7.1	5.0	✔
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1002422	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1002426	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1002421	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1002427	1	2	50.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B Waterloo - Environmental	Air	EPA TO-15 (mod)	Total Volatile Organic Compounds (TVOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B Waterloo - Environmental	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L Waterloo - Environmental	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C Waterloo - Environmental	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VPH in Canisters or Bags GC-MS (µg/m3)	EC592B Waterloo - Environmental	Air	BC MOE Lab Manual (Calculation of VPH)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHv = Volatile Hydrocarbons (VH6-13) minus benzene, toluene, ethylbenzene, xylenes, styrene, n-hexane, and n-decane.
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621B Waterloo - Environmental	Air	unit conversion	Convert ppbV to ug/m3
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621B-L Waterloo - Environmental	Air	unit conversion	Convert ppbV to ug/m3
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621C Waterloo - Environmental	Air	unit conversion	Convert ppbV to ug/m3
Air Canister Information	EF001 Waterloo - Environmental	Air	In-house	Air canister information provided by client and recorded on ALS report may affect the validity of results.



QUALITY CONTROL REPORT

<p>Work Order : VA23B3728</p> <p>Client : WSP Canada Inc.</p> <p>Contact : Braden Bartnik</p> <p>Address : 840 Howe St., Suite 1000 Vancouver BC Canada V6Z 2M1</p> <p>Telephone :</p> <p>Project : CA-WSP-171-03296-05</p> <p>PO : ----</p> <p>C-O-C number :</p> <p>Sampler : ---- ----</p> <p>Site : ----</p> <p>Quote number : 2023 Price List BC WSP/Golder</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 10</p> <p>Laboratory : Vancouver - Environmental</p> <p>Account Manager : Amber Springer</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 15-Jun-2023 15:40</p> <p>Date Analysis Commenced : 20-Jun-2023</p> <p>Issue Date : 27-Jun-2023 11:23</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
David Tremblett	VOC Section Supervisor	Waterloo Air Quality, Waterloo, Ontario

Page : 2 of 10
Work Order : VA23B3728
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Air

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1002421)											
VA23B3728-001	MT. Fee	Carbon tetrachloride	56-23-5	E621B-L	0.020	ppbv	0.076	0.076	0.0004	Diff <2x LOR	----
		Chloroform	67-66-3	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E621B-L	0.010	ppbv	0.015	0.015	0.0002	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E621B-L	0.030	ppbv	<0.030	<0.030	0	Diff <2x LOR	----
		Hexachlorobutadiene	87-68-3	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1002426)											
VA23B3728-001	MT. Fee	Acetone	67-64-1	E621B	1.0	ppbv	2.1	2.0	0.04	Diff <2x LOR	----
		Benzene	71-43-2	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Bromoform	75-25-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Butadiene, 1,3-	106-99-0	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Carbon disulfide	75-15-0	E621B	0.50	ppbv	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E621B	0.20	ppbv	0.50	0.48	0.02	Diff <2x LOR	----
		Cyclohexane	110-82-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E621B	0.20	ppbv	0.45	0.46	0.007	Diff <2x LOR	----



Sub-Matrix: Air					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1002426) - continued											
VA23B3728-001	MT. Fee	Dichloroethylene, cis-1,2-	156-59-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Ethyl acetate	141-78-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Hexanone, 2-	591-78-6	E621B	1.0	ppbv	<1.0	<1.0	0	Diff <2x LOR	----
		Isopropylbenzene	98-82-8	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Naphthalene	91-20-3	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Styrene	100-42-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Toluene	108-88-3	E621B	0.10	ppbv	<0.10	0.10	0.002	Diff <2x LOR	----
		Trichloro-1,2,2-trifluoroethane, 1,1,2-[Freon 113]	76-13-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Xylene, m+p-	179601-23-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Xylene, o-	95-47-6	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----		
Volatile Organic Compounds (QC Lot: 1002427)											
VA23B3728-001	MT. Fee	Bromobenzene	108-86-1	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chlorophenol, 2-	95-57-8	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Decane, n-	124-18-5	E621C	0.50	ppbv	<0.50	<0.50	0	Diff <2x LOR	----
		Methylcyclohexane	108-87-2	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1002422)											
VA23B3728-001	MT. Fee	VHv (C10-C13)	----	E593B	50	µg/m³	<50	<50	0	Diff <2x LOR	----
		VHv (C6-C10)	----	E593B	50	µg/m³	<50	<50	0	Diff <2x LOR	----
		VHv (C6-C13)	----	E593B	71	µg/m³	<71	<71	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Air

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Field Tests (QCLot: 998292)						
Pressure on receipt	---	EF001	0.1	Inches Hg	-29.8	---
Volatile Organic Compounds (QCLot: 1002421)						
Carbon tetrachloride	56-23-5	E621B-L	0.02	ppbv	<0.020	---
Chloroform	67-66-3	E621B-L	0.02	ppbv	<0.020	---
Dibromoethane, 1,2-	106-93-4	E621B-L	0.01	ppbv	<0.010	---
Dichloroethane, 1,1-	75-34-3	E621B-L	0.02	ppbv	<0.020	---
Dichloroethane, 1,2-	107-06-2	E621B-L	0.01	ppbv	<0.010	---
Dichloroethylene, 1,1-	75-35-4	E621B-L	0.02	ppbv	<0.020	---
Dichloropropane, 1,2-	78-87-5	E621B-L	0.03	ppbv	<0.030	---
Hexachlorobutadiene	87-68-3	E621B-L	0.01	ppbv	<0.010	---
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.02	ppbv	<0.020	---
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.01	ppbv	<0.010	---
Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.01	ppbv	<0.010	---
Trichloroethylene	79-01-6	E621B-L	0.02	ppbv	<0.020	---
Vinyl chloride	75-01-4	E621B-L	0.02	ppbv	<0.020	---
Volatile Organic Compounds (QCLot: 1002426)						
Acetone	67-64-1	E621B	1	ppbv	<1.0	---
Benzene	71-43-2	E621B	0.1	ppbv	<0.10	---
Bromodichloromethane	75-27-4	E621B	0.2	ppbv	<0.20	---
Bromoform	75-25-2	E621B	0.2	ppbv	<0.20	---
Bromomethane	74-83-9	E621B	0.2	ppbv	<0.20	---
Butadiene, 1,3-	106-99-0	E621B	0.2	ppbv	<0.20	---
Carbon disulfide	75-15-0	E621B	0.5	ppbv	<0.50	---
Chlorobenzene	108-90-7	E621B	0.2	ppbv	<0.20	---
Chloroethane	75-00-3	E621B	0.2	ppbv	<0.20	---
Chloromethane	74-87-3	E621B	0.2	ppbv	<0.20	---
Cyclohexane	110-82-7	E621B	0.2	ppbv	<0.20	---
Dibromochloromethane	124-48-1	E621B	0.2	ppbv	<0.20	---
Dichlorobenzene, 1,2-	95-50-1	E621B	0.2	ppbv	<0.20	---
Dichlorobenzene, 1,3-	541-73-1	E621B	0.2	ppbv	<0.20	---
Dichlorobenzene, 1,4-	106-46-7	E621B	0.2	ppbv	<0.20	---



Sub-Matrix: Air

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1002426) - continued						
Dichlorodifluoromethane	75-71-8	E621B	0.2	ppbv	<0.20	----
Dichloroethylene, cis-1,2-	156-59-2	E621B	0.2	ppbv	<0.20	----
Dichloroethylene, trans-1,2-	156-60-5	E621B	0.2	ppbv	<0.20	----
Dichloromethane	75-09-2	E621B	0.2	ppbv	<0.20	----
Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.2	ppbv	<0.20	----
Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.2	ppbv	<0.20	----
Ethyl acetate	141-78-6	E621B	0.2	ppbv	<0.20	----
Ethylbenzene	100-41-4	E621B	0.1	ppbv	<0.10	----
Hexane, n-	110-54-3	E621B	0.2	ppbv	<0.20	----
Hexanone, 2-	591-78-6	E621B	1	ppbv	<1.0	----
Isopropylbenzene	98-82-8	E621B	0.2	ppbv	<0.20	----
Methyl ethyl ketone [MEK]	78-93-3	E621B	0.2	ppbv	<0.20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.2	ppbv	<0.20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.2	ppbv	<0.20	----
Naphthalene	91-20-3	E621B	0.1	ppbv	<0.10	----
Styrene	100-42-5	E621B	0.2	ppbv	<0.20	----
Tetrachloroethylene	127-18-4	E621B	0.2	ppbv	<0.20	----
Toluene	108-88-3	E621B	0.1	ppbv	<0.10	----
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B	0.2	ppbv	<0.20	----
Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.2	ppbv	<0.20	----
Trichloroethane, 1,1,1-	71-55-6	E621B	0.2	ppbv	<0.20	----
Trichlorofluoromethane	75-69-4	E621B	0.2	ppbv	<0.20	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.2	ppbv	<0.20	----
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.2	ppbv	<0.20	----
Xylene, m+p-	179601-23-1	E621B	0.2	ppbv	<0.20	----
Xylene, o-	95-47-6	E621B	0.1	ppbv	<0.10	----
Volatile Organic Compounds (QCLot: 1002427)						
Bromobenzene	108-86-1	E621C	0.2	ppbv	<0.20	----
Chlorophenol, 2-	95-57-8	E621C	0.2	ppbv	<0.20	----
Decane, n-	124-18-5	E621C	0.5	ppbv	<0.50	----
Methylcyclohexane	108-87-2	E621C	0.2	ppbv	<0.20	----
Hydrocarbons (QCLot: 1002422)						
VHv (C10-C13)	----	E593B	50	µg/m³	<50	----
VHv (C6-C10)	----	E593B	50	µg/m³	<50	----
VHv (C6-C13)	----	E593B	71	µg/m³	<71	----

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Work Order : VA23B3728
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05





Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Air

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1002421)									
Carbon tetrachloride	56-23-5	E621B-L	0.02	ppbv	0.106 ppbv	105	70.0	130	----
Chloroform	67-66-3	E621B-L	0.02	ppbv	0.105 ppbv	103	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E621B-L	0.01	ppbv	0.108 ppbv	96.8	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E621B-L	0.02	ppbv	0.104 ppbv	107	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E621B-L	0.01	ppbv	0.104 ppbv	101	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E621B-L	0.02	ppbv	0.104 ppbv	110	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E621B-L	0.03	ppbv	0.105 ppbv	109	70.0	130	----
Hexachlorobutadiene	87-68-3	E621B-L	0.01	ppbv	0.109 ppbv	76.3	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.02	ppbv	0.105 ppbv	110	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.01	ppbv	0.107 ppbv	94.2	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.01	ppbv	0.108 ppbv	100	70.0	130	----
Trichloroethylene	79-01-6	E621B-L	0.02	ppbv	0.108 ppbv	103	70.0	130	----
Vinyl chloride	75-01-4	E621B-L	0.02	ppbv	0.101 ppbv	114	70.0	130	----
Volatile Organic Compounds (QCLot: 1002426)									
Acetone	67-64-1	E621B	1	ppbv	1.06 ppbv	105	70.0	130	----
Benzene	71-43-2	E621B	0.1	ppbv	1.06 ppbv	96.8	70.0	130	----
Bromodichloromethane	75-27-4	E621B	0.2	ppbv	1.02 ppbv	101	70.0	130	----
Bromoform	75-25-2	E621B	0.2	ppbv	1.06 ppbv	87.1	70.0	130	----
Bromomethane	74-83-9	E621B	0.2	ppbv	1.04 ppbv	96.8	70.0	130	----
Butadiene, 1,3-	106-99-0	E621B	0.2	ppbv	1.06 ppbv	98.6	70.0	130	----
Carbon disulfide	75-15-0	E621B	0.5	ppbv	1.06 ppbv	103	70.0	130	----
Chlorobenzene	108-90-7	E621B	0.2	ppbv	1.07 ppbv	92.0	70.0	130	----
Chloroethane	75-00-3	E621B	0.2	ppbv	1.01 ppbv	101	70.0	130	----
Chloromethane	74-87-3	E621B	0.2	ppbv	1.01 ppbv	103	70.0	130	----
Cyclohexane	110-82-7	E621B	0.2	ppbv	1.06 ppbv	97.0	70.0	130	----
Dibromochloromethane	124-48-1	E621B	0.2	ppbv	1.07 ppbv	95.3	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E621B	0.2	ppbv	1.06 ppbv	77.7	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E621B	0.2	ppbv	1.06 ppbv	79.4	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E621B	0.2	ppbv	1.05 ppbv	82.9	70.0	130	----
Dichlorodifluoromethane	75-71-8	E621B	0.2	ppbv	1.02 ppbv	94.5	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E621B	0.2	ppbv	1.06 ppbv	97.3	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E621B	0.2	ppbv	1.06 ppbv	98.0	70.0	130	----
Dichloromethane	75-09-2	E621B	0.2	ppbv	1.04 ppbv	97.1	70.0	130	----



Sub-Matrix: Air

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Concentration	Recovery (%)	Recovery Limits (%)		Qualifier
						Low	High		
Volatile Organic Compounds (QCLot: 1002426) - continued									
Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.2	ppbv	1.05 ppbv	96.5	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.2	ppbv	1.07 ppbv	96.6	70.0	130	----
Ethyl acetate	141-78-6	E621B	0.2	ppbv	1.05 ppbv	91.0	70.0	130	----
Ethylbenzene	100-41-4	E621B	0.1	ppbv	1.09 ppbv	87.0	70.0	130	----
Hexane, n-	110-54-3	E621B	0.2	ppbv	1.07 ppbv	98.9	70.0	130	----
Hexanone, 2-	591-78-6	E621B	1	ppbv	1.09 ppbv	82.4	70.0	130	----
Isopropylbenzene	98-82-8	E621B	0.2	ppbv	1.04 ppbv	87.1	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E621B	0.2	ppbv	1.07 ppbv	90.2	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.2	ppbv	1.07 ppbv	84.9	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.2	ppbv	1.07 ppbv	96.9	70.0	130	----
Naphthalene	91-20-3	E621B	0.1	ppbv	1.12 ppbv	82.8	70.0	130	----
Styrene	100-42-5	E621B	0.2	ppbv	1.06 ppbv	89.7	70.0	130	----
Tetrachloroethylene	127-18-4	E621B	0.2	ppbv	1.04 ppbv	92.3	70.0	130	----
Toluene	108-88-3	E621B	0.1	ppbv	1.09 ppbv	99.3	70.0	130	----
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B	0.2	ppbv	1.03 ppbv	99.5	70.0	130	----
Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.2	ppbv	1.07 ppbv	75.8	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E621B	0.2	ppbv	1.05 ppbv	99.1	70.0	130	----
Trichlorofluoromethane	75-69-4	E621B	0.2	ppbv	1.07 ppbv	96.6	70.0	130	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.2	ppbv	1.07 ppbv	85.5	70.0	130	----
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.2	ppbv	1.06 ppbv	83.5	70.0	130	----
Xylene, m+p-	179601-23-1	E621B	0.2	ppbv	2.12 ppbv	90.6	70.0	130	----
Xylene, o-	95-47-6	E621B	0.1	ppbv	1.07 ppbv	90.0	70.0	130	----
Volatile Organic Compounds (QCLot: 1002427)									
Bromobenzene	108-86-1	E621C	0.2	ppbv	1.07 ppbv	99.3	70.0	130	----
Chlorophenol, 2-	95-57-8	E621C	0.2	ppbv	1.05 ppbv	101	70.0	130	----
Decane, n-	124-18-5	E621C	0.5	ppbv	1.06 ppbv	106	70.0	130	----
Methylcyclohexane	108-87-2	E621C	0.2	ppbv	1.08 ppbv	99.2	70.0	130	----
Hydrocarbons (QCLot: 1002422)									
VHv (C10-C13)	---	E593B	50	µg/m³	0 µg/m³		---	---	----
VHv (C6-C10)	---	E593B	50	µg/m³	815 µg/m³	80.4	---	---	----
VHv (C6-C13)	---	E593B	71	µg/m³	815 µg/m³	80.4	50.0	150	----

Page : 10 of 10
Work Order : VA23B3728
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05



Batch Proof Report



right solutions.
right partner.

Batch Proof ID: 230523.102
Canister ID: 06000-0123
Analysis Date: 6-Jun-23

1,1,1-Trichloroethane	<0.02	ppb(V)	cis-1,3-Dichloropropene	<0.02	ppb(V)
1,1,1,2-Tetrachloroethane	<0.02	ppb(V)	Cyclohexane	<0.20	ppb(V)
1,1,2,2-Tetrachloroethane	<0.02	ppb(V)	Dibromochloromethane	<0.20	ppb(V)
1,1,2-Trichloroethane	<0.02	ppb(V)	Dichlorodifluoromethane	<0.20	ppb(V)
1,1-Dichloroethane	<0.02	ppb(V)	Ethyl Acetate	<0.20	ppb(V)
1,1-Dichloroethene	<0.02	ppb(V)	Ethyl Benzene	<0.02	ppb(V)
1,2,4-Trichlorobenzene	<0.20	ppb(V)	Freon 113	<0.20	ppb(V)
1,2,4-Trimethylbenzene	<0.20	ppb(V)	Freon 114	<0.20	ppb(V)
1,2-Dibromoethane	<0.01	ppb(V)	Hexachlorobutadiene	<0.02	ppb(V)
1,2-Dichlorobenzene	<0.02	ppb(V)	Isooctane	<0.20	ppb(V)
1,2-Dichloroethane	<0.01	ppb(V)	Isopropyl Alcohol	N/A	ppb(V)
1,2-Dichloropropane	<0.02	ppb(V)	Isopropylbenzene	<0.20	ppb(V)
1,3,5-Trimethylbenzene	<0.20	ppb(V)	m&p-Xylene	<0.04	ppb(V)
1,3-Butadiene	<0.20	ppb(V)	Methyl Ethyl Ketone	<0.20	ppb(V)
1,3-Dichlorobenzene	<0.02	ppb(V)	Methylcyclohexane	<0.20	ppb(V)
1,4-Dichlorobenzene	<0.02	ppb(V)	Methyl Isobutyl Ketone	<0.20	ppb(V)
1,4-Dioxane	<0.20	ppb(V)	Methylene Chloride	<0.02	ppb(V)
2-Chlorophenol	<0.20	ppb(V)	MTBE	<0.20	ppb(V)
2-Hexanone	<1.0	ppb(V)	Naphthalene	<0.05	ppb(V)
4-Ethyltoluene	<0.20	ppb(V)	n-Decane	<0.20	ppb(V)
Acetone	<1.0	ppb(V)	n-Heptane	<0.20	ppb(V)
Acrolein	<0.10	ppb(V)	n-Hexane	<0.02	ppb(V)
Allyl Chloride	<0.20	ppb(V)	o-Xylene	<0.02	ppb(V)
Benzene	<0.02	ppb(V)	Propylene	<0.20	ppb(V)
Benzyl Chloride	<0.20	ppb(V)	Styrene	<0.02	ppb(V)
Bromodichloromethane	<0.20	ppb(V)	Tetrachloroethylene	<0.02	ppb(V)
Bromobenzene	<0.20	ppb(V)	Tetrahydrofuran	<0.20	ppb(V)
Bromoform	<0.02	ppb(V)	Toluene	<0.02	ppb(V)
Bromomethane	<0.20	ppb(V)	trans-1,2-Dichloroethene	<0.02	ppb(V)
Carbon Disulfide	<0.50	ppb(V)	trans-1,3-Dichloropropene	<0.02	ppb(V)
Carbon Tetrachloride	<0.02	ppb(V)	Trichloroethylene	<0.02	ppb(V)
Chlorobenzene	<0.20	ppb(V)	Trichlorofluoromethane	<0.20	ppb(V)
Chloroethane	<0.02	ppb(V)	Vinyl Acetate	<0.50	ppb(V)
Chloroform	<0.02	ppb(V)	Vinyl Bromide	<0.20	ppb(V)
Chloromethane	<0.20	ppb(V)	Vinyl Chloride	<0.02	ppb(V)
cis-1,2-Dichloroethene	<0.02	ppb(V)	4-Bromofluorobenzene	101.88	%

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8



AIR QUALITY CHAIN OF CUSTODY FORM - Canister/Tube/Gas Bag

Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878

Note: All TAT Quoted is in business days which exclude statutory holidays and weekends. TAT of samples received past 3:00 pm or Saturday / Sunday begin the next day.

