July 31, 2023

Alberta Environment and Protected Areas (AEPA)
Monitoring Branch
11th Floor Oxbridge Place
9820-106 Street
Edmonton, Alberta
T5K 2J6

RE: Monthly Ambient Air Monitoring Report
June 2023
Clean Harbors Canada, Inc. Approval 10348-03-01

To whom it may concern:

Clean Harbors Canada, Inc. (Clean Harbors) is presenting this Monthly Ambient Air Monitoring Report, which was prepared by GHD Limited (Consultant), for the reporting period of June 2023, to Alberta Environment and Protected Areas (AEPA). The Clean Harbors Ryley Industrial Waste Management Facility (Facility) is located in SE 09-050-17 W4M near Ryley, Alberta.

This ambient air monitoring program is conducted in accordance with the requirements outlined in the facility's amended Environmental Protection and Enhancement Act (EPEA) Approval, Approval No. 10348-03-01 (Approval). Clean Harbors' original Ambient Air Monitoring Program for Approval No. 10348-03-00 was initially approved on June 24, 2009. As part of the amended Approval requirements, the Facility submitted an Enhanced Ambient Air Quality Monitoring Program to AEPA (formerly AEP) on September 14, 2022 (no formal approval has been provided by AEPA). Operating under the Approval and the submitted program, Clean Harbors operates the following ambient air monitoring stations:

- Wind
  - Facility Meteorological Station – AEPA Station ID 00010348-C-1
  - Facility Site Station – AEPA Station ID 00010348-C-2
  - Ryley School Station – AEPA Station ID 00010348-C-3
- TSP
  - Facility Site Station – AEPA Station ID 00010348-I-2
  - Ryley School Station – AEPA Station ID 00010348-I-3
  - Highway 854 Lift Station – AEPA Station ID 00010348-I-1
- PM_{10}
  - Highway 854 Lift Station – AEPA Station ID 00010348-I-1

Included in this report are the following:

- Summary of the ambient air monitoring program for June 2023
- Summary of AMD Electronic Transfer System submittals
- Results for Total Suspended Particulate Matter (TSP) reported in µg/m^3
- Results for Particulate Matter $\leq$ 10 microns (PM_{10}) reported in µg/m^3
- Results for metals if the TSP or PM_{10} results were >50 µg/m^3
- Results for Total Non-Methane Organic Compounds (TNMOC) and Volatile Organic Compounds (VOC)
- Wind frequency distribution tables, wind rose and monthly uptime

Should there be any questions and comments regarding this report, please do not hesitate to contact the undersigned.

Yours truly,

CLEAN HARBORS CANADA INC.

Stan Yuha

Stan Yuha

Facility Manager
Ryley Facility

Alberta Environment and Protected Areas (AEPA)
Monthly Ambient Air Monitoring Report
June 2023
Report Completed on July 31, 2023

Clean Harbors Environmental Services Inc.

Approval Number: 10348-03-01

Ryley Facility, Alberta

CLEAN HARBORS CANADA, INC.
P.O. Box 390, Ryley, Alberta T0B 4A0 Telephone (780) 663-3828

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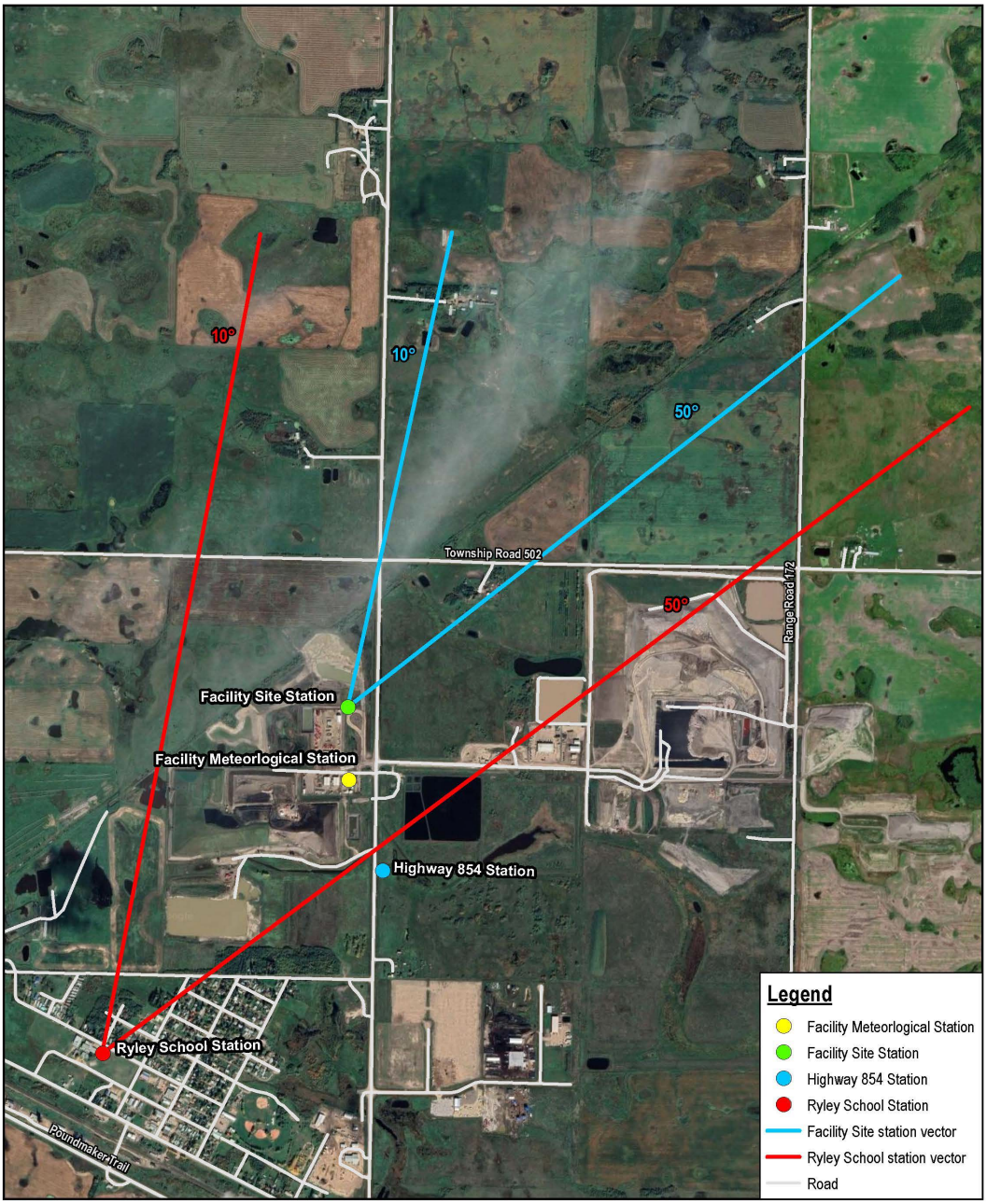
1. Introduction

The Facility operates the following ambient air monitoring stations to assess ambient air quality at and around the Facility as shown in Figure 1.



1. Upwind intermittent ambient air quality monitoring station, known as the Facility Site Station (AEPA Station ID 00010348-I-2), located at 50114 Range Road 173, Ryley, Alberta (53°18'13.11"N and 112°25'5.81"W). At this location, a Tisch TE-5170V VFC High Volume TSP Sampler (TSP Hi-Vol Sampler) is located against the Facility perimeter fence, north of the vehicle staging road.
2. Downwind intermittent ambient air quality monitoring station, known as the Ryley School Station (AEPA Station ID 00010348-I-3), located at 5211 52 Avenue, Ryley, Alberta (53°17'28.99"N and 112°25'55.81"W). At this location, a TSP Hi-Vol Sampler is located on the roof of the Ryley School.

For these two locations, samples are collected and analyzed for the following: total suspended particulate matter (TSP) (typically with diameter less than 35 microns (µm)). Additionally, TSP samples that exceed 50 micrograms per cubic metre (50 µg/m^3) are analyzed for a target list of metals. The samplers are programmed to run for approximately 24-hours. All samples are collected for a total of 24-hours by intermittent sampling when the wind speed is greater than 5 km/hr and wind direction is blowing from the northeast towards the southwest.

3. Intermittent monitoring station, known as the Highway 854 Lift Station (AEPA Station ID 00010348-I-1), located on Secondary Road 854, approximately 350 metres southeast of the Facility (Latitude: 53°17'52.66"N, Longitude: 112°24'57.87"W). At this location, a TSP Hi-Vol Sampler and a Partisol FRM 2000 PM_{10} Sampler (PM_{10} Sampler) will be located on the roof of the lift station. Samples are collected and analyzed for the following: TSP, particulate matter less than or equal to 10 µm in diameter (PM_{10}), volatile organic compounds (VOCs), and total non-methane organic compounds (TNMOC). Additionally, TSP or PM_{10} samples that exceed 50 µg/m^3 are analyzed for a target list of metals. Sampling is conducted once every 6-days for a 24-hour sampling period (midnight to midnight) as required by the Facility's Approval. The 6-day sampling frequency will be in alignment with the Government of Canada, National Air Pollution Surveillance Program (National Air Pollution Surveillance Program – Canada.ca). To correlate PM_{10} data with TSP data, Clean Harbors will continue PM_{10} sampling at the station for a two-year period.

4. Continuous meteorological stations that collect wind speed and wind direction data are also located at the Facility Meteorological Station (AEPA Station ID 00010348-C-1), Upwind Facility Site Station (AEPA Station ID 00010348-C-2), and Downwind Ryley School Station (AEPA Station ID 00010348-C-3). The anemometer equipment used to measure this data includes three R. M. Young 05305-10A Wind Monitor-Aqs.

All sampling and monitoring is conducted in accordance with the Facility's amended Approval (Approval No. 10348-03-01) and the Alberta Air Monitoring Directive, 2016 (AMD).

1.1 Contact Information

As required by AMD Chapter 9, Section 2, contact information is provided for the following Facility personnel and Contractors that assisted with the performance of the Facility's Air Monitoring Program.

Contact Information	
Name	**Mr. Stan Yuha**
Title	Plant Manager
Company	Clean Harbors
Responsibilities	Report Certifier/ETS Submitter
Address	PO Box 390, Ryley, AB T0B 4A0
Phone	780-663-2509
Email	yuha.stan@cleanharbors.com
Name	**Mr. Todd Webb**
Title	Laboratory Chemist
Company	Clean Harbors
Responsibilities	Station Field Operator and Field Sampler
Address	PO Box 390, Ryley, AB T0B 4A0
Phone	780-663-2513
Email	webb.todd@cleanharbors.com
Name	**Mr. Pooya Shariaty**
Title	Senior Air Quality Engineer/Project Manager
Company	GHD Limited
Responsibilities	Senior QA/QC
Address	3445-114th Ave. SE, Suite 103 Calgary, AB
Phone	403-538-7479
Email	Pooya.shariaty@ghd.com
Name	**Ms. Stepheney Davey**
Title	Air Quality Engineer in Training
Company	GHD Limited
Responsibilities	Maintenance/Calibration Services/Report Preparer/ETS Submitter
Address	10250 101 Street NW, Suite 640, Edmonton, AB
Phone	780-229-3687
Email	Stepheney.davey@ghd.com
Company	**Innotech**
Responsibilities	Laboratory Analytical Services
Address	PO Bag 4000, Vegreville, Alberta
Phone	780-632-8211
Email	EAS.Results@albertainnovates.ca

2. Summary of Ambient Air Monitoring Activities

The following ambient air monitoring activities were conducted during the month of June 2023.

Activity	*Completed (Y/N)*	*Date(s)*
Wind – Facility Meteorological Station		
Wind Speed/Direction Sensor Calibration	N	June 30, 2023(1)
Changes to the Wind Speed/Direction Sensor	N	-
Wind – Facility Site Station		
Wind Speed/Direction Sensor Calibration	N	Anemometer Error(2)
Changes to the Wind Speed/Direction Sensor	N	-
Wind – Ryley School Station		
Wind Speed/Direction Sensor Calibration	Y	June 30, 2023
Changes to the Wind Speed/Direction Sensor	N	-
TSP – Facility Site Station		
TSP Hi-Vol Sampler Calibration	Y	June 30, 2023
Changes to the TSP Hi-Vol Sampler	N	-
TSP Samples Collected	Y	June 1 – July 1, 2023
TSP Metal Analysis Conducted	Y	July 1, 2023
TSP Sampler Maintenance Activities	Y	June 30, 2023 July 1, 2023
TSP – Ryley School Station		
TSP Hi-Vol Sampler Calibration	Y	June 30, 2023
Changes to the TSP Hi-Vol Sampler	N	-
TSP Samples Collected	Y	June 1 – July 1, 2023
TSP Metal Analysis Conducted	Y	July 1, 2023
TSP Sampler Maintenance Activities	Y	June 30, 2023 July 1, 2023
TSP, PM_{10}, VOC and TNMOC – Highway 854 Lift Station		
TSP Hi-Vol Sampler Calibration	Y	June 30, 2023
PM_{10} Sampler Calibration	Y	June 30, 2023
Changes to the TSP Hi-Vol Sampler	N	-
Changes to the PM_{10} Sampling Station	N	-
TSP Samples Collected	Y	June 5, 2023 June 11, 2023 June 17, 2023 June 23, 2023 June 29, 2023
PM_{10} Samples Collected	Y	June 5, 2023

Activity	*Completed (Y/N)*	*Date(s)*
		June 11, 2023 June 17, 2023 June 23, 2023 June 29, 2023
VOC and TNMOC Samples Collected	Y	June 5, 2023 June 11, 2023 June 17, 2023 June 23, 2023 June 29, 2023
TSP Metal Analysis Conducted	Y	June 5, 2023 June 11, 2023 June 29, 2023
PM_{10} Metal Analysis Conducted	Y	June 5, 2023 June 11, 2023 June 29, 2023
TSP Sampler Maintenance Activities	Y	June 5, 2023 June 11, 2023 June 17, 2023 June 23, 2023 June 29, 2023 June 30, 2023
PM_{10} Sampler Maintenance Activities	Y	June 5, 2023 June 11, 2023 June 17, 2023 June 23, 2023 June 29, 2023 June 30, 2023
Other		
Dust Suppression Activities	N	-

Note: (1) The wind speed/direction sensor on the Facility Site Meteorological Station was checked for calibration on June 30, 2023 and was shown to be within the allowable tolerances and was then re-installed after calibration.

(2) Instrument is not currently reporting due to anemometer program corruption. The instrument was calibrated prior to install in the Fall of 2014 for voluntary reporting.

3. Summary of Electronic Transfer System (ETS) Submittals

In addition to the June 2023 monthly report, the following summarized items were submitted to the ETS:

3.1 AMD XML Schema

An XML formatted Schema file was submitted to the AEPA via the ETS portal. The XML Schema file contains the results from:

- Wind
  - Facility Meteorological Station – AEPA Station ID 00010348-C-1.
  - Facility Site Station – AEPA Station ID 00010348-C-2.
  - Ryley School Station – AEPA Station ID 00010348-C-3.
- TSP
  - Facility Site Station – AEPA Station ID 00010348-I-2.
  - Ryley School Station – AEPA Station ID 00010348-I-3.
  - Highway 854 Lift Station – AEPA Station ID 00010348-I-1.
- PM_{10}
  - Highway 854 Lift Station – AEPA Station ID 00010348-I-1.

3.2 Ambient Air Monitoring Program Laboratory Reports

One laboratory report in PDF file format was submitted to the AEPA via the ETS portal. The PDF file contains the results from AEPA Station ID 00010348-I-1, AEPA Station ID 00010348-I-2, and AEPA Station ID 00010348-I-3.

3.3 Ambient Air Monitoring Program Calibration Reports

One calibration report in PDF file format was submitted to the AEPA via the ETS portal. The PDF file contains the results from AEPA Station ID 00010348-C-1.

4. Calibration and Operation & Maintenance (O&M) Activities

4.1 Facility Meteorological Station for Wind Speed and Direction (AEPA Station ID 00010348-C-1)

The Facility Meteorological Station was taken down and calibrated on June 30, 2023. The station was shown to be within all allowable tolerances, as required by the manufacturer, and was then re-installed after calibration. Provided in Appendix A is the calibration report and record of installation.

4.2 Facility Site Station for Wind Speed and Direction (AEPA Station ID 00010348-C-2)

The Facility Site Station was last calibrated upon installation. When installed, the station was shown to be within all allowable tolerances, as required by the manufacturer.

During May 2023, Clean Harbors chose to swap the Ryley School Station (AEPA Station ID 00010348-C-3) anemometer with the Facility Site Station (AEPA Station ID 00010348-C-2) anemometer due to AEPA Station ID 00010348-C-3 anemometer program corruption. Per Approval No. 10348-03-01, Clean Harbors is only required to report "a minimum of one (1) meteorological

station in each of the Ryley School and Facility Site intermittent ambient air quality monitoring stations" thus, reporting from Station ID 00010348-C-2 is not required as Clean Harbors reports from the Facility Meteorological Station (Station ID 00010348-C-1).

4.3 Ryley School Station for Wind Speed and Direction (AEPA Station ID 00010348-C-3)

The Ryley School Station was taken down and calibrated on June 30, 2023. The station was shown to be within all allowable tolerances, as required by the manufacturer, and was then re-installed after calibration. Provided in Appendix A is the calibration report.

4.4 Facility Site Station TSP Hi-Vol Sampler (AEPA Station ID 00010348-I-2)

The sampling activities for the Tisch TE-5170V VFC High Volume TSP Sampler (TSP Hi-Vol Sampler) are recorded in the field sampling sheets provided in Appendix B.

On a quarterly basis, performance audits are completed on the TSP Hi-Vol Sampler. A quarterly audit was performed on June 30, 2023.

4.5 Ryley School Station TSP Hi-Vol Sampler (AEPA Station ID 00010348-I-3)

The sampling activities for the TSP Hi-Vol Sampler are recorded in the field sampling sheets provided in Appendix B.

On a quarterly basis, performance audits are completed on the TSP Hi-Vol Sampler. A quarterly audit was performed on June 30, 2023.

4.6 Highway 854 Lift Station TSP Hi-Vol Sampler (AEPA Station ID 00010348-I-1)

The sampling activities for the TSP Hi-Vol Sampler are recorded in the field sampling sheets provided in Appendix B.

On a quarterly basis, performance audits are completed on the TSP Hi-Vol Sampler. A quarterly audit was performed on June 30, 2023.

4.7 Highway 854 Lift Station PM_{10} Sampler (AEPA Station ID 00010348-I-1)

Maintenance activities for the Thermo Scientific™ Partisol 2000i-Federal Reference Method (FRM) PM_{10} Sampler included inlet cleaning and leak checks that were conducted before each sampling event in June 2023. The pre-sampling maintenance activities are recorded in the field sampling sheets provided in Appendix B.

On a quarterly basis, performance audits are completed on the TSP Hi-Vol Sampler. A quarterly audit was performed on June 30, 2023.

5. Ambient Air Monitoring Results

The following section presents the results from the ambient air monitoring program for the Facility Meteorological Station (AEPA Station ID 00010348-C-1), Facility Site Station (AEPA Station ID 00010348-C-2), Ryley School Station (AEPA Station ID 00010348-C-3), Highway 854 Lift Station (AEPA Station ID 00010348-I-1), Facility Site Station (AEPA Station ID 00010348-I-2), and Ryley School Station (AEPA Station ID 00010348-I-3) conducted in June 2023. Where applicable, comparisons were made to Alberta Ambient Air Quality Objectives (AAAQO) for parameters that had 24-hour average objectives. These parameters are TSP and some of the VOCs including o,m,p-xylene, hexane, and toluene. For the parameter objectives with averaging periods other than 24-hours, Section 7.1.2 of the Air Quality Model Guideline was used to covert the measured values to the corresponding AAAQO averaging periods prior to comparison. For all other parameters, AAAQO have not been established.

5.1 Meteorological Data for Wind Speed and Direction

In accordance with the Approval and the AMD, the Facility is required to collect wind speed and directional data continuously for the Facility Meteorological Station, Facility Site Station, and Ryley School Station. Tables 1 - 3 present the hourly and 24-hour average wind speeds, Tables 4 - 6 present the hourly and 24-hour most frequent wind direction data (degrees from north), and Tables 7 - 9 present the Wind Class Frequency Distribution for June 2023 from the Facility Meteorological Station, Facility Site Station, and Ryley School Station, respectively. Appendix C provides graphical representations of the Wind Class Frequency Distribution and the Wind Roses based on Tables 1 – 9.

5.1.1 Facility Meteorological Station Data Verification and Validation and Uptime (AEPA Station ID 00010348-C-1)

Based on the verification and validation process conducted for the meteorological data that was collected in June 2023, it was determined that 99.79 percent of the data is valid, which represents 99.79 percent uptime of the meteorological station. This is above the 90 percent uptime limit required for compliance, as per the Approval.

5.1.2 Facility Site Station Data Verification and Validation and Uptime (AEPA Station ID 00010348-C-2)

As noted above, Clean Harbors chose to swap the Ryley School Station (AEPA Station ID 00010348-C-3) anemometer with the Facility Site Station (AEPA Station ID 00010348-C-2) anemometer due to AEPA Station ID 00010348-C-3 anemometer program corruption. Per Approval No. 10348-03-01, Clean Harbors is only required to report "a minimum of one (1) meteorological station in each of the Ryley School and Facility Site intermittent ambient air quality monitoring stations" thus, reporting from Station ID 00010348-C-2 is not required as Clean Harbors reports from the Facility Meteorological Station (Station ID 00010348-C-1).

5.1.3 Ryley School Station Data Verification and Validation and Uptime (AEPA Station ID 00010348-C-3)

Based on the verification and validation process conducted for the meteorological data that was collected in June 2023, it was determined that 99.70 percent of the data is valid, which represents 99.70 percent uptime of the meteorological station. This is above the 90 percent uptime limit required for compliance, as per the Approval.

5.2 TSP Concentrations

AAAQO are specified for TSP at 100 µg/m^3 (24-hour averaging period). In accordance with the Facility's Approval, TSP samples that exceed 50 µg/m^3 are analyzed for a target list of metals. Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

5.2.1 Facility Site Station (AEPA Station ID 00010348-I-2)

Table 10 presents the results of the sampling conducted for TSP from the Facility Site Station.

5.2.2 Ryley School Station (AEPA Station ID 00010348-I-3)

Table 11 presents the results of the sampling conducted for TSP from the Ryley School Station. The TSP sample collected in June 2023 was shown to have an elevated TSP concentration of 113.923 µg/m^3, which is above the 100 µg/m^3 AAAQO threshold. It should be noted that Alberta experienced an unprecedented number of wildfires during this time which led to numerous regional air quality advisories resulting from wildfire smoke. The TSP exceedance for June 2023 is likely a result of the background air quality and not related to the Facility. As such, no contravention form was submitted due to this exceedance.

5.2.3 Highway 854 Lift Station (AEPA Station ID 00010348-I-1)

Table 12 presents the results of the sampling conducted for TSP from the Highway 854 Lift Station.

5.3 PM_{10} Concentrations

AAAQO are specified for TSP at 100 µg/m^3 and Particulate Matter $\leq$ 2.5 microns ($PM_{2.5}$) at 29 µg/m^3 (24-hour averaging period). There is currently no AAAQO specified for PM_{10} for a 24-hour averaging period in Alberta. To correlate PM_{10} data with TSP data, Clean Harbors will continue PM_{10} sampling at the station for a two-year period. In accordance with the Facility's Approval, PM_{10} samples that exceed 50 µg/m^3 are analyzed for a target list of metals. Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

5.3.1 Highway 854 Lift Station (AEPA Station ID 00010348-I-1)

Table 13 presents the results of the sampling conducted for PM_{10}.

5.4 VOC and TNMOC Concentrations

There are three VOC parameters that have corresponding AAAQO with 24-hour averaging periods including o,p,m-xylene, hexane and toluene. Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

5.4.1 Highway 854 Lift Station (AEPA Station ID 00010348-I-1)

Table 14 presents the VOC and TNMOC concentrations measured in June 2023. There were no exceedances for the parameters with AAAQO in June 2023.

5.5 Metal Concentrations

In accordance with the Facility's Approval, if collected TSP or PM_{10} samples show exceedances over 50 µg/m^3 after gravimetric analysis, a subsequent filter particulate analysis is done using inductively coupled plasma mass spectroscopy (ICP-MS) for 21 trace elements. There are four parameters that have corresponding AAAQO with 1 hour averaging periods including arsenic, chromium, lead, and nickel. The sample results were converted to a 1-hour averaging period for comparison with the sample AAAQO. If metal analysis was conducted, Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

5.5.1 Facility Site Station (AEPA Station ID 00010348-I-2)

The TSP sample collected in June 2023 was above 50 µg/m^3 and as such, analysis for metals was conducted on the sample. Facility Test #103 (HV-23-02-05) was shown to have an elevated TSP concentration of 59.663 µg/m^3, which is over the 50 µg/m^3 threshold. This sample was sent for additional analysis and the results for this test can be found in Table 15 of this report. There were no exceedances for the parameters with AAAQO in June 2023.

5.5.2 Ryley School Station (AEPA Station ID 00010348-I-3)

The TSP sample collected in June 2023 was above 50 µg/m^3 and as such, analysis for metals was conducted on the sample. School Test #103 (HV-23-02-06) was shown to have an elevated TSP concentration of 113.923 µg/m^3, which is over the 50 µg/m^3 threshold. This sample was sent for additional analysis and the results for this test can be found in Table 16 of this report. There were no exceedances for the parameters with AAAQO in June 2023.

5.5.3 Highway 854 Lift Station (AEPA Station ID 00010348-I-1)

TSP

Three of the TSP samples collected in June 2023 were above 50 µg/m^3 and as such, analysis for metals was conducted on the samples. Facility Test #845 (HVF-23-03-05), Facility Test #846 (HVF-23-03-13), and Facility Test #849 (HVF-23-03-17) were shown to have elevated TSP concentrations of 85.962 µg/m^3, 68.770 µg/m^3, and 59.346 µg/m^3, respectively, which are over the 50 µg/m^3 threshold. These samples were sent for additional analysis and the results for Test #845, Test

#846, and Test #849 can be found in Table 17 of this report. There were no exceedances for the parameters with AAAQO in June 2023.