DATE REQUIRED	SERVICE REQUESTED	Rush 3 day (100%)	<input type="checkbox"/>
	10 day (regular)	Rush 2 day (200%)	<input checked="" type="checkbox"/>
	Rush 5 day (50%)	Rush 1 day (300%) - Enquire	<input type="checkbox"/>

COMPANY NAME: WSP CANADA
OFFICE: 840 HOWE ST
PROJECT MANAGER: Braden Bartnik
PROJECT #: CA-WSP-171-03296-05
PHONE: FAX

REGULATION:
CRITERIA:
OTHER INFORMATION:

ANALYSIS REQUEST

TUBE AIR VOLUME - L	STARTING PRESSURE - Pre-Sampling ("Hg)	ENDING PRESSURE - Post Sampling ("Hg)	COLLECTION TIME (hrs)
6	-28	-6	181
6	-29	-6	240

All rush work requires lab approval before sample submission

SUBMISSION #:
ENTERED BY:
DATE/TIME ENTERED:
BIN #:

ACCOUNT #:
QUOTATION #:
PO #:

REPORT FORMAT/DISTRIBUTION

EMAIL FAX BOTH
SELECT: PDF DIGITAL BOTH
EMAIL 1: braden.bartnik@wsp.com
EMAIL 2:

SAMPLING INFORMATION				Matrix Type	SAMPLE DESCRIPTION TO APPEAR ON REPORT
Date (dd-mmm-yy)	Time (24hr) (hh:mm)	Canister or Tube ID# (e.g. 060000-XXXX or G0XXXXXSVI)	Regulator Serial # CS1200-XXXX or GXX		
14-JUN-23	09:49	06000-0111	CS1200-0229	AA	MT.FEE
14-JUN-23	09:59	06000-0123	CS1200-0054	AA	FENCE LINE

SAMPLE DESCRIPTION TO APPEAR ON REPORT

Environmental Division
Vancouver
Work Order Reference
VA23B3728

Telephone: +1 604 253 4188

Field Conditions (Rain/Wind/Dust/Odour):
Field PID Reading:
LAB ID:

SAMPLE CONDITION AS RECEIVED

FROZEN
COLD
COOLING INITIATED
AMBIENT

MEAN TEMP:
OBSERVATIONS: Yes No
If yes add SIF

SPECIAL INSTRUCTIONS/COMMENTS:

SAMPLED BY: Coral
RELINQUISHED BY:

This Chain of Custody Form:

Matrix Type: Soil Gas Vapour = SG
Ambient Air = AA

DATE & TIME: June 14/23
RECEIVED BY:

RECEIVED AT LAB BY:
DATE & TIME:

ME

DATE & TIME:

INIT

Notes

1. Quote number must be provided to ensure proper pricing

2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.

3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section. REV6-2015

RS | JUN - 15 | 15:40 | 27°C



CERTIFICATE OF ANALYSIS

<p>Work Order : VA23B7195</p> <p>Client : WSP Canada Inc.</p> <p>Contact : Braden Bartnik</p> <p>Address : 840 Howe St., Suite 1000 Vancouver BC Canada V6Z 2M1</p> <p>Telephone : ----</p> <p>Project : CA-WSP-171-03296-05</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : 2023 Price List BC WSP/Golder</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 7</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Amber Springer</p> <p>Address : 8081 Lougheed Highway Burnaby BC Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 26-Jul-2023 16:00</p> <p>Date Analysis Commenced : 30-Jul-2023</p> <p>Issue Date : 02-Aug-2023 10:09</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
David Tremblett	VOC Section Supervisor	Air Quality, Waterloo, Ontario



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
µg/m ³	micrograms per cubic metre
Inches Hg	inches of mercury
ppbv	parts per billion (volume/volume)

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Accreditation

<i>Accreditation</i>	<i>Description</i>	<i>Laboratory</i>	<i>Address</i>
A	CALA ISO/IEC 17025:2017	WT ALS Environmental - Waterloo	60 Northland Road, Unit 1, Waterloo, ON

Applicable accreditations are indicated in the Method/Lab column as superscripts.



Analytical Results

Sub-Matrix: Air					Client sample ID				
(Matrix: Air)					Fenceline	Dog Park	----	----	----
Client sampling date / time					23-Jul-2023 07:05	23-Jul-2023 07:10	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B7195-001	VA23B7195-002	-----	-----	-----
					Result	Result	---	---	---
Field Tests									
ID, batch proof	---	EF001/WT	-	-	230612.113	230612.102	----	----	----
ID, canister	---	EF001/WT	-	-	06000-0383	06000-0033	----	----	----
ID, regulator	---	EF001/WT	-	-	CS1200-022	CS1200-009	----	----	----
Pressure on receipt	---	EF001/WT	0.10	Inches Hg	1 -6.54	9 -5.11	----	----	----
Volatile Organic Compounds									
Acetone	67-64-1	EC621B/WT	2.4	µg/m ³	3.1	4.3	----	----	----
Acetone	67-64-1	E621B/WT A	1.0	ppbv	1.3	1.8	----	----	----
Benzene	71-43-2	EC621B/WT	0.32	µg/m ³	<0.32	<0.32	----	----	----
Benzene	71-43-2	E621B/WT A	0.10	ppbv	<0.10	<0.10	----	----	----
Bromobenzene	108-86-1	EC621C/WT	1.3	µg/m ³	<1.3	<1.3	----	----	----
Bromobenzene	108-86-1	E621C/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Bromodichloromethane	75-27-4	EC621B/WT	1.3	µg/m ³	<1.3	<1.3	----	----	----
Bromodichloromethane	75-27-4	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Bromoform	75-25-2	EC621B/WT	2.1	µg/m ³	<2.1	<2.1	----	----	----
Bromoform	75-25-2	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Bromomethane	74-83-9	EC621B/WT	0.78	µg/m ³	<0.78	<0.78	----	----	----
Bromomethane	74-83-9	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Butadiene, 1,3-	106-99-0	EC621B/WT	0.44	µg/m ³	<0.44	<0.44	----	----	----
Butadiene, 1,3-	106-99-0	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Carbon disulfide	75-15-0	EC621B/WT	1.6	µg/m ³	<1.6	<1.6	----	----	----
Carbon disulfide	75-15-0	E621B/WT A	0.50	ppbv	<0.50	<0.50	----	----	----
Carbon tetrachloride	56-23-5	EC621B-L/WT	0.13	µg/m ³	0.45	0.46	----	----	----
Carbon tetrachloride	56-23-5	E621B-L/WT A	0.020	ppbv	0.072	0.073	----	----	----
Chlorobenzene	108-90-7	EC621B/WT	0.92	µg/m ³	<0.92	<0.92	----	----	----
Chlorobenzene	108-90-7	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Chloroethane	75-00-3	EC621B/WT	0.53	µg/m ³	<0.53	<0.53	----	----	----
Chloroethane	75-00-3	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Chloroform	67-66-3	EC621B-L/WT	0.098	µg/m ³	<0.098	<0.098	----	----	----
Chloroform	67-66-3	E621B-L/WT A	0.020	ppbv	<0.020	<0.020	----	----	----



Analytical Results

Sub-Matrix: Air					Client sample ID	Fenceline	Dog Park	----	----	----
(Matrix: Air)					Client sampling date / time	23-Jul-2023 07:05	23-Jul-2023 07:10	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B7195-001	VA23B7195-002	-----	-----	-----	
					Result	Result	----	----	----	
Volatile Organic Compounds										
Chloromethane	74-87-3	EC621B/WT	0.41	µg/m³	1.05	1.09	----	----	----	
Chloromethane	74-87-3	E621B/WT A	0.20	ppbv	0.51	0.53	----	----	----	
Chlorophenol, 2-	95-57-8	EC621C/WT	1.0	µg/m³	<1.0	<1.0	----	----	----	
Chlorophenol, 2-	95-57-8	E621C/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Cyclohexane	110-82-7	EC621B/WT	0.69	µg/m³	<0.69	<0.69	----	----	----	
Cyclohexane	110-82-7	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Decane, n-	124-18-5	EC621C/WT	2.9	µg/m³	<2.9	<2.9	----	----	----	
Decane, n-	124-18-5	E621C/WT A	0.50	ppbv	<0.50	<0.50	----	----	----	
Dibromochloromethane	124-48-1	EC621B/WT	1.7	µg/m³	<1.7	<1.7	----	----	----	
Dibromochloromethane	124-48-1	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Dibromoethane, 1,2-	106-93-4	EC621B-L/WT	0.077	µg/m³	<0.077	<0.077	----	----	----	
Dibromoethane, 1,2-	106-93-4	E621B-L/WT A	0.010	ppbv	<0.010	<0.010	----	----	----	
Dichlorobenzene, 1,2-	95-50-1	EC621B/WT	1.2	µg/m³	<1.2	<1.2	----	----	----	
Dichlorobenzene, 1,2-	95-50-1	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichlorobenzene, 1,3-	541-73-1	EC621B/WT	1.2	µg/m³	<1.2	<1.2	----	----	----	
Dichlorobenzene, 1,3-	541-73-1	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichlorobenzene, 1,4-	106-46-7	EC621B/WT	1.2	µg/m³	<1.2	<1.2	----	----	----	
Dichlorobenzene, 1,4-	106-46-7	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichlorodifluoromethane	75-71-8	EC621B/WT	1.0	µg/m³	2.2	2.2	----	----	----	
Dichlorodifluoromethane	75-71-8	E621B/WT A	0.20	ppbv	0.44	0.45	----	----	----	
Dichloroethane, 1,1-	75-34-3	EC621B-L/WT	0.081	µg/m³	<0.081	<0.081	----	----	----	
Dichloroethane, 1,1-	75-34-3	E621B-L/WT A	0.020	ppbv	<0.020	<0.020	----	----	----	
Dichloroethane, 1,2-	107-06-2	EC621B-L/WT	0.040	µg/m³	<0.040	<0.040	----	----	----	
Dichloroethane, 1,2-	107-06-2	E621B-L/WT A	0.010	ppbv	<0.010	<0.010	----	----	----	
Dichloroethylene, 1,1-	75-35-4	EC621B-L/WT	0.079	µg/m³	<0.079	<0.079	----	----	----	
Dichloroethylene, 1,1-	75-35-4	E621B-L/WT A	0.020	ppbv	<0.020	<0.020	----	----	----	
Dichloroethylene, cis-1,2-	156-59-2	EC621B/WT	0.79	µg/m³	<0.79	<0.79	----	----	----	
Dichloroethylene, cis-1,2-	156-59-2	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichloroethylene, trans-1,2-	156-60-5	EC621B/WT	0.79	µg/m³	<0.79	<0.79	----	----	----	
Dichloroethylene, trans-1,2-	156-60-5	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Dichloromethane	75-09-2	EC621B/WT	0.69	µg/m³	<0.69	<0.69	----	----	----	



Analytical Results

Sub-Matrix: Air					Client sample ID	Fenceline	Dog Park	----	----	----
(Matrix: Air)					Client sampling date / time	23-Jul-2023 07:05	23-Jul-2023 07:10	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B7195-001	VA23B7195-002	-----	-----	-----	
					Result	Result	----	----	----	
Volatile Organic Compounds										
Dichloromethane	75-09-2	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----
Dichloropropane, 1,2-	78-87-5	EC621B-L/WT		0.14	µg/m³	<0.14	<0.14	----	----	----
Dichloropropane, 1,2-	78-87-5	E621B-L/WT	A	0.030	ppbv	<0.030	<0.030	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	EC621B/WT		0.9	µg/m³	<0.9	<0.9	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	EC621B/WT		0.9	µg/m³	<0.9	<0.9	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----
Ethyl acetate	141-78-6	EC621B/WT		0.72	µg/m³	<0.72	<0.72	----	----	----
Ethyl acetate	141-78-6	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----
Ethylbenzene	100-41-4	EC621B/WT		0.43	µg/m³	<0.43	<0.43	----	----	----
Ethylbenzene	100-41-4	E621B/WT	A	0.10	ppbv	<0.10	<0.10	----	----	----
Hexachlorobutadiene	87-68-3	EC621B-L/WT		0.11	µg/m³	<0.11	<0.11	----	----	----
Hexachlorobutadiene	87-68-3	E621B-L/WT	A	0.010	ppbv	<0.010	<0.010	----	----	----
Hexane, n-	110-54-3	EC621B/WT		0.70	µg/m³	<0.70	<0.70	----	----	----
Hexane, n-	110-54-3	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----
Hexanone, 2-	591-78-6	EC621B/WT		4.10	µg/m³	<4.10	<4.10	----	----	----
Hexanone, 2-	591-78-6	E621B/WT	A	1.0	ppbv	<1.0	<1.0	----	----	----
Isopropylbenzene	98-82-8	EC621B/WT		1.0	µg/m³	<1.0	<1.0	----	----	----
Isopropylbenzene	98-82-8	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----
Methyl ethyl ketone [MEK]	78-93-3	EC621B/WT		0.59	µg/m³	0.59	<0.59	----	----	----
Methyl ethyl ketone [MEK]	78-93-3	E621B/WT	A	0.20	ppbv	0.20	<0.20	----	----	----
Methyl isobutyl ketone [MIBK]	108-10-1	EC621B/WT		0.82	µg/m³	<0.82	<0.82	----	----	----
Methyl isobutyl ketone [MIBK]	108-10-1	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----
Methylcyclohexane	108-87-2	EC621C/WT		0.80	µg/m³	<0.80	<0.80	----	----	----
Methylcyclohexane	108-87-2	E621C/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	EC621B/WT		0.72	µg/m³	<0.72	<0.72	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----
Naphthalene	91-20-3	EC621B/WT		0.52	µg/m³	<0.52	<0.52	----	----	----
Naphthalene	91-20-3	E621B/WT	A	0.10	ppbv	<0.10	<0.10	----	----	----
Styrene	100-42-5	EC621B/WT		0.85	µg/m³	<0.85	<0.85	----	----	----
Styrene	100-42-5	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----



Analytical Results

Sub-Matrix: Air					Client sample ID	Fenceline	Dog Park	----	----	----
(Matrix: Air)					Client sampling date / time	23-Jul-2023 07:05	23-Jul-2023 07:10	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B7195-001	VA23B7195-002	-----	-----	-----	
					Result	Result	----	----	----	
Volatile Organic Compounds										
Tetrachloroethane, 1,1,1,2-	630-20-6	EC621B-L/WT	0.14	µg/m³	<0.14	<0.14	----	----	----	
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L/WT A	0.020	ppbv	<0.020	<0.020	----	----	----	
Tetrachloroethane, 1,1,1,2-	79-34-5	EC621B-L/WT	0.069	µg/m³	<0.069	<0.069	----	----	----	
Tetrachloroethane, 1,1,1,2-	79-34-5	E621B-L/WT A	0.010	ppbv	<0.010	<0.010	----	----	----	
Tetrachloroethylene	127-18-4	EC621B/WT	1.4	µg/m³	<1.4	<1.4	----	----	----	
Tetrachloroethylene	127-18-4	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Toluene	108-88-3	EC621B/WT	0.38	µg/m³	<0.38	<0.38	----	----	----	
Toluene	108-88-3	E621B/WT A	0.10	ppbv	<0.10	<0.10	----	----	----	
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	EC621B/WT	1.5	µg/m³	<1.5	<1.5	----	----	----	
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Trichlorobenzene, 1,2,4-	120-82-1	EC621B/WT	1.5	µg/m³	<1.5	<1.5	----	----	----	
Trichlorobenzene, 1,2,4-	120-82-1	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Trichloroethane, 1,1,1-	71-55-6	EC621B/WT	1.1	µg/m³	<1.1	<1.1	----	----	----	
Trichloroethane, 1,1,1-	71-55-6	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Trichloroethane, 1,1,2-	79-00-5	EC621B-L/WT	0.055	µg/m³	<0.054	<0.054	----	----	----	
Trichloroethane, 1,1,2-	79-00-5	E621B-L/WT A	0.010	ppbv	<0.010	<0.010	----	----	----	
Trichloroethylene	79-01-6	EC621B-L/WT	0.11	µg/m³	<0.11	<0.11	----	----	----	
Trichloroethylene	79-01-6	E621B-L/WT A	0.020	ppbv	<0.020	<0.020	----	----	----	
Trichlorofluoromethane	75-69-4	EC621B/WT	1.1	µg/m³	<1.1	<1.1	----	----	----	
Trichlorofluoromethane	75-69-4	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Trimethylbenzene, 1,2,4-	95-63-6	EC621B/WT	1.0	µg/m³	<1.0	<1.0	----	----	----	
Trimethylbenzene, 1,2,4-	95-63-6	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Trimethylbenzene, 1,3,5-	108-67-8	EC621B/WT	1.0	µg/m³	<1.0	<1.0	----	----	----	
Trimethylbenzene, 1,3,5-	108-67-8	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Vinyl chloride	75-01-4	EC621B-L/WT	0.051	µg/m³	<0.051	<0.051	----	----	----	
Vinyl chloride	75-01-4	E621B-L/WT A	0.020	ppbv	<0.020	<0.020	----	----	----	
Xylene, m+p-	179601-23-1	EC621B/WT	0.87	µg/m³	<0.87	<0.87	----	----	----	
Xylene, m+p-	179601-23-1	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----	
Xylene, o-	95-47-6	EC621B/WT	0.43	µg/m³	<0.43	<0.43	----	----	----	



Analytical Results

Sub-Matrix: Air						Client sample ID	Fenceline	Dog Park	----	----	----
(Matrix: Air)						Client sampling date / time	23-Jul-2023 07:05	23-Jul-2023 07:10	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA23B7195-001	VA23B7195-002	-----	-----	-----	
						Result	Result	----	----	----	
Volatile Organic Compounds											
Xylene, o-	95-47-6	E621B/WT	A	0.10	ppbv	<0.10	<0.10	----	----	----	
Xylenes, total	1330-20-7	EC621B/WT		1.3	µg/m³	<1.3	<1.3	----	----	----	
Xylenes, total	1330-20-7	E621B/WT	A	0.30	ppbv	<0.30	<0.30	----	----	----	
BTEX, total	----	EC621B/WT		1.2	µg/m³	<2.4	<2.4	----	----	----	
BTEX, total	----	E621B/WT	A	0.30	ppbv	<0.30	<0.30	----	----	----	
Hydrocarbons											
VHv (C10-C13)	----	E593B/WT		50	µg/m³	<50	<50	----	----	----	
VHv (C6-C10)	----	E593B/WT		50	µg/m³	<50	<50	----	----	----	
VHv (C6-C13)	----	E593B/WT		71	µg/m³	<71	<71	----	----	----	
VPHv	----	EC592B/WT		100	µg/m³	<100	<100	----	----	----	
Volatile Organic Compounds Surrogates											
Bromofluorobenzene, 4-	460-00-4	E621B/WT	A	0.20	%	102	103	----	----	----	
Bromofluorobenzene, 4-	460-00-4	E621B-L/WT	A	0.20	%	104	105	----	----	----	
Bromofluorobenzene, 4-	460-00-4	E621C/WT	A	0.20	%	102	103	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA23B7195</p> <p>Client : WSP Canada Inc.</p> <p>Contact : Braden Bartnik</p> <p>Address : 840 Howe St., Suite 1000 Vancouver BC Canada V6Z 2M1</p> <p>Telephone : ----</p> <p>Project : CA-WSP-171-03296-05</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : 2023 Price List BC WSP/Golder</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 6</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Amber Springer</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 26-Jul-2023 16:00</p> <p>Issue Date : 02-Aug-2023 10:12</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Air

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Air Canister Information										
Canister Dog Park	EF001	23-Jul-2023	----	----	----		30-Jul-2023	----	----	
Field Tests : Air Canister Information										
Canister Fenceline	EF001	23-Jul-2023	----	----	----		30-Jul-2023	----	----	
Hydrocarbons : TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)										
Canister Dog Park	E593B	23-Jul-2023	----	----	----		31-Jul-2023	30 days	8 days	✔
Hydrocarbons : TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)										
Canister Fenceline	E593B	23-Jul-2023	----	----	----		31-Jul-2023	30 days	8 days	✔
Volatile Organic Compounds : VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Dog Park	E621B	23-Jul-2023	----	----	----		31-Jul-2023	30 days	8 days	✔
Volatile Organic Compounds : VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fenceline	E621B	23-Jul-2023	----	----	----		31-Jul-2023	30 days	8 days	✔
Volatile Organic Compounds : VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Dog Park	E621B-L	23-Jul-2023	----	----	----		31-Jul-2023	30 days	8 days	✔



Matrix: **Air** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Volatile Organic Compounds : VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fenceline	E621B-L	23-Jul-2023	----	----	----		31-Jul-2023	30 days	8 days	✔
Volatile Organic Compounds : VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Dog Park	E621C	23-Jul-2023	----	----	----		31-Jul-2023	30 days	8 days	✔
Volatile Organic Compounds : VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fenceline	E621C	23-Jul-2023	----	----	----		31-Jul-2023	30 days	8 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: Air

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1063873	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1063870	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1063868	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1063872	1	2	50.0	5.0	✔
Laboratory Control Samples (LCS)							
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1063873	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1063870	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1063868	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1063872	1	2	50.0	5.0	✔
Method Blanks (MB)							
Air Canister Information	EF001	1062980	1	18	5.5	5.0	✔
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1063873	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1063870	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1063868	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1063872	1	2	50.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Total Volatile Organic Compounds (TVOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VPH in Canisters or Bags GC-MS (µg/m3)	EC592B ALS Environmental - Waterloo	Air	BC MOE Lab Manual (Calculation of VPH)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPH _v = Volatile Hydrocarbons (VH6-13) minus benzene, toluene, ethylbenzene, xylenes, styrene, n-hexane, and n-decane.
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621B ALS Environmental - Waterloo	Air	unit conversion	Convert ppbV to ug/m3
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621B-L ALS Environmental - Waterloo	Air	unit conversion	Convert ppbV to ug/m3
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621C ALS Environmental - Waterloo	Air	unit conversion	Convert ppbV to ug/m3
Air Canister Information	EF001 ALS Environmental - Waterloo	Air	In-house	Air canister information provided by client and recorded on ALS report may affect the validity of results.

QUALITY CONTROL REPORT

Work Order	: VA23B7195	Page	: 1 of 10
Client	: WSP Canada Inc.	Laboratory	: ALS Environmental - Vancouver
Contact	: Braden Bartnik	Account Manager	: Amber Springer
Address	: 840 Howe St., Suite 1000 Vancouver BC Canada V6Z 2M1	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	:	Telephone	: +1 604 253 4188
Project	: CA-WSP-171-03296-05	Date Samples Received	: 26-Jul-2023 16:00
PO	: ----	Date Analysis Commenced	: 30-Jul-2023
C-O-C number	: ----	Issue Date	: 02-Aug-2023 10:10
Sampler	: ---- ----		
Site	: ----		
Quote number	: 2023 Price List BC WSP/Golder		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
David Tremblett	VOC Section Supervisor	Waterloo Air Quality, Waterloo, Ontario

Page : 2 of 10
Work Order : VA23B7195
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Air

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1063868)											
VA23B7195-001	Fenceline	Carbon tetrachloride	56-23-5	E621B-L	0.020	ppbv	0.072	0.075	0.003	Diff <2x LOR	----
		Chloroform	67-66-3	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E621B-L	0.030	ppbv	<0.030	<0.030	0	Diff <2x LOR	----
		Hexachlorobutadiene	87-68-3	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1063870)											
VA23B7195-001	Fenceline	Acetone	67-64-1	E621B	1.0	ppbv	1.3	1.3	0.04	Diff <2x LOR	----
		Benzene	71-43-2	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Bromoform	75-25-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Butadiene, 1,3-	106-99-0	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Carbon disulfide	75-15-0	E621B	0.50	ppbv	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E621B	0.20	ppbv	0.51	0.52	0.02	Diff <2x LOR	----
		Cyclohexane	110-82-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E621B	0.20	ppbv	0.44	0.45	0.007	Diff <2x LOR	----



Sub-Matrix: Air					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1063870) - continued											
VA23B7195-001	Fenceline	Dichloroethylene, cis-1,2-	156-59-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Ethyl acetate	141-78-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Hexanone, 2-	591-78-6	E621B	1.0	ppbv	<1.0	<1.0	0	Diff <2x LOR	----
		Isopropylbenzene	98-82-8	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E621B	0.20	ppbv	0.20	<0.20	0.002	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Naphthalene	91-20-3	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Styrene	100-42-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Toluene	108-88-3	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Trichloro-1,2,2-trifluoroethane, 1,1,2-[Freon 113]	76-13-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Xylene, m+p-	179601-23-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Xylene, o-	95-47-6	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----		
Volatile Organic Compounds (QC Lot: 1063872)											
VA23B7195-001	Fenceline	Bromobenzene	108-86-1	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chlorophenol, 2-	95-57-8	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Decane, n-	124-18-5	E621C	0.50	ppbv	<0.50	<0.50	0	Diff <2x LOR	----
		Methylcyclohexane	108-87-2	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1063873)											
VA23B7195-001	Fenceline	VHv (C10-C13)	----	E593B	50	µg/m³	<50	<50	0	Diff <2x LOR	----
		VHv (C6-C10)	----	E593B	50	µg/m³	<50	<50	0	Diff <2x LOR	----
		VHv (C6-C13)	----	E593B	71	µg/m³	<71	<71	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Air

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Field Tests (QCLot: 1062980)						
Pressure on receipt	---	EF001	0.1	Inches Hg	-30.0	---
Volatile Organic Compounds (QCLot: 1063868)						
Carbon tetrachloride	56-23-5	E621B-L	0.02	ppbv	<0.020	---
Chloroform	67-66-3	E621B-L	0.02	ppbv	<0.020	---
Dibromoethane, 1,2-	106-93-4	E621B-L	0.01	ppbv	<0.010	---
Dichloroethane, 1,1-	75-34-3	E621B-L	0.02	ppbv	<0.020	---
Dichloroethane, 1,2-	107-06-2	E621B-L	0.01	ppbv	<0.010	---
Dichloroethylene, 1,1-	75-35-4	E621B-L	0.02	ppbv	<0.020	---
Dichloropropane, 1,2-	78-87-5	E621B-L	0.03	ppbv	<0.030	---
Hexachlorobutadiene	87-68-3	E621B-L	0.01	ppbv	<0.010	---
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.02	ppbv	<0.020	---
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.01	ppbv	<0.010	---
Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.01	ppbv	<0.010	---
Trichloroethylene	79-01-6	E621B-L	0.02	ppbv	<0.020	---
Vinyl chloride	75-01-4	E621B-L	0.02	ppbv	<0.020	---
Volatile Organic Compounds (QCLot: 1063870)						
Acetone	67-64-1	E621B	1	ppbv	<1.0	---
Benzene	71-43-2	E621B	0.1	ppbv	<0.10	---
Bromodichloromethane	75-27-4	E621B	0.2	ppbv	<0.20	---
Bromoform	75-25-2	E621B	0.2	ppbv	<0.20	---
Bromomethane	74-83-9	E621B	0.2	ppbv	<0.20	---
Butadiene, 1,3-	106-99-0	E621B	0.2	ppbv	<0.20	---
Carbon disulfide	75-15-0	E621B	0.5	ppbv	<0.50	---
Chlorobenzene	108-90-7	E621B	0.2	ppbv	<0.20	---
Chloroethane	75-00-3	E621B	0.2	ppbv	<0.20	---
Chloromethane	74-87-3	E621B	0.2	ppbv	<0.20	---
Cyclohexane	110-82-7	E621B	0.2	ppbv	<0.20	---
Dibromochloromethane	124-48-1	E621B	0.2	ppbv	<0.20	---
Dichlorobenzene, 1,2-	95-50-1	E621B	0.2	ppbv	<0.20	---
Dichlorobenzene, 1,3-	541-73-1	E621B	0.2	ppbv	<0.20	---
Dichlorobenzene, 1,4-	106-46-7	E621B	0.2	ppbv	<0.20	---



Sub-Matrix: Air

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1063870) - continued						
Dichlorodifluoromethane	75-71-8	E621B	0.2	ppbv	<0.20	----
Dichloroethylene, cis-1,2-	156-59-2	E621B	0.2	ppbv	<0.20	----
Dichloroethylene, trans-1,2-	156-60-5	E621B	0.2	ppbv	<0.20	----
Dichloromethane	75-09-2	E621B	0.2	ppbv	<0.20	----
Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.2	ppbv	<0.20	----
Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.2	ppbv	<0.20	----
Ethyl acetate	141-78-6	E621B	0.2	ppbv	<0.20	----
Ethylbenzene	100-41-4	E621B	0.1	ppbv	<0.10	----
Hexane, n-	110-54-3	E621B	0.2	ppbv	<0.20	----
Hexanone, 2-	591-78-6	E621B	1	ppbv	<1.0	----
Isopropylbenzene	98-82-8	E621B	0.2	ppbv	<0.20	----
Methyl ethyl ketone [MEK]	78-93-3	E621B	0.2	ppbv	<0.20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.2	ppbv	<0.20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.2	ppbv	<0.20	----
Naphthalene	91-20-3	E621B	0.1	ppbv	<0.10	----
Styrene	100-42-5	E621B	0.2	ppbv	<0.20	----
Tetrachloroethylene	127-18-4	E621B	0.2	ppbv	<0.20	----
Toluene	108-88-3	E621B	0.1	ppbv	<0.10	----
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B	0.2	ppbv	<0.20	----
Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.2	ppbv	<0.20	----
Trichloroethane, 1,1,1-	71-55-6	E621B	0.2	ppbv	<0.20	----
Trichlorofluoromethane	75-69-4	E621B	0.2	ppbv	<0.20	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.2	ppbv	<0.20	----
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.2	ppbv	<0.20	----
Xylene, m+p-	179601-23-1	E621B	0.2	ppbv	<0.20	----
Xylene, o-	95-47-6	E621B	0.1	ppbv	<0.10	----
Volatile Organic Compounds (QCLot: 1063872)						
Bromobenzene	108-86-1	E621C	0.2	ppbv	<0.20	----
Chlorophenol, 2-	95-57-8	E621C	0.2	ppbv	<0.20	----
Decane, n-	124-18-5	E621C	0.5	ppbv	<0.50	----
Methylcyclohexane	108-87-2	E621C	0.2	ppbv	<0.20	----
Hydrocarbons (QCLot: 1063873)						
VHv (C10-C13)	----	E593B	50	µg/m³	<50	----
VHv (C6-C10)	----	E593B	50	µg/m³	<50	----
VHv (C6-C13)	----	E593B	71	µg/m³	<71	----

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Work Order : VA23B7195
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05





Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Air

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1063868)									
Carbon tetrachloride	56-23-5	E621B-L	0.02	ppbv	0.106 ppbv	103	70.0	130	----
Chloroform	67-66-3	E621B-L	0.02	ppbv	0.105 ppbv	98.4	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E621B-L	0.01	ppbv	0.108 ppbv	95.5	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E621B-L	0.02	ppbv	0.104 ppbv	97.6	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E621B-L	0.01	ppbv	0.104 ppbv	98.9	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E621B-L	0.02	ppbv	0.104 ppbv	99.9	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E621B-L	0.03	ppbv	0.105 ppbv	110	70.0	130	----
Hexachlorobutadiene	87-68-3	E621B-L	0.01	ppbv	0.109 ppbv	76.9	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.02	ppbv	0.105 ppbv	99.9	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.01	ppbv	0.107 ppbv	90.5	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.01	ppbv	0.108 ppbv	100	70.0	130	----
Trichloroethylene	79-01-6	E621B-L	0.02	ppbv	0.108 ppbv	97.3	70.0	130	----
Vinyl chloride	75-01-4	E621B-L	0.02	ppbv	0.101 ppbv	100	70.0	130	----
Volatile Organic Compounds (QCLot: 1063870)									
Acetone	67-64-1	E621B	1	ppbv	1.06 ppbv	105	70.0	130	----
Benzene	71-43-2	E621B	0.1	ppbv	1.06 ppbv	95.6	70.0	130	----
Bromodichloromethane	75-27-4	E621B	0.2	ppbv	1.02 ppbv	103	70.0	130	----
Bromoform	75-25-2	E621B	0.2	ppbv	1.06 ppbv	96.5	70.0	130	----
Bromomethane	74-83-9	E621B	0.2	ppbv	1.04 ppbv	86.8	70.0	130	----
Butadiene, 1,3-	106-99-0	E621B	0.2	ppbv	1.06 ppbv	97.4	70.0	130	----
Carbon disulfide	75-15-0	E621B	0.5	ppbv	1.06 ppbv	99.1	70.0	130	----
Chlorobenzene	108-90-7	E621B	0.2	ppbv	1.07 ppbv	93.8	70.0	130	----
Chloroethane	75-00-3	E621B	0.2	ppbv	1.01 ppbv	95.3	70.0	130	----
Chloromethane	74-87-3	E621B	0.2	ppbv	1.01 ppbv	106	70.0	130	----
Cyclohexane	110-82-7	E621B	0.2	ppbv	1.06 ppbv	101	70.0	130	----
Dibromochloromethane	124-48-1	E621B	0.2	ppbv	1.07 ppbv	100	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E621B	0.2	ppbv	1.06 ppbv	89.7	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E621B	0.2	ppbv	1.06 ppbv	91.0	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E621B	0.2	ppbv	1.05 ppbv	93.1	70.0	130	----
Dichlorodifluoromethane	75-71-8	E621B	0.2	ppbv	1.02 ppbv	97.4	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E621B	0.2	ppbv	1.06 ppbv	96.7	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E621B	0.2	ppbv	1.06 ppbv	98.0	70.0	130	----
Dichloromethane	75-09-2	E621B	0.2	ppbv	1.04 ppbv	95.5	70.0	130	----



Sub-Matrix: Air

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1063870) - continued									
Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.2	ppbv	1.05 ppbv	98.2	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.2	ppbv	1.07 ppbv	101	70.0	130	----
Ethyl acetate	141-78-6	E621B	0.2	ppbv	1.05 ppbv	92.8	70.0	130	----
Ethylbenzene	100-41-4	E621B	0.1	ppbv	1.09 ppbv	88.4	70.0	130	----
Hexane, n-	110-54-3	E621B	0.2	ppbv	1.07 ppbv	99.1	70.0	130	----
Hexanone, 2-	591-78-6	E621B	1	ppbv	1.09 ppbv	97.1	70.0	130	----
Isopropylbenzene	98-82-8	E621B	0.2	ppbv	1.04 ppbv	91.8	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E621B	0.2	ppbv	1.07 ppbv	97.2	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.2	ppbv	1.07 ppbv	90.6	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.2	ppbv	1.07 ppbv	97.2	70.0	130	----
Naphthalene	91-20-3	E621B	0.1	ppbv	1.12 ppbv	84.4	70.0	130	----
Styrene	100-42-5	E621B	0.2	ppbv	1.06 ppbv	95.6	70.0	130	----
Tetrachloroethylene	127-18-4	E621B	0.2	ppbv	1.04 ppbv	94.2	70.0	130	----
Toluene	108-88-3	E621B	0.1	ppbv	1.09 ppbv	99.0	70.0	130	----
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B	0.2	ppbv	1.03 ppbv	97.2	70.0	130	----
Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.2	ppbv	1.07 ppbv	80.8	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E621B	0.2	ppbv	1.05 ppbv	101	70.0	130	----
Trichlorofluoromethane	75-69-4	E621B	0.2	ppbv	1.07 ppbv	96.1	70.0	130	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.2	ppbv	1.07 ppbv	94.0	70.0	130	----
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.2	ppbv	1.06 ppbv	90.4	70.0	130	----
Xylene, m+p-	179601-23-1	E621B	0.2	ppbv	2.12 ppbv	93.8	70.0	130	----
Xylene, o-	95-47-6	E621B	0.1	ppbv	1.07 ppbv	92.8	70.0	130	----
Volatile Organic Compounds (QCLot: 1063872)									
Bromobenzene	108-86-1	E621C	0.2	ppbv	1.07 ppbv	95.7	70.0	130	----
Chlorophenol, 2-	95-57-8	E621C	0.2	ppbv	1.05 ppbv	110	70.0	130	----
Decane, n-	124-18-5	E621C	0.5	ppbv	1.06 ppbv	101	70.0	130	----
Methylcyclohexane	108-87-2	E621C	0.2	ppbv	1.08 ppbv	93.4	70.0	130	----
Hydrocarbons (QCLot: 1063873)									
VHv (C10-C13)	----	E593B	50	µg/m³	0 µg/m³		----	----	----
VHv (C6-C10)	----	E593B	50	µg/m³	815 µg/m³	77.6	----	----	----
VHv (C6-C13)	----	E593B	71	µg/m³	815 µg/m³	77.5	50.0	150	----

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Work Order : VA23B7195
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05



Batch Proof Report



right solutions.
right partner.

Batch Proof ID: 230612.116
Canister ID: 06000-0272
Analysis Date: 22-Jun-23

1,1,1-Trichloroethane	<0.02	ppb(V)	cis-1,3-Dichloropropene	<0.02	ppb(V)
1,1,1,2-Tetrachloroethane	<0.02	ppb(V)	Cyclohexane	<0.20	ppb(V)
1,1,2,2-Tetrachloroethane	0.0971532	ppb(V)	Dibromochloromethane	<0.20	ppb(V)
1,1,2-Trichloroethane	<0.02	ppb(V)	Dichlorodifluoromethane	<0.20	ppb(V)
1,1-Dichloroethane	<0.02	ppb(V)	Ethyl Acetate	<0.20	ppb(V)
1,1-Dichloroethene	<0.02	ppb(V)	Ethyl Benzene	<0.02	ppb(V)
1,2,4-Trichlorobenzene	<0.20	ppb(V)	Freon 113	<0.20	ppb(V)
1,2,4-Trimethylbenzene	<0.20	ppb(V)	Freon 114	<0.20	ppb(V)
1,2-Dibromoethane	<0.01	ppb(V)	Hexachlorobutadiene	<0.02	ppb(V)
1,2-Dichlorobenzene	<0.02	ppb(V)	Isooctane	<0.20	ppb(V)
1,2-Dichloroethane	<0.01	ppb(V)	Isopropyl Alcohol	N/A	ppb(V)
1,2-Dichloropropane	<0.02	ppb(V)	Isopropylbenzene	<0.20	ppb(V)
1,3,5-Trimethylbenzene	<0.20	ppb(V)	m&p-Xylene	<0.04	ppb(V)
1,3-Butadiene	<0.20	ppb(V)	Methyl Ethyl Ketone	<0.20	ppb(V)
1,3-Dichlorobenzene	<0.02	ppb(V)	Methylcyclohexane	<0.20	ppb(V)
1,4-Dichlorobenzene	<0.02	ppb(V)	Methyl Isobutyl Ketone	<0.20	ppb(V)
1,4-Dioxane	<0.20	ppb(V)	Methylene Chloride	<0.02	ppb(V)
2-Chlorophenol	<0.20	ppb(V)	MTBE	<0.20	ppb(V)
2-Hexanone	<1.0	ppb(V)	Naphthalene	<0.05	ppb(V)
4-Ethyltoluene	<0.20	ppb(V)	n-Decane	#N/A	ppb(V)
Acetone	<1.0	ppb(V)	n-Heptane	<0.20	ppb(V)
Acrolein	#N/A	ppb(V)	n-Hexane	<0.02	ppb(V)
Allyl Chloride	<0.20	ppb(V)	o-Xylene	<0.02	ppb(V)
Benzene	<0.02	ppb(V)	Propylene	<0.20	ppb(V)
Benzyl Chloride	<0.20	ppb(V)	Styrene	<0.02	ppb(V)
Bromodichloromethane	<0.20	ppb(V)	Tetrachloroethylene	<0.02	ppb(V)
Bromobenzene	<0.20	ppb(V)	Tetrahydrofuran	<0.20	ppb(V)
Bromoform	<0.02	ppb(V)	Toluene	<0.02	ppb(V)
Bromomethane	<0.20	ppb(V)	trans-1,2-Dichloroethene	<0.02	ppb(V)
Carbon Disulfide	<0.50	ppb(V)	trans-1,3-Dichloropropene	<0.02	ppb(V)
Carbon Tetrachloride	<0.02	ppb(V)	Trichloroethylene	<0.02	ppb(V)
Chlorobenzene	<0.20	ppb(V)	Trichlorofluoromethane	<0.20	ppb(V)
Chloroethane	<0.02	ppb(V)	Vinyl Acetate	<0.50	ppb(V)
Chloroform	<0.02	ppb(V)	Vinyl Bromide	<0.20	ppb(V)
Chloromethane	<0.20	ppb(V)	Vinyl Chloride	<0.02	ppb(V)
cis-1,2-Dichloroethene	<0.02	ppb(V)	4-Bromofluorobenzene	NR	%

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8

Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878



AIR QUALITY CHAIN OF CUSTODY FORM - Canister/Tube/Gas Bag

Note: All TAT Quoted is in business days which exclude statutory holidays and weekends. TAT of samples received past 3:00 pm on Saturday / Sunday begin the next day.