PM_{10}

None of the PM_{10} samples collected in June 2023 was above 50 µg/m^3. The PM_{10} concentrations measured for Facility Test #845 (C9700087), Facility Test #843 (C1170495), and Facility Test #849 (C1170491) were less than the 50 µg/m^3 threshold, 34.489 µg/m^3, 44.619 µg/m^3, and 31.757 µg/m^3, respectively; however, as the TSP concentrations for these samples were above the 50 µg/m^3 threshold (as noted above), the corresponding PM_{10} samples were sent for additional analysis. The results for Test #845, Test #846, and Test #849 can be found in Table 18 of this report. There were no exceedances for the parameters with AAAQO in June 2023.

The remainder of the TSP and PM_{10} samples collected in June 2023 were below 50 µg/m^3 and as such analysis for metals was not conducted on those samples.

5.6 Dust Suppression

There were no dust suppression activities, which include using leachate spread on the surface of the active landfill, conducted during June 2023.

6. Conclusions

The following summarizes the Ambient Air Monitoring Program that was conducted in June 2023.

1 During June 2023, the Facility Meteorological Station (AEPA Station ID 00010348-C-1) operated at 99.79 percent uptime. Based on the data verification and validation procedure conducted, this is in compliance with the minimum 90 percent uptime required by the AMD.

2 During June 2023, the continuous Facility Site wind Station was not operational. Per the approval, reporting from Station ID 00010348-C-2 is not required as Clean Harbors reports from the Facility Meteorological Station.

3 During June 2023, the continuous Ryley School wind Station operated at 99.70 percent uptime. Based on the data verification and validation procedure conducted, this is in compliance with the minimum 90 percent uptime required by the AMD.

4 The TSP concentration measured at the intermittent Facility Site Station from June 1, 2023 to July 1, 2023 was 59.663 µg/m^3.

5 The TSP concentration measured at the intermittent Ryley School Station from June 1, 2023 to July 1, 2023 was 113.923 µg/m^3. The AAAQO exceedance for this month is likely a result of the background air quality due to wildfire smoke and not related to the Facility.

6 The TSP concentrations measured at the intermittent Highway 854 Lift Station (AEPA Station ID 00010348-I-1) on June 5, June 11, June 17, June 23, and June 29 were 85.962 µg/m^3, 68.770 µg/m^3, 49.157 µg/m^3, 43.299 µg/m^3, and 59.346 µg/m^3, respectively.

7 The PM_{10} concentrations measured at the intermittent Highway 854 Lift Station (AEPA Station ID 00010348-I-1) on June 5, June 11, June 17, June 23, and June 29 were 34.489 µg/m^3, 44.619 µg/m^3, 12.115 µg/m^3, 20.929 µg/m^3, and 31.757 µg/m^3, respectively.

8 Based on the VOC and TMNOC results measured at the intermittent Highway 854 Lift Station (AEPA Station ID 00010348-I-1), no exceedances were detected for parameters with applicable AAAQO, which included o,m,p-xylene, hexane and toluene. There are no applicable AAAQO for other parameters that were monitored in June 2023.

9 The TSP concentration measured for Facility Test #103 (HV-23-02-05), conducted from June 1, 2023 to July 1, 2023, was above the 50 µg/m^3 threshold outlined in the Facility's approval. Because of the elevated TSP concentration, this sample was sent for additional analysis of metals. The results of this test showed that all parameters were below any applicable AAAQO (arsenic, chromium, lead, and nickel).

10 The TSP concentration measured for School Test #102 (HV-23-02-06), conducted from June 1, 2023 to July 1, 2023, was above the 50 µg/m^3 threshold outlined in the Facility's approval. Because of the elevated TSP concentration, this sample was sent for additional analysis of metals. The results of this test showed that all parameters were below any applicable AAAQO (arsenic, chromium, lead, and nickel).

11 The TSP concentrations measured for Facility Test #845 (HVF-23-03-05), Facility Test #846 (HVF-23-03-13), and Facility Test #849 (HVF-23-03-17) were over the 50 µg/m^3 threshold outlined in the Facility's approval. Because of the elevated TSP concentration, these samples were sent for additional analysis of metals. The results of these tests showed that all parameters for Test #845, Test #846, and Test #849 were below any applicable AAAQO (arsenic, chromium, lead, and nickel).

12 None of the PM_{10} concentrations measured were over the 50 µg/m^3 threshold outlined in the Facility's approval. The PM_{10} concentrations measured for Facility Test #845 (C9700087), Facility Test #843 (C1170495), and Facility Test #849 (C1170491) were less than the 50 µg/m^3 threshold; however, as the TSP concentrations for these samples were above the 50 µg/m^3 threshold, the corresponding PM_{10} samples were sent for additional analysis. The results of these tests showed that all parameters for Test #845, Test #846, and Test #849 were below any applicable AAAQO (arsenic, chromium, lead, and nickel).

Clean Harbors will continue to perform their Facility's Ambient Air Monitoring Program in accordance with their Approval and the AMD and evaluate the data to determine impacts on the ambient air quality.

7. Certification

Per the requirements of AMD, Chapter 9, Section 2.3, the following certification is provided for the June 2023 Ambient Air Monitoring Report.

"I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements."

Stan Yuha

Plant Manager/Report Certifier

END OF REPORT

Tables

TABLE 1

Average Wind Speed (metres/second)
AEPA Station ID 00010348-C-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Ryley Wind Direction Data (degrees, blowing from) - Month of June 2023																								
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	6.8	5.2	4.0	4.5	5.4	6.3	5.3	6.3	6.5	6.0	7.1	6.0	5.8	6.0	5.5	5.0	5.1	5.3	5.6	5.2	5.1	3.9	3.5	3.4
2	3.5	4.0	3.8	3.0	3.1	2.7	2.6	2.9	2.5	1.8	2.8	3.9	4.6	4.6	4.1	3.9	3.5	3.8	3.8	3.9	2.3	1.9	2.3	1.8
3	1.8	2.4	1.2	0.7	0.6	1.2	1.6	1.7	2.2	1.7	2.8	2.9	3.5	4.0	4.3	4.0	4.1	4.8	6.5	5.6	3.4	2.8	3.6	3.5
4	2.3	0.4	0.9	0.9	0.8	0.9	0.8	1.1	1.9	2.4	2.7	2.2	2.1	3.4	4.6	4.6	4.1	5.2	5.4	5.0	4.3	3.4	2.9	2.6
5	2.6	2.6	2.1	1.4	2.3	6.5	7.0	6.1	6.1	4.1	2.9	3.2	2.9	2.0	1.5	3.1	4.3	7.0	8.1	9.3	10.0	10.7	11.0	9.7
6	7.9	7.2	5.5	3.3	3.4	3.8	2.6	3.1	3.5	4.1	3.5	3.4	2.4	2.0	2.1	2.1	2.1	2.8	2.8	1.9	2.4	1.4	1.7	2.4
7	3.4	2.8	2.8	3.7	3.6	2.5	4.2	3.6	4.0	5.4	4.6	4.3	4.3	4.7	3.9	3.4	3.7	4.4	4.3	4.3	3.2	2.7	2.0	1.9
8	2.6	1.9	1.6	3.0	2.9	1.7	2.2	2.4	3.7	4.7	5.0	5.1	5.1	5.4	5.0	4.4	5.4	6.1	6.8	7.0	6.1	5.0	4.8	3.7
9	3.8	3.7	3.3	3.2	3.5	4.0	3.5	4.9	6.4	6.4	7.3	7.0	6.2	5.9	6.0	6.0	5.9	6.1	6.1	5.3	4.2	4.7	4.5	3.6
10	4.6	5.8	6.0	5.7	5.1	4.2	5.1	6.7	7.4	7.1	6.7	7.6	8.6	8.5	8.6	8.5	8.3	7.9	8.4	6.7	5.6	5.0	6.3	6.2
11	4.7	3.5	3.2	3.0	2.8	2.7	2.4	3.1	3.6	5.8	5.6	5.9	6.1	5.7	5.7	5.2	5.5	6.3	7.2	8.0	4.8	3.9	2.7	3.1
12	2.9	3.3	3.6	3.8	3.4	3.5	3.3	2.9	3.6	3.2	3.1	3.1	2.5	2.3	2.2	2.5	2.0	2.3	1.9	2.4	2.7	3.2	3.9	3.6
13	3.6	3.9	3.7	3.9	4.3	2.8	3.1	1.4	2.8	4.6	5.9	5.7	6.9	8.0	10.0	11.1	10.0	8.6	8.3	8.9	6.1	9.6	9.4	6.0
14	4.7	4.1	3.7	4.6	6.1	6.5	7.5	6.7	7.4	8.0	8.4	7.6	8.0	8.9	7.1	7.6	8.1	8.2	10.2	9.7	9.2	9.3	9.6	9.1
15	8.3	7.2	9.7	10.5	9.5	10.1	9.9	12.7	14.6	13.1	12.3	11.1	11.1	10.2	10.2	10.3	9.7	8.2	6.1	4.3	1.9	0.5	1.6	2.3
16	3.3	3.7	3.2	3.7	3.8	2.2	3.2	4.6	5.9	5.6	5.6	6.0	6.7	7.1	5.9	5.0	4.0	5.8	4.3	1.2	1.5	8.7	6.4	3.0
17	2.4	2.8	2.3	3.0	4.9	4.1	3.2	3.4	3.7	4.8	4.3	4.0	3.2	2.5	2.9	2.6	3.5	5.2	7.4	4.1	4.1	2.7	3.0	3.0
18	2.6	3.0	3.6	5.4	5.7	5.5	5.1	4.0	5.9	5.6	7.4	8.5	8.4	6.7	7.4	5.4	6.6	5.7	4.0	3.5	3.1	4.4	6.6	8.0
19	8.1	5.0	5.4	6.1	5.6	5.3	5.0	5.0	4.6	3.8	5.7	6.4	5.2	4.2	5.2	4.7	2.8	3.1	3.2	2.1	4.3	6.4	6.6	6.7
20	6.6	6.3	6.1	5.7	5.1	7.1	7.3	6.3	6.7	6.4	7.2	7.2	7.1	7.6	8.8	9.2	10.2	8.9	7.1	6.1	3.7	3.5	3.0	2.6
21	3.1	3.8	3.4	3.4	2.3	2.4	2.6	3.2	3.1	3.0	2.0	2.4	2.9	4.7	3.6	5.0	3.8	5.5	3.2	3.2	1.8	0.6	2.7	3.8
22	4.4	4.9	4.9	5.3	5.6	5.6	5.0	4.4	3.4	4.0	4.4	5.0	3.6	3.5	2.9	2.9	2.9	2.4	2.4	1.5	1.7	1.7	2.0	2.1
23	1.9	1.4	1.6	1.9	1.0	2.7	2.8	1.6	2.1	2.6	2.8	2.0	1.7	1.6	2.0	2.3	2.2	2.6	1.7	1.9	1.2	1.2	1.9	1.9
24	1.6	0.7	0.5	0.9	1.0	1.0	1.4	0.8	2.7	1.8	0.9	1.6	1.8	2.6	3.4	3.0	3.9	3.7	3.8	2.8	1.7	0.6	1.5	3.1
25	2.7	2.7	3.7	4.4	4.8	4.0	4.0	4.6	5.9	6.4	6.3	6.2	6.0	6.3	6.2	5.8	6.1	5.1	4.8	9.3	6.1	4.6	2.2	1.4
26	1.5	1.3	2.7	2.7	2.6	2.5	3.7	2.8	2.5	2.9	2.9	4.2	3.6	3.1	3.3	2.7	3.1	2.6	2.9	1.8	1.3	2.3	2.8	3.7
27	4.5	3.1	3.4	3.1	2.9	3.1	2.2	2.5	2.5	1.9	1.7	1.6	1.5	2.0	3.5	2.4	3.4	6.3	4.2	2.1	1.8	1.0	1.1	1.9
28	3.0	4.3	2.9	1.9	0.9	0.3	1.1	0.5	1.1	0.9	1.6	1.6	2.0	2.4	2.4	2.3	2.0	2.7	2.7	2.9	2.4	3.2	3.4	3.5
29	4.0	4.9	5.0	4.8	3.0	2.9	3.3	4.1	4.8	4.6	4.6	5.5	4.3	3.8	3.3	2.8	2.3	1.9	2.0	1.9	1.5	1.3	3.4	2.6
30	2.7	1.5	1.9	3.0	3.3	2.6	2.4	1.7	2.0	2.9	2.0	1.7	(C)	(C)	(C)	2.8	2.7	2.5	2.1	2.1	1.4	2.0	2.0	2.2

Notes:
- On June 30, 2023 the unit was calibrated
- (C) - Equipment Calibration

TABLE 2

Average Wind Speed (metres/second)
AEPA Station ID 00010348-C-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Ryley Wind Speed Data (m/s) - Month of June 2023																							
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
2	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
3	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
4	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
5	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
6	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
7	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
8	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
9	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
10	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
11	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
12	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
13	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
14	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
15	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
16	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
17	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
18	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
19	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
20	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
21	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
22	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
23	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
24	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
25	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
26	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
27	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
28	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
29	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
30	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)

Notes:
- (X) - Equipment Malfunction

TABLE 3

Average Wind Speed (metres/second)
AEPA Station ID 00010348-C-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Ryley Wind Speed Data (m/s) - Month of June 2023																							
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.1	2.9	2.0	2.6	3.0	3.1	2.4	2.8	3.2	3.2	3.5	2.4	2.9	2.3	1.8	2.3	2.4	2.7	3.1	2.6	2.8	2.5	1.6	1.0
2	1.3	1.2	1.4	1.5	1.7	1.1	1.5	1.9	1.5	1.2	1.7	2.1	2.2	2.3	2.7	2.4	2.2	2.2	1.8	1.9	0.8	0.6	0.6	0.3
3	0.8	1.2	0.6	0.4	0.4	0.5	0.7	0.9	1.1	1.0	1.6	1.8	2.3	2.8	3.2	3.0	2.9	3.6	4.7	4.0	2.5	1.5	1.8	1.6
4	1.4	0.3	0.4	0.0	0.1	0.4	0.7	1.2	1.6	2.2	2.1	2.0	2.7	2.8	4.3	4.2	3.7	4.5	4.6	4.4	3.4	2.6	2.2	2.2
5	2.4	2.6	1.5	0.9	1.2	3.7	3.1	2.5	2.5	1.9	1.8	1.7	1.8	1.4	1.2	2.3	2.6	4.3	4.9	5.6	5.7	6.1	5.5	5.3
6	4.2	3.8	3.1	2.3	2.2	2.5	0.9	1.8	1.9	2.1	1.9	2.3	1.6	1.4	1.3	1.2	1.5	1.7	1.5	1.3	1.7	0.4	0.9	1.7
7	3.0	2.3	2.5	2.7	2.5	2.9	3.5	3.6	3.9	4.3	3.0	3.3	3.3	3.5	2.1	2.2	1.9	2.5	3.1	2.3	0.7	0.8	0.6	0.5
8	1.4	0.6	0.9	1.2	0.9	0.2	1.0	1.3	1.9	2.2	2.6	3.0	3.3	3.3	3.2	3.0	2.7	3.4	4.6	4.5	3.6	2.8	2.7	2.2
9	2.3	2.3	1.9	2.2	2.8	3.1	3.3	4.2	5.2	6.0	5.3	6.0	4.7	4.9	4.8	5.2	5.1	5.1	4.9	4.3	3.3	3.6	3.5	3.4
10	4.1	4.6	5.1	5.0	4.4	4.4	5.6	6.0	6.5	6.4	6.5	6.6	7.6	7.5	7.5	7.4	6.7	6.8	7.0	5.6	4.0	3.3	5.0	5.2
11	3.9	3.2	3.2	3.0	2.5	2.1	2.1	2.3	1.8	3.3	3.1	3.3	3.2	3.3	3.3	3.2	3.7	3.7	4.5	4.4	3.1	2.7	1.5	1.5
12	0.9	1.7	2.0	2.0	1.6	1.5	1.6	1.8	2.1	1.6	1.8	2.0	1.5	1.7	1.6	1.7	1.6	1.1	1.1	1.1	1.0	1.5	2.5	2.7
13	3.0	3.0	2.9	3.7	3.7	3.0	2.0	1.0	2.5	3.8	4.6	4.6	5.8	6.9	7.8	8.7	6.8	6.2	6.0	6.3	4.8	6.5	5.2	2.9
14	2.2	1.8	2.4	2.9	3.7	4.8	4.6	4.4	4.4	4.3	5.2	5.0	4.8	4.6	4.2	3.7	4.1	5.2	5.1	5.0	4.7	3.9	3.5	3.1
15	3.0	2.5	4.3	4.6	5.1	4.8	6.1	6.8	7.9	7.3	6.5	6.3	6.0	6.3	6.0	5.7	5.3	4.1	3.8	2.2	0.5	0.1	0.4	1.4
16	1.4	2.1	1.8	3.3	2.9	2.6	3.0	4.5	4.8	4.6	4.5	5.1	5.9	5.7	4.4	3.8	3.1	3.6	1.8	0.6	0.7	5.0	2.6	1.6
17	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.5	2.2	3.0	2.5	2.3	2.2	1.7	1.6	1.6	2.2	2.9	4.8	1.9	1.7	1.2	2.0	1.5
18	1.5	1.0	2.4	3.2	2.6	2.5	2.2	1.7	2.1	1.8	3.9	3.5	3.6	2.7	3.1	2.6	3.8	2.6	2.0	1.6	1.4	2.4	3.5	3.9
19	3.1	2.6	4.4	5.0	4.6	4.1	3.8	3.9	4.1	3.1	4.1	5.4	4.2	3.3	4.3	4.0	1.4	1.7	1.1	0.6	2.1	2.3	2.8	3.8
20	3.4	3.4	3.4	3.5	3.1	3.7	3.6	3.5	2.6	3.1	3.3	4.0	3.5	3.8	4.0	4.6	4.2	3.9	2.7	2.5	2.0	1.9	1.3	1.0
21	1.4	0.7	1.5	1.8	0.8	0.2	0.4	1.0	1.3	1.1	1.4	1.0	1.6	2.9	1.9	2.8	1.6	2.9	1.8	2.2	0.9	0.4	0.6	0.7
22	0.6	1.0	1.1	0.7	0.9	1.0	0.5	0.6	0.5	0.9	1.4	1.9	1.6	1.8	1.6	2.5	2.5	2.4	1.2	1.4	1.6	1.5	1.7	1.7
23	1.6	1.1	1.1	1.0	0.4	2.2	2.2	1.1	1.6	2.4	2.3	1.8	1.1	1.1	1.4	1.6	0.9	0.9	0.8	0.8	0.7	0.8	0.8	0.3
24	0.6	0.1	0.2	0.4	0.4	0.2	0.6	0.5	1.7	1.1	1.0	1.4	1.3	1.5	1.7	2.0	1.5	1.0	0.9	0.9	0.9	0.1	1.4	1.1
25	1.0	0.7	1.1	0.6	0.3	0.6	1.4	2.5	3.8	3.7	3.6	3.7	3.3	2.6	3.4	2.9	3.0	2.9	2.6	7.7	5.1	3.3	1.6	0.4
26	0.4	0.8	2.3	2.1	1.9	1.8	0.7	0.4	0.9	1.5	2.4	3.7	2.9	2.1	2.6	2.2	2.0	1.8	1.8	1.2	1.0	1.7	1.5	0.3
27	0.2	1.2	0.2	0.8	0.7	1.5	1.3	1.6	1.5	1.4	1.1	1.1	1.3	1.4	1.0	1.3	1.8	3.1	1.8	1.2	0.7	0.2	0.3	0.4
28	0.2	0.4	0.3	0.2	0.3	0.0	0.2	0.5	0.5	0.9	1.4	1.3	1.8	1.7	2.3	1.7	2.0	2.4	2.4	2.2	2.1	2.6	2.5	3.3
29	3.6	4.2	4.2	4.1	2.9	2.7	3.2	4.3	4.5	3.6	4.3	4.6	4.2	3.8	2.8	2.1	1.5	1.1	1.2	0.6	0.6	0.7	2.1	0.8
30	1.2	0.5	0.9	1.3	1.5	1.5	1.5	0.8	1.3	(C)	(C)	(C)	1.4	1.5	1.5	1.8	1.4	1.4	1.1	1.0	0.6	1.3	0.9	1.5

Notes:
- On June 30, 2023 the unit was calibrated
- (C) - Equipment Calibration

TABLE 4

Average Wind Direction (degrees from North)
AEPA Station ID 00010348-C-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Ryley Wind Direction Data (degrees, blowing from) - Month of June 2023																								
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	38	326	338	329	337	338	342	337	339	342	345	349	346	203	249	346	346	341	334	328	329	308	290	283
2	285	280	284	298	301	292	300	302	312	323	298	284	256	301	246	97	171	50	49	30	14	42	98	131
3	121	114	122	166	240	280	307	222	109	66	69	69	69	83	91	86	100	101	106	102	103	99	86	91
4	109	150	163	259	266	214	152	203	198	177	180	209	173	166	153	156	159	162	146	147	155	142	135	135
5	140	148	172	220	290	327	349	266	277	115	258	317	310	188	153	246	325	329	322	321	322	322	331	335
6	342	330	326	314	303	302	289	311	311	316	215	267	238	177	211	233	199	231	224	201	204	214	163	162
7	166	162	179	186	188	177	199	207	206	208	216	212	206	216	231	232	264	291	306	333	300	11	31	73
8	132	176	266	320	316	155	65	69	70	77	71	80	75	81	81	78	74	80	106	102	90	96	98	102
9	104	106	107	120	121	124	135	141	144	153	138	136	135	132	130	123	128	126	124	126	124	126	133	133
10	134	143	149	155	154	151	162	156	157	161	162	157	158	157	156	163	158	170	155	153	143	141	149	166
11	175	163	148	162	148	170	175	179	250	332	333	305	310	306	313	310	320	324	326	321	322	314	310	299
12	295	299	303	306	301	297	293	305	256	87	72	126	75	189	194	202	145	84	82	54	69	100	110	126
13	139	148	145	157	156	154	227	195	155	135	142	141	137	145	149	134	116	111	105	110	120	277	326	338
14	334	318	303	309	326	322	319	320	323	330	320	318	320	328	335	329	281	323	335	341	341	347	329	238
15	215	268	349	348	345	335	334	330	331	326	328	324	327	321	318	325	329	328	316	248	257	235	163	185
16	200	213	203	195	205	194	202	200	200	196	195	201	196	202	215	209	210	237	314	175	172	268	274	268
17	281	275	270	247	245	248	266	249	295	321	325	310	301	286	119	82	94	45	279	341	100	157	117	100
18	110	88	109	96	85	85	76	86	68	74	88	75	76	75	79	81	93	47	42	52	49	26	26	43
19	50	90	186	178	165	152	146	144	137	148	165	155	148	149	147	164	191	305	291	263	187	186	321	337
20	340	340	328	322	324	333	341	348	299	336	345	342	343	343	345	342	343	346	347	332	330	298	317	296
21	295	274	290	319	295	273	251	234	239	244	244	252	281	310	298	312	264	321	303	311	295	208	230	239
22	237	234	232	231	231	232	236	240	253	245	238	231	247	260	238	208	200	192	213	199	180	180	175	169
23	163	185	263	159	140	138	159	93	103	124	128	169	187	208	263	248	234	253	232	235	217	200	186	178
24	172	191	221	197	209	255	204	239	313	281	273	223	232	235	234	231	253	248	254	281	315	289	177	208
25	206	217	267	256	256	274	280	289	318	325	324	334	304	300	320	321	317	322	312	166	195	183	190	234
26	189	174	147	164	175	199	236	249	245	230	207	194	203	219	215	223	193	223	215	221	201	203	220	236
27	249	292	260	284	292	300	322	329	297	308	150	268	203	289	262	275	308	260	25	43	47	120	291	283
28	274	273	287	284	134	142	196	219	274	110	124	116	128	132	109	128	159	159	158	187	166	152	159	163
29	161	171	168	175	164	169	165	165	170	180	177	183	186	184	188	190	234	222	282	315	339	315	320	171
30	317	159	226	296	296	326	274	322	271	331	170	197	(C)	(C)	(C)	279	280	103	28	56	36	84	99	104

Notes:
- On June 30, 2023 the unit was calibrated
- (C) - Equipment Calibration

TABLE 5

Average Wind Direction (degrees from North)
AEPA Station ID 00010348-C-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Ryley Wind Direction Data (degrees, blowing from) - Month of June 2023																								
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
2	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
3	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
4	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
5	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
6	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
7	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
8	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
9	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
10	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
11	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
12	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
13	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
14	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
15	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
16	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
17	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
18	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
19	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
20	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
21	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
22	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
23	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
24	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
25	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
26	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
27	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
28	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
29	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
30	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)