Specify date required	Service Requested	Rush 3 day (100%)	<input type="checkbox"/>
	10 day (regular)	Rush 2 day (200%)	<input checked="" type="checkbox"/>
	Rush 5 day (50%)	Rush 1 day (300%) - Enquire	<input type="checkbox"/>

COMPANY NAME: WSP
OFFICE: Vancouver
PROJECT MANAGER: Braden
PROJECT #: CA-WSP-171-03296-0-5
PHONE: 604-312-0424 FAX: _____
ACCOUNT #: _____
QUOTATION: _____ PO #: _____

CRITERIA: _____
Reg. 419/05 Reg. 153/04 SVI
OTHER Please List _____
REPORT FORMAT/DISTRIBUTION
EMAIL FAX _____ BOTH _____
SELECT: PDF _____ DIGITAL _____ BOTH _____
EMAIL 1 _____
EMAIL 2 _____

ANALYSIS REQUEST		
TUBE AIR VOLUME - L or ml	STARTING PRESSURE - Pre-Sampling ("Hg)	ENDING PRESSURE - Post Sampling ("Hg)
<u>VOC-Full Fuels</u>	<u>26</u>	<u>6</u>
<u>X</u>	<u>275</u>	<u>45</u>
<u>X</u>	<u>238</u>	<u>160</u>

All rush work requires lab approval before sample submission

SUBMISSION # _____
ENTERED BY: _____
DATE/TIME ENTERED: _____
BIN # _____
Field Conditions (Rain/Wind/Dust/Odour) Field PID Reading _____
LAB ID _____

SAMPLING INFORMATION					Matrix Type	SAMPLE DESCRIPTION TO APPEAR ON REPORT
Date (dd-mmm-yy)	Time (24hr) (hh:mm)	Canister or Tube ID# (e.g. 060000-XXXX or G0XXXXXXSVI)	Regulator Serial # CSI 200-XXXX or GXX	Regulator Serial #		
<u>26-07-23</u>	<u>07:05</u>	<u>0383</u>	<u>0221</u>	<u>0221</u>		<u>Fence Line</u>
<u>"</u>	<u>07:10</u>	<u>0033</u>	<u>0099</u>	<u>0099</u>		<u>Dog Park</u>

Environmental Division
Vancouver
Work Order Reference
VA23B7195



Telephone: +1 604 253 4188

SPECIAL INSTRUCTIONS/COMMENTS: Regulator 0221 had a problem and we had to stop sample early

SAMPLED BY: David + Alen
RELINQUISHED BY: _____

This Chain of Custody

Matrix Type: Soil Gas Vapour = SG
Ambient Air = AA

RECEIVED BY: _____
RECEIVED AT LAB BY: Du JS

samples: _____

SAMPLE CONDITION AS RECEIVED

FROZEN MEAN TEMP _____
COOLING INITIATED
AMBIENT

OBSERVATIONS: Yes No If yes add SHF _____
INIT _____

Notes

- Quote number must be provided to ensure proper pricing
- TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.
- Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

REV5-2014



CERTIFICATE OF ANALYSIS

Work Order : **VA23C1000**
Client : **WSP Canada Inc.**
Contact : Braden Bartnik
Address : 840 Howe St., Suite 1000
 Vancouver BC Canada V6Z 2M1
Telephone : ----
Project : CA-WSP-171-03296-05
PO : ----
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : 2023 Price List BC WSP/Golder
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 7
Laboratory : ALS Environmental - Vancouver
Account Manager : Amber Springer
Address : 8081 Lougheed Highway
 Burnaby BC Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 06-Sep-2023 17:00
Date Analysis Commenced : 08-Sep-2023
Issue Date : 15-Sep-2023 13:57

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
David Tremblett	VOC Section Supervisor	Air Quality, Waterloo, Ontario



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
µg/m ³	micrograms per cubic metre
Inches Hg	inches of mercury
ppbv	parts per billion (volume/volume)

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Accreditation

<i>Accreditation</i>	<i>Description</i>	<i>Laboratory</i>	<i>Address</i>
A	CALA ISO/IEC 17025:2017	WT ALS Environmental - Waterloo	60 Northland Road, Unit 1, Waterloo, ON

Applicable accreditations are indicated in the Method/Lab column as superscripts.



Analytical Results

Sub-Matrix: Air					Client sample ID				
(Matrix: Air)					Dog Park	Fenceline	----	----	----
Client sampling date / time					06-Sep-2023 10:28	06-Sep-2023 10:37	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C1000-001	VA23C1000-002	-----	-----	-----
					Result	Result	----	----	----
Field Tests									
ID, batch proof	----	EF001/WT	-	-	230822.107	230822.103	----	----	----
ID, canister	----	EF001/WT	-	-	06000-0074	06000-0109	----	----	----
ID, regulator	----	EF001/WT	-	-	CS1200-027	CS1200-019	----	----	----
Pressure on receipt	----	EF001/WT	0.10	Inches Hg	1 -7.97	6 -7.15	----	----	----
Volatile Organic Compounds									
Acetone	67-64-1	EC621B/WT	2.4	µg/m³	10.9	11.9	----	----	----
Acetone	67-64-1	E621B/WT A	1.0	ppbv	4.6	5.0	----	----	----
Benzene	71-43-2	EC621B/WT	0.32	µg/m³	<0.32	<0.32	----	----	----
Benzene	71-43-2	E621B/WT A	0.10	ppbv	<0.10	<0.10	----	----	----
Bromobenzene	108-86-1	EC621C/WT	1.3	µg/m³	<1.3	<1.3	----	----	----
Bromobenzene	108-86-1	E621C/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Bromodichloromethane	75-27-4	EC621B/WT	1.3	µg/m³	<1.3	<1.3	----	----	----
Bromodichloromethane	75-27-4	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Bromoform	75-25-2	EC621B/WT	2.1	µg/m³	<2.1	<2.1	----	----	----
Bromoform	75-25-2	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Bromomethane	74-83-9	EC621B/WT	0.78	µg/m³	<0.78	<0.78	----	----	----
Bromomethane	74-83-9	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Butadiene, 1,3-	106-99-0	EC621B/WT	0.44	µg/m³	<0.44	<0.44	----	----	----
Butadiene, 1,3-	106-99-0	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Carbon disulfide	75-15-0	EC621B/WT	1.6	µg/m³	<1.6	<1.6	----	----	----
Carbon disulfide	75-15-0	E621B/WT A	0.50	ppbv	<0.50	<0.50	----	----	----
Carbon tetrachloride	56-23-5	EC621B-L/WT	0.13	µg/m³	0.50	0.48	----	----	----
Carbon tetrachloride	56-23-5	E621B-L/WT A	0.020	ppbv	0.080	0.076	----	----	----
Chlorobenzene	108-90-7	EC621B/WT	0.92	µg/m³	<0.92	<0.92	----	----	----
Chlorobenzene	108-90-7	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Chloroethane	75-00-3	EC621B/WT	0.53	µg/m³	<0.53	<0.53	----	----	----
Chloroethane	75-00-3	E621B/WT A	0.20	ppbv	<0.20	<0.20	----	----	----
Chloroform	67-66-3	EC621B-L/WT	0.098	µg/m³	<0.098	<0.098	----	----	----



Analytical Results

Sub-Matrix: Air						Client sample ID	Dog Park	Fenceline	----	----	----
(Matrix: Air)						Client sampling date / time	06-Sep-2023 10:28	06-Sep-2023 10:37	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C1000-001	VA23C1000-002	-----	-----	-----		
						Result	Result	---	---	---	
Volatile Organic Compounds											
Chloroform	67-66-3	E621B-L/WT	A	0.020	ppbv	<0.020	<0.020	---	---	---	
Chloromethane	74-87-3	EC621B/WT		0.41	µg/m³	1.09	1.20	---	---	---	
Chloromethane	74-87-3	E621B/WT	A	0.20	ppbv	0.53	0.58	---	---	---	
Chlorophenol, 2-	95-57-8	EC621C/WT		1.0	µg/m³	<1.0	<1.0	---	---	---	
Chlorophenol, 2-	95-57-8	E621C/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	
Cyclohexane	110-82-7	EC621B/WT		0.69	µg/m³	<0.69	<0.69	---	---	---	
Cyclohexane	110-82-7	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	
Decane, n-	124-18-5	EC621C/WT		2.9	µg/m³	<2.9	<2.9	---	---	---	
Decane, n-	124-18-5	E621C/WT	A	0.50	ppbv	<0.50	<0.50	---	---	---	
Dibromochloromethane	124-48-1	EC621B/WT		1.7	µg/m³	<1.7	<1.7	---	---	---	
Dibromochloromethane	124-48-1	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	
Dibromoethane, 1,2-	106-93-4	EC621B-L/WT		0.077	µg/m³	<0.077	<0.077	---	---	---	
Dibromoethane, 1,2-	106-93-4	E621B-L/WT	A	0.010	ppbv	<0.010	<0.010	---	---	---	
Dichlorobenzene, 1,2-	95-50-1	EC621B/WT		1.2	µg/m³	<1.2	<1.2	---	---	---	
Dichlorobenzene, 1,2-	95-50-1	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichlorobenzene, 1,3-	541-73-1	EC621B/WT		1.2	µg/m³	<1.2	<1.2	---	---	---	
Dichlorobenzene, 1,3-	541-73-1	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichlorobenzene, 1,4-	106-46-7	EC621B/WT		1.2	µg/m³	<1.2	<1.2	---	---	---	
Dichlorobenzene, 1,4-	106-46-7	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichlorodifluoromethane	75-71-8	EC621B/WT		1.0	µg/m³	2.3	2.3	---	---	---	
Dichlorodifluoromethane	75-71-8	E621B/WT	A	0.20	ppbv	0.47	0.46	---	---	---	
Dichloroethane, 1,1-	75-34-3	EC621B-L/WT		0.081	µg/m³	<0.081	<0.081	---	---	---	
Dichloroethane, 1,1-	75-34-3	E621B-L/WT	A	0.020	ppbv	<0.020	<0.020	---	---	---	
Dichloroethane, 1,2-	107-06-2	EC621B-L/WT		0.040	µg/m³	<0.040	<0.040	---	---	---	
Dichloroethane, 1,2-	107-06-2	E621B-L/WT	A	0.010	ppbv	<0.010	<0.010	---	---	---	
Dichloroethylene, 1,1-	75-35-4	EC621B-L/WT		0.079	µg/m³	<0.079	<0.079	---	---	---	
Dichloroethylene, 1,1-	75-35-4	E621B-L/WT	A	0.020	ppbv	<0.020	<0.020	---	---	---	
Dichloroethylene, cis-1,2-	156-59-2	EC621B/WT		0.79	µg/m³	<0.79	<0.79	---	---	---	
Dichloroethylene, cis-1,2-	156-59-2	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichloroethylene, trans-1,2-	156-60-5	EC621B/WT		0.79	µg/m³	<0.79	<0.79	---	---	---	



Analytical Results

Sub-Matrix: Air					Client sample ID		Dog Park	Fenceline	----	----	----
(Matrix: Air)					Client sampling date / time		06-Sep-2023 10:28	06-Sep-2023 10:37	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C1000-001	VA23C1000-002	-----	-----	-----	-----	-----
					Result	Result	---	---	---	---	---
Volatile Organic Compounds											
Dichloroethylene, trans-1,2-	156-60-5	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Dichloromethane	75-09-2	EC621B/WT		0.69	µg/m³	<0.69	<0.69	---	---	---	---
Dichloromethane	75-09-2	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Dichloropropane, 1,2-	78-87-5	EC621B-L/WT		0.14	µg/m³	<0.14	<0.14	---	---	---	---
Dichloropropane, 1,2-	78-87-5	E621B-L/WT	A	0.030	ppbv	<0.030	<0.030	---	---	---	---
Dichloropropylene, cis-1,3-	10061-01-5	EC621B/WT		0.9	µg/m³	<0.9	<0.9	---	---	---	---
Dichloropropylene, cis-1,3-	10061-01-5	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Dichloropropylene, trans-1,3-	10061-02-6	EC621B/WT		0.9	µg/m³	<0.9	<0.9	---	---	---	---
Dichloropropylene, trans-1,3-	10061-02-6	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Ethyl acetate	141-78-6	EC621B/WT		0.72	µg/m³	<0.72	<0.72	---	---	---	---
Ethyl acetate	141-78-6	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Ethylbenzene	100-41-4	EC621B/WT		0.43	µg/m³	<0.43	<0.43	---	---	---	---
Ethylbenzene	100-41-4	E621B/WT	A	0.10	ppbv	<0.10	<0.10	---	---	---	---
Hexachlorobutadiene	87-68-3	EC621B-L/WT		0.11	µg/m³	<0.11	<0.11	---	---	---	---
Hexachlorobutadiene	87-68-3	E621B-L/WT	A	0.010	ppbv	<0.010	<0.010	---	---	---	---
Hexane, n-	110-54-3	EC621B/WT		0.70	µg/m³	<0.70	<0.70	---	---	---	---
Hexane, n-	110-54-3	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Hexanone, 2-	591-78-6	EC621B/WT		4.10	µg/m³	<4.10	<4.10	---	---	---	---
Hexanone, 2-	591-78-6	E621B/WT	A	1.0	ppbv	<1.0	<1.0	---	---	---	---
Isopropylbenzene	98-82-8	EC621B/WT		1.0	µg/m³	<1.0	<1.0	---	---	---	---
Isopropylbenzene	98-82-8	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Methyl ethyl ketone [MEK]	78-93-3	EC621B/WT		0.59	µg/m³	<0.59	<0.59	---	---	---	---
Methyl ethyl ketone [MEK]	78-93-3	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Methyl isobutyl ketone [MIBK]	108-10-1	EC621B/WT		0.82	µg/m³	<0.82	<0.82	---	---	---	---
Methyl isobutyl ketone [MIBK]	108-10-1	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Methylcyclohexane	108-87-2	EC621C/WT		0.80	µg/m³	<0.80	<0.80	---	---	---	---
Methylcyclohexane	108-87-2	E621C/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Methyl-tert-butyl ether [MTBE]	1634-04-4	EC621B/WT		0.72	µg/m³	<0.72	<0.72	---	---	---	---
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---	---
Naphthalene	91-20-3	EC621B/WT		0.52	µg/m³	<0.52	<0.52	---	---	---	---



Analytical Results

Sub-Matrix: Air					Client sample ID	Dog Park	Fenceline	----	----	----
(Matrix: Air)					Client sampling date / time	06-Sep-2023 10:28	06-Sep-2023 10:37	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C1000-001	VA23C1000-002	-----	-----	-----	
					Result	Result	---	---	---	
Volatile Organic Compounds										
Naphthalene	91-20-3	E621B/WT	A	0.10	ppbv	<0.10	<0.10	---	---	---
Styrene	100-42-5	EC621B/WT		0.85	µg/m³	<0.85	<0.85	---	---	---
Styrene	100-42-5	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---
Tetrachloroethane, 1,1,1,2-	630-20-6	EC621B-L/WT		0.14	µg/m³	<0.14	<0.14	---	---	---
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L/WT	A	0.020	ppbv	<0.020	<0.020	---	---	---
Tetrachloroethane, 1,1,2,2-	79-34-5	EC621B-L/WT		0.069	µg/m³	<0.069	<0.069	---	---	---
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L/WT	A	0.010	ppbv	<0.010	<0.010	---	---	---
Tetrachloroethylene	127-18-4	EC621B/WT		1.4	µg/m³	<1.4	<1.4	---	---	---
Tetrachloroethylene	127-18-4	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---
Toluene	108-88-3	EC621B/WT		0.38	µg/m³	<0.38	<0.38	---	---	---
Toluene	108-88-3	E621B/WT	A	0.10	ppbv	<0.10	<0.10	---	---	---
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	EC621B/WT		1.5	µg/m³	<1.5	<1.5	---	---	---
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---
Trichlorobenzene, 1,2,4-	120-82-1	EC621B/WT		1.5	µg/m³	<1.5	<1.5	---	---	---
Trichlorobenzene, 1,2,4-	120-82-1	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---
Trichloroethane, 1,1,1-	71-55-6	EC621B/WT		1.1	µg/m³	<1.1	<1.1	---	---	---
Trichloroethane, 1,1,1-	71-55-6	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---
Trichloroethane, 1,1,2-	79-00-5	EC621B-L/WT		0.055	µg/m³	<0.054	<0.054	---	---	---
Trichloroethane, 1,1,2-	79-00-5	E621B-L/WT	A	0.010	ppbv	<0.010	<0.010	---	---	---
Trichloroethylene	79-01-6	EC621B-L/WT		0.11	µg/m³	<0.11	<0.11	---	---	---
Trichloroethylene	79-01-6	E621B-L/WT	A	0.020	ppbv	<0.020	<0.020	---	---	---
Trichlorofluoromethane	75-69-4	EC621B/WT		1.1	µg/m³	1.1	1.1	---	---	---
Trichlorofluoromethane	75-69-4	E621B/WT	A	0.20	ppbv	0.20	0.20	---	---	---
Trimethylbenzene, 1,2,4-	95-63-6	EC621B/WT		1.0	µg/m³	<1.0	<1.0	---	---	---
Trimethylbenzene, 1,2,4-	95-63-6	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---
Trimethylbenzene, 1,3,5-	108-67-8	EC621B/WT		1.0	µg/m³	<1.0	<1.0	---	---	---
Trimethylbenzene, 1,3,5-	108-67-8	E621B/WT	A	0.20	ppbv	<0.20	<0.20	---	---	---
Vinyl chloride	75-01-4	EC621B-L/WT		0.051	µg/m³	<0.051	<0.051	---	---	---



Analytical Results

Sub-Matrix: Air						Client sample ID	Dog Park	Fenceline	----	----	----
(Matrix: Air)						Client sampling date / time	06-Sep-2023 10:28	06-Sep-2023 10:37	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA23C1000-001	VA23C1000-002	-----	-----	-----	
						Result	Result	----	----	----	
Volatile Organic Compounds											
Vinyl chloride	75-01-4	E621B-L/WT	A	0.020	ppbv	<0.020	<0.020	----	----	----	
Xylene, m+p-	179601-23-1	EC621B/WT		0.87	µg/m ³	<0.87	<0.87	----	----	----	
Xylene, m+p-	179601-23-1	E621B/WT	A	0.20	ppbv	<0.20	<0.20	----	----	----	
Xylene, o-	95-47-6	EC621B/WT		0.43	µg/m ³	<0.43	<0.43	----	----	----	
Xylene, o-	95-47-6	E621B/WT	A	0.10	ppbv	<0.10	<0.10	----	----	----	
Xylenes, total	1330-20-7	EC621B/WT		1.3	µg/m ³	<1.3	<1.3	----	----	----	
Xylenes, total	1330-20-7	E621B/WT	A	0.30	ppbv	<0.30	<0.30	----	----	----	
BTEX, total	----	EC621B/WT		1.2	µg/m ³	<2.4	<2.4	----	----	----	
BTEX, total	----	E621B/WT	A	0.30	ppbv	<0.30	<0.30	----	----	----	
Hydrocarbons											
VHv (C10-C13)	----	E593B/WT		50	µg/m ³	<50	<50	----	----	----	
VHv (C6-C10)	----	E593B/WT		50	µg/m ³	<50	<50	----	----	----	
VHv (C6-C13)	----	E593B/WT		71	µg/m ³	<71	<71	----	----	----	
VPHv	----	EC592B/WT		100	µg/m ³	<100	<100	----	----	----	
Volatile Organic Compounds Surrogates											
Bromofluorobenzene, 4-	460-00-4	E621B/WT	A	0.20	%	91.7	90.7	----	----	----	
Bromofluorobenzene, 4-	460-00-4	E621B-L/WT	A	0.20	%	95.2	94.2	----	----	----	
Bromofluorobenzene, 4-	460-00-4	E621C/WT	A	0.20	%	91.7	90.7	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA23C1000</p> <p>Client : WSP Canada Inc.</p> <p>Contact : Braden Bartnik</p> <p>Address : 840 Howe St., Suite 1000 Vancouver BC Canada V6Z 2M1</p> <p>Telephone : ----</p> <p>Project : CA-WSP-171-03296-05</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : 2023 Price List BC WSP/Golder</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 6</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Amber Springer</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 06-Sep-2023 17:00</p> <p>Issue Date : 15-Sep-2023 13:45</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Air