Notes:
- (X) - Equipment Malfunction

TABLE 6

Most Frequent Wind Direction (degrees from North)
AEPA Station ID 00010348-C-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Ryley Wind Direction Data (degrees, blowing from) - Month of June 2023																								
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	83	321	330	319	329	331	306	326	328	331	333	341	334	260	284	331	332	331	328	322	320	303	291	284
2	288	284	286	293	301	289	297	308	301	283	278	258	241	248	275	166	143	70	51	25	58	45	119	134
3	108	106	101	215	282	291	305	205	175	85	49	57	82	91	106	95	107	105	109	109	104	103	92	94
4	116	169	254	296	276	175	135	207	206	191	204	180	154	172	160	148	153	152	136	141	145	134	133	133
5	136	137	182	215	263	322	340	274	261	130	264	249	293	227	240	217	282	322	319	312	318	317	322	327
6	330	324	317	304	298	303	276	316	307	300	224	281	163	231	261	252	194	243	224	197	201	206	146	154
7	155	154	155	164	160	173	199	214	212	211	222	202	213	206	231	238	258	300	311	314	246	92	49	98
8	112	192	293	331	250	108	152	71	62	68	70	78	82	88	75	67	59	81	103	104	97	97	99	100
9	100	102	106	110	113	115	130	135	137	141	133	137	131	127	124	127	128	122	126	124	123	128	134	135
10	134	136	141	145	144	142	151	147	149	150	150	147	148	149	152	154	159	160	148	141	138	133	140	156
11	161	155	152	155	156	171	163	170	263	318	325	287	297	319	324	324	320	323	321	322	316	309	300	291
12	278	296	300	298	297	292	293	309	280	132	83	117	152	186	187	214	136	213	153	107	72	101	109	120
13	132	137	139	142	142	145	230	176	137	127	136	132	131	138	139	128	115	112	108	112	116	298	319	330
14	325	301	301	302	318	311	313	311	319	322	316	312	317	321	324	309	286	316	325	325	328	333	344	288
15	288	261	335	335	330	324	323	319	322	320	320	317	319	312	312	322	325	328	322	263	204	186	154	178
16	167	199	175	194	205	201	212	200	200	196	203	204	197	210	218	211	212	252	324	272	296	327	243	291
17	270	267	256	287	245	245	245	252	312	308	305	306	298	232	163	68	85	45	315	322	75	158	119	92
18	110	74	107	96	95	83	80	71	61	60	94	81	87	79	86	91	84	33	28	38	31	21	21	35
19	40	99	181	163	151	141	137	134	132	140	161	148	141	138	139	153	254	313	287	277	288	258	339	328
20	330	328	317	313	314	325	330	331	322	333	332	328	331	330	332	329	331	335	339	323	314	297	289	296
21	292	280	293	313	279	236	205	243	229	246	225	253	296	304	294	301	259	317	308	311	275	267	251	249
22	259	247	245	246	253	248	238	252	262	261	251	246	250	244	239	205	181	176	226	174	158	157	159	152
23	150	180	236	138	176	126	144	86	96	118	121	157	216	212	224	226	230	266	242	242	192	173	167	157
24	155	264	225	200	216	244	186	264	313	198	169	195	208	234	219	231	245	257	256	282	311	229	181	182
25	201	232	285	236	280	293	289	295	312	318	322	324	328	276	330	331	304	321	312	156	202	167	164	227
26	180	140	133	150	158	197	233	251	255	229	203	191	195	222	213	211	211	216	216	214	208	211	230	272
27	203	278	257	292	285	297	326	312	308	309	216	227	161	272	257	268	303	222	59	35	33	217	284	277
28	284	295	292	286	140	231	249	233	272	83	92	96	132	125	109	102	140	145	165	170	149	140	143	145
29	152	153	154	153	151	155	153	153	154	165	161	168	175	170	198	183	211	242	293	325	275	303	299	219
30	312	150	252	291	294	277	309	295	286	(C)	(C)	(C)	267	255	244	295	281	184	67	67	73	88	108	96

Notes:
- On June 30, 2023 the unit was calibrated
- (C) - Equipment Calibration

TABLE 7

Wind Frequency Distribution
AEPA Station ID 00010348-C-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Frequency Distribution Report: Ryley, Alberta - June 2023										
Direction	Angle	Wind Speed (m/s) and Number of Occurences (minutes)							%	Total Occurrences by Direction
		< 0.5	0.5 to < 2.1	2.1 to < 3.6	3.6 to < 5.7	5.7 to < 8.8	8.8 to < 11.1	>= 11.1		
North	> 337.5 - 22.5	107	976	964	1461	1897	483	139	14.0%	6027
Northeast	> 22.5 - 67.5	82	559	655	623	303	41	2	5.2%	2265
East	> 67.5 - 112.5	71	477	1091	1239	852	151	20	9.0%	3901
Southeast	> 112.5 - 157.5	80	835	1703	1950	1393	237	76	14.5%	6274
South	> 157.5 - 202.5	115	1539	2082	1664	897	133	28	14.9%	6458
Southwest	> 202.5 - 247.5	99	879	1499	1611	316	6	0	10.2%	4410
West	> 247.5 - 292.5	72	967	1710	1081	71	16	7	9.1%	3924
Northwest	> 292.5 - 337.5	112	1183	2798	2281	2128	810	538	22.8%	9850
Missing/Invalid Hours									0.2%	91
Total Occurences by Speed		738	7415	12502	11910	7857	1877	810		**43200**
Occurences by %		1.7%	17.2%	28.9%	27.6%	18.2%	4.3%	1.9%	**100.00%**	

TABLE 8

Wind Frequency Distribution
AEPA Station ID 00010348-C-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Frequency Distribution Report: Ryley, Alberta - June 2023										
Direction	Angle	Wind Speed (m/s) and Number of Occurences (minutes)							%	Total Occurrences by Direction
		< 0.5	0.5 to < 2.1	2.1 to < 3.6	3.6 to < 5.7	5.7 to < 8.8	8.8 to < 11.1	>= 11.1		
North	> 337.5 - 22.5	0	0	0	0	0	0	0	0.0%	0
Northeast	> 22.5 - 67.5	0	0	0	0	0	0	0	0.0%	0
East	> 67.5 - 112.5	0	0	0	0	0	0	0	0.0%	0
Southeast	> 112.5 - 157.5	0	0	0	0	0	0	0	0.0%	0
South	> 157.5 - 202.5	0	0	0	0	0	0	0	0.0%	0
Southwest	> 202.5 - 247.5	0	0	0	0	0	0	0	0.0%	0
West	> 247.5 - 292.5	0	0	0	0	0	0	0	0.0%	0
Northwest	> 292.5 - 337.5	0	0	0	0	0	0	0	0.0%	0
Missing/Invalid Hours									**100%**	43200
Total Occurences by Speed		0	0	0	0	0	0	0		**43200**
Occurences by %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**100.00%**	

TABLE 9

Wind Frequency Distribution
AEPA Station ID 00010348-C-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Frequency Distribution Report: Ryley, Alberta - June 2023										
		Wind Speed (m/s) and Number of Occurences (minutes)								
Direction	Angle	< 0.5	0.5 to < 2.1	2.1 to < 3.6	3.6 to < 5.7	5.7 to < 8.8	8.8 to < 11.1	>= 11.1	%	Total Occurrences by Direction
North	> 337.5 - 22.5	567	2027	1043	387	38	0	0	9.4%	4062
Northeast	> 22.5 - 67.5	311	1236	489	142	9	0	0	5.1%	2187
East	> 67.5 - 112.5	230	1636	1180	639	188	14	2	9.0%	3889
Southeast	> 112.5 - 157.5	356	1897	2688	2535	1144	153	26	20.4%	8799
South	> 157.5 - 202.5	283	1299	1088	816	285	25	1	8.8%	3797
Southwest	> 202.5 - 247.5	674	1736	871	445	88	1	0	8.8%	3815
West	> 247.5 - 292.5	1278	2513	242	36	9	0	0	9.4%	4078
Northwest	> 292.5 - 337.5	770	3944	3772	2837	1015	97	10	28.8%	12445
Missing/Invalid Hours									0.3%	128
Total Occurences by Speed		4469	16288	11373	7837	2776	290	39		**43200**
Occurences by %		10.3%	37.7%	26.3%	18.1%	6.4%	0.7%	0.1%	**100.00%**	

TABLE 10

Total Suspended Particulate (TSP) Matter Results
AEPA Station ID 00010348-I-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Filter ID	HV-23-02-05
Test ID	Facility Test # 103
Sample Start Date/Time	23/06/01 13:00:00
Sample End Date/Time	23/07/01 13:00:00
Sampling Time (hours)	32.13
Flow Rate (m^3/min)	1.304
Volume (m^3)	2514.1
TSP Mass (mg)	150
TSP Concentration (ug/m^3)	59.663
Sampler Name	TE-5170V / P8580 TSP VFC

TABLE 11

Total Suspended Particulate (TSP) Matter Results
AEPA Station ID 00010348-I-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Filter ID	HV-23-02-06
Test ID	School Test # 103
Sample Start Date/Time	23/06/01 13:00:00
Sample End Date/Time	23/07/01 13:00:00
Sampling Time (hours)	28.02
Flow Rate (m^3/min)	1.295
Volume (m^3)	2176.9
TSP Mass (mg)	248
TSP Concentration (ug/m^3)	113.923
Sampler Name	TE-5170V / P8581 TSP VFC

TABLE 12

Total Suspended Particulate (TSP) Matter Results
AEPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Filter ID	HVF-23-03-05	HVF-23-03-13	HVF-23-03-19	HVF-23-03-20	HVF-23-03-17
Test ID	845	846	847	848	849
Sample Start Date/Time	23/06/05 00:00:00	23/06/11 00:00:00	23/06/17 00:00:00	23/06/23 00:00:00	23/06/29 00:00:00
Sample End Date/Time	23/06/06 00:00:00	23/06/12 00:00:00	23/06/18 00:00:00	23/06/24 00:00:00	23/06/30 00:00:00
Sampling Time (hours)	23.86	23.9	24.04	24.03	24.49
Flow Rate (m^3/min)	1.227	1.227	1.227	1.227	1.227
Volume (m^3)	1756.60	1759.50	1769.82	1769.09	1803.00
TSP Mass (mg)	151	121	87.0	76.6	107
TSP Concentration (ug/m^3)	85.962	68.770	49.157	43.299	59.346
Sampler Name	TE-5170V / P11162 TSP VFC	TE-5170V / P11162 TSP VFC	TE-5170V / P11162 TSP VFC	TE-5170V / P11162 TSP VFC	TE-5170V / P11162 TSP VFC

TABLE 13

Particulate Matter PM_{10} Results
AEPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Filter ID	C9700087	C1170495	C1170492	C1170496	C1170491
Test ID	845	846	847	848	849
Sample Start Date/Time	23/06/05 00:00:00	23/06/11 00:00:00	23/06/17 00:00:00	23/06/23 00:00:00	23/06/29 00:00:00
Sample End Date/Time	23/06/06 00:00:00	23/06/12 00:00:00	23/06/18 00:00:00	23/06/24 00:00:00	23/06/30 00:00:00
Sampling Time (hours)	24	24	24	24	24
Flow Rate (l/min)	16.7	16.7	16.7	16.7	16.7
Volume (m^3)	22.5	22.3	22.7	22.6	22.2
PM_{10} Mass (mg)	0.776	0.995	0.275	0.473	0.705
PM_{10} Concentration (ug/m^3)	34.489	44.619	12.115	20.929	31.757
Sampler Name	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905

TABLE 14

VOC and TNMOC Analytical Results
AEPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Parameter	Units	Date / Sample ID / AAAQO[1]	5-Jun-23 845	11-Jun-23 846	17-Jun-23 847	23-Jun-23 848	29-Jun-23 849
Total Non-Methane Organic Carbon	ppmv	-	< 0.08	< 0.09	< 0.09	< 0.09	< 0.10
1,2,3-Trimethylbenzene	ppbv	-	< 0.08	< 0.09	< 0.09	< 0.09	0.12
1,2,4-Trimethylbenzene	ppbv	-	< 0.05	< 0.05	0.07	< 0.05	2.54
1,3,5-Trimethylbenzene	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	1.09
1-Butene/Isobutylene	ppbv	-	< 0.10	< 0.10	< 0.10	< 0.11	< 0.12
1-Hexene/2-Methyl-1-pentene	ppbv	-	< 0.11	< 0.12	< 0.12	< 0.12	< 0.14
1-Pentene	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.06
2,2,4-Trimethylpentane	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.04	< 0.04
2,2-Dimethylbutane	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.04	< 0.04
2,3,4-Trimethylpentane	ppbv	-	< 0.03	0.06	< 0.03	< 0.04	< 0.04
2,3-Dimethylbutane	ppbv	-	< 0.14	< 0.15	< 0.16	< 0.16	< 0.18
2,3-Dimethylpentane	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.04	< 0.04
2,4-Dimethylpentane	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.06
2-Methylheptane	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.04	0.05
2-Methylhexane	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.06
2-Methylpentane	ppbv	-	0.13	0.17	< 0.03	< 0.04	0.21
3-Methylheptane	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.06
3-Methylhexane	ppbv	-	0.06	0.06	< 0.03	< 0.04	0.06
3-Methylpentane	ppbv	-	0.05	0.06	< 0.03	0.05	0.07
Benzene	ppbv	-	0.06	0.22	< 0.05	< 0.05	0.08
cis-2-Butene	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.06
cis-2-Pentene	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.04	< 0.04
Cyclohexane	ppbv	-	0.07	0.07	< 0.07	< 0.07	< 0.08
Cyclopentane	ppbv	-	< 0.03	< 0.03	0.04	< 0.04	< 0.04
Ethylbenzene	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	0.38
Isobutane	ppbv	-	0.47	0.25	3.41	0.63	0.30
Isopentane	ppbv	-	0.39	0.51	0.23	0.41	0.60
Isoprene	ppbv	-	0.09	0.32	0.08	0.08	0.30
Isopropylbenzene	ppbv	-	< 0.06	< 0.07	< 0.07	< 0.07	< 0.08
m,p-Xylene	ppbv	161	0.20	0.17	0.31	0.09	1.37
m-Diethylbenzene	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.04	< 0.04
m-Ethyltoluene	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	0.14
Methylcyclohexane	ppbv	-	0.08	0.15	0.06	< 0.04	0.12
Methylcyclopentane	ppbv	-	< 0.08	0.09	< 0.09	< 0.09	< 0.10
n-Butane	ppbv	-	0.25	0.60	0.59	0.75	0.88
n-Decane	ppbv	-	< 0.10	< 0.10	< 0.10	< 0.11	0.14
n-Dodecane	ppbv	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.6
n-Heptane	ppbv	-	< 0.06	0.11	0.08	< 0.07	0.13
n-Hexane	ppbv	1990	0.23	0.15	0.06	0.24	0.16
n-Nonane	ppbv	-	< 0.06	0.09	< 0.07	< 0.07	< 0.08
n-Octane	ppbv	-	0.04	0.09	< 0.03	< 0.04	0.07
n-Pentane	ppbv	-	0.29	0.38	0.14	0.20	0.32
n-Propylbenzene	ppbv	-	< 0.10	< 0.10	< 0.10	< 0.11	< 0.12
n-Undecane	ppbv	-	< 0.8	< 0.9	< 0.9	< 0.9	< 1.0
o-Ethyltoluene	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.04	0.08
o-Xylene	ppbv	161	< 0.05	< 0.05	0.07	< 0.05	0.43
p-Diethylbenzene	ppbv	-	< 0.03	0.05	< 0.03	< 0.04	< 0.04
p-Ethyltoluene	ppbv	-	< 0.06	< 0.07	< 0.07	< 0.07	0.09
Styrene	ppbv	-	< 0.06	< 0.07	0.07	< 0.07	0.12
Toluene	ppbv	106	0.38	0.16	0.20	0.11	0.56
trans-2-Butene	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.06
trans-2-Pentene	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.04	< 0.04
Total VOCs [2]	ppbv	-	5.980	6.850	8.770	6.370	13.630

Notes:
(1) Alberta Ambient Air Quality Objectives for a 24 hour averaging period.
(2) Total VOCs are calculated under the assumption that values under the detection limit are equal to the detection limit, as per the AMD.

TABLE 15

TSP Metals Analytical Results
AEPA Station ID 00010348-I-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

	Date		1-Jul-23	
	Sample ID		HV-23-02-05	
Parameter	**Lab Results [1]**		**(ug/m^3)[2]**	**AAAQO[2] (ug/m^3)**
Antimony	218	ng/Filter	2.29E-04	-
Arsenic	1290	ng/Filter	1.36E-03	0.10
Barium	850000	ng/Filter	8.93E-01	-
Beryllium	25.4	ng/Filter	2.67E-05	-
Boron	9750000	ng/Filter	1.02E+01	-
Cadmium	661	ng/Filter	6.95E-04	-
Chromium	5330	ng/Filter	5.60E-03	1.0
Cobalt	908	ng/Filter	9.54E-04	-
Copper	119000	ng/Filter	1.25E-01	-
Iron	2160000	ng/Filter	2.27E+00	-
Lead	7710	ng/Filter	8.10E-03	1.5
Manganese	68200	ng/Filter	7.17E-02	-
Mercury	13.4	ng/Filter	1.41E-05	-
Nickel	6970	ng/Filter	7.32E-03	6
Selenium	1060	ng/Filter	1.11E-03	-
Silver	87.9	ng/Filter	9.24E-05	-
Thallium	28.9	ng/Filter	3.04E-05	-
Tin	1170	ng/Filter	1.23E-03	-
Uranium	104	ng/Filter	1.09E-04	-
Vanadium	6300	ng/Filter	6.62E-03	-
Zinc	809000	ng/Filter	8.50E-01	-

Sampling Time (hours)	32.13
Flow Rate (m3/min)	1.304
Volume Sampled (m^3)	2514.10

Notes:
(1) These results are from a 32.13 hour averaging period that took place on June 1 to July 1, 2023
(2) Measured data have been converted from the measured 32.13 hour avering period to a 1 hour averaging period based on Alberta's Air Quality Model Guideline Section 7.1.2.

TABLE 16

TSP Metals Analytical Results
AEPA Station ID 00010348-I-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

Parameter	Date / Sample ID / Lab Results [1]		(ug/m^3)[2]	AAAQO[2] (ug/m^3)
	1-Jul-23 / HV-23-02-06			
Antimony	334	ng/Filter	3.90E-04	-
Arsenic	4780	ng/Filter	5.58E-03	0.10
Barium	< 300	ng/Filter	3.50E-04	-
Beryllium	5.20	ng/Filter	6.07E-06	-
Boron	< 600	ng/Filter	7.01E-04	-
Cadmium	619	ng/Filter	7.23E-04	-
Chromium	4410	ng/Filter	5.15E-03	1.0
Cobalt	783	ng/Filter	9.15E-04	-
Copper	245000	ng/Filter	2.86E-01	-
Iron	1920000	ng/Filter	2.24E+00	-
Lead	6000	ng/Filter	7.01E-03	1.5
Manganese	68700	ng/Filter	8.02E-02	-
Mercury	18.4	ng/Filter	2.15E-05	-
Nickel	6840	ng/Filter	7.99E-03	6
Selenium	1690	ng/Filter	1.97E-03	-
Silver	126	ng/Filter	1.47E-04	-
Thallium	< 0.20	ng/Filter	2.34E-07	-
Tin	212	ng/Filter	2.48E-04	-
Uranium	< 0.200	ng/Filter	2.34E-07	-
Vanadium	3860	ng/Filter	4.51E-03	-
Zinc	< 1000	ng/Filter	1.17E-03	-
Sampling Time (hours)	28.02			
Flow Rate (m3/min)	1.295			
Volume Sampled (m^3)	2176.90			

Notes:
(1) These results are from a 28.02 hour averaging period that took place on June 1 to July 1, 2023
(2) Measured data have been converted from the measured 28.02 hour avering period to a 1 hour averaging period based on Alberta's Air Quality Model Guideline Section 7.1.2.

TABLE 17

TSP Metals Analytical Results
EPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

	Date			Date			Date			
	Sample ID	5-Jun-23 845		Sample ID	11-Jun-23 846		Sample ID	29-Jun-23 849		
Parameter	**Lab Results [1]**		**(ug/m^3)[3]**	**Lab Results [1]**		**(ug/m^3)[3]**	**Lab Results [1]**		**(ug/m^3)[3]**	**AAAQO[3] (ug/m^3)**
Antimony	320	ng/Filter	4.43E-04	347	ng/Filter	4.80E-04	343	ng/Filter	4.66E-04	-
Arsenic	7010	ng/Filter	9.70E-03	7210	ng/Filter	9.97E-03	5300	ng/Filter	7.20E-03	0.10
Barium	< 300	ng/Filter	4.15E-04	1810000	ng/Filter	2.50E+00	< 300	ng/Filter	4.07E-04	-
Beryllium	14.9	ng/Filter	2.06E-05	43.5	ng/Filter	6.01E-05	< 0.60	ng/Filter	8.15E-07	-
Boron	6320000	ng/Filter	8.75E+00	12700000	ng/Filter	1.76E+01	1540000	ng/Filter	2.09E+00	-
Cadmium	270	ng/Filter	3.74E-04	458	ng/Filter	6.33E-04	143	ng/Filter	1.94E-04	-
Chromium	9690	ng/Filter	1.34E-02	7390	ng/Filter	1.02E-02	4270	ng/Filter	5.80E-03	1.0
Cobalt	1560	ng/Filter	2.16E-03	740	ng/Filter	1.02E-03	901	ng/Filter	1.22E-03	-
Copper	273000	ng/Filter	3.78E-01	432000	ng/Filter	5.97E-01	492000	ng/Filter	6.68E-01	-
Iron	3130000	ng/Filter	4.33E+00	1530000	ng/Filter	2.11E+00	2200000	ng/Filter	2.99E+00	-
Lead	18500	ng/Filter	2.56E-02	11500	ng/Filter	1.59E-02	6260	ng/Filter	8.50E-03	1.5
Manganese	110000	ng/Filter	1.52E-01	67700	ng/Filter	9.36E-02	73900	ng/Filter	1.00E-01	-
Mercury	28.7	ng/Filter	3.97E-05	72.5	ng/Filter	1.00E-04	6.99	ng/Filter	9.49E-06	-
Nickel	12800	ng/Filter	1.77E-02	82900	ng/Filter	1.15E-01	3570	ng/Filter	4.85E-03	6
Selenium	1990	ng/Filter	2.75E-03	2080	ng/Filter	2.87E-03	1710	ng/Filter	2.32E-03	-
Silver	204	ng/Filter	2.82E-04	279	ng/Filter	3.86E-04	268	ng/Filter	3.64E-04	-
Thallium	< 0.20	ng/Filter	2.77E-07	< 0.20	ng/Filter	2.76E-07	< 0.20	ng/Filter	2.72E-07	-
Tin	175	ng/Filter	2.42E-04	292	ng/Filter	4.04E-04	146	ng/Filter	1.98E-04	-
Uranium	< 0.200	ng/Filter	2.77E-07	< 0.200	ng/Filter	2.76E-07	< 0.200	ng/Filter	2.72E-07	-
Vanadium	12700	ng/Filter	1.76E-02	6300	ng/Filter	8.71E-03	4400	ng/Filter	5.98E-03	-
Zinc	< 1000	ng/Filter	1.38E-03	1660000	ng/Filter	2.29E+00	< 1000	ng/Filter	1.36E-03	-
Sampling Time (hours)	23.86			23.9			24.49			
Flow Rate (l/min)	1.227			1.227			1.227			
Volume Sampled (m^3)	1756.60			1759.50			1803.00			

Notes:
(1) These results are from an approximately 24 hour averaging period that took place on June 5, June 11, and June 29, 2023.
(2) Measured data have been converted from the measured approximately 24 hour avering period to a 1 hour averaging period based on Alberta's Air Quality Model Guideline Section 7.1.2.

TABLE 18

PM10 Metals Analytical Results
EPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
June 2023

	Date	5-Jun-23		Date	11-Jun-23		Date	29-Jun-23		
	Sample ID	845		Sample ID	846		Sample ID	849		
Parameter	**Lab Results [1]**		**(ug/m^3)[2]**	**Lab Results [1]**		**(ug/m^3)[2]**	**Lab Results [1]**		**(ug/m^3)[2]**	**AAAQO[2] (ug/m^3)**
Antimony	2.72	ng/Filter	2.94E-04	2.53	ng/Filter	2.76E-04	3.64	ng/Filter	3.92E-04	-
Arsenic	16.0	ng/Filter	1.73E-03	13.3	ng/Filter	1.45E-03	7.69	ng/Filter	8.28E-04	0.10
Barium	372	ng/Filter	4.03E-02	197	ng/Filter	2.15E-02	275	ng/Filter	2.96E-02	-
Beryllium	0.74	ng/Filter	8.01E-05	0.39	ng/Filter	4.26E-05	0.34	ng/Filter	3.66E-05	-
Boron	149	ng/Filter	1.61E-02	342	ng/Filter	3.73E-02	210	ng/Filter	2.26E-02	-
Cadmium	1.57	ng/Filter	1.70E-04	3.44	ng/Filter	3.76E-04	0.56	ng/Filter	6.03E-05	-
Chromium	109	ng/Filter	1.18E-02	38	ng/Filter	4.15E-03	5	ng/Filter	5.39E-04	1.0
Cobalt	9.38	ng/Filter	1.02E-03	4.95	ng/Filter	5.40E-04	4.17	ng/Filter	4.49E-04	-
Copper	155	ng/Filter	1.68E-02	187	ng/Filter	2.04E-02	348	ng/Filter	3.75E-02	-
Iron	22100	ng/Filter	2.39E+00	12100	ng/Filter	1.32E+00	17800	ng/Filter	1.92E+00	-
Lead	88.5	ng/Filter	9.58E-03	45.0	ng/Filter	4.91E-03	6.39	ng/Filter	6.88E-04	1.5
Manganese	743	ng/Filter	8.04E-02	453	ng/Filter	4.95E-02	531	ng/Filter	5.72E-02	-
Mercury	0.37	ng/Filter	4.00E-05	0.86	ng/Filter	9.39E-05	0.30	ng/Filter	3.23E-05	-
Nickel	98.0	ng/Filter	1.06E-02	803	ng/Filter	8.77E-02	4.8	ng/Filter	5.17E-04	6
Selenium	21.4	ng/Filter	2.32E-03	25.0	ng/Filter	2.73E-03	14.1	ng/Filter	1.52E-03	-
Silver	0.49	ng/Filter	5.30E-05	0.70	ng/Filter	7.64E-05	0.33	ng/Filter	3.56E-05	-
Thallium	0.36	ng/Filter	3.90E-05	0.33	ng/Filter	3.60E-05	0.31	ng/Filter	3.34E-05	-
Tin	2.82	ng/Filter	3.05E-04	2.81	ng/Filter	3.07E-04	0.04	ng/Filter	4.31E-06	-
Uranium	1.18	ng/Filter	1.28E-04	0.746	ng/Filter	8.15E-05	0.395	ng/Filter	4.26E-05	-
Vanadium	95.3	ng/Filter	1.03E-02	62.8	ng/Filter	6.86E-03	7.13	ng/Filter	7.68E-04	-
Zinc	872	ng/Filter	9.44E-02	746	ng/Filter	8.15E-02	134	ng/Filter	1.44E-02	-
Sampling Time (hours)	24			24			24			
Flow Rate (l/min)	16.7			16.7			16.7			
Volume Sampled (m^3)	22.50			22.30			22.6			

Notes:
(1) These results are from an approximately 24 hour averaging period that took place on June 5, June 11, and June 29, 2023.
(2) Measured data have been converted from the measured approximately 24 hour avering period to a 1 hour averaging period based on Alberta's Air Quality Model Guideline Section 7.1.2.

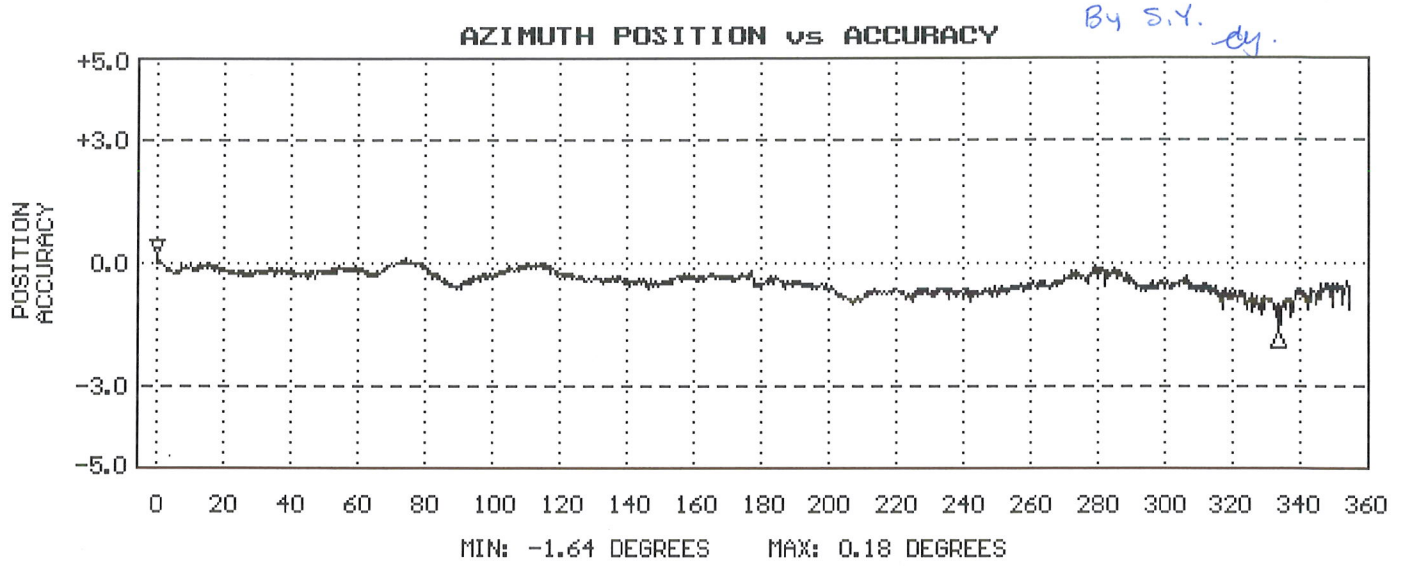
Appendix A
Meteorological Station Calibration Report

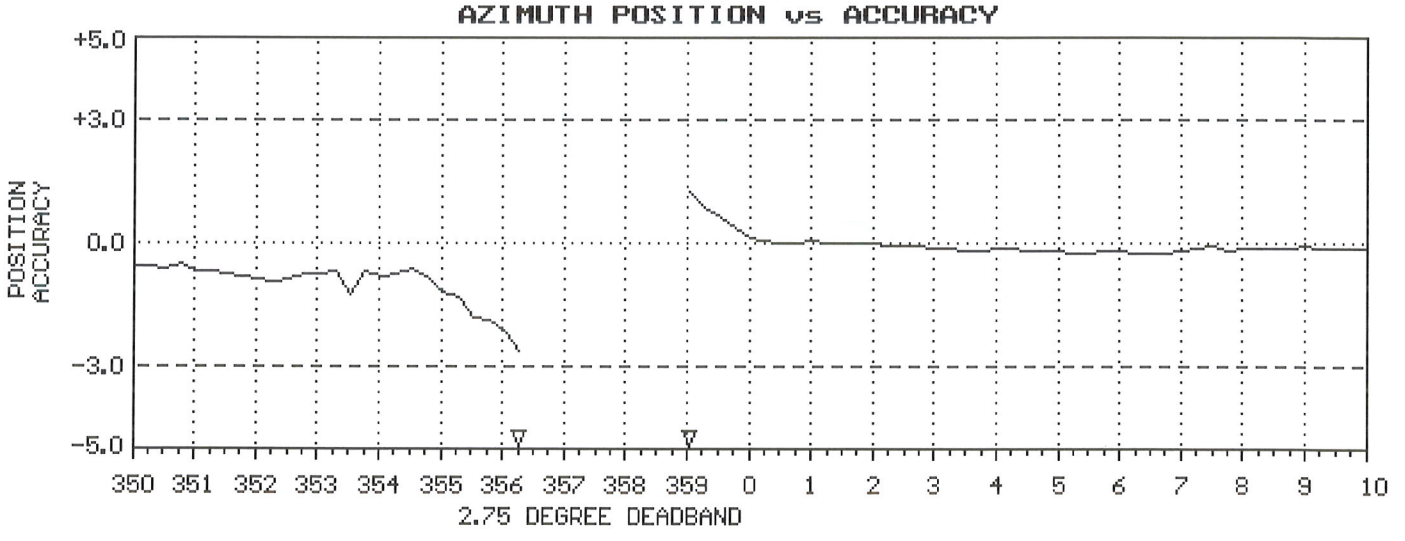
R. M. YOUNG COMPANY WIND SENSOR CALIBRATION CERTIFICATE

SENSOR: 05305-10A WIND MONITOR-AQ
SENSOR SERIAL NUMBER: WM149768
BEARINGS: SHIELDED/OIL LUBE
DATE: AUG 3 2016
WIND SPEED THRESHOLD TEST: PASS
LOW WIND SPEED AMPLITUDE/FREQUENCY TEST: PASS
HIGH WIND SPEED AMPLITUDE/FREQUENCY TEST: PASS
VANE TORQUE TEST: PASS
SPECIAL NOTES:
SPECIAL NOTES:

Insp. By

Installed Nov. 8/16
By S.Y. dy.





NOTE: Azimuth Position vs Accuracy graphs are accurate to within 0.5 degrees. The accuracy shown in the potentiometer deadband region between 355 and 0 degrees is the result of no resistance change while position changes. The gap represents the actual deadband (open circuit).

GHD Wind Calibration Form

Site and Instrument Information

Site		Wind Monitor	
Location:	Facility	**Make:**	RM Young
Calibration Date:	Jun 30, 2023	**Model:**	05305
Tech.:	P. Shariaty & S. Davey	**Serial #:**	149768
Instrument:	Continuous Wind Monitor	**Calibration due:**	Annually
Time:	1:05 PM - 1:20 PM	**Temperature:**	25°C

Pre-Calibration Inspection	Y/N
Is the wind direction < +/- 10° from compass observation?	N
Is siting aligned?	Y
Does the propeller rotate 360° with no friction?	Y
Does the vane rotate 360° with no friction?	Y

Calibration Information

Direction (degrees °)			Anemometer Speed (m/s)		
Test Angle (°)	Recorded Angle (°)	Within +/- 5°? (Y/N)	Test Speed (m/s)	Recorded Speed (m/s)	Within +/- 3 (m/s)? (Y/N)
0	0	Y	26.1	26.0	Y
30	29	Y	24.6	24.5	Y
60	59	Y	23.0	22.9	Y
180	178	Y	20.5	20.4	Y
			18.9	18.9	Y
			41.0	40.8	Y

Comments	Conversion Factors	
	m/s	RPM
Wind monitor (SN:149768) was removed from tower, inspected and the calibration was checked on June 30, 2023. Mechanical bearings and shaft alignment were inspected. Bearings were cleaned of any dust buildup. Alignment was in good condition. Wind direction calibration adjustment was required based on the pre-calibration inspection. Other than cleaning and direction calibration, no additional maintenance was required. It is recommended that the instrument be cleaned biannually and bearings checked and replaced (if required) at the next calibration interval. After calibration check, wind monitor was re-installed and sited back to original position.	26.112	5100.0
	24.576	4800.0
	23.040	4500.0
	20.480	4000.0
	18.944	3700.0
	40.960	8000.0
Calibration Adjustment Required?: Yes		

GHD Wind Calibration Form

Site and Instrument Information

Site		Wind Monitor	
Location:	Ryley School	**Make:**	RM Young
Calibration Date:	Jun 30, 2023	**Model:**	05305
Tech.:	P. Shariaty & S. Davey	**Serial #:**	183487
Instrument:	Continuous Wind Monitor	**Calibration due:**	Annually
Time:	10:00 AM - 11:20 AM	**Temperature:**	22°C

Pre-Calibration Inspection	Y/N
Is the wind direction < +/- 10° from compass observation?	N
Is siting aligned?	Y
Does the propeller rotate 360° with no friction?	Y
Does the vane rotate 360° with no friction?	Y

Calibration Information

Direction (degrees °)			Anemometer Speed (m/s)		
Test Angle (°)	Recorded Angle (°)	Within +/- 5°? (Y/N)	Test Speed (m/s)	Recorded Speed (m/s)	Within +/- 3 (m/s)? (Y/N)
0	1	Y	26.112	26.0	Y
30	29	Y	24.576	24.5	Y
330	332	Y	23.040	22.9	Y
60	57	Y	20.480	20.4	Y
90	86	Y	18.944	18.9	Y
0	1	Y	40.960	40.8	Y
180	176	Y			
260	256	Y			

Comments	Conversion Factors	
	m/s	RPM
Wind monitor (SN:183487) was removed from tower, inspected and the calibration was checked on June 30, 2023. Mechanical bearings and shaft alignment were inspected. Bearings were cleaned of any dust buildup. Alignment was in good condition. Wind direction calibration adjustment was required based on the pre-calibration inspection. Other than cleaning and direction calibration, no additional maintenance was required. It is recommended that the instrument be cleaned biannually and bearings checked and replaced (if required) at the next calibration interval. After the calibration check, the wind monitor was re-installed and sited back to the original position.	26.112	5100.0
	24.576	4800.0
	23.040	4500.0
	20.480	4000.0
	18.944	3700.0
	40.960	8000.0
Calibration Adjustment Required?: Yes		

Appendix B
Sampling Field Sheets

FIELD SHEET			
PM_{10} (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RYLEY, ALBERTA			
A) GENERAL INFORMATION			
Filter ID:	C9700087		
PO Number:	233992		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 845		
Sample Date:	23/06/05	yy/mm/dd	
Shipping Date to Laboratory:	23/06/09		
PM10 Analysis Trigger Weight (mg):	1.13	weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	23/06/05		
Sampling Start Time:	00:00		
Current Instrument Date:	23/05/31		
Current Instrument Time:	10:21		
Ambient Temperature °C:	20.9		
Barometric Pressure (mm Hg):	697		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	Partly Cloudy		
Weather Conditions set up:	Scattered Clouds		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	23/06/06		
Sampling End Time:	00:00		
Current Instrument Date:	23/06/08		
Current Instrument Time:	9:53		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m^3):	22.5		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	26.8		
Barometric Pressure (mm Hg) :	703		
Sample Filter Temperature °C :	28.4		
Flow Rate Coefficient of Variation (%CV):	0		
Weather Conditions :	Partly Sunny		
Leak Check:	Pass	(Pass/Fail)	
FIELD BLANK		(Once every quarter)	
Was a field blank collected	No	(Yes/No)	
Filter ID:			
Filter Batch Number:			
Current Instrument Date:			
Current Instrument Time:			
C) OBSERVATIONS			
Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No		
Describe facility operations that may affect sampling event:			
Comments:			

FIELD SHEET
VOLATILE ORGANIC COMPOUNDS
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

A) GENERAL INFORMATION

Sample Identification Number:	Organic Test 845	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 845	
Sample Date:	23/06/05	yy/mm/dd
Shipping Date to Laboratory:	23/06/09	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	32184	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/05/31	23/06/08
Ambient Temperature °C (inside shed):	22.6	28.2
Barometric Pressure (mm Hg):	697	703
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)3
Sample Time:	24	24

C) OBSERVATIONS

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event? No

Describe general weather conditions during sampling event: Partly Cloudy

Describe facility operations that may affect sampling event: None

Comments:

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #845			
Lab Filter ID	HVF-23-03-05			
Start Sampling	6 mm	5 dd	0 hr	2023
Stop Sampling	6 mm	6 dd	0 hr	2023
Timer Initial:	608.17			
Timer Final:	632.03			
	23.86			
Total Sampling Time	23 hr	52 min	1432	
Average Flow Rate	cfm			
Actual m3/min	1.227			
Air Volume	1756.6 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	87.8 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

Instrument Last Calibrated:	10-Mar-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

_____

FIELD SHEET			
PM_{10} (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RYLEY, ALBERTA			
A) GENERAL INFORMATION			
Filter ID:	C1170495		
PO Number:	233992		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 846		
Sample Date:	23/06/11	yy/mm/dd	
Shipping Date to Laboratory:	23/06/15		
PM10 Analysis Trigger Weight (mg):	1.12	weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	23/06/11		
Sampling Start Time:	00:00		
Current Instrument Date:	23/06/08		
Current Instrument Time:	10:02		
Ambient Temperature °C:	27.3		
Barometric Pressure (mm Hg):	703		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	partly sunny		
Weather Conditions set up:	partly sunny		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	23/06/12		
Sampling End Time:	00:00		
Current Instrument Date:	23/06/13		
Current Instrument Time:	14:54		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m^3):	22.3		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	27.3		
Barometric Pressure (mm Hg) :	691		
Sample Filter Temperature °C :	27.9		
Flow Rate Coefficient of Variation (%CV):	0		
Weather Conditions :	Overcast		
Leak Check:	Pass	(Pass/Fail)	
FIELD BLANK		(Once every quarter)	
Was a field blank collected	No	(Yes/No)	
Filter ID:			
Filter Batch Number:			
Current Instrument Date:			
Current Instrument Time:			
C) OBSERVATIONS			
Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No		
Describe facility operations that may affect sampling event:			
Comments:			

FIELD SHEET
VOLATILE ORGANIC COMPOUNDS
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

A) GENERAL INFORMATION

Sample Identification Number:	Organic Test 846	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 846	
Sample Date:	23/06/11	yy/mm/dd
Shipping Date to Laboratory:	23/06/15	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	32197	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/06/08	23/06/13
Ambient Temperature °C (inside shed):	28.2	35.5
Barometric Pressure (mm Hg):	703	691
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)5
Sample Time:	24	24

C) OBSERVATIONS

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event? No

Describe general weather conditions during sampling event: partly sunny

Describe facility operations that may affect sampling event: None

Comments:

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #846			
Lab Filter ID	HVF-23-03-13			
Start Sampling	6	11	0	2023
	mm	dd	hr	
Stop Sampling	6	12	0	2023
	mm	dd	hr	
Timer Initial:	632.03			
Timer Final:	655.93			
	23.90			
Total Sampling Time	23 hr	54 min	1434	
Average Flow Rate	cfm			
Actual m3/min	1.227			
Air Volume	1759.5 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	88.0 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

Instrument Last Calibrated:	10-Mar-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

_____

FIELD SHEET			
PM_{10} (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RYLEY, ALBERTA			
A) GENERAL INFORMATION			
Filter ID:	C1170492		
PO Number:	233992		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 847		
Sample Date:	23/06/17	yy/mm/dd	
Shipping Date to Laboratory:	23/06/20		
PM10 Analysis Trigger Weight (mg):	1.14	weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	23/06/17		
Sampling Start Time:	00:00		
Current Instrument Date:	23/06/13		
Current Instrument Time:	15:05		
Ambient Temperature °C:	28.3		
Barometric Pressure (mm Hg):	691		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	partly sunny		
Weather Conditions set up:	broken clouds		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	23/06/18		
Sampling End Time:	00:00		
Current Instrument Date:	23/06/19		
Current Instrument Time:	9:52		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m^3):	22.7		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	12.1		
Barometric Pressure (mm Hg) :	686		
Sample Filter Temperature °C :	12.2		
Flow Rate Coefficient of Variation (%CV):	0.1		
Weather Conditions :	Overcast		
Leak Check:	Pass	(Pass/Fail)	
FIELD BLANK		(Once every quarter)	
Was a field blank collected	No	(Yes/No)	
Filter ID:			
Filter Batch Number:			
Current Instrument Date:			
Current Instrument Time:			
C) OBSERVATIONS			
Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No		
Describe facility operations that may affect sampling event:			
Comments:			

FIELD SHEET
VOLATILE ORGANIC COMPOUNDS
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

A) GENERAL INFORMATION

Sample Identification Number:	Organic Test 847	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 847	
Sample Date:	23/06/17	yy/mm/dd
Shipping Date to Laboratory:	23/06/20	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	32264	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/06/13	23/06/19
Ambient Temperature °C (inside shed):	35.5	15.7
Barometric Pressure (mm Hg):	691	686
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)5
Sample Time:	24	24

C) OBSERVATIONS

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event? No

Describe general weather conditions during sampling event: partly sunny

Describe facility operations that may affect sampling event: None

Comments:

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #847			
Lab Filter ID	HVF-23-03-19			
Start Sampling	6 mm	17 dd	0 hr	2023
Stop Sampling	6 mm	18 dd	0 hr	2023
Timer Initial:	655.93			
Timer Final:	679.97			
	24.04			
Total Sampling Time	24 hr		2 min	1442
Average Flow Rate		cfm		
Actual m3/min	1.227			
Air Volume	1769.8	cubic metres		
Net TSP Weight		g		
TSP Concentration		mg/m3		
TSP Analysis Trigger Weight	88.5	mg	weight which TSP conc. > 50 µg/m^3	

3. OBSERVATIONS

Comments:

Instrument Last Calibrated:	10-Mar-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

_____

FIELD SHEET			
PM_{10} (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RYLEY, ALBERTA			
A) GENERAL INFORMATION			
Filter ID:	C1170496		
PO Number:	233992		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 848		
Sample Date:	23/06/23	yy/mm/dd	
Shipping Date to Laboratory:	23/06/29		
PM10 Analysis Trigger Weight (mg):	1.13	weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	23/06/23		
Sampling Start Time:	00:00		
Current Instrument Date:	23/06/22		
Current Instrument Time:	14:14		
Ambient Temperature °C:	23.9		
Barometric Pressure (mm Hg):	701		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	partly sunny		
Weather Conditions set up:	partly cloudy		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	23/06/24		
Sampling End Time:	00:00		
Current Instrument Date:	23/06/26		
Current Instrument Time:	10:00		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m^3):	22.6		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	22.9		
Barometric Pressure (mm Hg) :	700		
Sample Filter Temperature °C :	23.5		
Flow Rate Coefficient of Variation (%CV):	0		
Weather Conditions :	Sunny		
Leak Check:	Pass	(Pass/Fail)	
FIELD BLANK		(Once every quarter)	
Was a field blank collected	No	(Yes/No)	
Filter ID:			
Filter Batch Number:			
Current Instrument Date:			
Current Instrument Time:			
C) OBSERVATIONS			
Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No		
Describe facility operations that may affect sampling event:			
Comments:			

FIELD SHEET
VOLATILE ORGANIC COMPOUNDS
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

A) GENERAL INFORMATION

Sample Identification Number:	Organic Test 848	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 848	
Sample Date:	23/06/23	yy/mm/dd
Shipping Date to Laboratory:	23/06/29	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	28933	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/06/22	23/06/26
Ambient Temperature °C (inside shed):	33.0	26.3
Barometric Pressure (mm Hg):	691	700
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)7
Sample Time:	24	24

C) OBSERVATIONS

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No
Describe general weather conditions during sampling event:	partly sunny
Describe facility operations that may affect sampling event:	None
Comments:	

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #848			
Lab Filter ID	HVF-23-03-20			
Start Sampling	6	23	0	2023
	mm	dd	hr	
Stop Sampling	6	24	0	2023
	mm	dd	hr	
Timer Initial:	679.97			
Timer Final:	704.00			
	24.03			
Total Sampling Time	24 hr	2 min	1442	
Average Flow Rate	cfm			
Actual m3/min	1.227			
Air Volume	1769.1 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	88.5 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

Instrument Last Calibrated:	10-Mar-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

_____

FIELD SHEET				
PM_{10} (Partisol Monitoring Unit)				
CLEAN HARBORS CANADA INC				
RYLEY, ALBERTA				
A) GENERAL INFORMATION				
Filter ID:	C1170491			
PO Number:	233992			
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905			
Test number :	Particulate Test 849			
Sample Date:	23/06/29		yy/mm/dd	
Shipping Date to Laboratory:	23/07/04			
PM10 Analysis Trigger Weight (mg):	1.11		weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION				
SAMPLE START				
Sampling Start Date:	23/06/29			
Sampling Start Time:	00:00			
Current Instrument Date:	23/06/26			
Current Instrument Time:	10:09			
Ambient Temperature °C:	22.9			
Barometric Pressure (mm Hg):	700			
Leak Check:	Pass		(Pass/Fail)	
Clean PM10 Inlet:	Yes		(Yes/No)	
Weather Conditions Sampling date :	Sunny			
Weather Conditions set up:	partly sunny			
SAMPLE RETRIEVAL				
Sampled by	T. Webb			
Sampling End Date:	23/06/30			
Sampling End Time:	00:00			
Current Instrument Date:	23/06/30			
Current Instrument Time:	7:30			
Run Status:	OK		(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24			
Volume Sampled (m^3):	22.2			
Average Flow Rate (L/min):	16.7 L/min			
AmbT °C :	21.9			
Barometric Pressure (mm Hg) :	700			
Sample Filter Temperature °C :	21.5			
Flow Rate Coefficient of Variation (%CV):	0			
Weather Conditions :	partly cloudy			
Leak Check:	Pass		(Pass/Fail)	
FIELD BLANK			(Once every quarter)	
Was a field blank collected	No		(Yes/No)	
Filter ID:				
Filter Batch Number:				
Current Instrument Date:				
Current Instrument Time:				
C) OBSERVATIONS				
Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No			
Describe facility operations that may affect sampling event:				
Comments:				

FIELD SHEET
VOLATILE ORGANIC COMPOUNDS
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

A) GENERAL INFORMATION

Sample Identification Number:	Organic Test 849	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 849	
Sample Date:	23/06/29	yy/mm/dd
Shipping Date to Laboratory:	23/07/04	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	29037	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/06/26	23/06/30
Ambient Temperature °C (inside shed):	26.3	20.2
Barometric Pressure (mm Hg):	700	700
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)7
Sample Time:	24	24

C) OBSERVATIONS

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No
Describe general weather conditions during sampling event:	Sunny
Describe facility operations that may affect sampling event:	None
Comments:	

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #849			
Lab Filter ID	HVF-23-03-17			
Start Sampling	6 mm	29 dd	0 hr	2023
Stop Sampling	6 mm	30 dd	0 hr	2023
Timer Initial:	704.00			
Timer Final:	728.49			
	24.49			
Total Sampling Time	24 hr	29 min	1469	
Average Flow Rate	cfm			
Actual m3/min	1.227			
Air Volume	1803.0 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	90.1 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

Instrument Last Calibrated:	10-Mar-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

FIELD SHEET
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Facility Test # 103			
Lab Filter ID	HV-23-02-05			
Start Sampling	6 mm	1 dd	13 hr	2023
Stop Sampling	7 mm	1 dd	13 hr	2023
Timer Initial:	3091.14			
Timer Final:	3123.28			

Total Sampling Time	32	hr	8	min	1928
Average Flow Rate		cfm			
Actual m3/min	1.304				
Air Volume	2514.1	cubic metres			
Net TSP Weight		g			
TSP Concentration		mg/m3			

3. OBSERVATIONS

Comments: The two stations were swapped locations prior to this sampling period.

Instrument Last Calibrated: 30-Jun-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.

Sample was collected in accordance with the above guidelines.