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Air Canister Information										
Canister Dog Park	EF001	06-Sep-2023	----	----	----		08-Sep-2023	----	2 days	
Field Tests : Air Canister Information										
Canister Fenceline	EF001	06-Sep-2023	----	----	----		08-Sep-2023	----	2 days	
Hydrocarbons : TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)										
Canister Dog Park	E593B	06-Sep-2023	----	----	----		12-Sep-2023	30 days	6 days	✔
Hydrocarbons : TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)										
Canister Fenceline	E593B	06-Sep-2023	----	----	----		12-Sep-2023	30 days	6 days	✔
Volatile Organic Compounds : VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Dog Park	E621B	06-Sep-2023	----	----	----		11-Sep-2023	30 days	5 days	✔
Volatile Organic Compounds : VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fenceline	E621B	06-Sep-2023	----	----	----		11-Sep-2023	30 days	5 days	✔
Volatile Organic Compounds : VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Dog Park	E621B-L	06-Sep-2023	----	----	----		11-Sep-2023	30 days	5 days	✔



Matrix: **Air** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Volatile Organic Compounds : VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fenceline	E621B-L	06-Sep-2023	----	----	----		11-Sep-2023	30 days	5 days	✓
Volatile Organic Compounds : VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Dog Park	E621C	06-Sep-2023	----	----	----		11-Sep-2023	30 days	5 days	✓
Volatile Organic Compounds : VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fenceline	E621C	06-Sep-2023	----	----	----		11-Sep-2023	30 days	5 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: Air

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1129553	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1127953	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1127940	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1127948	1	2	50.0	5.0	✔
Laboratory Control Samples (LCS)							
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1129553	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1127953	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1127940	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1127948	1	2	50.0	5.0	✔
Method Blanks (MB)							
Air Canister Information	EF001	1124601	1	8	12.5	5.0	✔
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1129553	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1127953	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1127940	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1127948	1	2	50.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Total Volatile Organic Compounds (TVOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VPH in Canisters or Bags GC-MS (µg/m3)	EC592B ALS Environmental - Waterloo	Air	BC MOE Lab Manual (Calculation of VPH)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHv = Volatile Hydrocarbons (VH6-13) minus benzene, toluene, ethylbenzene, xylenes, styrene, n-hexane, and n-decane.
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621B ALS Environmental - Waterloo	Air	unit conversion	Convert ppbV to ug/m3
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621B-L ALS Environmental - Waterloo	Air	unit conversion	Convert ppbV to ug/m3
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621C ALS Environmental - Waterloo	Air	unit conversion	Convert ppbV to ug/m3
Air Canister Information	EF001 ALS Environmental - Waterloo	Air	In-house	Air canister information provided by client and recorded on ALS report may affect the validity of results.

QUALITY CONTROL REPORT

Work Order	: VA23C1000	Page	: 1 of 10
Client	: WSP Canada Inc.	Laboratory	: ALS Environmental - Vancouver
Contact	: Braden Bartnik	Account Manager	: Amber Springer
Address	: 840 Howe St., Suite 1000 Vancouver BC Canada V6Z 2M1	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	:	Telephone	: +1 604 253 4188
Project	: CA-WSP-171-03296-05	Date Samples Received	: 06-Sep-2023 17:00
PO	: ----	Date Analysis Commenced	: 08-Sep-2023
C-O-C number	: ----	Issue Date	: 15-Sep-2023 13:53
Sampler	: ---- ----		
Site	: ----		
Quote number	: 2023 Price List BC WSP/Golder		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
David Tremblett	VOC Section Supervisor	Waterloo Air Quality, Waterloo, Ontario

Page : 2 of 10
Work Order : VA23C1000
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Air

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1127940)											
VA23C1000-001	Dog Park	Carbon tetrachloride	56-23-5	E621B-L	0.020	ppbv	0.080	0.079	0.002	Diff <2x LOR	----
		Chloroform	67-66-3	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E621B-L	0.030	ppbv	<0.030	<0.030	0	Diff <2x LOR	----
		Hexachlorobutadiene	87-68-3	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
Vinyl chloride	75-01-4	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----		
Volatile Organic Compounds (QC Lot: 1127948)											
VA23C1000-001	Dog Park	Bromobenzene	108-86-1	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chlorophenol, 2-	95-57-8	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Decane, n-	124-18-5	E621C	0.50	ppbv	<0.50	<0.50	0	Diff <2x LOR	----
		Methylcyclohexane	108-87-2	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1127953)											
VA23C1000-001	Dog Park	Acetone	67-64-1	E621B	2.5	ppbv	4.6	4.6	0.06	Diff <2x LOR	----
		Benzene	71-43-2	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Bromoform	75-25-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Butadiene, 1,3-	106-99-0	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Carbon disulfide	75-15-0	E621B	0.50	ppbv	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E621B	0.20	ppbv	0.53	0.53	0.002	Diff <2x LOR	----
		Cyclohexane	110-82-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----



Sub-Matrix: Air

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1127953) - continued											
VA23C1000-001	Dog Park	Dibromochloromethane	124-48-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E621B	0.20	ppbv	0.47	0.46	0.006	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Ethyl acetate	141-78-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Hexanone, 2-	591-78-6	E621B	1.0	ppbv	<1.0	<1.0	0	Diff <2x LOR	----
		Isopropylbenzene	98-82-8	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Naphthalene	91-20-3	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Styrene	100-42-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Toluene	108-88-3	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Trichloro-1,2,2-trifluoroethane, 1,1,2-[Freon 113]	76-13-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
Trichlorofluoromethane	75-69-4	E621B	0.20	ppbv	0.20	0.20	0	Diff <2x LOR	----		
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Xylene, m+p-	179601-23-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Xylene, o-	95-47-6	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----		
Hydrocarbons (QC Lot: 1129553)											
VA23C1000-001	Dog Park	VHv (C10-C13)	----	E593B	50	µg/m³	<50	<50	0	Diff <2x LOR	----
		VHv (C6-C10)	----	E593B	50	µg/m³	<50	<50	0	Diff <2x LOR	----
		VHv (C6-C13)	----	E593B	71	µg/m³	<71	<71	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Air

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Field Tests (QCLot: 1124601)						
Pressure on receipt	---	EF001	0.1	Inches Hg	-30.0	---
Volatile Organic Compounds (QCLot: 1127940)						
Carbon tetrachloride	56-23-5	E621B-L	0.02	ppbv	<0.020	---
Chloroform	67-66-3	E621B-L	0.02	ppbv	<0.020	---
Dibromoethane, 1,2-	106-93-4	E621B-L	0.01	ppbv	<0.010	---
Dichloroethane, 1,1-	75-34-3	E621B-L	0.02	ppbv	<0.020	---
Dichloroethane, 1,2-	107-06-2	E621B-L	0.01	ppbv	<0.010	---
Dichloroethylene, 1,1-	75-35-4	E621B-L	0.02	ppbv	<0.020	---
Dichloropropane, 1,2-	78-87-5	E621B-L	0.03	ppbv	<0.030	---
Hexachlorobutadiene	87-68-3	E621B-L	0.01	ppbv	<0.010	---
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.02	ppbv	<0.020	---
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.01	ppbv	<0.010	---
Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.01	ppbv	<0.010	---
Trichloroethylene	79-01-6	E621B-L	0.02	ppbv	<0.020	---
Vinyl chloride	75-01-4	E621B-L	0.02	ppbv	<0.020	---
Volatile Organic Compounds (QCLot: 1127948)						
Bromobenzene	108-86-1	E621C	0.2	ppbv	<0.20	---
Chlorophenol, 2-	95-57-8	E621C	0.2	ppbv	<0.20	---
Decane, n-	124-18-5	E621C	0.5	ppbv	<0.50	---
Methylcyclohexane	108-87-2	E621C	0.2	ppbv	<0.20	---
Volatile Organic Compounds (QCLot: 1127953)						
Acetone	67-64-1	E621B	1	ppbv	<1.0	---
Benzene	71-43-2	E621B	0.1	ppbv	<0.10	---
Bromodichloromethane	75-27-4	E621B	0.2	ppbv	<0.20	---
Bromoform	75-25-2	E621B	0.2	ppbv	<0.20	---
Bromomethane	74-83-9	E621B	0.2	ppbv	<0.20	---
Butadiene, 1,3-	106-99-0	E621B	0.2	ppbv	<0.20	---
Carbon disulfide	75-15-0	E621B	0.5	ppbv	<0.50	---
Chlorobenzene	108-90-7	E621B	0.2	ppbv	<0.20	---
Chloroethane	75-00-3	E621B	0.2	ppbv	<0.20	---
Chloromethane	74-87-3	E621B	0.2	ppbv	<0.20	---



Sub-Matrix: Air

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1127953) - continued						
Cyclohexane	110-82-7	E621B	0.2	ppbv	<0.20	----
Dibromochloromethane	124-48-1	E621B	0.2	ppbv	<0.20	----
Dichlorobenzene, 1,2-	95-50-1	E621B	0.2	ppbv	<0.20	----
Dichlorobenzene, 1,3-	541-73-1	E621B	0.2	ppbv	<0.20	----
Dichlorobenzene, 1,4-	106-46-7	E621B	0.2	ppbv	<0.20	----
Dichlorodifluoromethane	75-71-8	E621B	0.2	ppbv	<0.20	----
Dichloroethylene, cis-1,2-	156-59-2	E621B	0.2	ppbv	<0.20	----
Dichloroethylene, trans-1,2-	156-60-5	E621B	0.2	ppbv	<0.20	----
Dichloromethane	75-09-2	E621B	0.2	ppbv	<0.20	----
Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.2	ppbv	<0.20	----
Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.2	ppbv	<0.20	----
Ethyl acetate	141-78-6	E621B	0.2	ppbv	<0.20	----
Ethylbenzene	100-41-4	E621B	0.1	ppbv	<0.10	----
Hexane, n-	110-54-3	E621B	0.2	ppbv	<0.20	----
Hexanone, 2-	591-78-6	E621B	1	ppbv	<1.0	----
Isopropylbenzene	98-82-8	E621B	0.2	ppbv	<0.20	----
Methyl ethyl ketone [MEK]	78-93-3	E621B	0.2	ppbv	<0.20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.2	ppbv	<0.20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.2	ppbv	<0.20	----
Naphthalene	91-20-3	E621B	0.1	ppbv	<0.10	----
Styrene	100-42-5	E621B	0.2	ppbv	<0.20	----
Tetrachloroethylene	127-18-4	E621B	0.2	ppbv	<0.20	----
Toluene	108-88-3	E621B	0.1	ppbv	<0.10	----
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B	0.2	ppbv	<0.20	----
Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.2	ppbv	<0.20	----
Trichloroethane, 1,1,1-	71-55-6	E621B	0.2	ppbv	<0.20	----
Trichlorofluoromethane	75-69-4	E621B	0.2	ppbv	<0.20	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.2	ppbv	<0.20	----
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.2	ppbv	<0.20	----
Xylene, m+p-	179601-23-1	E621B	0.2	ppbv	<0.20	----
Xylene, o-	95-47-6	E621B	0.1	ppbv	<0.10	----
Hydrocarbons (QCLot: 1129553)						
VHv (C10-C13)	----	E593B	50	µg/m³	<50	----
VHv (C6-C10)	----	E593B	50	µg/m³	<50	----
VHv (C6-C13)	----	E593B	71	µg/m³	<71	----

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Work Order : VA23C1000
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05





Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Air

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1127940)									
Carbon tetrachloride	56-23-5	E621B-L	0.02	ppbv	0.106 ppbv	100	70.0	130	----
Chloroform	67-66-3	E621B-L	0.02	ppbv	0.105 ppbv	100	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E621B-L	0.01	ppbv	0.108 ppbv	92.1	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E621B-L	0.02	ppbv	0.104 ppbv	102	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E621B-L	0.01	ppbv	0.104 ppbv	98.6	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E621B-L	0.02	ppbv	0.104 ppbv	102	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E621B-L	0.03	ppbv	0.105 ppbv	98.7	70.0	130	----
Hexachlorobutadiene	87-68-3	E621B-L	0.01	ppbv	0.109 ppbv	84.2	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.02	ppbv	0.105 ppbv	96.7	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.01	ppbv	0.107 ppbv	89.2	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.01	ppbv	0.108 ppbv	96.9	70.0	130	----
Trichloroethylene	79-01-6	E621B-L	0.02	ppbv	0.108 ppbv	95.7	70.0	130	----
Vinyl chloride	75-01-4	E621B-L	0.02	ppbv	0.101 ppbv	108	70.0	130	----
Volatile Organic Compounds (QCLot: 1127948)									
Bromobenzene	108-86-1	E621C	0.2	ppbv	1.07 ppbv	91.5	70.0	130	----
Chlorophenol, 2-	95-57-8	E621C	0.2	ppbv	1.05 ppbv	93.7	70.0	130	----
Decane, n-	124-18-5	E621C	0.5	ppbv	1.06 ppbv	104	70.0	130	----
Methylcyclohexane	108-87-2	E621C	0.2	ppbv	1.08 ppbv	99.3	70.0	130	----
Volatile Organic Compounds (QCLot: 1127953)									
Acetone	67-64-1	E621B	1	ppbv	1.06 ppbv	105	70.0	130	----
Benzene	71-43-2	E621B	0.1	ppbv	1.06 ppbv	97.1	70.0	130	----
Bromodichloromethane	75-27-4	E621B	0.2	ppbv	1.02 ppbv	102	70.0	130	----
Bromoform	75-25-2	E621B	0.2	ppbv	1.06 ppbv	93.9	70.0	130	----
Bromomethane	74-83-9	E621B	0.2	ppbv	1.04 ppbv	94.1	70.0	130	----
Butadiene, 1,3-	106-99-0	E621B	0.2	ppbv	1.06 ppbv	100	70.0	130	----
Carbon disulfide	75-15-0	E621B	0.5	ppbv	1.06 ppbv	100	70.0	130	----
Chlorobenzene	108-90-7	E621B	0.2	ppbv	1.07 ppbv	93.9	70.0	130	----
Chloroethane	75-00-3	E621B	0.2	ppbv	1.01 ppbv	94.2	70.0	130	----
Chloromethane	74-87-3	E621B	0.2	ppbv	1.01 ppbv	104	70.0	130	----
Cyclohexane	110-82-7	E621B	0.2	ppbv	1.06 ppbv	99.4	70.0	130	----
Dibromochloromethane	124-48-1	E621B	0.2	ppbv	1.07 ppbv	98.6	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E621B	0.2	ppbv	1.06 ppbv	82.8	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E621B	0.2	ppbv	1.06 ppbv	83.5	70.0	130	----



Sub-Matrix: Air

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Volatile Organic Compounds (QCLot: 1127953) - continued									
Dichlorobenzene, 1,4-	106-46-7	E621B	0.2	ppbv	1.05 ppbv	83.4	70.0	130	----
Dichlorodifluoromethane	75-71-8	E621B	0.2	ppbv	1.02 ppbv	96.5	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E621B	0.2	ppbv	1.06 ppbv	97.7	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E621B	0.2	ppbv	1.06 ppbv	99.1	70.0	130	----
Dichloromethane	75-09-2	E621B	0.2	ppbv	1.04 ppbv	97.6	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.2	ppbv	1.05 ppbv	98.4	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.2	ppbv	1.07 ppbv	98.2	70.0	130	----
Ethyl acetate	141-78-6	E621B	0.2	ppbv	1.05 ppbv	93.9	70.0	130	----
Ethylbenzene	100-41-4	E621B	0.1	ppbv	1.09 ppbv	89.8	70.0	130	----
Hexane, n-	110-54-3	E621B	0.2	ppbv	1.07 ppbv	99.0	70.0	130	----
Hexanone, 2-	591-78-6	E621B	1	ppbv	1.09 ppbv	99.0	70.0	130	----
Isopropylbenzene	98-82-8	E621B	0.2	ppbv	1.04 ppbv	89.1	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E621B	0.2	ppbv	1.07 ppbv	98.8	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.2	ppbv	1.07 ppbv	97.2	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.2	ppbv	1.07 ppbv	98.3	70.0	130	----
Naphthalene	91-20-3	E621B	0.1	ppbv	1.12 ppbv	83.2	70.0	130	----
Styrene	100-42-5	E621B	0.2	ppbv	1.06 ppbv	91.7	70.0	130	----
Tetrachloroethylene	127-18-4	E621B	0.2	ppbv	1.04 ppbv	92.9	70.0	130	----
Toluene	108-88-3	E621B	0.1	ppbv	1.09 ppbv	99.3	70.0	130	----
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B	0.2	ppbv	1.03 ppbv	94.3	70.0	130	----
Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.2	ppbv	1.07 ppbv	75.8	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E621B	0.2	ppbv	1.05 ppbv	97.8	70.0	130	----
Trichlorofluoromethane	75-69-4	E621B	0.2	ppbv	1.07 ppbv	92.3	70.0	130	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.2	ppbv	1.07 ppbv	87.1	70.0	130	----
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.2	ppbv	1.06 ppbv	88.2	70.0	130	----
Xylene, m+p-	179601-23-1	E621B	0.2	ppbv	2.12 ppbv	92.9	70.0	130	----
Xylene, o-	95-47-6	E621B	0.1	ppbv	1.07 ppbv	92.7	70.0	130	----
Hydrocarbons (QCLot: 1129553)									
VHv (C10-C13)	----	E593B	50	µg/m³	0 µg/m³		----	----	----
VHv (C6-C10)	----	E593B	50	µg/m³	815 µg/m³	100	----	----	----
VHv (C6-C13)	----	E593B	71	µg/m³	815 µg/m³	100	50.0	150	----

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Work Order : VA23C1000
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05



Batch Proof Report



right solutions.
right partner.