Sampler's Signature: 

Comments:

2. SAMPLING INFORMATION

Sample ID	School Test # 103			
Lab Filter ID	HV-23-02-06			
Start Sampling	6	1	13	2023
	mm	dd	hr	
Stop Sampling	7	1	13	2023
	mm	dd	hr	
Timer Initial:	2497.5			
Timer Final:	2525.52			

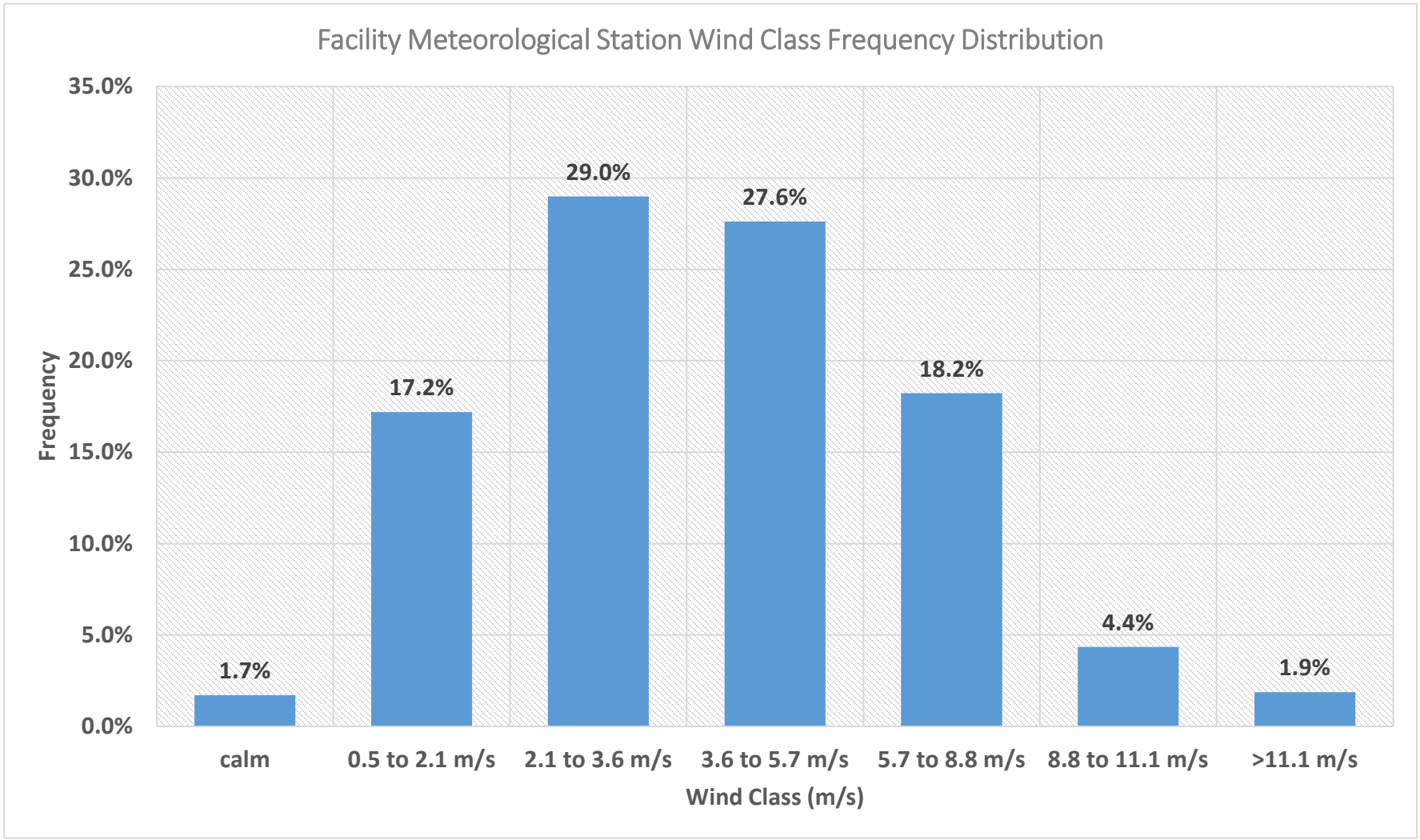
Total Sampling Time	28 hr	1 min	1681	
Average Flow Rate	cfm			
Actual m3/min	1.295			
Air Volume	2176.9 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			

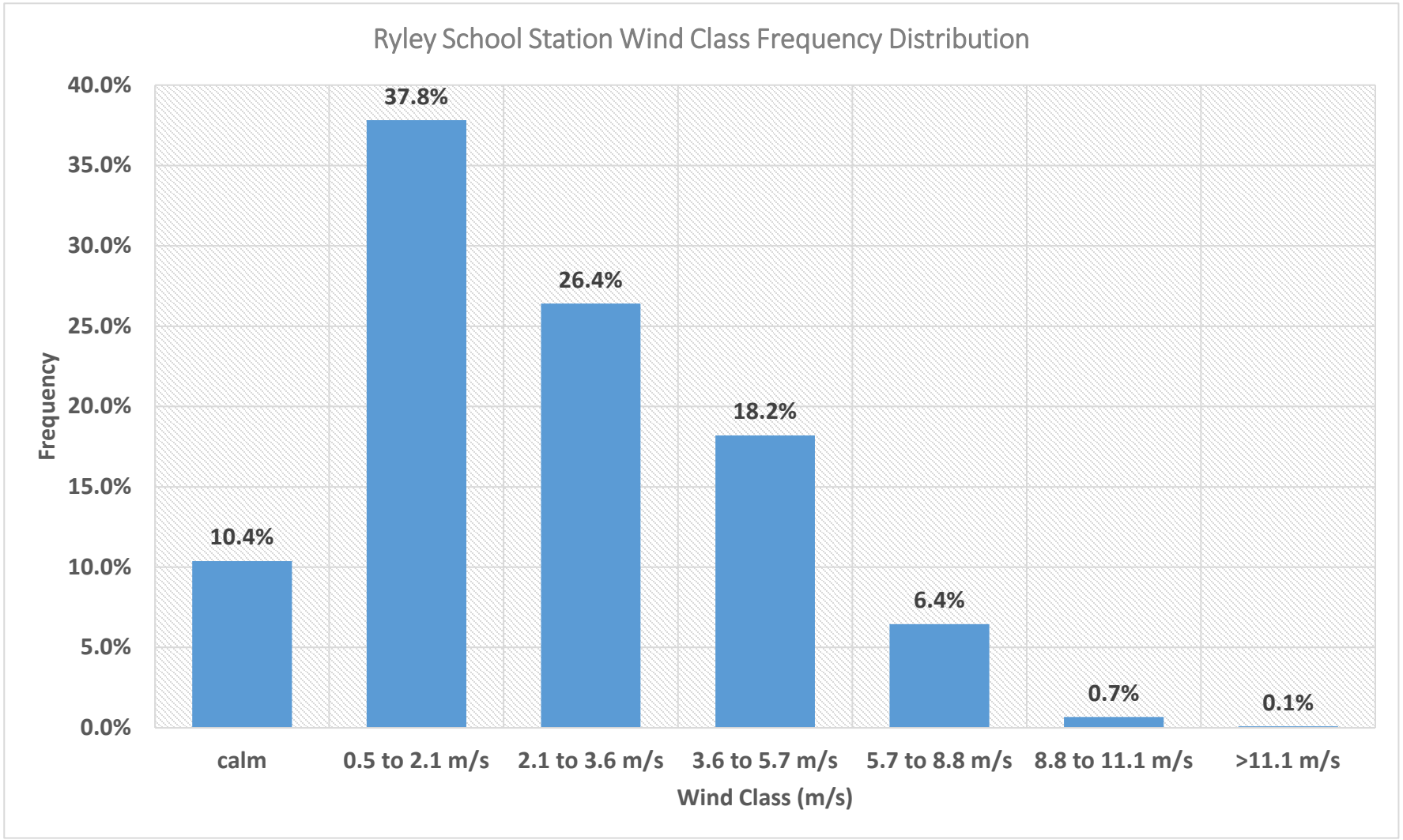
Sampler's Signature: _____

Comments: _____

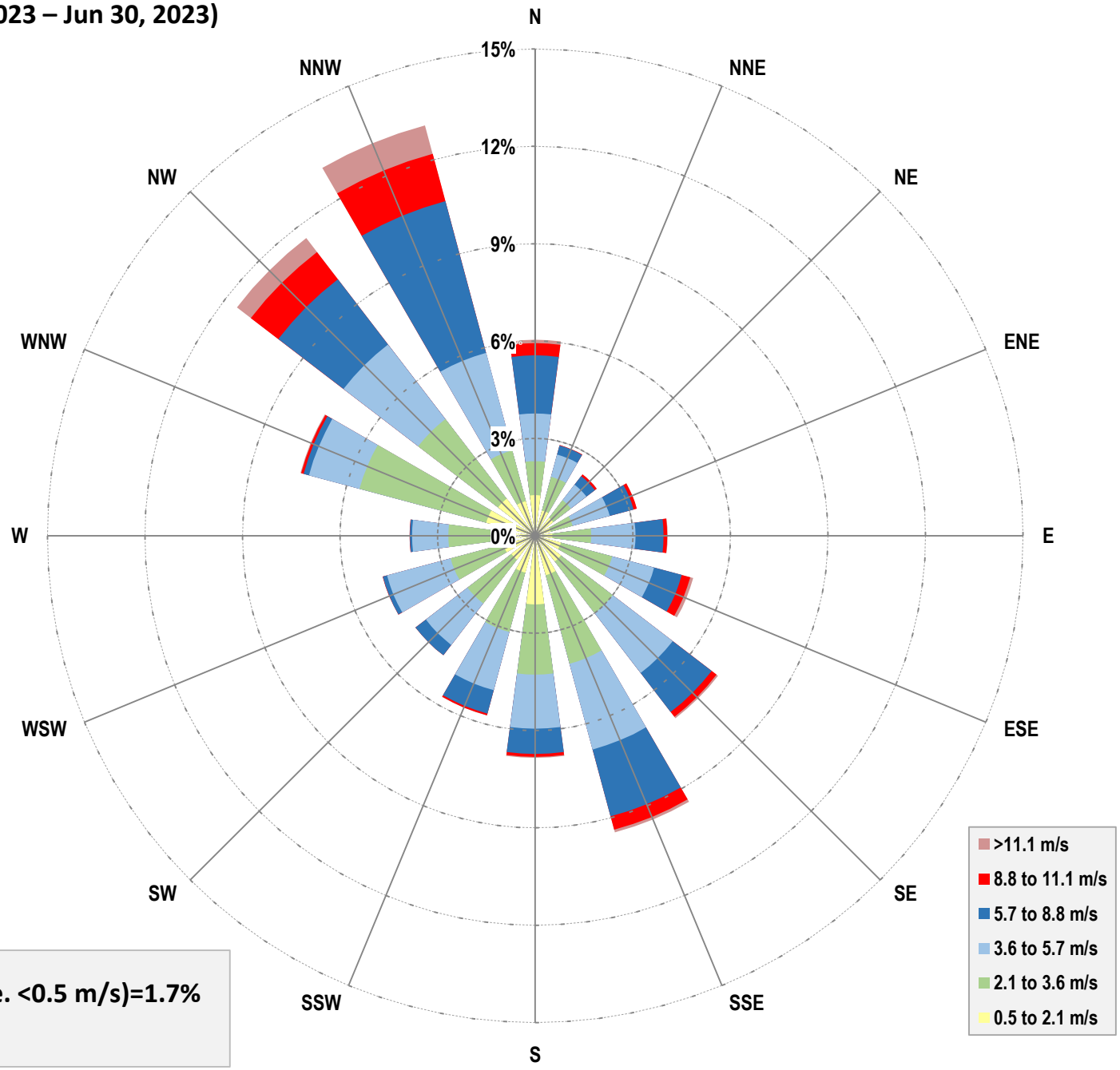
_____

Appendix C
Wind Class Frequency Distribution Graphs and Wind Rose


Facility Meteorological Station Wind Class Frequency Distribution
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Frequency
1.7%
17.2%
29.0%
27.6%
18.2%
4.4%
1.9%
calm
0.5 to 2.1 m/s
2.1 to 3.6 m/s
3.6 to 5.7 m/s
5.7 to 8.8 m/s
8.8 to 11.1 m/s
>11.1 m/s
Wind Class (m/s)

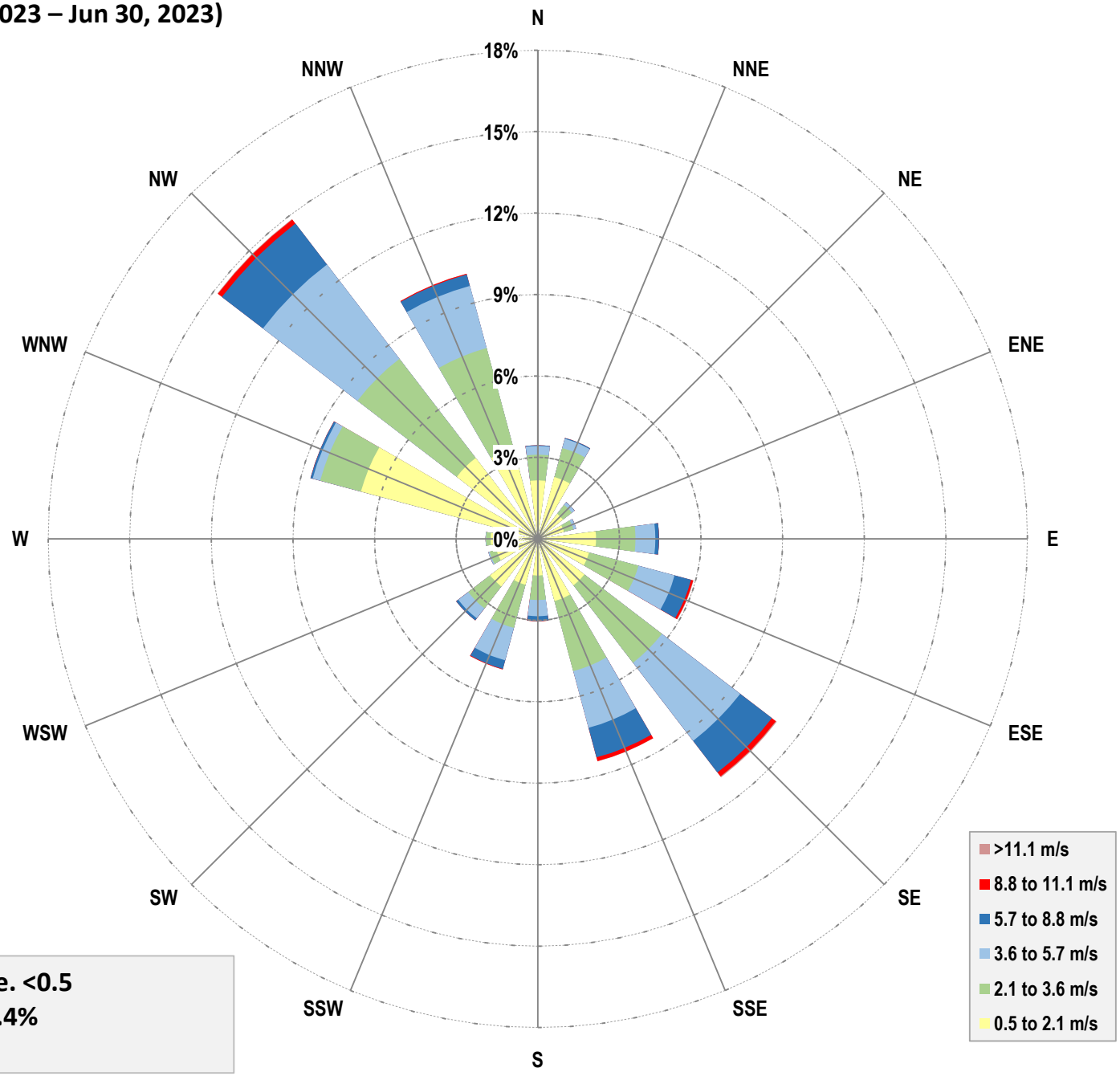

Ryley School Station Wind Class Frequency Distribution
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Frequency
37.8%
26.4%
18.2%
10.4%
6.4%
0.7%
0.1%
calm
0.5 to 2.1 m/s
2.1 to 3.6 m/s
3.6 to 5.7 m/s
5.7 to 8.8 m/s
8.8 to 11.1 m/s
>11.1 m/s
Wind Class (m/s)

Clean Harbors Facility Meteorological Station
(Jun 1, 2023 – Jun 30, 2023)



calms (i.e. <0.5 m/s)=1.7%

Clean Harbors Ryley School Station
(Jun 1, 2023 – Jun 30, 2023)



calms (i.e. <0.5 m/s)=10.4%

Appendix D
Chain of Custody Forms and Laboratory Analytical Reports

InnoTech ALBERTA
PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: Ryley Facility Test # 103 - HV-23-02-05
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION: Filter Number # HV-23-02-05
DATE SAMPLED: 06-Jun-23
DATE RECEIVED: 06-Jul-23
REPORT CREATED: 26-Jul-23
REPORT NUMBER: 23070041
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070041-001	Antimony		218	ng/Filter	0.30	AC-021	21-Jul-23
23070041-001	Arsenic		1290	ng/Filter	0.30	AC-021	21-Jul-23
23070041-001	Barium		850000	ng/Filter	300	AC-021	21-Jul-23
23070041-001	Beryllium		25.4	ng/Filter	0.60	AC-021	21-Jul-23
23070041-001	Boron		9750000	ng/Filter	600	AC-021	21-Jul-23
23070041-001	Cadmium		661	ng/Filter	0.80	AC-021	21-Jul-23
23070041-001	Chromium		5330	ng/Filter	20	AC-021	21-Jul-23
23070041-001	Cobalt		908	ng/Filter	0.50	AC-021	21-Jul-23
23070041-001	Copper		119000	ng/Filter	20	AC-021	21-Jul-23
23070041-001	Iron		2160000	ng/Filter	80	AC-021	21-Jul-23
23070041-001	Lead		7710	ng/Filter	0.70	AC-021	21-Jul-23
23070041-001	Manganese		68200	ng/Filter	1.0	AC-021	21-Jul-23
23070041-001	Mercury		13.4	ng/Filter	0.70	AC-021	21-Jul-23
23070041-001	Nickel		6970	ng/Filter	5.0	AC-021	21-Jul-23
23070041-001	Selenium		1060	ng/Filter	4.0	AC-021	21-Jul-23
23070041-001	Silver		87.9	ng/Filter	0.50	AC-021	21-Jul-23
23070041-001	Thallium		28.9	ng/Filter	0.20	AC-021	21-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: July 26, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech ALBERTA
PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
Ryley Facility Test # 103 - HV-23-02-05		Air Filter	06-Jun-23

DESCRIPTION: Filter Number # HV-23-02-05

REPORT NUMBER: 23070041 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070041-001	Tin		1170	ng/Filter	0.20	AC-021	21-Jul-23
23070041-001	Uranium		104	ng/Filter	0.200	AC-021	21-Jul-23
23070041-001	Vanadium		6300	ng/Filter	0.40	AC-021	21-Jul-23
23070041-001	Zinc		809000	ng/Filter	1000	AC-021	21-Jul-23
23070041-001	Particulate Weight		150	mg	0.1	Research	10-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
Ryley School Test # 103 - HV-23-02-06		Air Filter	06-Jun-23

DESCRIPTION: Filter Number # HV-23-02-06

REPORT NUMBER: 23070041 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070041-002	Antimony		334	ng/Filter	0.30	AC-021	21-Jul-23
23070041-002	Arsenic		4780	ng/Filter	0.30	AC-021	21-Jul-23
23070041-002	Barium	K, T, U	< 300	ng/Filter	300	AC-021	21-Jul-23
23070041-002	Beryllium		5.20	ng/Filter	0.60	AC-021	21-Jul-23
23070041-002	Boron	K, T, U	< 600	ng/Filter	600	AC-021	21-Jul-23
23070041-002	Cadmium		619	ng/Filter	0.80	AC-021	21-Jul-23
23070041-002	Chromium		4410	ng/Filter	20	AC-021	21-Jul-23
23070041-002	Cobalt		783	ng/Filter	0.50	AC-021	21-Jul-23
23070041-002	Copper		245000	ng/Filter	20	AC-021	21-Jul-23
23070041-002	Iron		1920000	ng/Filter	80	AC-021	21-Jul-23
23070041-002	Lead		6000	ng/Filter	0.70	AC-021	21-Jul-23
23070041-002	Manganese		68700	ng/Filter	1.0	AC-021	21-Jul-23
23070041-002	Mercury		18.4	ng/Filter	0.70	AC-021	21-Jul-23
23070041-002	Nickel		6840	ng/Filter	5.0	AC-021	21-Jul-23
23070041-002	Selenium		1690	ng/Filter	4.0	AC-021	21-Jul-23
23070041-002	Silver		126	ng/Filter	0.50	AC-021	21-Jul-23
23070041-002	Thallium	K, T, U	< 0.20	ng/Filter	0.20	AC-021	21-Jul-23
23070041-002	Tin		212	ng/Filter	0.20	AC-021	21-Jul-23
23070041-002	Uranium	K, T, U	< 0.200	ng/Filter	0.200	AC-021	21-Jul-23
23070041-002	Vanadium		3860	ng/Filter	0.40	AC-021	21-Jul-23
23070041-002	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	21-Jul-23
23070041-002	Particulate Weight		248	mg	0.1	Research	10-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23070041	01	26-Jul-23	Report created

Methods

Method	Description
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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Canada T9C 1T4
(780) 632-8211

Order Comments

23070041

Quote ID: QT140005

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(780) 632-8211

Sample Comments

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Vegreville, Alberta
Canada T9C 1T4
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Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

InnoTech ALBERTA
PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: HI-VOL Test # 845, HVF-23-03-05
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION: HI-VOL Filter
DATE SAMPLED: 05-Jun-23 0:00
DATE RECEIVED: 12-Jun-23
REPORT CREATED: 26-Jul-23
REPORT NUMBER: 23060160
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060160-003	Antimony		320	ng/Filter	0.30	AC-021	21-Jul-23
23060160-003	Arsenic		7010	ng/Filter	0.30	AC-021	21-Jul-23
23060160-003	Barium	K, T, U	< 300	ng/Filter	300	AC-021	21-Jul-23
23060160-003	Beryllium		14.9	ng/Filter	0.60	AC-021	21-Jul-23
23060160-003	Boron		6320000	ng/Filter	600	AC-021	21-Jul-23
23060160-003	Cadmium		270	ng/Filter	0.80	AC-021	21-Jul-23
23060160-003	Chromium		9690	ng/Filter	20	AC-021	21-Jul-23
23060160-003	Cobalt		1560	ng/Filter	0.50	AC-021	21-Jul-23
23060160-003	Copper		273000	ng/Filter	20	AC-021	21-Jul-23
23060160-003	Iron		3130000	ng/Filter	80	AC-021	21-Jul-23
23060160-003	Lead		18500	ng/Filter	0.70	AC-021	21-Jul-23
23060160-003	Manganese		110000	ng/Filter	1.0	AC-021	21-Jul-23
23060160-003	Mercury		28.7	ng/Filter	0.70	AC-021	21-Jul-23
23060160-003	Nickel		12800	ng/Filter	5.0	AC-021	21-Jul-23
23060160-003	Selenium		1990	ng/Filter	4.0	AC-021	21-Jul-23
23060160-003	Silver		204	ng/Filter	0.50	AC-021	21-Jul-23
23060160-003	Thallium	K, T, U	< 0.20	ng/Filter	0.20	AC-021	21-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: July 26, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca//

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Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
HI-VOL Test # 845, HVF-23-03-05		Air Filter	05-Jun-23 0:00

DESCRIPTION: HI-VOL Filter

REPORT NUMBER: 23060160 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060160-003	Tin		175	ng/Filter	0.20	AC-021	21-Jul-23
23060160-003	Uranium	K, T, U	< 0.200	ng/Filter	0.200	AC-021	21-Jul-23
23060160-003	Vanadium		12700	ng/Filter	0.40	AC-021	21-Jul-23
23060160-003	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	21-Jul-23
23060160-003	Particulate Weight		151	mg	0.1	Research	

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test # 845, C9700087		Air Filter	05-Jun-23 0:00

DESCRIPTION: PM10 Filter

REPORT NUMBER: 23060160 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060160-002	Antimony		2.72	ng/Filter	0.03	AC-021	18-Jul-23
23060160-002	Arsenic		16.0	ng/Filter	0.03	AC-021	18-Jul-23
23060160-002	Barium		372	ng/Filter	0.3	AC-021	18-Jul-23
23060160-002	Beryllium		0.74	ng/Filter	0.06	AC-021	18-Jul-23
23060160-002	Boron		149	ng/Filter	0.6	AC-021	18-Jul-23
23060160-002	Cadmium		1.57	ng/Filter	0.08	AC-021	18-Jul-23
23060160-002	Chromium		109	ng/Filter	2	AC-021	18-Jul-23
23060160-002	Cobalt		9.38	ng/Filter	0.05	AC-021	18-Jul-23
23060160-002	Copper		155	ng/Filter	2	AC-021	18-Jul-23
23060160-002	Iron		22100	ng/Filter	8	AC-021	18-Jul-23
23060160-002	Lead		88.5	ng/Filter	0.07	AC-021	18-Jul-23
23060160-002	Manganese		743	ng/Filter	0.1	AC-021	18-Jul-23
23060160-002	Mercury		0.37	ng/Filter	0.07	AC-021	18-Jul-23
23060160-002	Nickel		98.0	ng/Filter	0.5	AC-021	18-Jul-23
23060160-002	Selenium		21.4	ng/Filter	0.4	AC-021	18-Jul-23
23060160-002	Silver		0.49	ng/Filter	0.05	AC-021	18-Jul-23
23060160-002	Thallium		0.36	ng/Filter	0.02	AC-021	18-Jul-23
23060160-002	Tin		2.82	ng/Filter	0.02	AC-021	18-Jul-23
23060160-002	Uranium		1.18	ng/Filter	0.020	AC-021	18-Jul-23
23060160-002	Vanadium		95.3	ng/Filter	0.04	AC-021	18-Jul-23
23060160-002	Zinc		872	ng/Filter	1	AC-021	18-Jul-23
23060160-002	Particulate Weight		0.776	mg	0.004	AC-029	14-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 845	32184	Ambient Air	05-Jun-23 0:00

DESCRIPTION: Canister

REPORT NUMBER: 23060160 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060160-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08	ppmv	0.08	NA-028	13-Jun-23
23060160-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	15-Jun-23
23060160-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	1-Butene/Isobutylene	K, T, U	< 0.10	ppbv	0.10	AC-058	15-Jun-23
23060160-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.11	ppbv	0.11	AC-058	15-Jun-23
23060160-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	2,3,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	2,3-Dimethylbutane	K, T, U	< 0.14	ppbv	0.14	AC-058	15-Jun-23
23060160-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	2-Methylpentane	I	0.13	ppbv	0.03	AC-058	15-Jun-23
23060160-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	3-Methylhexane	I	0.06	ppbv	0.03	AC-058	15-Jun-23
23060160-001	3-Methylpentane	I	0.05	ppbv	0.03	AC-058	15-Jun-23
23060160-001	Benzene	I	0.06	ppbv	0.05	AC-058	15-Jun-23
23060160-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	Cyclohexane	I	0.07	ppbv	0.06	AC-058	15-Jun-23
23060160-001	Cyclopentane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	Ethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 845	32184	Ambient Air	05-Jun-23 0:00

DESCRIPTION: Canister

REPORT NUMBER: 23060160 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060160-001	Isobutane		0.47	ppbv	0.05	AC-058	15-Jun-23
23060160-001	Isopentane		0.39	ppbv	0.06	AC-058	15-Jun-23
23060160-001	Isoprene	I	0.09	ppbv	0.03	AC-058	15-Jun-23
23060160-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Jun-23
23060160-001	m,p-Xylene	I	0.20	ppbv	0.06	AC-058	15-Jun-23
23060160-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	Methylcyclohexane	I	0.08	ppbv	0.03	AC-058	15-Jun-23
23060160-001	Methylcyclopentane	K, T, U	< 0.08	ppbv	0.08	AC-058	15-Jun-23
23060160-001	n-Butane		0.25	ppbv	0.03	AC-058	15-Jun-23
23060160-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	15-Jun-23
23060160-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	15-Jun-23
23060160-001	n-Heptane	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Jun-23
23060160-001	n-Hexane	I	0.23	ppbv	0.05	AC-058	15-Jun-23
23060160-001	n-Octane	I	0.04	ppbv	0.03	AC-058	15-Jun-23
23060160-001	n-Pentane		0.29	ppbv	0.06	AC-058	15-Jun-23
23060160-001	n-Propylbenzene	K, T, U	< 0.10	ppbv	0.10	AC-058	15-Jun-23
23060160-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	15-Jun-23
23060160-001	n-Nonane	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Jun-23
23060160-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	o-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23
23060160-001	p-Ethyltoluene	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Jun-23
23060160-001	Styrene	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Jun-23
23060160-001	Toluene		0.38	ppbv	0.05	AC-058	15-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 845	32184	Ambient Air	05-Jun-23 0:00

DESCRIPTION: Canister

REPORT NUMBER: 23060160 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060160-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Jun-23
23060160-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23060160	01	26-Jul-23	Report created

Methods

Method	Description
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-028	Determination of Total Non-methane Hydrocarbons and Total Hydrocarbons in Ambient Air by Gas Chromatography Flame Ionization Detector
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

Order Comments

23060160

Project ID: Test 845. Send report to Yuha.Stan@cleanharbors.com.

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Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: HiVol Test # 846, HVF-23-03-13
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION: Hivol Filter
DATE SAMPLED: 11-Jun-23 0:00
DATE RECEIVED: 20-Jun-23
REPORT CREATED: 26-Jul-23
REPORT NUMBER: 23060295
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060295-003	Antimony		347	ng/Filter	0.30	AC-021	21-Jul-23
23060295-003	Arsenic		7210	ng/Filter	0.30	AC-021	21-Jul-23
23060295-003	Barium		1810000	ng/Filter	300	AC-021	21-Jul-23
23060295-003	Beryllium		43.5	ng/Filter	0.60	AC-021	21-Jul-23
23060295-003	Boron		12700000	ng/Filter	600	AC-021	21-Jul-23
23060295-003	Cadmium		458	ng/Filter	0.80	AC-021	21-Jul-23
23060295-003	Chromium		7390	ng/Filter	20	AC-021	21-Jul-23
23060295-003	Cobalt		740	ng/Filter	0.50	AC-021	21-Jul-23
23060295-003	Copper		432000	ng/Filter	20	AC-021	21-Jul-23
23060295-003	Iron		1530000	ng/Filter	80	AC-021	21-Jul-23
23060295-003	Lead		11500	ng/Filter	0.70	AC-021	21-Jul-23
23060295-003	Manganese		67700	ng/Filter	1.0	AC-021	21-Jul-23
23060295-003	Mercury		72.5	ng/Filter	0.70	AC-021	21-Jul-23
23060295-003	Nickel		82900	ng/Filter	5.0	AC-021	21-Jul-23
23060295-003	Selenium		2080	ng/Filter	4.0	AC-021	21-Jul-23
23060295-003	Silver		279	ng/Filter	0.50	AC-021	21-Jul-23
23060295-003	Thallium	K, T, U	< 0.20	ng/Filter	0.20	AC-021	21-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: July 26, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
HiVol Test # 846, HVF-23-03-13		Air Filter	11-Jun-23 0:00

DESCRIPTION: Hivol Filter

REPORT NUMBER: 23060295 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060295-003	Tin		292	ng/Filter	0.20	AC-021	21-Jul-23
23060295-003	Uranium	K, T, U	< 0.200	ng/Filter	0.200	AC-021	21-Jul-23
23060295-003	Vanadium		6300	ng/Filter	0.40	AC-021	21-Jul-23
23060295-003	Zinc		1660000	ng/Filter	1000	AC-021	21-Jul-23
23060295-003	Particulate Weight		121	mg	0.1	Research	

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test # 846, C1170495		Air Filter	11-Jun-23 0:00

DESCRIPTION: PM10 Filter

REPORT NUMBER: 23060295 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060295-002	Antimony		2.53	ng/Filter	0.03	AC-021	18-Jul-23
23060295-002	Arsenic		13.3	ng/Filter	0.03	AC-021	18-Jul-23
23060295-002	Barium		197	ng/Filter	0.3	AC-021	18-Jul-23
23060295-002	Beryllium		0.39	ng/Filter	0.06	AC-021	18-Jul-23
23060295-002	Boron		342	ng/Filter	0.6	AC-021	18-Jul-23
23060295-002	Cadmium		3.44	ng/Filter	0.08	AC-021	18-Jul-23
23060295-002	Chromium		38	ng/Filter	2	AC-021	18-Jul-23
23060295-002	Cobalt		4.95	ng/Filter	0.05	AC-021	18-Jul-23
23060295-002	Copper		187	ng/Filter	2	AC-021	18-Jul-23
23060295-002	Iron		12100	ng/Filter	8	AC-021	18-Jul-23
23060295-002	Lead		45.0	ng/Filter	0.07	AC-021	18-Jul-23
23060295-002	Manganese		453	ng/Filter	0.1	AC-021	18-Jul-23
23060295-002	Mercury		0.86	ng/Filter	0.07	AC-021	18-Jul-23
23060295-002	Nickel		803	ng/Filter	0.5	AC-021	18-Jul-23
23060295-002	Selenium		25.0	ng/Filter	0.4	AC-021	18-Jul-23
23060295-002	Silver		0.70	ng/Filter	0.05	AC-021	18-Jul-23
23060295-002	Thallium		0.33	ng/Filter	0.02	AC-021	18-Jul-23
23060295-002	Tin		2.81	ng/Filter	0.02	AC-021	18-Jul-23
23060295-002	Uranium		0.746	ng/Filter	0.020	AC-021	18-Jul-23
23060295-002	Vanadium		62.8	ng/Filter	0.04	AC-021	18-Jul-23
23060295-002	Zinc		746	ng/Filter	1	AC-021	18-Jul-23
23060295-002	Particulate Weight		0.995	mg	0.004	AC-029	21-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 846		Ambient Air	11-Jun-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23060295 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060295-001	Total Non-Methane Organic Carbon	K, T, U	< 0.09	ppmv	0.09	NA-028	20-Jun-23
23060295-001	1,2,3-Trimethylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	22-Jun-23
23060295-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	1-Butene/Isobutylene	K, T, U	< 0.10	ppbv	0.10	AC-058	22-Jun-23
23060295-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.12	ppbv	0.12	AC-058	22-Jun-23
23060295-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	22-Jun-23
23060295-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	22-Jun-23
23060295-001	2,3,4-Trimethylpentane	I	0.06	ppbv	0.03	AC-058	22-Jun-23
23060295-001	2,3-Dimethylbutane	K, T, U	< 0.15	ppbv	0.15	AC-058	22-Jun-23
23060295-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	22-Jun-23
23060295-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	22-Jun-23
23060295-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	2-Methylpentane		0.17	ppbv	0.03	AC-058	22-Jun-23
23060295-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	3-Methylhexane	I	0.06	ppbv	0.03	AC-058	22-Jun-23
23060295-001	3-Methylpentane	I	0.06	ppbv	0.03	AC-058	22-Jun-23
23060295-001	Benzene	I	0.22	ppbv	0.05	AC-058	22-Jun-23
23060295-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	22-Jun-23
23060295-001	Cyclohexane	I	0.07	ppbv	0.07	AC-058	22-Jun-23
23060295-001	Cyclopentane	K, T, U	< 0.03	ppbv	0.03	AC-058	22-Jun-23
23060295-001	Ethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 846		Ambient Air	11-Jun-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23060295 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060295-001	Isobutane		0.25	ppbv	0.05	AC-058	22-Jun-23
23060295-001	Isopentane		0.51	ppbv	0.07	AC-058	22-Jun-23
23060295-001	Isoprene		0.32	ppbv	0.03	AC-058	22-Jun-23
23060295-001	Isopropylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	22-Jun-23
23060295-001	m,p-Xylene	I	0.17	ppbv	0.07	AC-058	22-Jun-23
23060295-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	22-Jun-23
23060295-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	Methylcyclohexane	I	0.15	ppbv	0.03	AC-058	22-Jun-23
23060295-001	Methylcyclopentane	I	0.09	ppbv	0.09	AC-058	22-Jun-23
23060295-001	n-Butane		0.60	ppbv	0.03	AC-058	22-Jun-23
23060295-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	22-Jun-23
23060295-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	22-Jun-23
23060295-001	n-Heptane	I	0.11	ppbv	0.07	AC-058	22-Jun-23
23060295-001	n-Hexane	I	0.15	ppbv	0.05	AC-058	22-Jun-23
23060295-001	n-Octane	I	0.09	ppbv	0.03	AC-058	22-Jun-23
23060295-001	n-Pentane		0.38	ppbv	0.07	AC-058	22-Jun-23
23060295-001	n-Propylbenzene	K, T, U	< 0.10	ppbv	0.10	AC-058	22-Jun-23
23060295-001	n-Undecane	K, T, U	< 0.9	ppbv	0.9	AC-058	22-Jun-23
23060295-001	n-Nonane	I	0.09	ppbv	0.07	AC-058	22-Jun-23
23060295-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	22-Jun-23
23060295-001	o-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	p-Diethylbenzene	I	0.05	ppbv	0.03	AC-058	22-Jun-23
23060295-001	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	22-Jun-23
23060295-001	Styrene	K, T, U	< 0.07	ppbv	0.07	AC-058	22-Jun-23
23060295-001	Toluene	I	0.16	ppbv	0.05	AC-058	22-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech ALBERTA
PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 846		Ambient Air	11-Jun-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23060295 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060295-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	22-Jun-23
23060295-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	22-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23060295	01	26-Jul-23	Report created

Methods

Method	Description
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-028	Determination of Total Non-methane Hydrocarbons and Total Hydrocarbons in Ambient Air by Gas Chromatography Flame Ionization Detector
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

Order Comments

23060295

Project ID: Test # 846. Send report to Stan Yuha.

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Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: HI-VOL Test # 847 - HVF-23-03-19
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION: Test # 847
DATE SAMPLED: 17-Jun-23 0:00
DATE RECEIVED: 21-Jun-23
REPORT CREATED: 05-Jul-23
REPORT NUMBER: 23060317
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060317-003	Particulate Weight		87.0	mg	0.1	Research	

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: July 5, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test # 847 - C1170492		Air Filter	17-Jun-23 0:00

DESCRIPTION: Test # 847

REPORT NUMBER: 23060317 **REPORT CREATED:** 05-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060317-002	Particulate Weight		0.275	mg	0.004	AC-029	23-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 5, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 847	32264	Ambient Air	17-Jun-23 0:00

DESCRIPTION: Test # 847

REPORT NUMBER: 23060317 **REPORT CREATED:** 05-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060317-001	Total Non-Methane Organic Carbon	K, T, U	< 0.09	ppmv	0.09	NA-028	22-Jun-23
23060317-001	1,2,3-Trimethylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	23-Jun-23
23060317-001	1,2,4-Trimethylbenzene	I	0.07	ppbv	0.05	AC-058	23-Jun-23
23060317-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23
23060317-001	1-Butene/Isobutylene	K, T, U	< 0.10	ppbv	0.10	AC-058	23-Jun-23
23060317-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.12	ppbv	0.12	AC-058	23-Jun-23
23060317-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23
23060317-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	2,3,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	2,3-Dimethylbutane	K, T, U	< 0.16	ppbv	0.16	AC-058	23-Jun-23
23060317-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23
23060317-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23
23060317-001	2-Methylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23
23060317-001	3-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	3-Methylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	Benzene	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23
23060317-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23
23060317-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	Cyclohexane	K, T, U	< 0.07	ppbv	0.07	AC-058	23-Jun-23
23060317-001	Cyclopentane	I	0.04	ppbv	0.03	AC-058	23-Jun-23
23060317-001	Ethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 5, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 847	32264	Ambient Air	17-Jun-23 0:00

DESCRIPTION: Test # 847

REPORT NUMBER: 23060317 **REPORT CREATED:** 05-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060317-001	Isobutane		3.41	ppbv	0.05	AC-058	23-Jun-23
23060317-001	Isopentane		0.23	ppbv	0.07	AC-058	23-Jun-23
23060317-001	Isoprene	I	0.08	ppbv	0.03	AC-058	23-Jun-23
23060317-001	Isopropylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	23-Jun-23
23060317-001	m,p-Xylene	I	0.31	ppbv	0.07	AC-058	23-Jun-23
23060317-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23
23060317-001	Methylcyclohexane	I	0.06	ppbv	0.03	AC-058	23-Jun-23
23060317-001	Methylcyclopentane	K, T, U	< 0.09	ppbv	0.09	AC-058	23-Jun-23
23060317-001	n-Butane		0.59	ppbv	0.03	AC-058	23-Jun-23
23060317-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	23-Jun-23
23060317-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	23-Jun-23
23060317-001	n-Heptane	I	0.08	ppbv	0.07	AC-058	23-Jun-23
23060317-001	n-Hexane	I	0.06	ppbv	0.05	AC-058	23-Jun-23
23060317-001	n-Octane	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	n-Pentane	I	0.14	ppbv	0.07	AC-058	23-Jun-23
23060317-001	n-Propylbenzene	K, T, U	< 0.10	ppbv	0.10	AC-058	23-Jun-23
23060317-001	n-Undecane	K, T, U	< 0.9	ppbv	0.9	AC-058	23-Jun-23
23060317-001	n-Nonane	K, T, U	< 0.07	ppbv	0.07	AC-058	23-Jun-23
23060317-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	o-Xylene	I	0.07	ppbv	0.05	AC-058	23-Jun-23
23060317-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23
23060317-001	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	23-Jun-23
23060317-001	Styrene	I	0.07	ppbv	0.07	AC-058	23-Jun-23
23060317-001	Toluene	I	0.20	ppbv	0.05	AC-058	23-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 5, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca//

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 847	32264	Ambient Air	17-Jun-23 0:00

DESCRIPTION: Test # 847

REPORT NUMBER: 23060317 **REPORT CREATED:** 05-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060317-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	23-Jun-23
23060317-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	23-Jun-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 5, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23060317	01	05-Jul-23	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-028	Determination of Total Non-methane Hydrocarbons and Total Hydrocarbons in Ambient Air by Gas Chromatography Flame Ionization Detector
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

Order Comments

23060317

Send report to Yuha.Stan@cleanharbours.com. Project ID Test 847

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Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

Sample Comments

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Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: HI-VOL Test # 848 - HVF-23-03-20
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION:
DATE SAMPLED: 23-Jun-23 0:00
DATE RECEIVED: 30-Jun-23
REPORT CREATED: 17-Jul-23
REPORT NUMBER: 23060459
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060459-003	Particulate Weight		76.6	mg	0.1	Research	

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: July 17, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test # 848 - C1170496		Air Filter	23-Jun-23 0:00

DESCRIPTION:

REPORT NUMBER: 23060459 **REPORT CREATED:** 17-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060459-002	Particulate Weight		0.473	mg	0.004	AC-029	04-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 17, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TMNOC Test # 848	28933	Ambient Air	23-Jun-23 0:00

DESCRIPTION:

REPORT NUMBER: 23060459 **REPORT CREATED:** 17-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060459-001	Total Non-Methane Organic Carbon	K, T, U	< 0.09	ppmv	0.09	NA-028	30-Jun-23
23060459-001	1,2,3-Trimethylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	05-Jul-23
23060459-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	1-Butene/Isobutylene	K, T, U	< 0.11	ppbv	0.11	AC-058	05-Jul-23
23060459-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.12	ppbv	0.12	AC-058	05-Jul-23
23060459-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	2,2,4-Trimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	2,2-Dimethylbutane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	2,3,4-Trimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	2,3-Dimethylbutane	K, T, U	< 0.16	ppbv	0.16	AC-058	05-Jul-23
23060459-001	2,3-Dimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	2-Methylheptane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	2-Methylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	3-Methylhexane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	3-Methylpentane	I	0.05	ppbv	0.04	AC-058	05-Jul-23
23060459-001	Benzene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	cis-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	Cyclohexane	K, T, U	< 0.07	ppbv	0.07	AC-058	05-Jul-23
23060459-001	Cyclopentane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	Ethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 17, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TMNOC Test # 848	28933	Ambient Air	23-Jun-23 0:00

DESCRIPTION:

REPORT NUMBER: 23060459 **REPORT CREATED:** 17-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060459-001	Isobutane		0.63	ppbv	0.05	AC-058	05-Jul-23
23060459-001	Isopentane		0.41	ppbv	0.07	AC-058	05-Jul-23
23060459-001	Isoprene	I	0.08	ppbv	0.04	AC-058	05-Jul-23
23060459-001	Isopropylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	05-Jul-23
23060459-001	m,p-Xylene	I	0.09	ppbv	0.07	AC-058	05-Jul-23
23060459-001	m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	Methylcyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	Methylcyclopentane	K, T, U	< 0.09	ppbv	0.09	AC-058	05-Jul-23
23060459-001	n-Butane		0.75	ppbv	0.04	AC-058	05-Jul-23
23060459-001	n-Decane	K, T, U	< 0.11	ppbv	0.11	AC-058	05-Jul-23
23060459-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	05-Jul-23
23060459-001	n-Heptane	K, T, U	< 0.07	ppbv	0.07	AC-058	05-Jul-23
23060459-001	n-Hexane	I	0.24	ppbv	0.05	AC-058	05-Jul-23
23060459-001	n-Octane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	n-Pentane		0.20	ppbv	0.07	AC-058	05-Jul-23
23060459-001	n-Propylbenzene	K, T, U	< 0.11	ppbv	0.11	AC-058	05-Jul-23
23060459-001	n-Undecane	K, T, U	< 0.9	ppbv	0.9	AC-058	05-Jul-23
23060459-001	n-Nonane	K, T, U	< 0.07	ppbv	0.07	AC-058	05-Jul-23
23060459-001	o-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	o-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23
23060459-001	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	05-Jul-23
23060459-001	Styrene	K, T, U	< 0.07	ppbv	0.07	AC-058	05-Jul-23
23060459-001	Toluene	I	0.11	ppbv	0.05	AC-058	05-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 17, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca//

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TMNOC Test # 848	28933	Ambient Air	23-Jun-23 0:00

DESCRIPTION:

REPORT NUMBER: 23060459 **REPORT CREATED:** 17-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23060459-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Jul-23
23060459-001	trans-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 17, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23060459	01	17-Jul-23	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-028	Determination of Total Non-methane Hydrocarbons and Total Hydrocarbons in Ambient Air by Gas Chromatography Flame Ionization Detector
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

Order Comments

23060459

Send report to yuha.stan@cleanharbors.com. Project ID: Test 848

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Sample Comments

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Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: HI-VOL Test # 849 - HVF-23-03-17
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION:
DATE SAMPLED: 29-Jun-23 0:00
DATE RECEIVED: 06-Jul-23
REPORT CREATED: 26-Jul-23
REPORT NUMBER: 23070042
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070042-003	Antimony		343	ng/Filter	0.30	AC-021	21-Jul-23
23070042-003	Arsenic		5300	ng/Filter	0.30	AC-021	21-Jul-23
23070042-003	Barium	K, T, U	< 300	ng/Filter	300	AC-021	21-Jul-23
23070042-003	Beryllium	K, T, U	< 0.60	ng/Filter	0.60	AC-021	21-Jul-23
23070042-003	Boron		1540000	ng/Filter	600	AC-021	21-Jul-23
23070042-003	Cadmium		143	ng/Filter	0.80	AC-021	21-Jul-23
23070042-003	Chromium		4270	ng/Filter	20	AC-021	21-Jul-23
23070042-003	Cobalt		901	ng/Filter	0.50	AC-021	21-Jul-23
23070042-003	Copper		492000	ng/Filter	20	AC-021	21-Jul-23
23070042-003	Iron		2200000	ng/Filter	80	AC-021	21-Jul-23
23070042-003	Lead		6260	ng/Filter	0.70	AC-021	21-Jul-23
23070042-003	Manganese		73900	ng/Filter	1.0	AC-021	21-Jul-23
23070042-003	Mercury		6.99	ng/Filter	0.70	AC-021	21-Jul-23
23070042-003	Nickel		3570	ng/Filter	5.0	AC-021	21-Jul-23
23070042-003	Selenium		1710	ng/Filter	4.0	AC-021	21-Jul-23
23070042-003	Silver		268	ng/Filter	0.50	AC-021	21-Jul-23
23070042-003	Thallium	K, T, U	< 0.20	ng/Filter	0.20	AC-021	21-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: July 26, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
HI-VOL Test # 849 - HVF-23-03-17		Air Filter	29-Jun-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070042 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070042-003	Tin		146	ng/Filter	0.20	AC-021	21-Jul-23
23070042-003	Uranium	K, T, U	< 0.200	ng/Filter	0.200	AC-021	21-Jul-23
23070042-003	Vanadium		4400	ng/Filter	0.40	AC-021	21-Jul-23
23070042-003	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	21-Jul-23
23070042-003	Particulate Weight		107	mg	0.1	Research	

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test # 849 - C1170491		Air Filter	29-Jun-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070042 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070042-002	Antimony		3.64	ng/Filter	0.03	AC-021	18-Jul-23
23070042-002	Arsenic		7.69	ng/Filter	0.03	AC-021	18-Jul-23
23070042-002	Barium		275	ng/Filter	0.3	AC-021	18-Jul-23
23070042-002	Beryllium		0.34	ng/Filter	0.06	AC-021	18-Jul-23
23070042-002	Boron		210	ng/Filter	0.6	AC-021	18-Jul-23
23070042-002	Cadmium		0.56	ng/Filter	0.08	AC-021	18-Jul-23
23070042-002	Chromium	I	5	ng/Filter	2	AC-021	18-Jul-23
23070042-002	Cobalt		4.17	ng/Filter	0.05	AC-021	18-Jul-23
23070042-002	Copper		348	ng/Filter	2	AC-021	18-Jul-23
23070042-002	Iron		17800	ng/Filter	8	AC-021	18-Jul-23
23070042-002	Lead		6.39	ng/Filter	0.07	AC-021	18-Jul-23
23070042-002	Manganese		531	ng/Filter	0.1	AC-021	18-Jul-23
23070042-002	Mercury		0.30	ng/Filter	0.07	AC-021	18-Jul-23
23070042-002	Nickel		4.8	ng/Filter	0.5	AC-021	18-Jul-23
23070042-002	Selenium		14.1	ng/Filter	0.4	AC-021	18-Jul-23
23070042-002	Silver		0.33	ng/Filter	0.05	AC-021	18-Jul-23
23070042-002	Thallium		0.31	ng/Filter	0.02	AC-021	18-Jul-23
23070042-002	Tin	I	0.04	ng/Filter	0.02	AC-021	18-Jul-23
23070042-002	Uranium		0.395	ng/Filter	0.020	AC-021	18-Jul-23
23070042-002	Vanadium		7.13	ng/Filter	0.04	AC-021	18-Jul-23
23070042-002	Zinc		134	ng/Filter	1	AC-021	18-Jul-23
23070042-002	Particulate Weight		0.705	mg	0.004	AC-029	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TMNOC Test # 849	29037	Ambient Air	29-Jun-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070042 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070042-001	Total Non-Methane Organic Carbon	K, T, U	< 0.10	ppmv	0.10	NA-028	07-Jul-23
23070042-001	1,2,3-Trimethylbenzene	I	0.12	ppbv	0.10	AC-058	11-Jul-23
23070042-001	1,2,4-Trimethylbenzene		2.54	ppbv	0.06	AC-058	11-Jul-23
23070042-001	1,3,5-Trimethylbenzene		1.09	ppbv	0.06	AC-058	11-Jul-23
23070042-001	1-Butene/Isobutylene	K, T, U	< 0.12	ppbv	0.12	AC-058	11-Jul-23
23070042-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.14	ppbv	0.14	AC-058	11-Jul-23
23070042-001	1-Pentene	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jul-23
23070042-001	2,2,4-Trimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070042-001	2,2-Dimethylbutane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070042-001	2,3,4-Trimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070042-001	2,3-Dimethylbutane	K, T, U	< 0.18	ppbv	0.18	AC-058	11-Jul-23
23070042-001	2,3-Dimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070042-001	2,4-Dimethylpentane	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jul-23
23070042-001	2-Methylheptane	I	0.05	ppbv	0.04	AC-058	11-Jul-23
23070042-001	2-Methylhexane	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jul-23
23070042-001	2-Methylpentane		0.21	ppbv	0.04	AC-058	11-Jul-23
23070042-001	3-Methylheptane	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jul-23
23070042-001	3-Methylhexane	I	0.06	ppbv	0.04	AC-058	11-Jul-23
23070042-001	3-Methylpentane	I	0.07	ppbv	0.04	AC-058	11-Jul-23
23070042-001	Benzene	I	0.08	ppbv	0.06	AC-058	11-Jul-23
23070042-001	cis-2-Butene	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jul-23
23070042-001	cis-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070042-001	Cyclohexane	K, T, U	< 0.08	ppbv	0.08	AC-058	11-Jul-23
23070042-001	Cyclopentane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070042-001	Ethylbenzene	I	0.38	ppbv	0.06	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TMNOC Test # 849	29037	Ambient Air	29-Jun-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070042 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070042-001	Isobutane		0.30	ppbv	0.06	AC-058	11-Jul-23
23070042-001	Isopentane		0.60	ppbv	0.08	AC-058	11-Jul-23
23070042-001	Isoprene		0.30	ppbv	0.04	AC-058	11-Jul-23
23070042-001	Isopropylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	11-Jul-23
23070042-001	m,p-Xylene		1.37	ppbv	0.08	AC-058	11-Jul-23
23070042-001	m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070042-001	m-Ethyltoluene	I	0.14	ppbv	0.06	AC-058	11-Jul-23
23070042-001	Methylcyclohexane	I	0.12	ppbv	0.04	AC-058	11-Jul-23
23070042-001	Methylcyclopentane	K, T, U	< 0.10	ppbv	0.10	AC-058	11-Jul-23
23070042-001	n-Butane		0.88	ppbv	0.04	AC-058	11-Jul-23
23070042-001	n-Decane	I	0.14	ppbv	0.12	AC-058	11-Jul-23
23070042-001	n-Dodecane	K, T, U	< 0.6	ppbv	0.6	AC-058	11-Jul-23
23070042-001	n-Heptane	I	0.13	ppbv	0.08	AC-058	11-Jul-23
23070042-001	n-Hexane	I	0.16	ppbv	0.06	AC-058	11-Jul-23
23070042-001	n-Octane	I	0.07	ppbv	0.04	AC-058	11-Jul-23
23070042-001	n-Pentane		0.32	ppbv	0.08	AC-058	11-Jul-23
23070042-001	n-Propylbenzene	K, T, U	< 0.12	ppbv	0.12	AC-058	11-Jul-23
23070042-001	n-Undecane	K, T, U	< 1.0	ppbv	1.0	AC-058	11-Jul-23
23070042-001	n-Nonane	K, T, U	< 0.08	ppbv	0.08	AC-058	11-Jul-23
23070042-001	o-Ethyltoluene	I	0.08	ppbv	0.04	AC-058	11-Jul-23
23070042-001	o-Xylene		0.43	ppbv	0.06	AC-058	11-Jul-23
23070042-001	p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070042-001	p-Ethyltoluene	I	0.09	ppbv	0.08	AC-058	11-Jul-23
23070042-001	Styrene	I	0.12	ppbv	0.08	AC-058	11-Jul-23
23070042-001	Toluene		0.56	ppbv	0.06	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TMNOC Test # 849	29037	Ambient Air	29-Jun-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070042 **REPORT CREATED:** 26-Jul-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070042-001	trans-2-Butene	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jul-23
23070042-001	trans-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: July 26, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23070042	01	26-Jul-23	Report created

Methods

Method	Description
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-028	Determination of Total Non-methane Hydrocarbons and Total Hydrocarbons in Ambient Air by Gas Chromatography Flame Ionization Detector
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

Order Comments

23070042

Send results to yuha.stan@cleanharbors.com. Project ID: Test 849

PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Sample ID: 23070041-001 Priority: Normal

Customer ID: Clean Harbours
Cust Samp ID: Ryley Facility Test # 103 - HV-23-02-05

...lytical Services
PO Bag 4000
Vegreville, AB T9C 1T4
Phone: (780) 632-8284 Fax: (780) 632-8620
Shipping: Highway 16 A & 75 St

ANALYSIS REQUEST FORM

Project Code: _____
Client Code: _____
Invoice Code: _____
Date Rec'd (D/M/Y): JUL 06 2023
Rec'd By: _____

RECEIVED

FOR AITF USE ONLY

Client details:
Contact: __
Company: __
Project ID: __
Address: __
__
__
Telephone: __
Email: __

CleanHarbors

Jorge A. Mendoza
Laboratory Manager

Clean Harbors
Environmental Services
Box 390 , 2 Km North of Hwy 14
on Sec. Road 854
Ryley, AB T0B 4A0
www.cleanharbors.com

780.663.3828 Ext. 235
Home Office 780.663.2342
Mobile 780.934.2342
Fax 780.663.3539
Direct Line 780.663.2513
mendoza.jorge@cleanharbors.com

"People & Technology Creating a Safer, Cleaner Environment"

Special Instructions/Comments: **RUSH (Surcharge):** ☐

PO # 0000234728
Quote ID: QT140005

AITF Contact: _____ **Email:** _____
Tel: _____

Sample ID	Sample Source Description	Date/Time Sampled From/To		Analysis Requested
		Date (dd/mm/yy)	Time (24 Hr)	
Ryley Facility Test # 103	Filter Number # HV-23-02-05	1/06/23		Particulate weight ICP-MS analysis
		1/07/23	32.14 hrs	
Ryley School Test # 103	Filter Number # HV-23-02-06	1/06/23		Particulate weight ICP-MS analysis
		1/07/23	28.02 hrs	

{00004818;6}

TERMS AND CONDITIONS

The attached document entitled "**Chain of Custody Form**" is subject to the following Terms and Conditions, unless otherwise specified on the Quotation. InnoTech Alberta's commencement of the Services shall be deemed acceptance of the terms and conditions by the Client.