Batch Proof ID: 230822.114
Canister ID: 06000-0536
Analysis Date: 30-Aug-23

1,1,1-Trichloroethane	<0.02	ppb(V)	cis-1,3-Dichloropropene	<0.02	ppb(V)
1,1,1,2-Tetrachloroethane	<0.02	ppb(V)	Cyclohexane	<0.20	ppb(V)
1,1,2,2-Tetrachloroethane	<0.02	ppb(V)	Dibromochloromethane	<0.20	ppb(V)
1,1,2-Trichloroethane	<0.02	ppb(V)	Dichlorodifluoromethane	<0.20	ppb(V)
1,1-Dichloroethane	<0.02	ppb(V)	Ethyl Acetate	<0.20	ppb(V)
1,1-Dichloroethene	<0.02	ppb(V)	Ethyl Benzene	<0.02	ppb(V)
1,2,4-Trichlorobenzene	<0.20	ppb(V)	Freon 113	<0.20	ppb(V)
1,2,4-Trimethylbenzene	<0.20	ppb(V)	Freon 114	<0.20	ppb(V)
1,2-Dibromoethane	<0.01	ppb(V)	Hexachlorobutadiene	<0.02	ppb(V)
1,2-Dichlorobenzene	<0.02	ppb(V)	Isooctane	<0.20	ppb(V)
1,2-Dichloroethane	<0.01	ppb(V)	Isopropyl Alcohol	N/A	ppb(V)
1,2-Dichloropropane	<0.02	ppb(V)	Isopropylbenzene	<0.20	ppb(V)
1,3,5-Trimethylbenzene	<0.20	ppb(V)	m&p-Xylene	<0.04	ppb(V)
1,3-Butadiene	<0.20	ppb(V)	Methyl Ethyl Ketone	<0.20	ppb(V)
1,3-Dichlorobenzene	<0.02	ppb(V)	Methylcyclohexane	<0.20	ppb(V)
1,4-Dichlorobenzene	<0.02	ppb(V)	Methyl Isobutyl Ketone	<0.20	ppb(V)
1,4-Dioxane	<0.20	ppb(V)	Methylene Chloride	<0.02	ppb(V)
2-Chlorophenol	<0.20	ppb(V)	MTBE	<0.20	ppb(V)
2-Hexanone	<1.0	ppb(V)	Naphthalene	<0.05	ppb(V)
4-Ethyltoluene	<0.20	ppb(V)	n-Decane	<0.20	ppb(V)
Acetone	<1.0	ppb(V)	n-Heptane	<0.20	ppb(V)
Acrolein	<0.10	ppb(V)	n-Hexane	<0.02	ppb(V)
Allyl Chloride	<0.20	ppb(V)	o-Xylene	<0.02	ppb(V)
Benzene	<0.02	ppb(V)	Propylene	<0.20	ppb(V)
Benzyl Chloride	<0.20	ppb(V)	Styrene	<0.02	ppb(V)
Bromodichloromethane	<0.20	ppb(V)	Tetrachloroethylene	<0.02	ppb(V)
Bromobenzene	<0.20	ppb(V)	Tetrahydrofuran	<0.20	ppb(V)
Bromoform	<0.02	ppb(V)	Toluene	<0.02	ppb(V)
Bromomethane	<0.20	ppb(V)	trans-1,2-Dichloroethene	<0.02	ppb(V)
Carbon Disulfide	<0.50	ppb(V)	trans-1,3-Dichloropropene	<0.02	ppb(V)
Carbon Tetrachloride	<0.02	ppb(V)	Trichloroethylene	<0.02	ppb(V)
Chlorobenzene	<0.20	ppb(V)	Trichlorofluoromethane	<0.20	ppb(V)
Chloroethane	<0.02	ppb(V)	Vinyl Acetate	<0.50	ppb(V)
Chloroform	<0.02	ppb(V)	Vinyl Bromide	<0.20	ppb(V)
Chloromethane	<0.20	ppb(V)	Vinyl Chloride	<0.02	ppb(V)
cis-1,2-Dichloroethene	<0.02	ppb(V)	4-Bromofluorobenzene	99.93	%

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8

Phone: (519) 886-6910

Fax: (519) 886-9047

Toll Free: 1-800-668-9878



AIR QUALITY CHAIN OF CUSTODY FORM - Canister/Tube/Gas Bag

Note: All TAT Quoted is in business days which exclude statutory holidays and weekends. TAT of samples received past 3:00 pm or Saturday / Sunday begin the next day.

DATE REQUIRED	SERVICE REQUESTED	Rush 3 day (100%)	<input type="checkbox"/>
	10 day (regular)	Rush 2 day (200%)	<input type="checkbox"/>
	Rush 5 day (50%)	Rush 1 day (300%) - Enquire	<input type="checkbox"/>

COMPANY NAME: **WSP**
 OFFICE: **Vancouver**
 PROJECT MANAGER: **Braden**
 PROJECT #: **CA-WSP-171-03296-05**
 PHONE: **604-312-0424** FAX: _____
 ACCOUNT #: _____
 QUOTATION #: _____ PO #: _____

REGULATION: _____
 CRITERIA: _____
 OTHER INFORMATION: _____
 ANALYSIS REQUEST: _____
 REPORT FORMAT/DISTRIBUTION: _____
 EMAIL FAX _____ BOTH _____
 SELECT: PDF _____ DIGITAL _____ BOTH _____
 EMAIL 1: _____
 EMAIL 2: _____

Environmental Division
Vancouver
 Work Order Reference
VA23C1000

Telephone: +1 604 253 4188

SAMPLING INFORMATION					Matrix Type	SAMPLE DESCRIPTION TO APPEAR ON REPORT	TUBE AIR VOLUME - L <input type="checkbox"/> or m ³ <input type="checkbox"/>	STARTING PRESSURE - Pre-Sampling ("Hg)	ENDING PRESSURE - Post Sampling ("Hg)	COLLECTION TIME (hh:mm)	Field Conditions (Rain/Wind/Dust/Odour) Field PID Reading	LAB ID
Date (dd-mmm-yy)	Time (24hr) (hh:mm)	Canister or Tube ID# (e.g. 060000-XXXX or G0XXXXXXSVI)	Regulator Serial # (CS1200-XXXX or GXX)	Sample Date/Time								
06-09-23	10:28	0074	0271		Dog Parks		288	8	213	Light Drizzle ~lh		
06-09-23	10:37	0109	0196		Fence line		28	8	215	"		

SPECIAL INSTRUCTIONS/COMMENTS: _____
 This Chain of Custody Form is only to be used for Air Quality Samples.
 SAMPLE CONDITION AS RECEIVED: _____

SAMPLED BY: **David** DATE & TIME: _____ RECEIVED BY: **SDU** DATE & TIME: **8/9/23 5pm**

RELINQUISHED BY: _____ DATE & TIME: _____ RECEIVED AT LAB BY: _____ DATE & TIME: _____

Matrix Type: Soil Gas Vapour = SG Indoor Air = IA Ambient Air = AA Industrial Hygiene = IH

FROZEN MEAN TEMP: _____
 GOLD
 COOLING INITIATED **21**
 AMBIENT

OBSERVATIONS: Yes No If yes, add SIF

Notes

- Quote number must be provided to ensure proper pricing
- TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.
- Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

REV6-2015

AIR SAMPLING MEDIA REQUEST FORM



COMPLETE Blue sections. Grey sections are for INTERNAL USE ONLY
Form MUST be reviewed & Initialed by an ALS Account Manager prior to submission to NAWTR AIRMEDIA REQUEST (nawtr.airmediarequest@alsglobal.com)

SHIPPING INFO: pls ship Purolator Express Friday 1Sept for delivery 5Sept latest

CLIENT:	WSP Golder	ORDER TAKEN BY:	Aspinger
CLIENT CONTACT:	Braden Bartnik	ORDER DATE:	30-Aug-23
CLIENT PROJECT:	VOC full fuels	AM REVIEWER:	DSTASTNY
QUOTE #:		CLIENT EXPECT DATE:	6-Sep-23
DELIVERY TO:	WSP Golder, 840 Howe Street, Suite 1000, Vancouver, BC, V6Z 2M1	ORDER FILLED BY:	MP7
TELEPHONE NUMBER:	604-601-6776	PEER REVIEWER:	AO5
SHIP TO/ATTENTION OF:	Braden Bartnik braden.bartnik@wsp.com	DATE COMPLETED:	9/1/2023

Shipping Method: (Select one)

- Ground (ALS will cover shipping cost)
- Express (Client will be billed for shipping costs, please confirm with Account Manager)
- External Courier
- Pickup at ALS
 - Location:
- ALS Drivers

Shipping Company:

- FedEx
- Purolator
- DHL
- UPS
- Other
- N/A

Tracking Number:

Completion of all Sections is Mandatory

1. What type of air is being sampled? **Check all appropriate types in the Additional Information Box below**
 2. Please provide a list of compounds and reporting limits that are required. **Include regulation & target list (attach to email)**
 3. What is your planned canister sampling time? **Options listed under Regulator Times**
 4. Trip blanks will be shipped pre-filled unless specifically requested below.
- Note: If analysis required is DIFFERENT than what is LISTED on this form, email nawtr.airmediarequest@alsglobal.com ASAP to confirm the media was adequately proofed.**

Canister Size/Tube	Regulator Times	Regulator Quantity	Parameters/ Product Codes	Canister/Tube Identification #	Initial Pressure/Flow (mmHg/mL per min)	Controller Identification #
6L Canister	24 hr		VOC-FULL-FUELS-BC-WT_GEL	06000-0109	-28.70	CS1200-0196
	12 hr		S621	06000-0074	-28.70	CS1200-0271
	8 hr					
	4 hr	2				
	1 hr					
0.5 hr						
Number of Canisters	L2	Trip Blank				
1.4L Canister	60 mins					
	20 mins					
	10 mins					
	4 mins					
	No Restrictor					
Number of Canisters		Trip Blank				
Bottle Vacs	40 mins					
	14 mins					
	7 mins					
	3 mins					
	No Restrictor					
Number of Canisters		Trip Blank				
Passive CarboPak X Tubes						
Diffusive Caps						
Active SVI Tubes						
Calibration Tube for SVI (yes/no)						

Other Sampling Supplies	Quantity	ID #	Additional Information & Special Instructions or Requests		
Pressure Gauge	1	PG39	Check all that apply: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Indoor Air <input checked="" type="checkbox"/> Ambient Air <input type="checkbox"/> Probe/Well <input type="checkbox"/> Other (specify): 	<ul style="list-style-type: none"> <input type="checkbox"/> Sub-Slab <input type="checkbox"/> Landfill <input type="checkbox"/> Crawlspace 	<ul style="list-style-type: none"> <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Residential
Caplok Tool					
Canister Stands					
Valve Adaptor for Soil Vapour					

Chargeable Supplies	Quantity	COMMENTS:
Duplicate Sampler - \$40 can/\$25 tube		order another 2 suma canisters. Same set-up as last time (4 hour sample) and it can be shipped to my office
Teflon Tubing - \$3 per foot	-Total length (ft) -Length per section (ft)	
Nut & Ferrule Sets - \$6 per set		WSP Global Inc Suite 1000 - 840 Howe Street Vancouver, BC V6Z 2M1, Canada - no charge for canisters - replacement due to equipment malfunction
Tedlar Bags (contact the lab before SUBMITTING)	-\$22 unpurged -\$40 purged	
Siloxane Kit - \$90 each (Kit: \$45, TD tube prep/rental: \$45)		
Include sampling supplies from other ALS location (yes/no)		
SEE COMMENTS		

RENTAL COSTS: Canister Rental is 2 WEEKS only. After this time additional rental fees apply.
 MEDIA REPLACEMENT COSTS: (Media lost or damaged will be charged to the client)
 1) TD SORBENT TUBE & CAPS - \$190.00 2) TD DIFFUSION CAP - \$30.00 3) CAPLOK TOOL SET - \$95.00 4) VACUUM GAUGE - \$240.00 5) BOTTLE VAC CANISTER - \$135.00
 6) PROTECTIVE CAP - \$20.00 7) CANISTER - 6L: \$650.00; 1.4L: \$450.00; 8) CONTROLLER - TWA: \$950.00; GRAB: \$850.00 9) CANISTER STAND - \$75.00 10) DUPLICATE SAMPLER - \$550.00



CERTIFICATE OF ANALYSIS

Work Order : **VA23C3578**
Client : **WSP Canada Inc.**
Contact : Braden Bartnik
Address : 840 Howe St., Suite 1000
 Vancouver BC Canada V6Z 2M1
Telephone : ----
Project : CA-WSP-171-03296-05
PO : ----
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : 2023 Price List BC WSP/Golder
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 7
Laboratory : ALS Environmental - Vancouver
Account Manager : Amber Springer
Address : 8081 Lougheed Highway
 Burnaby BC Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 03-Oct-2023 16:50
Date Analysis Commenced : 05-Oct-2023
Issue Date : 16-Oct-2023 10:34

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
David Tremblett	VOC Section Supervisor	Air Quality, Waterloo, Ontario



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
µg/m ³	micrograms per cubic metre
Inches Hg	inches of mercury
ppbv	parts per billion (volume/volume)

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Air					Client sample ID				
(Matrix: Air)					Dog Park	Fence line	----	----	----
Client sampling date / time					03-Oct-2023 09:55	03-Oct-2023 10:02	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C3578-001	VA23C3578-002	-----	-----	-----
					Result	Result	----	----	----
Field Tests									
ID, batch proof	----	EF001/WT	-	-	230919.101	230919.120	----	----	----
ID, canister	----	EF001/WT	-	-	06000-0531	06000-0051	----	----	----
ID, regulator	----	EF001/WT	-	-	CS1200-016	CS1200-031	----	----	----
Pressure on receipt	----	EF001/WT	0.10	Inches Hg	3 -4.91	1 -5.52	----	----	----
Volatile Organic Compounds									
Acetone	67-64-1	EC621B/WT	2.4	µg/m³	2.8	3.1	----	----	----
Acetone	67-64-1	E621B/WT	1.0	ppbv	1.2	1.3	----	----	----
Benzene	71-43-2	EC621B/WT	0.32	µg/m³	<0.32	<0.32	----	----	----
Benzene	71-43-2	E621B/WT	0.10	ppbv	<0.10	<0.10	----	----	----
Bromobenzene	108-86-1	EC621C/WT	1.3	µg/m³	<1.3	<1.3	----	----	----
Bromobenzene	108-86-1	E621C/WT	0.20	ppbv	<0.20	<0.20	----	----	----
Bromodichloromethane	75-27-4	EC621B/WT	1.3	µg/m³	<1.3	<1.3	----	----	----
Bromodichloromethane	75-27-4	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----
Bromoform	75-25-2	EC621B/WT	2.1	µg/m³	<2.1	<2.1	----	----	----
Bromoform	75-25-2	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----
Bromomethane	74-83-9	EC621B/WT	0.78	µg/m³	<0.78	<0.78	----	----	----
Bromomethane	74-83-9	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----
Butadiene, 1,3-	106-99-0	EC621B/WT	0.44	µg/m³	<0.44	<0.44	----	----	----
Butadiene, 1,3-	106-99-0	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----
Carbon disulfide	75-15-0	EC621B/WT	1.6	µg/m³	<1.6	<1.6	----	----	----
Carbon disulfide	75-15-0	E621B/WT	0.50	ppbv	<0.50	<0.50	----	----	----
Carbon tetrachloride	56-23-5	EC621B-L/WT	0.13	µg/m³	0.49	0.48	----	----	----
Carbon tetrachloride	56-23-5	E621B-L/WT	0.020	ppbv	0.078	0.077	----	----	----
Chlorobenzene	108-90-7	EC621B/WT	0.92	µg/m³	<0.92	<0.92	----	----	----
Chlorobenzene	108-90-7	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----
Chloroethane	75-00-3	EC621B/WT	0.53	µg/m³	<0.53	<0.53	----	----	----
Chloroethane	75-00-3	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----
Chloroform	67-66-3	EC621B-L/WT	0.098	µg/m³	<0.098	<0.098	----	----	----



Analytical Results

Sub-Matrix: Air					Client sample ID	Dog Park	Fence line	----	----	----
(Matrix: Air)					Client sampling date / time	03-Oct-2023 09:55	03-Oct-2023 10:02	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C3578-001	VA23C3578-002	-----	-----	-----	
					Result	Result	---	---	---	
Volatile Organic Compounds										
Chloroform	67-66-3	E621B-L/WT	0.020	ppbv	<0.020	<0.020	---	---	---	
Chloromethane	74-87-3	EC621B/WT	0.41	µg/m³	1.03	0.99	---	---	---	
Chloromethane	74-87-3	E621B/WT	0.20	ppbv	0.50	0.48	---	---	---	
Chlorophenol, 2-	95-57-8	EC621C/WT	1.0	µg/m³	<1.0	<1.0	---	---	---	
Chlorophenol, 2-	95-57-8	E621C/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Cyclohexane	110-82-7	EC621B/WT	0.69	µg/m³	<0.69	<0.69	---	---	---	
Cyclohexane	110-82-7	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Decane, n-	124-18-5	EC621C/WT	2.9	µg/m³	<2.9	<2.9	---	---	---	
Decane, n-	124-18-5	E621C/WT	0.50	ppbv	<0.50	<0.50	---	---	---	
Dibromochloromethane	124-48-1	EC621B/WT	1.7	µg/m³	<1.7	<1.7	---	---	---	
Dibromochloromethane	124-48-1	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Dibromoethane, 1,2-	106-93-4	EC621B-L/WT	0.077	µg/m³	<0.077	<0.077	---	---	---	
Dibromoethane, 1,2-	106-93-4	E621B-L/WT	0.010	ppbv	<0.010	<0.010	---	---	---	
Dichlorobenzene, 1,2-	95-50-1	EC621B/WT	1.2	µg/m³	<1.2	<1.2	---	---	---	
Dichlorobenzene, 1,2-	95-50-1	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichlorobenzene, 1,3-	541-73-1	EC621B/WT	1.2	µg/m³	<1.2	<1.2	---	---	---	
Dichlorobenzene, 1,3-	541-73-1	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichlorobenzene, 1,4-	106-46-7	EC621B/WT	1.2	µg/m³	<1.2	<1.2	---	---	---	
Dichlorobenzene, 1,4-	106-46-7	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichlorodifluoromethane	75-71-8	EC621B/WT	1.0	µg/m³	2.3	2.2	---	---	---	
Dichlorodifluoromethane	75-71-8	E621B/WT	0.20	ppbv	0.46	0.45	---	---	---	
Dichloroethane, 1,1-	75-34-3	EC621B-L/WT	0.081	µg/m³	<0.081	<0.081	---	---	---	
Dichloroethane, 1,1-	75-34-3	E621B-L/WT	0.020	ppbv	<0.020	<0.020	---	---	---	
Dichloroethane, 1,2-	107-06-2	EC621B-L/WT	0.040	µg/m³	0.048	0.053	---	---	---	
Dichloroethane, 1,2-	107-06-2	E621B-L/WT	0.010	ppbv	0.012	0.013	---	---	---	
Dichloroethylene, 1,1-	75-35-4	EC621B-L/WT	0.079	µg/m³	<0.079	<0.079	---	---	---	
Dichloroethylene, 1,1-	75-35-4	E621B-L/WT	0.020	ppbv	<0.020	<0.020	---	---	---	
Dichloroethylene, cis-1,2-	156-59-2	EC621B/WT	0.79	µg/m³	<0.79	<0.79	---	---	---	
Dichloroethylene, cis-1,2-	156-59-2	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichloroethylene, trans-1,2-	156-60-5	EC621B/WT	0.79	µg/m³	<0.79	<0.79	---	---	---	



Analytical Results

Sub-Matrix: Air					Client sample ID	Dog Park	Fence line	----	----	----
(Matrix: Air)					Client sampling date / time	03-Oct-2023 09:55	03-Oct-2023 10:02	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C3578-001	VA23C3578-002	-----	-----	-----	
					Result	Result	---	---	---	
Volatile Organic Compounds										
Dichloroethylene, trans-1,2-	156-60-5	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichloromethane	75-09-2	EC621B/WT	0.69	µg/m³	<0.69	<0.69	---	---	---	
Dichloromethane	75-09-2	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichloropropane, 1,2-	78-87-5	EC621B-L/WT	0.14	µg/m³	<0.14	<0.14	---	---	---	
Dichloropropane, 1,2-	78-87-5	E621B-L/WT	0.030	ppbv	<0.030	<0.030	---	---	---	
Dichloropropylene, cis-1,3-	10061-01-5	EC621B/WT	0.9	µg/m³	<0.9	<0.9	---	---	---	
Dichloropropylene, cis-1,3-	10061-01-5	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Dichloropropylene, trans-1,3-	10061-02-6	EC621B/WT	0.9	µg/m³	<0.9	<0.9	---	---	---	
Dichloropropylene, trans-1,3-	10061-02-6	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Ethyl acetate	141-78-6	EC621B/WT	0.72	µg/m³	<0.72	<0.72	---	---	---	
Ethyl acetate	141-78-6	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Ethylbenzene	100-41-4	EC621B/WT	0.43	µg/m³	<0.43	<0.43	---	---	---	
Ethylbenzene	100-41-4	E621B/WT	0.10	ppbv	<0.10	<0.10	---	---	---	
Hexachlorobutadiene	87-68-3	EC621B-L/WT	0.11	µg/m³	<0.11	<0.11	---	---	---	
Hexachlorobutadiene	87-68-3	E621B-L/WT	0.010	ppbv	<0.010	<0.010	---	---	---	
Hexane, n-	110-54-3	EC621B/WT	0.70	µg/m³	<0.70	<0.70	---	---	---	
Hexane, n-	110-54-3	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Hexanone, 2-	591-78-6	EC621B/WT	4.10	µg/m³	<4.10	<4.10	---	---	---	
Hexanone, 2-	591-78-6	E621B/WT	1.0	ppbv	<1.0	<1.0	---	---	---	
Isopropylbenzene	98-82-8	EC621B/WT	1.0	µg/m³	<1.0	<1.0	---	---	---	
Isopropylbenzene	98-82-8	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Methyl ethyl ketone [MEK]	78-93-3	EC621B/WT	0.59	µg/m³	<0.59	<0.59	---	---	---	
Methyl ethyl ketone [MEK]	78-93-3	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Methyl isobutyl ketone [MIBK]	108-10-1	EC621B/WT	0.82	µg/m³	<0.82	<0.82	---	---	---	
Methyl isobutyl ketone [MIBK]	108-10-1	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Methylcyclohexane	108-87-2	EC621C/WT	0.80	µg/m³	<0.80	<0.80	---	---	---	
Methylcyclohexane	108-87-2	E621C/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Methyl-tert-butyl ether [MTBE]	1634-04-4	EC621B/WT	0.72	µg/m³	<0.72	<0.72	---	---	---	
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Naphthalene	91-20-3	EC621B/WT	0.52	µg/m³	<0.52	<0.52	---	---	---	