1. Any proposal contained herein is prepared for the consideration of the Client only. Its contents may not be used or disclosed to any other party without prior written consent of the INNOTECH ALBERTA INC. (hereinafter referred to as "InnoTech Alberta").

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4. InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not, however, be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, including any damage, loss or expense resulting from InnoTech Alberta's negligence. InnoTech Alberta shall not be responsible for any damage, which is a natural or necessary result of any testing procedure.

5. For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.

6. All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).

7. The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.

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12. Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:

(a) be responsible for all costs associated with the handling, transportation and disposal of such materials;

(b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

(c) indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.

13. The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.

14. If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.

15. InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.

16. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

17. The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:

(a) any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;

(b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or

(c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.

The hold harmless shall survive this Agreement.

18. The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property.

19. InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars ($2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars ($1,000,000.00) per claim, and two million dollars ($2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.

20. The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.

21. This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.

22. If a party's performance of any of its obligations under this Agreement (excepting only an obligation to pay) is delayed, rendered impossible or impractical, or prevented in whole or in part due to circumstances beyond its reasonable control, including but not limited to acts of God, war, terrorism, labour disputes, pandemics or epidemics, global health emergencies, or governmental action, that party will not be in breach of this Agreement due to the delay or failure in performance occasioned by such event..

23. InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.

24. This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.

Sample ID: 23060160-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 845

CHAIN OF CUSTODY FORM

Environmental Analytical Services
Highway 16A & 75 Street
Vegreville, AB T9C 1T4

Phone: 780-632-8403
Email: EAS.Reception@innotechalberta.ca
www.innotechalberta.ca

Client Reporting Information

Company:	Clean Harbors Canada, Inc
Address:	PO Box 390, 50114 Range Road 173, Ryley, AB T0B 4A0
Contact:	Todd Webb or Stan Yuha
Phone:	780-663-2513 or 780-663-3828
Email:	Webb.Todd@cleanharbors.com, Yuha.Stan@cleanharbors.com

Client Billing Information

Contact:	Stephanie Dennis
Phone:	780-663-3828
Email:	Dennis.Stephanie@cleanharbors.com
Project ID:	Test 845
PO #:	0000233992

Turnaround Time

X Normal (10 business days)

Rush

Note: Rush service not available for all tests.
Confirm rush requests with InnoTech Alberta.

Special Instructions/Comments:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**
If neither filter exceeds its trigger weight, neither filter is analyzed for metals
If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC
Trigger Weight for Analysis (PM10): 1.13 mg
Trigger Weight for Analysis (HI-VOL): 87.8 mg

Date Received – Lab Use Only

RECEIVED
JUN 12 2023

Lab Sample No.	Client Sample ID	Sample Source/ Description	Canister Number/ Sampler ID	Date Sampled (dd/mm/yy) From / To	Time Sampled (24 hour) From / To	Analysis Requested
1	VOCs and TNMOC Test Number: 845	Canister	32184	05/06/23	00:00	VOC PAMS & TNMOC
				06/06/23	00:00	
2	PM10 Test Number: 845	PM10 filter	C9700087	05/06/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				06/06/23	00:00	
3	HI-VOL Test Number: 845	HI-VOL Filter	HVF-23-03-05	05/06/23	00:00	Particulate Weight (& metals if over trigger weight)*
				06/06/23	00:00	
					Total: 23.86 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

This "Chain of Custody" form is subject to InnoTech Alberta standard terms and conditions.

Sample ID: 23060160-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 845

Filter Shipping Record

Sent To: Clean Harbors
PO Box 390
Ryley, AB T0B 4A0
(1/2 mile north, Hwy 854)
Todd Webb
780-663-2513

Date: MARCH 30/23

Project: Clean Harbors

Prepared by: S Zelenka

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C9700087 EST 845

Returns: coolers, large and small containers may be shipped to: Innotech, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

InnoTech ALBERTA

Canister ID: 32184

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ4 on: FEB 2 4 2023

Evacuated: MAR 3 1 2023 Recertified:

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: Test 845

Sampled By: T. Webb

Starting Vacuum: -27.1 "Hg

End Pressure: KG -3 "Hg/psig

Sample ID: 23060160-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 845

{00004084;2}

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5.For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.

6.All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).

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(b)reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

(c)indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.

13.The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.

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15.InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.

16.In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

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(a)any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
(b)differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
(c)any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.
The hold harmless shall survive this Agreement.

18.The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property. 19.InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars ($2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars ($1,000,000.00) per claim, and two million dollars ($2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.

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21.This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.

22.InnoTech Alberta shall not be liable to the Client for any failure or delay in performance of its obligations caused by circumstances beyond its control, including but not limited to acts of God, strikes, laws imposed after the fact, governmental restrictions, riots, wars, civil disorder, rebellion, sabotage, fire, flood, explosion, earthquake or other disasters.

23.InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.

24.This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.

Sample ID: 23060160-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 845

Sample ID: 23060295-001 Priority: Normal

CUSTODY FORM

Environmental Analytical Services
Highway 16A & 75 Street
Vegreville, AB T9C 1T4

Phone: 780-632-8403
Email: EAS.Reception@innotechalberta.ca
www.innotechalberta.ca

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 846

Company:	Clean Harbors Canada, Inc
Address:	PO Box 390, 50114 Range Road 173, Ryley, AB T0B 4A0
Contact:	Todd Webb or Stan Yuha
Phone:	780-663-2513 or 780-663-3828
Email:	Webb.Todd@cleanharbors.com, Yuha.Stan@cleanharbors.com

Client Billing Information

Contact:	Stephanie Dennis
Phone:	780-663-3828
Email:	Dennis.Stephanie@cleanharbors.com
Project ID:	Test 846
PO #:	0000233992

Turnaround Time

X Normal (10 business days)

Rush

Note: Rush service not available for all tests.
Confirm rush requests with InnoTech Alberta.

Special Instructions/Comments:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**

If neither filter exceeds its trigger weight, neither filter is analyzed for metals

If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC

Trigger Weight for Analysis (PM10): 1.12 mg

Trigger Weight for Analysis (HI-VOL): 88.0 mg

Date Received – Lab Use Only

RECEIVED
JUN 20 2023

Lab Sample No.	Client Sample ID	Sample Source/ Description	Canister Number/ Sampler ID	Date Sampled (dd/mm/yy) From / To	Time Sampled (24 hour) From / To	Analysis Requested
1	VOCs and TNMOC Test Number: 846	Canister	32197	11/06/23	00:00	VOC PAMS & TNMOC
				12/06/23	00:00	
2	PM10 Test Number: 846	PM10 filter	C1170495	11/06/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				12/06/23	00:00	
3	HI-VOL Test Number: 846	HI-VOL Filter	HVF-23-03-13	11/06/23	00:00	Particulate Weight (& metals if over trigger weight)*
				12/06/23	00:00	
					Total: 23.90 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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{00004084;2}

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9. Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.

10. Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.

11. Prices quoted do not include shipping, insurance or cost of consumables. The Client shall be responsible for all costs incurred by InnoTech Alberta in collecting any item for testing and returning the item to the Client after testing and shall be responsible for all necessary incidental costs incurred by InnoTech Alberta in providing the Services. InnoTech Alberta will not be responsible for any damage or loss to items during shipping and it is the responsibility of the Client to arrange and pay for any insurance it deems necessary.

12. Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:

(a) be responsible for all costs associated with the handling, transportation and disposal of such materials;

(b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

(c) indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.

13. The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.

14. If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.

15. InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.

16. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

17. The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
(a) any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
(b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
(c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.
The hold harmless shall survive this Agreement.

18. The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property. 19. InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars ($2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars ($1,000,000.00) per claim, and two million dollars ($2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.

20. The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.

21. This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.

22. InnoTech Alberta shall not be liable to the Client for any failure or delay in performance of its obligations caused by circumstances beyond its control, including but not limited to acts of God, strikes, laws imposed after the fact, governmental restrictions, riots, wars, civil disorder, rebellion, sabotage, fire, flood, explosion, earthquake or other disasters.

23. InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.

24. This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.

RECEIVED
JUN 20 2023

Sample ID: 23060295-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 846

F163-01

Sample ID: 23060295-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 846

Filter Shipping Record

RECEIVED
JUN 20 2023

Sent To: Clean Harbors
PO Box 390
Ryley, AB T0B 4A0
(1/2 mile north, Hwy 854)
Todd Webb
780-663-2513

Date: May 16 2023

Project: Clean Harbors

Prepared by:

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1170495 test 846

Returns: coolers, large and small containers may be shipped to: Innotech, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

Sample ID: 23060295-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 846

InnoTech ALBERTA

Canister ID: 32197

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ4 on: APR 2 1 2023

Evacuated: MAY 1 2 2023 Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: Test 846

Sampled By: T. Webb

Starting Vacuum: -27.1 "Hg

End Pressure: -5 "Hg/ psig TWP

Sample ID: 23060317-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 847 - 32264

CHAIN OF CUSTODY FORM

Environmental Analytical Services
Highway 16A & 75 Street
Vegreville, AB T9C 1T4

Phone: 780-632-8403
Email: EAS.Reception@innotechalberta.ca
www.innotechalberta.ca

Client Reporting Information		Client Billing Information		Turnaround Time
Company:	Clean Harbors Canada, Inc	Contact:	Stephanie Dennis	X Normal (10 business days)
Address:	PO Box 390, 50114 Range Road 173, Ryley, AB T0B 4A0	Phone:	780-663-3828	Rush
Contact:	Todd Webb or Stan Yuha	Email:	Dennis.Stephanie@cleanharbors.com	Note: Rush service not available for all tests. Confirm rush requests with InnoTech Alberta.
Phone:	780-663-2513 or 780-663-3828	Project ID:	Test 847	
Email:	Webb.Todd@cleanharbors.com, Yuha.Stan@cleanharbors.com	PO #:	0000233992	

Special Instructions/Comments:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**
If neither filter exceeds its trigger weight, neither filter is analyzed for metals
If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC
Trigger Weight for Analysis (PM10): 1.14 mg
Trigger Weight for Analysis (HI-VOL): 88.5 mg

Date Received – Lab Use Only

RECEIVED
JUN 21 2023

Lab Sample No.	Client Sample ID	Sample Source/ Description	Canister Number/ Sampler ID	Date Sampled (dd/mm/yy) From / To	Time Sampled (24 hour) From / To	Analysis Requested
	VOCs and TNMOC Test Number: 847	Canister	32264	17/06/23	00:00	VOC PAMS & TNMOC
				18/06/23	00:00	
	PM10 Test Number: 847	PM10 filter	C1170492	17/06/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				18/06/23	00:00	
	HI-VOL Test Number: 847	HI-VOL Filter	HVF-23-03-19	17/06/23	00:00	Particulate Weight (& metals if over trigger weight)*
				18/06/23	00:00	
					Total: 23.04 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

This "Chain of Custody" form is subject to InnoTech Alberta standard terms and conditions.

Sample ID: 23060317-002 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: PM10 Test # 847 - C1170492

Filter Shipping Record

Sent To: Clean Harbors
PO Box 390
Ryley, AB T0B 4A0
(1/2 mile north, Hwy 854)
Todd Webb
780-663-2513

RECEIVED
JUN 21 2023

Date: May 16-2023

Project: Clean Harbors

Prepared by: [signature]

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1170492 Test 847

Returns: coolers, large and small containers may be shipped to: Innotech, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

Sample ID: 23060317-003 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: HI-VOL Test # 847 - HVF-23-03-19

InnoTech ALBERTA

Canister ID: 32264

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ4 on: APR 17 2023

Evacuated: MAY 12 2023 Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: Test 847

Sampled By: T. Webb

Starting Vacuum:	End Vacuum:
-27.1 "Hg	-5 "Hg/psig

RECEIVED
JUN 21 2023

{00004084;2}

TERMS AND CONDITIONS

The attached document entitled "**Chain of Custody Form**" is subject to the following Terms and Conditions, unless otherwise specified on the Quotation. InnoTech Alberta's commencement of the Services shall be deemed acceptance of the terms and conditions by the Client.

1. Any proposal contained herein is prepared for the consideration of the Client only. Its contents may not be used or disclosed to any other party without prior written consent of the INNOTECH ALBERTA INC. (hereinafter referred to as "InnoTech Alberta").

2. InnoTech Alberta will perform the Services in accordance with normal professional standards.

3. The delivery time for performance of the Services (as set out on the front page of this Quotation) is approximate and may be changed by InnoTech Alberta giving written notice to the Client.

4. InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not, however, be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, including any damage, loss or expense resulting from InnoTech Alberta's negligence. InnoTech Alberta shall not be responsible for any damage, which is a natural or necessary result of any testing procedure.

5. For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.

6. All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).

7. The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.

8. The Client shall not use InnoTech Alberta's name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta.

9. Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.

10. Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.

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(b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

(c) indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.

13. The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.

14. If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.

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16. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

17. The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
(a) any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
(b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
(c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.
The hold harmless shall survive this Agreement.

18. The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property. 19. InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars ($2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars ($1,000,000.00) per claim, and two million dollars ($2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.

20. The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.

21. This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.

22. InnoTech Alberta shall not be liable to the Client for any failure or delay in performance of its obligations caused by circumstances beyond its control, including but not limited to acts of God, strikes, laws imposed after the fact, governmental restrictions, riots, wars, civil disorder, rebellion, sabotage, fire, flood, explosion, earthquake or other disasters.

23. InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.

24. This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.

Sample ID: 23060459-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TMNOC Test #848

HAIN OF CUSTODY FORM

Environmental Analytical Services
Highway 16A & 75 Street
Vegreville, AB T9C 1T4

Phone: 780-632-8403
Email: EAS.Reception@innotechalberta.ca
www.innotechalberta.ca

Client Reporting Information		Client Billing Information		Turnaround Time
Company:	Clean Harbors Canada, Inc	Contact:	Stephanie Dennis	X Normal (10 business days)
Address:	PO Box 390, 50114 Range Road 173, Ryley, AB T0B 4A0	Phone:	780-663-3828	Rush
Contact:	Todd Webb or Stan Yuha	Email:	Dennis.Stephanie@cleanharbors.com	Note: Rush service not available for all tests. Confirm rush requests with InnoTech Alberta.
Phone:	780-663-2513 or 780-663-3828	Project ID:	Test 848	
Email:	Webb.Todd@cleanharbors.com, Yuha.Stan@cleanharbors.com	PO #:	0000233992	

Special Instructions/Comments:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**

If neither filter exceeds its trigger weight, neither filter is analyzed for metals

If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC

Trigger Weight for Analysis (PM10): 1.13 mg

Trigger Weight for Analysis (HI-VOL): 88.5 mg

Date Received – Lab Use Only

RECEIVED
JUN 30 2023

Lab Sample No.	Client Sample ID	Sample Source/ Description	Canister Number/ Sampler ID	Date Sampled (dd/mm/yy) From / To	Time Sampled (24 hour) From / To	Analysis Requested
	VOCs and TNMOC Test Number: 848	Canister	28933	23/06/23	00:00	VOC PAMS & TNMOC
				24/06/23	00:00	
	PM10 Test Number: 848	PM10 filter	C1170496	23/06/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				24/06/23	00:00	
	HI-VOL Test Number: 848	HI-VOL Filter	HVF-23-03-20	23/06/23	00:00	Particulate Weight (& metals if over trigger weight)*
				24/06/23	00:00	
					Total: 23.03 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

This "Chain of Custody" form is subject to InnoTech Alberta standard terms and conditions.

Sample ID: 23060459-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TMNOC Test #848

InnoTech ALBERTA

Canister ID: 28933

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ4 on: APR 12 2023

Evacuated: MAY 12 2023 Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: Test ~~848~~

Sampled By: T. Webb

Starting Vacuum: -27.1 "Hg

End Vacuum: -7 "Hg/psig mw

RECEIVED
JUN 30 2023

Sample ID: 23060459-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TMNOC Test #848

RECEIVED
JUN 30 2023

Filter Shipping Record

Sent To: Clean Harbors
PO Box 390
Ryley, AB T0B 4A0
(1/2 mile north, Hwy 854)
Todd Webb
780-663-2513

Date: MAY 16 - 2023

Project: Clean Harbors

Prepared by:

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1170496 ~~test 848~~

Returns: coolers, large and small containers may be shipped to: Innotech, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

Sample ID: 23070042-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TMNOC Test # 849

HAIN OF CUSTODY FORM

Environmental Analytical Services
Highway 16A & 75 Street
Vegreville, AB T9C 1T4

Phone: 780-632-8403
Email: EAS.Reception@innotechalberta.ca
www.innotechalberta.ca

Client Reporting Information

Company: Clean Harbors Canada, Inc
Address: PO Box 390, 50114 Range Road 173, Ryley, AB T0B 4A0
Contact: Todd Webb or Stan Yuha
Phone: 780-663-2513 or 780-663-3828
Email: Webb.Todd@cleanharbors.com, Yuha.Stan@cleanharbors.com

Client Billing Information

Contact: Stephanie Dennis
Phone: 780-663-3828
Email: Dennis.Stephanie@cleanharbors.com
Project ID: Test 849
PO #: 0000233992

Turnaround Time

X Normal (10 business days)

Rush

Note: Rush service not available for all tests.
Confirm rush requests with InnoTech Alberta.

Special Instructions/Comments:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**
If neither filter exceeds its trigger weight, neither filter is analyzed for metals
If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC
Trigger Weight for Analysis (PM10): 1.11 mg
Trigger Weight for Analysis (HI-VOL): 90.1 mg

Date Received – Lab Use Only

RECEIVED
JUL 06 2023

Lab Sample No.	Client Sample ID	Sample Source/ Description	Canister Number/ Sampler ID	Date Sampled (dd/mm/yy) From / To	Time Sampled (24 hour) From / To	Analysis Requested
1	VOCs and TNMOC Test Number: 849	Canister	29037	29/06/23	00:00	VOC PAMS & TNMOC
				30/06/23	00:00	
2	PM10 Test Number: 849	PM10 filter	C1170491	29/06/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				30/06/23	00:00	
3	HI-VOL Test Number: 849	HI-VOL Filter	HVF-23-03-17	29/06/23	00:00	Particulate Weight (& metals if over trigger weight)*
				30/06/23	00:00	
					Total: 24.49 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

This "Chain of Custody" form is subject to InnoTech Alberta standard terms and conditions.

Sample ID: 23070042-002 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: PM10 Test # 849 - C1170491

RECEIVED
JUL 06 2023

Filter Shipping Record

Sent To: Clean Harbors
PO Box 390
Ryley, AB T0B 4A0
(1/2 mile north, Hwy 854)
Todd Webb
780-663-2513

Date: May 16-2023

Project: Clean Harbors

Prepared by:

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1170491 Test 849

Returns: coolers, large and small containers may be shipped to: Innotech, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

InnoTech ALBERTA

Canister ID: 29037

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ3 on: MAY 1 6 2023

Evacuated: MAY 2 6 2023 Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: Test 849

Sampled By: T. Webb

Starting Vacuum: -27.1 "Hg

End Vacuum: KG -7 "Hg/ psig

Sample ID: 23070042-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TMNOC Test # 849

{00004084;2}

TERMS AND CONDITIONS

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1.Any proposal contained herein is prepared for the consideration of the Client only. Its contents may not be used or disclosed to any other party without prior written consent of the INNOTECH ALBERTA INC. (hereinafter referred to as "InnoTech Alberta").

2.InnoTech Alberta will perform the Services in accordance with normal professional standards.

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4.InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not, however, be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, including any damage, loss or expense resulting from InnoTech Alberta's negligence. InnoTech Alberta shall not be responsible for any damage, which is a natural or necessary result of any testing procedure.

5.For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.

6.All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).

7.The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.

8.The Client shall not use InnoTech Alberta's name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta.

9.Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.

10.Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.

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12.Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:

(a)be responsible for all costs associated with the handling, transportation and disposal of such materials;

(b)reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

(c)indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.

13.The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.

14.If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.

15.InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.

16.In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

17.The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
(a)any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
(b)differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
(c)any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.
The hold harmless shall survive this Agreement.

18.The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property. 19.InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars ($2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars ($1,000,000.00) per claim, and two million dollars ($2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.

20.The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.

21.This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.

22.InnoTech Alberta shall not be liable to the Client for any failure or delay in performance of its obligations caused by circumstances beyond its control, including but not limited to acts of God, strikes, laws imposed after the fact, governmental restrictions, riots, wars, civil disorder, rebellion, sabotage, fire, flood, explosion, earthquake or other disasters.

23.InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.

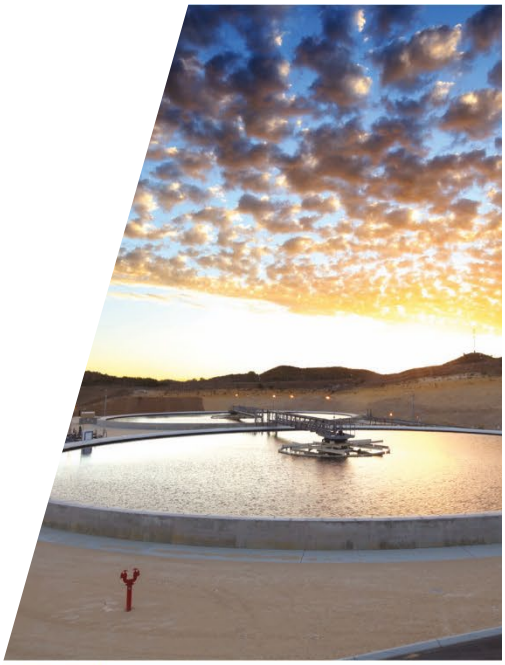
24.This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.

Sample ID: 23070042-001 **Priority:** Normal

Customer ID: Clean Harbours

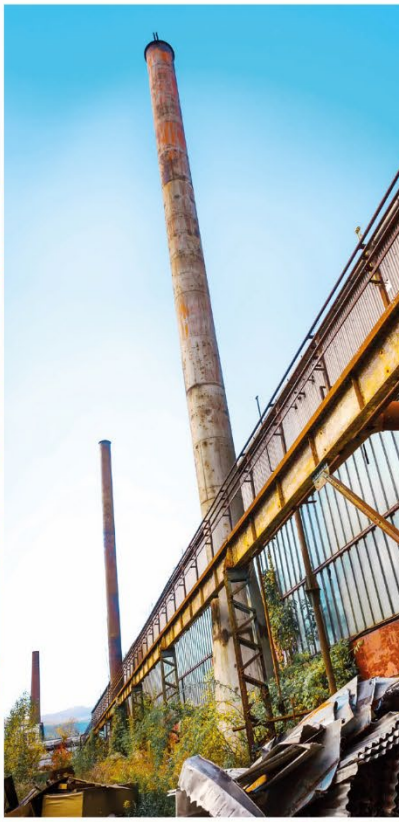
Cust Samp ID: VOCs and TMNOC Test # 849

Appendix E
June Quarterly Audits



Quarterly Audit Partisol FRM Model 2000

Clean Harbors
50114 Range Rd. 173
Ryley, Alberta T0B 4A0
Quarterly Audit Date: June 30, 2023



Clean Harbors

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Table Index

Appendix Index

1. Introduction

GHD Limited (GHD) was retained by Clean Harbors to conduct a Quarterly Audit at 50114 Range Road 173 Ryley, Alberta (Facility) on June 30, 2023. The Quarterly Audit was conducted on the Partisol FRM 2000 Particulate Matter less than 10 microns (PM_{10}) Sampler (Partisol Sampler), located at the Ryley Lift Station, Secondary Road 854, approximately 350 metres southeast of the Facility (53°17'52.66"N and 112°24'57.87"W).