Analytical Results

Sub-Matrix: Air					Client sample ID	Dog Park	Fence line	----	----	----
(Matrix: Air)					Client sampling date / time	03-Oct-2023 09:55	03-Oct-2023 10:02	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C3578-001	VA23C3578-002	-----	-----	-----	
					Result	Result	---	---	---	
Volatile Organic Compounds										
Naphthalene	91-20-3	E621B/WT	0.10	ppbv	<0.10	<0.10	---	---	---	
Styrene	100-42-5	EC621B/WT	0.85	µg/m ³	<0.85	<0.85	---	---	---	
Styrene	100-42-5	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Tetrachloroethane, 1,1,1,2-	630-20-6	EC621B-L/WT	0.14	µg/m ³	<0.14	<0.14	---	---	---	
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L/WT	0.020	ppbv	<0.020	<0.020	---	---	---	
Tetrachloroethane, 1,1,2,2-	79-34-5	EC621B-L/WT	0.069	µg/m ³	<0.069	<0.069	---	---	---	
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L/WT	0.010	ppbv	<0.010	<0.010	---	---	---	
Tetrachloroethylene	127-18-4	EC621B/WT	1.4	µg/m ³	<1.4	<1.4	---	---	---	
Tetrachloroethylene	127-18-4	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Toluene	108-88-3	EC621B/WT	0.38	µg/m ³	<0.38	<0.38	---	---	---	
Toluene	108-88-3	E621B/WT	0.10	ppbv	<0.10	<0.10	---	---	---	
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	EC621B/WT	1.5	µg/m ³	<1.5	<1.5	---	---	---	
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Trichlorobenzene, 1,2,4-	120-82-1	EC621B/WT	1.5	µg/m ³	<1.5	<1.5	---	---	---	
Trichlorobenzene, 1,2,4-	120-82-1	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Trichloroethane, 1,1,1-	71-55-6	EC621B/WT	1.1	µg/m ³	<1.1	<1.1	---	---	---	
Trichloroethane, 1,1,1-	71-55-6	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Trichloroethane, 1,1,2-	79-00-5	EC621B-L/WT	0.055	µg/m ³	<0.054	<0.054	---	---	---	
Trichloroethane, 1,1,2-	79-00-5	E621B-L/WT	0.010	ppbv	<0.010	<0.010	---	---	---	
Trichloroethylene	79-01-6	EC621B-L/WT	0.11	µg/m ³	<0.11	<0.11	---	---	---	
Trichloroethylene	79-01-6	E621B-L/WT	0.020	ppbv	<0.020	<0.020	---	---	---	
Trichlorofluoromethane	75-69-4	EC621B/WT	1.1	µg/m ³	1.2	1.1	---	---	---	
Trichlorofluoromethane	75-69-4	E621B/WT	0.20	ppbv	0.21	0.20	---	---	---	
Trimethylbenzene, 1,2,4-	95-63-6	EC621B/WT	1.0	µg/m ³	<1.0	<1.0	---	---	---	
Trimethylbenzene, 1,2,4-	95-63-6	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Trimethylbenzene, 1,3,5-	108-67-8	EC621B/WT	1.0	µg/m ³	<1.0	<1.0	---	---	---	
Trimethylbenzene, 1,3,5-	108-67-8	E621B/WT	0.20	ppbv	<0.20	<0.20	---	---	---	
Vinyl chloride	75-01-4	EC621B-L/WT	0.051	µg/m ³	<0.051	<0.051	---	---	---	



Analytical Results

Sub-Matrix: Air					Client sample ID	Dog Park	Fence line	----	----	----
(Matrix: Air)					Client sampling date / time	03-Oct-2023 09:55	03-Oct-2023 10:02	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C3578-001	VA23C3578-002	-----	-----	-----	
					Result	Result	----	----	----	
Volatile Organic Compounds										
Vinyl chloride	75-01-4	E621B-L/WT	0.020	ppbv	<0.020	<0.020	----	----	----	
Xylene, m+p-	179601-23-1	EC621B/WT	0.87	µg/m ³	<0.87	<0.87	----	----	----	
Xylene, m+p-	179601-23-1	E621B/WT	0.20	ppbv	<0.20	<0.20	----	----	----	
Xylene, o-	95-47-6	EC621B/WT	0.43	µg/m ³	<0.43	<0.43	----	----	----	
Xylene, o-	95-47-6	E621B/WT	0.10	ppbv	<0.10	<0.10	----	----	----	
Xylenes, total	1330-20-7	EC621B/WT	1.3	µg/m ³	<1.3	<1.3	----	----	----	
Xylenes, total	1330-20-7	E621B/WT	0.30	ppbv	<0.30	<0.30	----	----	----	
BTEX, total	----	EC621B/WT	1.2	µg/m ³	<2.4	<2.4	----	----	----	
BTEX, total	----	E621B/WT	0.30	ppbv	<0.30	<0.30	----	----	----	
Hydrocarbons										
VHv (C10-C13)	----	E593B/WT	50	µg/m ³	<50	<50	----	----	----	
VHv (C6-C10)	----	E593B/WT	50	µg/m ³	<50	<50	----	----	----	
VHv (C6-C13)	----	E593B/WT	71	µg/m ³	<71	<71	----	----	----	
VPHv	----	EC592B/WT	100	µg/m ³	<100	<100	----	----	----	
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E621B/WT	0.20	%	95.2	96.8	----	----	----	
Bromofluorobenzene, 4-	460-00-4	E621B-L/WT	0.20	%	97.2	98.8	----	----	----	
Bromofluorobenzene, 4-	460-00-4	E621C/WT	0.20	%	95.2	96.8	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA23C3578</p> <p>Client : WSP Canada Inc.</p> <p>Contact : Braden Bartnik</p> <p>Address : 840 Howe St., Suite 1000 Vancouver BC Canada V6Z 2M1</p> <p>Telephone : ----</p> <p>Project : CA-WSP-171-03296-05</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : 2023 Price List BC WSP/Golder</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 6</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Amber Springer</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 03-Oct-2023 16:50</p> <p>Issue Date : 16-Oct-2023 10:31</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Air

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Air Canister Information										
Canister Dog Park	EF001	03-Oct-2023	----	----	----		05-Oct-2023	----	2 days	
Field Tests : Air Canister Information										
Canister Fence line	EF001	03-Oct-2023	----	----	----		05-Oct-2023	----	2 days	
Hydrocarbons : TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)										
Canister Dog Park	E593B	03-Oct-2023	----	----	----		13-Oct-2023	30 days	10 days	✔
Hydrocarbons : TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)										
Canister Fence line	E593B	03-Oct-2023	----	----	----		13-Oct-2023	30 days	10 days	✔
Volatile Organic Compounds : VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Dog Park	E621B	03-Oct-2023	----	----	----		13-Oct-2023	30 days	10 days	✔
Volatile Organic Compounds : VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fence line	E621B	03-Oct-2023	----	----	----		13-Oct-2023	30 days	10 days	✔
Volatile Organic Compounds : VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Dog Park	E621B-L	03-Oct-2023	----	----	----		13-Oct-2023	30 days	10 days	✔



Matrix: **Air** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Volatile Organic Compounds : VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fence line	E621B-L	03-Oct-2023	----	----	----		13-Oct-2023	30 days	10 days	✔
Volatile Organic Compounds : VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Dog Park	E621C	03-Oct-2023	----	----	----		13-Oct-2023	30 days	10 days	✔
Volatile Organic Compounds : VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)										
Canister Fence line	E621C	03-Oct-2023	----	----	----		13-Oct-2023	30 days	10 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: Air

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1182989	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1182988	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1182987	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1182990	1	2	50.0	5.0	✔
Laboratory Control Samples (LCS)							
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1182989	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1182988	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1182987	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1182990	1	2	50.0	5.0	✔
Method Blanks (MB)							
Air Canister Information	EF001	1170003	1	2	50.0	5.0	✔
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B	1182989	1	2	50.0	5.0	✔
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B	1182988	1	2	50.0	5.0	✔
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L	1182987	1	2	50.0	5.0	✔
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C	1182990	1	2	50.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TVOC (VHv) in Canisters or Bags by GC-MS (µg/m3)	E593B ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Total Volatile Organic Compounds (TVOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ppbV)	E621B ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ppbV)	E621B-L ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ppbV)	E621C ALS Environmental - Waterloo	Air	EPA TO-15 (mod)	Volatile Organic Compounds (VOC) in canisters (or bags) are transferred to a preconcentrator system and then thermally desorbed prior to injection into a GC-MS system for analysis.
VPH in Canisters or Bags GC-MS (µg/m3)	EC592B ALS Environmental - Waterloo	Air	BC MOE Lab Manual (Calculation of VPH)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHv = Volatile Hydrocarbons (VH6-13) minus benzene, toluene, ethylbenzene, xylenes, styrene, n-hexane, and n-decane.
VOCs (TO-15 List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621B ALS Environmental - Waterloo	Air	unit conversion	Convert ppbV to ug/m3
VOCs (TO-15 SIM List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621B-L ALS Environmental - Waterloo	Air	unit conversion	Convert ppbV to ug/m3
VOCs (WT Misc. List) in Air by Canister or Bag by GC-MS (ug/m3)	EC621C ALS Environmental - Waterloo	Air	unit conversion	Convert ppbV to ug/m3
Air Canister Information	EF001 ALS Environmental - Waterloo	Air	In-house	Air canister information provided by client and recorded on ALS report may affect the validity of results.

QUALITY CONTROL REPORT

Work Order	: VA23C3578	Page	: 1 of 10
Client	: WSP Canada Inc.	Laboratory	: ALS Environmental - Vancouver
Contact	: Braden Bartnik	Account Manager	: Amber Springer
Address	: 840 Howe St., Suite 1000 Vancouver BC Canada V6Z 2M1	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	:	Telephone	: +1 604 253 4188
Project	: CA-WSP-171-03296-05	Date Samples Received	: 03-Oct-2023 16:50
PO	: ----	Date Analysis Commenced	: 05-Oct-2023
C-O-C number	: ----	Issue Date	: 16-Oct-2023 10:30
Sampler	: ---- ----		
Site	: ----		
Quote number	: 2023 Price List BC WSP/Golder		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
David Tremblett	VOC Section Supervisor	Waterloo Air Quality, Waterloo, Ontario

Page : 2 of 10
Work Order : VA23C3578
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Air

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1182987)											
VA23C3578-001	Dog Park	Carbon tetrachloride	56-23-5	E621B-L	0.020	ppbv	0.078	0.076	0.002	Diff <2x LOR	----
		Chloroform	67-66-3	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E621B-L	0.010	ppbv	0.012	0.011	0.001	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E621B-L	0.030	ppbv	<0.030	<0.030	0	Diff <2x LOR	----
		Hexachlorobutadiene	87-68-3	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.010	ppbv	<0.010	<0.010	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E621B-L	0.020	ppbv	<0.020	<0.020	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1182988)											
VA23C3578-001	Dog Park	Acetone	67-64-1	E621B	1.0	ppbv	1.2	1.1	0.05	Diff <2x LOR	----
		Benzene	71-43-2	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Bromoform	75-25-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Butadiene, 1,3-	106-99-0	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Carbon disulfide	75-15-0	E621B	0.50	ppbv	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E621B	0.20	ppbv	0.50	0.48	0.02	Diff <2x LOR	----
		Cyclohexane	110-82-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
Dichlorodifluoromethane	75-71-8	E621B	0.20	ppbv	0.46	0.44	0.02	Diff <2x LOR	----		



Sub-Matrix: Air					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 1182988) - continued											
VA23C3578-001	Dog Park	Dichloroethylene, cis-1,2-	156-59-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Ethyl acetate	141-78-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Hexanone, 2-	591-78-6	E621B	1.0	ppbv	<1.0	<1.0	0	Diff <2x LOR	----
		Isopropylbenzene	98-82-8	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Naphthalene	91-20-3	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Styrene	100-42-5	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Toluene	108-88-3	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----
		Trichloro-1,2,2-trifluoroethane, 1,1,2-[Freon 113]	76-13-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E621B	0.20	ppbv	0.21	<0.20	0.007	Diff <2x LOR	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Xylene, m+p-	179601-23-1	E621B	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----		
Xylene, o-	95-47-6	E621B	0.10	ppbv	<0.10	<0.10	0	Diff <2x LOR	----		
Volatile Organic Compounds (QC Lot: 1182990)											
VA23C3578-001	Dog Park	Bromobenzene	108-86-1	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Chlorophenol, 2-	95-57-8	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
		Decane, n-	124-18-5	E621C	0.50	ppbv	<0.50	<0.50	0	Diff <2x LOR	----
		Methylcyclohexane	108-87-2	E621C	0.20	ppbv	<0.20	<0.20	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1182989)											
VA23C3578-001	Dog Park	VHv (C10-C13)	----	E593B	50	µg/m³	<50	<50	0	Diff <2x LOR	----
		VHv (C6-C10)	----	E593B	50	µg/m³	<50	<50	0	Diff <2x LOR	----
		VHv (C6-C13)	----	E593B	71	µg/m³	<71	<71	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Air

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Field Tests (QCLot: 1170003)						
Pressure on receipt	---	EF001	0.1	Inches Hg	-30.0	---
Volatile Organic Compounds (QCLot: 1182987)						
Carbon tetrachloride	56-23-5	E621B-L	0.02	ppbv	<0.020	---
Chloroform	67-66-3	E621B-L	0.02	ppbv	<0.020	---
Dibromoethane, 1,2-	106-93-4	E621B-L	0.01	ppbv	<0.010	---
Dichloroethane, 1,1-	75-34-3	E621B-L	0.02	ppbv	<0.020	---
Dichloroethane, 1,2-	107-06-2	E621B-L	0.01	ppbv	<0.010	---
Dichloroethylene, 1,1-	75-35-4	E621B-L	0.02	ppbv	<0.020	---
Dichloropropane, 1,2-	78-87-5	E621B-L	0.03	ppbv	<0.030	---
Hexachlorobutadiene	87-68-3	E621B-L	0.01	ppbv	<0.010	---
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.02	ppbv	<0.020	---
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.01	ppbv	<0.010	---
Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.01	ppbv	<0.010	---
Trichloroethylene	79-01-6	E621B-L	0.02	ppbv	<0.020	---
Vinyl chloride	75-01-4	E621B-L	0.02	ppbv	<0.020	---
Volatile Organic Compounds (QCLot: 1182988)						
Acetone	67-64-1	E621B	1	ppbv	<1.0	---
Benzene	71-43-2	E621B	0.1	ppbv	<0.10	---
Bromodichloromethane	75-27-4	E621B	0.2	ppbv	<0.20	---
Bromoform	75-25-2	E621B	0.2	ppbv	<0.20	---
Bromomethane	74-83-9	E621B	0.2	ppbv	<0.20	---
Butadiene, 1,3-	106-99-0	E621B	0.2	ppbv	<0.20	---
Carbon disulfide	75-15-0	E621B	0.5	ppbv	<0.50	---
Chlorobenzene	108-90-7	E621B	0.2	ppbv	<0.20	---
Chloroethane	75-00-3	E621B	0.2	ppbv	<0.20	---
Chloromethane	74-87-3	E621B	0.2	ppbv	<0.20	---
Cyclohexane	110-82-7	E621B	0.2	ppbv	<0.20	---
Dibromochloromethane	124-48-1	E621B	0.2	ppbv	<0.20	---
Dichlorobenzene, 1,2-	95-50-1	E621B	0.2	ppbv	<0.20	---
Dichlorobenzene, 1,3-	541-73-1	E621B	0.2	ppbv	<0.20	---
Dichlorobenzene, 1,4-	106-46-7	E621B	0.2	ppbv	<0.20	---



Sub-Matrix: Air

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1182988) - continued						
Dichlorodifluoromethane	75-71-8	E621B	0.2	ppbv	<0.20	----
Dichloroethylene, cis-1,2-	156-59-2	E621B	0.2	ppbv	<0.20	----
Dichloroethylene, trans-1,2-	156-60-5	E621B	0.2	ppbv	<0.20	----
Dichloromethane	75-09-2	E621B	0.2	ppbv	<0.20	----
Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.2	ppbv	<0.20	----
Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.2	ppbv	<0.20	----
Ethyl acetate	141-78-6	E621B	0.2	ppbv	<0.20	----
Ethylbenzene	100-41-4	E621B	0.1	ppbv	<0.10	----
Hexane, n-	110-54-3	E621B	0.2	ppbv	<0.20	----
Hexanone, 2-	591-78-6	E621B	1	ppbv	<1.0	----
Isopropylbenzene	98-82-8	E621B	0.2	ppbv	<0.20	----
Methyl ethyl ketone [MEK]	78-93-3	E621B	0.2	ppbv	<0.20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.2	ppbv	<0.20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.2	ppbv	<0.20	----
Naphthalene	91-20-3	E621B	0.1	ppbv	<0.10	----
Styrene	100-42-5	E621B	0.2	ppbv	<0.20	----
Tetrachloroethylene	127-18-4	E621B	0.2	ppbv	<0.20	----
Toluene	108-88-3	E621B	0.1	ppbv	<0.10	----
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B	0.2	ppbv	<0.20	----
Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.2	ppbv	<0.20	----
Trichloroethane, 1,1,1-	71-55-6	E621B	0.2	ppbv	<0.20	----
Trichlorofluoromethane	75-69-4	E621B	0.2	ppbv	<0.20	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.2	ppbv	<0.20	----
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.2	ppbv	<0.20	----
Xylene, m+p-	179601-23-1	E621B	0.2	ppbv	<0.20	----
Xylene, o-	95-47-6	E621B	0.1	ppbv	<0.10	----
Volatile Organic Compounds (QCLot: 1182990)						
Bromobenzene	108-86-1	E621C	0.2	ppbv	<0.20	----
Chlorophenol, 2-	95-57-8	E621C	0.2	ppbv	<0.20	----
Decane, n-	124-18-5	E621C	0.5	ppbv	<0.50	----
Methylcyclohexane	108-87-2	E621C	0.2	ppbv	<0.20	----
Hydrocarbons (QCLot: 1182989)						
VHv (C10-C13)	----	E593B	50	µg/m³	<50	----
VHv (C6-C10)	----	E593B	50	µg/m³	<50	----
VHv (C6-C13)	----	E593B	71	µg/m³	<71	----

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Work Order : VA23C3578
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05





Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Air

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1182987)									
Carbon tetrachloride	56-23-5	E621B-L	0.02	ppbv	0.106 ppbv	99.2	70.0	130	----
Chloroform	67-66-3	E621B-L	0.02	ppbv	0.105 ppbv	99.8	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E621B-L	0.01	ppbv	0.108 ppbv	94.9	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E621B-L	0.02	ppbv	0.104 ppbv	101	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E621B-L	0.01	ppbv	0.104 ppbv	97.9	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E621B-L	0.02	ppbv	0.104 ppbv	102	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E621B-L	0.03	ppbv	0.105 ppbv	100	70.0	130	----
Hexachlorobutadiene	87-68-3	E621B-L	0.01	ppbv	0.109 ppbv	88.7	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E621B-L	0.02	ppbv	0.105 ppbv	98.1	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E621B-L	0.01	ppbv	0.107 ppbv	93.7	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E621B-L	0.01	ppbv	0.108 ppbv	95.8	70.0	130	----
Trichloroethylene	79-01-6	E621B-L	0.02	ppbv	0.108 ppbv	96.4	70.0	130	----
Vinyl chloride	75-01-4	E621B-L	0.02	ppbv	0.101 ppbv	108	70.0	130	----
Volatile Organic Compounds (QCLot: 1182988)									
Acetone	67-64-1	E621B	1	ppbv	1.06 ppbv	99.7	70.0	130	----
Benzene	71-43-2	E621B	0.1	ppbv	1.06 ppbv	97.8	70.0	130	----
Bromodichloromethane	75-27-4	E621B	0.2	ppbv	1.02 ppbv	100	70.0	130	----
Bromoform	75-25-2	E621B	0.2	ppbv	1.06 ppbv	93.8	70.0	130	----
Bromomethane	74-83-9	E621B	0.2	ppbv	1.04 ppbv	93.8	70.0	130	----
Butadiene, 1,3-	106-99-0	E621B	0.2	ppbv	1.06 ppbv	99.0	70.0	130	----
Carbon disulfide	75-15-0	E621B	0.5	ppbv	1.06 ppbv	99.2	70.0	130	----
Chlorobenzene	108-90-7	E621B	0.2	ppbv	1.07 ppbv	94.1	70.0	130	----
Chloroethane	75-00-3	E621B	0.2	ppbv	1.01 ppbv	98.0	70.0	130	----
Chloromethane	74-87-3	E621B	0.2	ppbv	1.01 ppbv	104	70.0	130	----
Cyclohexane	110-82-7	E621B	0.2	ppbv	1.06 ppbv	101	70.0	130	----
Dibromochloromethane	124-48-1	E621B	0.2	ppbv	1.07 ppbv	97.0	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E621B	0.2	ppbv	1.06 ppbv	88.4	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E621B	0.2	ppbv	1.06 ppbv	89.5	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E621B	0.2	ppbv	1.05 ppbv	89.2	70.0	130	----
Dichlorodifluoromethane	75-71-8	E621B	0.2	ppbv	1.02 ppbv	97.0	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E621B	0.2	ppbv	1.06 ppbv	97.7	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E621B	0.2	ppbv	1.06 ppbv	99.1	70.0	130	----
Dichloromethane	75-09-2	E621B	0.2	ppbv	1.04 ppbv	97.3	70.0	130	----



Sub-Matrix: Air

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Volatile Organic Compounds (QCLot: 1182988) - continued									
Dichloropropylene, cis-1,3-	10061-01-5	E621B	0.2	ppbv	1.05 ppbv	99.4	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E621B	0.2	ppbv	1.07 ppbv	98.3	70.0	130	----
Ethyl acetate	141-78-6	E621B	0.2	ppbv	1.05 ppbv	93.5	70.0	130	----
Ethylbenzene	100-41-4	E621B	0.1	ppbv	1.09 ppbv	91.2	70.0	130	----
Hexane, n-	110-54-3	E621B	0.2	ppbv	1.07 ppbv	102	70.0	130	----
Hexanone, 2-	591-78-6	E621B	1	ppbv	1.09 ppbv	96.8	70.0	130	----
Isopropylbenzene	98-82-8	E621B	0.2	ppbv	1.04 ppbv	91.9	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E621B	0.2	ppbv	1.07 ppbv	100	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E621B	0.2	ppbv	1.07 ppbv	99.6	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E621B	0.2	ppbv	1.07 ppbv	100	70.0	130	----
Naphthalene	91-20-3	E621B	0.1	ppbv	1.12 ppbv	104	70.0	130	----
Styrene	100-42-5	E621B	0.2	ppbv	1.06 ppbv	94.7	70.0	130	----
Tetrachloroethylene	127-18-4	E621B	0.2	ppbv	1.04 ppbv	93.2	70.0	130	----
Toluene	108-88-3	E621B	0.1	ppbv	1.09 ppbv	101	70.0	130	----
Trichloro-1,2,2-trifluoroethane, 1,1,2- [Freon 113]	76-13-1	E621B	0.2	ppbv	1.03 ppbv	95.6	70.0	130	----
Trichlorobenzene, 1,2,4-	120-82-1	E621B	0.2	ppbv	1.07 ppbv	91.3	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E621B	0.2	ppbv	1.05 ppbv	97.4	70.0	130	----
Trichlorofluoromethane	75-69-4	E621B	0.2	ppbv	1.07 ppbv	92.5	70.0	130	----
Trimethylbenzene, 1,2,4-	95-63-6	E621B	0.2	ppbv	1.07 ppbv	96.4	70.0	130	----
Trimethylbenzene, 1,3,5-	108-67-8	E621B	0.2	ppbv	1.06 ppbv	92.1	70.0	130	----
Xylene, m+p-	179601-23-1	E621B	0.2	ppbv	2.12 ppbv	94.6	70.0	130	----
Xylene, o-	95-47-6	E621B	0.1	ppbv	1.07 ppbv	94.3	70.0	130	----
Volatile Organic Compounds (QCLot: 1182990)									
Bromobenzene	108-86-1	E621C	0.2	ppbv	1.07 ppbv	94.1	70.0	130	----
Chlorophenol, 2-	95-57-8	E621C	0.2	ppbv	1.05 ppbv	101	70.0	130	----
Decane, n-	124-18-5	E621C	0.5	ppbv	1.06 ppbv	108	70.0	130	----
Methylcyclohexane	108-87-2	E621C	0.2	ppbv	1.08 ppbv	99.6	70.0	130	----
Hydrocarbons (QCLot: 1182989)									
VHv (C10-C13)	---	E593B	50	µg/m³	0 µg/m³		---	---	----
VHv (C6-C10)	---	E593B	50	µg/m³	815 µg/m³	93.8	---	---	----
VHv (C6-C13)	---	E593B	71	µg/m³	815 µg/m³	93.7	50.0	150	----

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Work Order : VA23C3578
Client : WSP Canada Inc.
Project : CA-WSP-171-03296-05



Batch Proof Report



right solutions.
right partner.

Batch Proof ID: 230919.115
Canister ID: 06000-0568
Analysis Date: 26-Sep-23

1,1,1-Trichloroethane	<0.02	ppb(V)	cis-1,3-Dichloropropene	<0.02	ppb(V)
1,1,1,2-Tetrachloroethane	<0.02	ppb(V)	Cyclohexane	<0.20	ppb(V)
1,1,2,2-Tetrachloroethane	<0.02	ppb(V)	Dibromochloromethane	<0.20	ppb(V)
1,1,2-Trichloroethane	<0.02	ppb(V)	Dichlorodifluoromethane	<0.20	ppb(V)
1,1-Dichloroethane	<0.02	ppb(V)	Ethyl Acetate	<0.20	ppb(V)
1,1-Dichloroethene	<0.02	ppb(V)	Ethyl Benzene	<0.02	ppb(V)
1,2,4-Trichlorobenzene	<0.20	ppb(V)	Freon 113	<0.20	ppb(V)
1,2,4-Trimethylbenzene	<0.20	ppb(V)	Freon 114	<0.20	ppb(V)
1,2-Dibromoethane	<0.01	ppb(V)	Hexachlorobutadiene	<0.02	ppb(V)
1,2-Dichlorobenzene	<0.02	ppb(V)	Isooctane	<0.20	ppb(V)
1,2-Dichloroethane	<0.01	ppb(V)	Isopropyl Alcohol	N/A	ppb(V)
1,2-Dichloropropane	<0.02	ppb(V)	Isopropylbenzene	<0.20	ppb(V)
1,3,5-Trimethylbenzene	<0.20	ppb(V)	m&p-Xylene	<0.04	ppb(V)
1,3-Butadiene	<0.20	ppb(V)	Methyl Ethyl Ketone	<0.20	ppb(V)
1,3-Dichlorobenzene	<0.02	ppb(V)	Methylcyclohexane	<0.20	ppb(V)
1,4-Dichlorobenzene	<0.02	ppb(V)	Methyl Isobutyl Ketone	<0.20	ppb(V)
1,4-Dioxane	<0.20	ppb(V)	Methylene Chloride	<0.02	ppb(V)
2-Chlorophenol	<0.20	ppb(V)	MTBE	<0.20	ppb(V)
2-Hexanone	<1.0	ppb(V)	Naphthalene	<0.05	ppb(V)
4-Ethyltoluene	<0.20	ppb(V)	n-Decane	<0.20	ppb(V)
Acetone	<1.0	ppb(V)	n-Heptane	<0.20	ppb(V)
Acrolein	<0.10	ppb(V)	n-Hexane	<0.02	ppb(V)
Allyl Chloride	<0.20	ppb(V)	o-Xylene	<0.02	ppb(V)
Benzene	<0.02	ppb(V)	Propylene	<0.20	ppb(V)
Benzyl Chloride	<0.20	ppb(V)	Styrene	<0.02	ppb(V)
Bromodichloromethane	<0.20	ppb(V)	Tetrachloroethylene	<0.02	ppb(V)
Bromobenzene	<0.20	ppb(V)	Tetrahydrofuran	<0.20	ppb(V)
Bromoform	<0.02	ppb(V)	Toluene	<0.02	ppb(V)
Bromomethane	<0.20	ppb(V)	trans-1,2-Dichloroethene	<0.02	ppb(V)
Carbon Disulfide	<0.50	ppb(V)	trans-1,3-Dichloropropene	<0.02	ppb(V)
Carbon Tetrachloride	<0.02	ppb(V)	Trichloroethylene	<0.02	ppb(V)
Chlorobenzene	<0.20	ppb(V)	Trichlorofluoromethane	<0.20	ppb(V)
Chloroethane	<0.02	ppb(V)	Vinyl Acetate	<0.50	ppb(V)
Chloroform	<0.02	ppb(V)	Vinyl Bromide	<0.20	ppb(V)
Chloromethane	<0.20	ppb(V)	Vinyl Chloride	<0.02	ppb(V)
cis-1,2-Dichloroethene	<0.02	ppb(V)	4-Bromofluorobenzene	102.91	%

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8

Phone: (519) 886-6910

Fax: (519) 886-9047

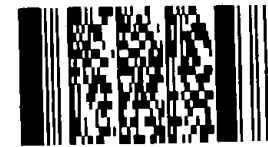
Toll Free: 1-800-668-9878



AIR QUALITY CHAIN OF CUSTODY FORM - Canister/Tube/Gas Bag

Note: All TAT Quoted is in business days which exclude statutory holidays and weekends. TAT of samples received past 3:00 pm or Saturday / Sunday begin the next day.

DATE REQUIRED	SERVICE REQUESTED	Rush 3 day (100%)	<input type="checkbox"/>
	10 day (regular)	Rush 2 day (200%)	<input checked="" type="checkbox"/>
	Rush 5 day (50%)	Rush 1 day (300%) - Enquire	<input type="checkbox"/>

COMPANY NAME WSP		REGULATION		ANALYSIS REQUEST										All rush work requires lab approval before sample submission			
OFFICE Vancouver		CRITERIA															
PROJECT-MANAGER CA-WSP-171-03296-05		OTHER INFORMATION												Environmental Division Vancouver Work Order Reference VA23C3578  Telephone : +1 604 253 4186			
PHONE 604-312-0424		REPORT FORMAT/DISTRIBUTION		TUBE AIR VOLUME - L <input type="checkbox"/> or m ³ <input type="checkbox"/> VOC - Full fuels													
FAX		EMAIL <input checked="" type="checkbox"/> FAX <input type="checkbox"/> BOTH <input type="checkbox"/>															
ACCOUNT #		SELECT: PDF <input type="checkbox"/> DIGITAL <input type="checkbox"/> BOTH <input type="checkbox"/>												STARTING PRESSURE - Pre-Sampling ("Hg)			
QUOTATION #		EMAIL 1 _____												ENDING PRESSURE - Post Sampling ("Hg)			
PO #		EMAIL 2 _____												COLLECTION TIME (Min)			
SAMPLING INFORMATION																	
Sample Date/Time		Canister or Tube ID#	Regulator Serial #	Matrix Type	SAMPLE DESCRIPTION TO APPEAR ON REPORT					TUBE AIR VOLUME			STARTING PRESSURE	ENDING PRESSURE	COLLECTION TIME	Field PID Reading	
Date (dd-mmm-yy)	Time (hh:mm)	(e.g. 060000-XXXX or G0XXXXXXSVI)	CS1200-XXXX or GXX							L							
03-10-23	09:55	0531	0163		Dog Park					X			28.5	5	217	Sunny	
03-10-23	10:02	0051	0311		Fence line					X			27.5	5	230	Sunny	
SPECIAL INSTRUCTIONS/COMMENTS				This Chain of Custody Form is only to be used for Air Quality Samples										SAMPLE CONDITION AS RECEIVED			
				Matrix Type		Soil Gas Vapour = SC					Indoor Air = IA					FROZEN <input type="checkbox"/>	
						Ambient Air = AA					Industrial Hygiene = IH					COLD <input type="checkbox"/>	
																COOLING INITIATED <input type="checkbox"/>	
																AMBIENT <input type="checkbox"/>	
SAMPLED BY: Dawd				DATE & TIME		RECEIVED BY: DW					DATE & TIME: Oct 3					OBSERVATIONS	
RELINQUISHED BY:				DATE & TIME		RECEIVED AT LAB BY:					DATE & TIME: 4/5/2010					Yes <input type="checkbox"/> No <input type="checkbox"/> If yes add SIF	

Notes

1. Quote number must be provided to ensure proper pricing

2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.

3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

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AIR SAMPLING MEDIA REQUEST FORM



COMPLETE Blue sections. Grey sections are for INTERNAL USE ONLY
Form **MUST** be reviewed & Initialed by an ALS Account Manager prior to submission to NAWTR AIRMEDIA REQUEST (nawtr.airmediarequest@alsglobal.com)

SHIPPING INFO: pls ship Purolator Express Wed 27SEP for delivery 28SEPT

CLIENT:	WSP Golder	ORDER TAKEN BY:	Aspringer
CLIENT CONTACT:	Braden Bartnik	ORDER DATE:	21-Sep-23
CLIENT PROJECT:	VOC full fuels	AM REVIEWER:	DSTASTNY
QUOTE #:		CLIENT EXPECT DATE:	28-Sep-23
DELIVERY TO:	WSP Golder, 840 Howe Street, Suite 1000, Vancouver, BC, V6Z 2M1	ORDER FILLED BY:	MP7
TELEPHONE NUMBER:	604-601-6776	PEER REVIEWER:	AO5
SHIP TO/ATTENTION OF:	Braden Bartnik, braden.bartnik@wsp.com	DATE COMPLETED:	9/27/2023

Shipping Method: (Select one)

- Ground (ALS will cover shipping cost)
- Express (Client will be billed for shipping costs, please confirm with Account Manager)
- External Courier
- Pickup at ALS
- Location:
- ALS Drivers

Shipping Company:

- FedEx
- Purolator
- DHL
- UPS
- Other
- N/A

Tracking Number:

Completion of all Sections is Mandatory

1. What type of air is being sampled? **Check all appropriate types in the Additional Information Box below**
 2. Please provide a list of compounds and reporting limits that are required. **Include regulation & target list (attach to email)**
 3. What is your planned canister sampling time? **Options listed under Regulator Times**
 4. Trip blanks will be shipped pre-filled unless specifically requested below.
- Note: If analysis required is DIFFERENT than what is LISTED on this form, email nawtr.airmediarequest@alsglobal.com ASAP to confirm the media was adequately proofed.**

Canister Size/Tube	Regulator Times	Regulator Quantity	Parameters/ Product Codes	Canister/Tube Identification #	Initial Pressure/Flow (mmHg/mL per min)	Controller Identification #
6L Canister	24 hr		VOC-FULL-FUELS-BC-WT_GEL S621	06000-0531	-28.7	CS1200-0311
	12 hr			06000-0051	-28.7	CS1200-0163
	8 hr					
	4 hr	2				
	1 hr					
0.5 hr						
Number of Canisters	2	Trip Blank				
1.4L Canister	60 mins					
	20 mins					
	10 mins					
	4 mins					
	No Restrictor					
Number of Canisters		Trip Blank				
Bottle Vacs	40 mins					
	14 mins					
	7 mins					
	3 mins					
	No Restrictor					
Number of Canisters		Trip Blank				
Passive CarboPak X Tubes						
Diffusive Caps						
Active SVI Tubes						
Calibration Tube for SVI (yes/no)						

Other Sampling Supplies	Quantity	ID #	Additional Information & Special Instructions or Requests												
Pressure Gauge	1	PG29	Check all that apply: <table style="display: inline-table; vertical-align: top; margin-left: 10px;"> <tr> <td><input checked="" type="checkbox"/> Indoor Air</td> <td><input type="checkbox"/> Sub-Slab</td> <td><input type="checkbox"/> Industrial</td> </tr> <tr> <td><input checked="" type="checkbox"/> Ambient Air</td> <td><input type="checkbox"/> Landfill</td> <td><input type="checkbox"/> Commercial</td> </tr> <tr> <td><input type="checkbox"/> Probe/Well</td> <td><input type="checkbox"/> Crawspace</td> <td><input type="checkbox"/> Residential</td> </tr> <tr> <td colspan="3"><input type="checkbox"/> Other (specify):</td> </tr> </table>	<input checked="" type="checkbox"/> Indoor Air	<input type="checkbox"/> Sub-Slab	<input type="checkbox"/> Industrial	<input checked="" type="checkbox"/> Ambient Air	<input type="checkbox"/> Landfill	<input type="checkbox"/> Commercial	<input type="checkbox"/> Probe/Well	<input type="checkbox"/> Crawspace	<input type="checkbox"/> Residential	<input type="checkbox"/> Other (specify):		
<input checked="" type="checkbox"/> Indoor Air	<input type="checkbox"/> Sub-Slab	<input type="checkbox"/> Industrial													
<input checked="" type="checkbox"/> Ambient Air	<input type="checkbox"/> Landfill	<input type="checkbox"/> Commercial													
<input type="checkbox"/> Probe/Well	<input type="checkbox"/> Crawspace	<input type="checkbox"/> Residential													
<input type="checkbox"/> Other (specify):															
Caplok Tool															
Canister Stands															
Valve Adaptor for Soil Vapour															

Chargeable Supplies	Quantity	COMMENTS:
Duplicate Sampler - \$40 can/\$25 tube		order another 2 suma canisters. Same set-up as last time (4 hour sample) and it can be shipped to my office. WSP Global Inc. Suite 1000 - 840 Howe Street Vancouver, BC V6Z 2M1, Canada - no charge for canisters - replacement due to equipment malfunction
Teflon Tubing - \$3 per foot		
-Total length (ft)		
-Length per section (ft)		
Nut & Ferrule Sets - \$6 per set		
Tedlar Bags (contact the lab before SUBMITTING)		
- \$22 unpurged		
- \$40 purged		
Siloxane Kit - \$90 each (Kit: \$45, TD tube prep/rental: \$45)		
Include sampling supplies from other ALS location (yes/no)		
SEE COMMENTS		

RENTAL COSTS: Canister Rental is 2 WEEKS only. After this time additional rental fees apply.
MEDIA REPLACEMENT COSTS: (Media lost or damaged will be charged to the client)
 1) TD SORBENT TUBE & CAPS - \$190.00 2) TD DIFFUSION CAP - \$30.00 3) CAPLOK TOOL SET - \$95.00 4) VACUUM GAUGE - \$240.00 5) BOTTLEVAC CANISTER - \$135.00
 6) PROTECTIVE CAP - \$20.00 7) CANISTER - 6L: \$650.00; 1.4L: \$450.00 8) CONTROLLER - TWA: \$950.00; GRAB: \$850.00 9) CANISTER STAND - \$75.00 10) DUPLICATE SAMPLER - \$350.00