2. Audit Procedure

The Partisol Sampler was audited in accordance with the instrument manual and the Alberta Air Monitoring Directive, 2016 (AMD). Siting location, ambient pressure, ambient temperature, filter temperature, leakage rate and flow rate were audited, as well as overall instrument condition to ensure compliance with the instrument manual and the AMD. Below is a summary of the tasks performed on the Partisol Sampler:

- Siting Location Audit
- Ambient Pressure Audit
- Ambient Temperature Audit
- Filter Temperature Audit
- Leakage Rate Audit
- Flow Rate Audit
- Instrument Condition and Recommendations

GHD verified all of these parameters using calibrated reference instruments. GHD reference instruments either have National Institute of Standards and Technology (NIST) Traceable Certifications, current manufacturer certification, or were verified by a primary standard. The GHD quarterly audit field form can be found in Appendix A. All calibrations and certifications can be found in Appendix B.

3. Audit Results

3.1 Siting Location Audit Results (AEP Station ID 00010348-I-1)

The siting location of the Partisol Sampler meets the requirements of Chapter 3, of the AMD. Table 3.1 of this report compares the AMD Siting Requirements for Intermittent Samplers versus the current Partisol sampler location.

- The current coordinates of the Partisol Sampler are 53°17'52.66"N and 112°24'57.87"W.
- The distance from the nearest roadway is 21 m.

Table 3.1 AMD Requirements vs. Current Partisol Sampler Location

Site Characteristics	AMD Requirements	Current Location	Specification
Sampler Inlet-height above ground (abg)	Minimum 2 m, Maximum 15 m	Meets Requirement	4.63 m abg
Other Requirements	a. Distance from an obstacle greater than 2.5 times the height of the obstacle above the sampler.	Meets Requirement	>2.5 times
	b. At least 2 m from any other samplers or inlets with flow rates greater than 200 litres (L) per minute,	Meets Requirement	None
	Or at least 1 m apart from any other samplers or inlets with flow rates less than or equal of 200 L per minute.	Meets Requirement	None
	c. Unrestricted air flow in three to four wind quadrants.	Meets Requirement	4/4 Unrestricted Quadrants

3.2 Pressure and Temperature Audit Results (AEP Station ID 00010348-I-1)

The pressure and temperature audit results of the Partisol Sampler meet the requirements of Chapter 4, of the AMD. Table 3.2 of this report compares the reference results versus the Partisol Sampler readings.

Table 3.2 Reference Results vs. Partisol Sampler Readings

Parameter	Partisol	Reference	Difference	Limit	Pass/Fail
Ambient Temperature (°C)	29.7	29.5	0.2	±2°C	Pass
Barometric Pressure (mmHg)	700.0	701.3	1.3	±10 mmHg	Pass
Filter Temperature (°C)	30.8	30.5	0.3	±2°C	Pass
Flow (L/min	16.7	15.8	0.9	±1.0 L/min	Pass

3.3 Leak Check Results (AEP Station ID 00010348-I-1)

3.3.1 Automatic Leak Check

The Partisol firmware performs leak checks in automatic mode and indicates either a "pass" or "fail" based on a pressure drop threshold of 127 mmHg per minute. The Partisol Sampler passed the requirements outlined in the service manual with a pressure drop of 6 mmHg per minute during the audit.

3.3.2 External Manual Leak Check

GHD also performs an external manual leak check on the Partisol Sampler as part of the quarterly audit. The external manual leak check measures the pressure drop on a vacuum gauge located on

the sampler. The pressure drop may not exceed more than 8.5 inHg (216 mmHg) over a 30-second span. The Partisol Sampler passed the requirements of the service manual with a pressure drop of 0.5 inHg in a 30-second span.

3.4 Flow Audit (AEP Station ID 00010348-I-1)

The flow audit results of the Partisol Sampler meet the requirements of Chapter 4 of the AMD, refer to Table 3.2.

3.5 Instrument Condition and Recommendations (AEP Station ID 00010348-I-1)

The Partisol Sampler was visually and functionally inspected on the audit day. Audit recommendations and instrument conditions are listed below:

- Liquid crystal display screen is functioning.
- Filter exchange cabinet has been cleaned.
- Ventilation fan filters are clean.
- Filter exchange mechanism is operating normally.
- Filter v-seals are in good condition.
- Ambient temperature and pressure sensor wires in good condition.
- Main power connection wire in good condition.

3.5.1 Recommendations

GHD recommends opening and cleaning PM_{10} sampling inlet prior to next sampling event.

Appendices

Appendix A
Quarterly Audit Form

GHD Quarterly Audit Form

Date	6/30/2023	Weather Cond.:	Sunny
Owner	Clean Harbors	Start Time:	11:45:00 AM
Station Name	Ryley Lift Station	End Time:	11:55:00 AM
Parameter	PM_{10}	Performed By:	S. Davey and P. Shariaty

Partisol FRM Model 2000 Identification		**Sampler Data**	
Make/Model:	R & P Partisol FRM 2000	Temperature:	29.7
Unit ID:	Ryley Lift Station	Pressure:	700
S/N:	200FB209860905	Flow Set Point:	16.7 L/min

GHD Reference Standards

	Flow	Pressure	Temperature	Manometer
Make:	AirMetrics	TSI	Fluke	Dwyer
Model:	FRM	9555-X / 960	1551A Ex	475-0-FM
Serial Number:	FRM1218	9555X1002005	4893012	N/A
Calibration Date:	5/17/2016	12/20/2022	12/19/2022	12/1/2022

Audit Data

	Sampler Data	Reference Data	Difference	Pass/Fail	Units
Ambient Temperature (+/- 2 °C)	29.70	29.50	0.2	Pass	°C
Barometric Pressure (+/- 10 mmHg)	700.00	701.31	1.3	Pass	mmHg
Filter Temperature (+/- 2 °C)	30.80	30.53	0.3	Pass	°C
Flow (+/- 1.0 Litres/min)	16.70	15.80	0.9	Pass	Litres/min

Leak Check

Manual Check (-8.5 inHg)

Initial Pressure	Final Pressure	Pressure Drop	Pass/Fail	Units
-14.50	-14.00	-0.50	Pass	inHG

Automatic Check (-127 mmHg)

Leak check was performed in automatic mode, sampler indicated:	6 mmHg/min	Pass	mmHg/min

As Found/As Left	**Yes/No**	**As Found**	**As Left**	**Pass/Fail**
Did the ambient temperature require adjustment?	No	29.7	29.7	Pass
Did the barometric pressure require adjustment?	No	700	700	Pass
Did the filter temperature require adjustment?	No	30.8	30.8	Pass
Did the flow audit require adjustment?	No	16.7	16.7	Pass

Comments

Flow Equation

Set Point (lpm)	Actual Flow *(Qact)* (lpm)	Absolute Difference (lpm)	Pass/Fail (± 1 lpm)			
				Manometer *(DH)*	3.8 "H2O	
				Actual Temp *(Tact)*	302.65 °K	29.5°C
				Actual Pres *(Pact)*	0.935 bar	
16.7	16.6	0.1	Pass	Actual Pres *(Pact)*	27.61 inHg	

FTS Linear Regression Constants

(mflo) = 0.4452

(bflo) = 0.4430

$$Qact = mflo \times \frac{\sqrt{\Delta H \times Tact}}{Pact} + bflo$$

Appendix B
Calibration Certificates

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Calgary, AB T2C 5J3

VANCOUVER
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www.itm.com • 1.800.561.8187 • information@itm.com

Calibration Certificate

Customer: *ITM Edmonton*

Certificate: C542640-00-03

Unit Identification

Manufacturer: **Fluke**
Model: **1551A Ex**
Description: **Stik Thermometer**
Serial: **4893012**
Unit ID: **I-2902**

Calibration Date

Calibration Date: **19-Dec-2022**
Due Date: **19-Dec-2023**

Calibration Conditions

Temperature: **21.9°C**
Humidity: **22.2 %**
Barometric Pressure: **N/A**

General Information

Remark:**N/A**

Standards Used

Unit ID	Manufacturer	Model	Cal Date	Due Date
I-1969	Ametek	RTC-157A	3-Mar-2022	3-Mar-2023
I-2040	Fluke	1523	26-May-2021	26-May-2023
I-2374	Fluke	5608	28-May-2021	28-May-2023

The calibration was performed using measurement standards traceable to the National Measurement Institute Standards (NMIS) part of the National Research Council of Canada (NRC) or the National Institute of Standards and Technology (NIST), or to accepted instrinsic standards or measurement, or is derived by ratio type self-calibration techniques. Measurement uncertainties given in this report are based on a coverage factor of k=2 corresponding to a confidence level of approximately 95%.

Calibrated by: *J. Wilson*

Jordan Wilson

Approved by:

Test Results
Procedure: **FLUKE 1551A EX_RTC-157A,Fluke 1523** Rev: **1**
Data Type: **As Found** Results: **Pass**

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert
TEMPERATURE ACCURACY TEST						
-39.9430 °C		-39.923 °C	-39.993 °C	-39.893 °C	Pass	5.0e-002 °C
-24.9690 °C		-24.959 °C	-25.019 °C	-24.919 °C	Pass	5.0e-002 °C
-0.0010 °C		-0.004 °C	-0.051 °C	0.049 °C	Pass	5.0e-002 °C
99.9630 °C		99.949 °C	99.913 °C	100.013 °C	Pass	5.0e-002 °C
154.9230 °C		154.955 °C	154.873 °C	154.973 °C	Pass	5.0e-002 °C

Test Results
Procedure: **No Procedure** Rev: **1**
Data Type: **pending** Results:

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert

Results Run: 2.00

NIST Traceable Transfer Standard Calibration

Calibration Date:	05/17/2016		Orifice #	FRM1218-	By:
Ambient Temp, °K:	295.5		Pri Std #	LFE774300	
Amb Press, Atm:	1.0000		Manometer #	FRM1218	Chk:

Std ΔH (inH_2O)	Manometer ΔH (inH_2O)	Actual Flow (alpm)	Calc Flow (alpm)	Difference* (%diff)
6.67	6.67	20.179	20.209	-0.15
5.86	5.86	18.988	18.970	0.09
5.10	5.10	17.733	17.727	0.03
4.39	4.39	16.490	16.479	0.07
3.73	3.73	15.233	15.224	0.06
3.12	3.12	13.964	13.962	0.02
2.56	2.56	12.683	12.688	-0.04
2.05	2.05	11.390	11.401	-0.10

Manometer ΔH vs Act Flow
Linear Regression Results:

m_{flo} =	**0.4452**
b_{flo} =	**0.4430**
r^2 =	**1.0000**

* all points must be within ± 2%

The MiniFlo calibration is performed with an NIST-traceable standard. Each unit has a unique pair of calibration constants derived from the calibration which are used to calculate the actual air flow rate at all ambient conditions. The unit's calibration should be recertified annually.

The actual flow rate is a function of the pressure drop across the device, the ambient temperature, and the ambient pressure. The relationship of these variables and the unique calibration constants ("m" and "b") for each device is presented in the following equation (Eq.A):

$$Q_{act} = m_{flo} \times \sqrt{\frac{\Delta H \times T_{act}}{P_{act}}} + b_{flo}$$

Q_{act} = actual flowrate, liters per min
ΔH = manometer reading, inches of water
T_{act} = ambient temperature, °K
P_{act} = ambient pressure, atmospheres

CAUTION: The weather service, most airports, etc, reduce the atmospheric pressure to a common reference (sea level). The equation above requires the atmospheric pressure at the location where the MiniFlo is being used.

The equation below may be used to estimate the ambient atmospheric pressure at any elevation if the sea level pressure is known.

$$P_{act} = P_{sea} \times \left(1 - \frac{E}{145300}\right)^{5.25}$$

P_{act} = Ambient Atmospheric Pressure
P_{sea} = Sea Level Atmospheric Pressure
E = Site elevation, feet

Airmetrics
1940 Don St., Suite 300
Springfield, OR 97477
(541) 683-5420

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information@itm.com
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Calibration Certificate

Customer: *GHD Ltd.*

Certificate: C542161-00-01

Unit Identification

Manufacturer: **Dwyer**
Model: **475-0-FM**
Description: **Digital Manometer**
Serial: **N/A**
Unit ID: **MAN-CAL-001**

Calibration Date

Calibration Date: **1-Dec-2022**
Due Date: **1-Dec-2023**

Calibration Conditions

Temperature: **21.7°C**
Humidity: **15 %**
Barometric Pressure: **N/A**

General Information

Remark:**N/A**

Standards Used

Unit ID	Manufacturer	Model	Cal Date	Due Date
CAL0224	Fluke	750P01	12-Sep-2022	12-Mar-2023

The calibration was performed using measurement standards traceable to the National Measurement Institute Standards (NMIS) part of the National Research Council of Canada (NRC) or the National Institute of Standards and Technology (NIST), or to accepted instrinsic standards or measurement, or is derived by ratio type self-calibration techniques. Measurement uncertainties given in this report are based on a coverage factor of k=2 corresponding to a confidence level of approximately 95%.

Calibrated by: *D. Gano*

Approved by:

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Test Results
Procedure: **Pressure Gauge 10.00 IN.W.C 0.5% FS /750P01** Rev: **1.1**
Data Type: **As Found** Results: **Pass**

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert
Tolerance used (additive if more than one listed): 0.5% of full scale						
UUT is set to the nominal value, Reading is the actual pressure read by the system instrument.						
1.000 inH2O		1.003 inH2O	0.950 inH2O	1.050 inH2O	Pass	1.6e-002 inH2O
2.000 inH2O		1.983 inH2O	1.950 inH2O	2.050 inH2O	Pass	1.6e-002 inH2O
4.000 inH2O		3.982 inH2O	3.950 inH2O	4.050 inH2O	Pass	1.6e-002 inH2O
6.000 inH2O		5.978 inH2O	5.950 inH2O	6.050 inH2O	Pass	1.6e-002 inH2O
8.000 inH2O		7.969 inH2O	7.950 inH2O	8.050 inH2O	Pass	1.6e-002 inH2O
10.000 inH2O		9.974 inH2O	9.950 inH2O	10.050 inH2O	Pass	1.6e-002 inH2O

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Calibration Certificate

Customer: *GHD LTD*

Certificate: C542157-00-01

Unit Identification

Manufacturer: **TSI**
Model: **9555-X / 960**
Description: **VelociCalc**

Serial: **9555X1002005**
Unit ID: **VEL-CAL-002**

Calibration Date

Calibration Date: **20-Dec-2022**

Due Date: **20-Dec-2023**

Calibration Conditions

Temperature: **22.5°C**
Humidity: **34.8 %**
Barometric Pressure: **103.0kPa**

General Information

Remark:**N/A**

Standards Used

Unit ID	Manufacturer	Model	Cal Date	Due Date
M-012	Airflow Development	83FSL	********** No Calibration Required **********	
M-110	Love Controls	HM3531DLF600	11-Oct-2022	11-Oct-2023
M-115	Rotronic	M22W	10-Jul-2022	10-Jul-2023
M-130	Fluke	1552A	13-May-2022	13-May-2023

The calibration was performed using measurement standards traceable to the National Measurement Institute Standards (NMIS) part of the National Research Council of Canada (NRC) or the National Institute of Standards and Technology (NIST), or to accepted instrinsic standards or measurement, or is derived by ratio type self-calibration techniques. Measurement uncertainties given in this report are based on a coverage factor of k=2 corresponding to a confidence level of approximately 95%.

Calibrated by: ***R. Chaaya***

Approved by:

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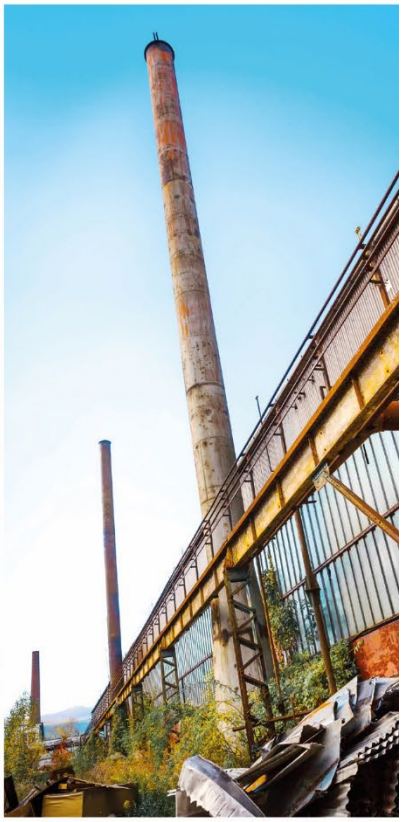
Test Results
Procedure: **TSI 9555-P C/W 964 Probe** Rev: **2**
Data Type: **As Found** Results: **Pass**

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert
TEMPERATURE TEST ACCURACY °C						
0.0 °C		0.1 °C	-0.3 °C	0.3 °C	Pass	1.2e-001 °C
25.0 °C		24.9 °C	24.7 °C	25.3 °C	Pass	1.2e-001 °C
60.0 °C		60.0 °C	59.7 °C	60.3 °C	Pass	1.2e-001 °C
VELOCITY TEST ACCURACY ft/min						
100 ft/min		99 ft/min	97 ft/min	103 ft/min	Pass	5.8e-001 t/min
200 ft/min		201 ft/min	194 ft/min	206 ft/min	Pass	5.8e-001 t/min
300 ft/min		303 ft/min	291 ft/min	309 ft/min	Pass	5.8e-001 t/min
400 ft/min		402 ft/min	388 ft/min	412 ft/min	Pass	5.8e-001 t/min
500 ft/min		496 ft/min	485 ft/min	515 ft/min	Pass	5.8e-001 t/min
750 ft/min		754 ft/min	727 ft/min	773 ft/min	Pass	5.8e-001 t/min
1000 ft/min		993 ft/min	970 ft/min	1030 ft/min	Pass	5.8e-001 t/min
1500 ft/min		1507 ft/min	1455 ft/min	1545 ft/min	Pass	5.8e-001 t/min
2000 ft/min		2018 ft/min	1939 ft/min	2061 ft/min	Pass	5.8e-001 t/min
3000 ft/min		3005 ft/min	2910 ft/min	3090 ft/min	Pass	5.8e-001 t/min
4000 ft/min		3986 ft/min	3880 ft/min	4120 ft/min	Pass	5.8e-001 t/min
5000 ft/min		5011 ft/min	4850 ft/min	5150 ft/min	Pass	5.8e-001 t/min

Quarterly Total Suspended Particulate (TSP) High Volume Sampler Calibration

Clean Harbors
50114 Range RD. 173
Ryley, Alberta T0B 4A0
Quarterly Audit Date: June 30, 2023



Clean Harbors

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Table Index

Appendix Index

1. Introduction

GHD Limited (GHD) was retained by Clean Harbors to conduct a Quarterly Total Suspended Particulate (TSP) High Volume Calibration Audit at 50114 Range Road 173 Ryley, Alberta (Facility), 5211 - 52 Ave, Ryley, Alberta (School), and Secondary Road 854, approximately 350 metres southeast of the Facility (Lift Station) on June 30, 2023. The Quarterly Audit was conducted on three Tisch TSP High Volume Samplers (Hi-Vol Samplers). The Facility Site Station (AEPA Station ID 00010348-I-2) Sampler is located against the Facility perimeter fence, north of the vehicle staging road (53°18’13.11”N and 112°25’5.81”W). The Ryley School Station (AEPA Station ID 00010348-I-3) Sampler is located on the roof of the Ryley School (53°17’28.99”N and 112°25’55.81”W). The Highway 854 Lift Station (AEPA Station ID 00010348-I-1) Sampler is located at the Ryley Lift Station, Secondary Road 854, approximately 350 metres southeast of the Facility (53°17’52.66”N and 112°24’57.87”W).

2. Audit Procedure

The TSP Samplers were audited in accordance with the instrument manual, the Clean Harbors Ryley Enhanced Ambient Air Quality Monitoring Program (AQMP) and the Alberta Air Monitoring Directive, 2016 (AMD). The AQMP requires that the calibration of equipment be completed on a quarterly basis. GHD performed a siting location audit, leak audit, 5-point flow calibration audit and evaluation of instrumentation and provided recommendations.

Below is a summary of the tasks performed on each Sampler:

- Siting Location Audit
- Leak Audit
- 5-Point Flow Rate Audit
- Instrument Condition and Recommendations

GHD verified all of these parameters using calibrated reference instruments. GHD reference instruments either have National Institute of Standards and Technology (NIST) Traceable Certifications, current manufacturer certification, or were verified by a primary standard. The GHD quarterly audit field forms can be found in Appendix A. All calibrations and certifications can be found in Appendix B.

3. Audit Results

3.1 Siting Location Audit Results

The siting locations of the Hi-Vol Samplers meet the requirements of Chapter 3, Page 8, Table 5 of the AMD. Table 3.1 of this report compares the AMD Siting Requirements for Intermittent Samplers versus the Sampler locations.

Facility Site Station

- The current coordinates of the Facility Sampler is 53°18’13.11”N and 112°25’5.81”W.
- The distance from the nearest roadway is ~10 metres (m).

Ryley School Station

- The current coordinates of the School Sampler are 53°17’28.99”N and 112°25’55.81”W.
- The distance from the nearest roadway is ~5 m.

Highway 854 Lift Station

- The current coordinates of the List Station Sampler are 53°17’52.66”N and 112°24’57.87”W.
- The distance from the nearest roadway is ~5 m.

Table 3.1 AMD Requirements vs. Facility Site Station Location

Site Characteristics	AMD Requirements	Current Location	Specification
Sampler Inlet-height above ground (abg)	Minimum 2 m, Maximum 15 m	Meets Requirement	4 m abg
Other Requirements	a. Distance from an obstacle greater than 2.5 times the height of the obstacle above the sampler.	Meets Requirement	>2.5 times
	b. At least 2 m from any other samplers or inlets with flow rates greater than 200 litres (L) per minute.	Meets Requirement	None
	or at least 1 m apart from any other samplers or inlets with flow rates less than or equal of 200 L per minute	Meets Requirement	None
	c. Unrestricted air flow in three to four wind quadrants.	Meets Requirement	Three to four Unrestricted Quadrants

Table 3.2 AMD Requirements vs. Ryley School Station Location

Site Characteristics	AMD Requirements	Current Location	Specification
Sampler Inlet-height above ground (abg)	Minimum 2 m, Maximum 15 m	Meets Requirement	4 m abg
Other Requirements	a. Distance from an obstacle greater than 2.5 times the height of the obstacle above the sampler.	Meets Requirement	>2.5 times
	b. At least 2 m from any other samplers or inlets with flow rates greater than 200 litres (L) per minute.	Meets Requirement	None
	or at least 1 m apart from any other samplers or inlets	Meets Requirement	None

Table 3.2 AMD Requirements vs. Ryley School Station Location

Site Characteristics	AMD Requirements		Current Location	Specification
		with flow rates less than or equal of 200 L per minute		
	c.	Unrestricted air flow in three to four wind quadrants.	Meets Requirement	4/4 Unrestricted Quadrants

Table 3.3 AMD Requirements vs. Highway 854 Lift Station Location

Site Characteristics	AMD Requirements		Current Location	Specification
Sampler Inlet-height above ground (abg)	Minimum 2 m, Maximum 15 m		Meets Requirement	4 m abg
Other Requirements	a.	Distance from an obstacle greater than 2.5 times the height of the obstacle above the sampler.	Meets Requirement	>2.5 times
	b.	At least 2 m from any other samplers or inlets with flow rates greater than 200 litres (L) per minute.	Meets Requirement	None
		or at least 1 m apart from any other samplers or inlets with flow rates less than or equal of 200 L per minute	Meets Requirement	None
	c.	Unrestricted air flow in three to four wind quadrants.	Meets Requirement	4/4 Unrestricted Quadrants

3.2 Leak Check Procedure

GHD performed a leak rate pre-inspection of each Sampler by making sure all gaskets were in place and in good condition, all connections are secure and not over tightened and inspected for damaged components. The leak rate audit was conducted by installing the calibrator orifice plate and warming up the sampler to normal operating temperature. The orifice plate holes and pressure tap holes were then covered for 30 seconds. Leakage was determined by listening for a "high-pitched squealing" sound made by escaping air.

3.2.1 Leak Check Results

Facility Site Station

The Facility Site Station Sampler passed the requirements of manufacturer's requirement for Leak Rate Audit.

Ryley School Station

The Ryley School Station Sampler passed the requirements of manufacturer's requirement for Leak Rate Audit.

Highway 854 Lift Station

The Lift Station Sampler passed the requirements of manufacturer's requirement for Leak Rate Audit.

3.3 Flow Audit Results

The 5-point flow audit was completed in accordance with the AQMP, the AMD and procedures outlined in the manufacturer's manual. The Facility Sampler, School Sampler, and Lift Station Sampler field audit forms are provided in Appendix A.

Facility Site Station

The Facility Site Station Sampler passed the 10 percent tolerance at 40 cubic feet per minute (CFM) as specified in the AQMP.

Ryley School Station

The Ryley School Station Sampler passed the 10 percent tolerance at 40 cubic feet per minute (CFM) as specified in the AQMP.

Highway 854 Lift Station

The Lift Station Sampler passed the 10 percent tolerance at 40 cubic feet per minute (CFM) as specified in the AQMP.

3.4 Instrument Condition and Recommendations

The Facility Site Sampler, Ryley School Sampler, and Lift Station Sampler were visually and functionally inspected on the audit day. Audit recommendations are listed below:

- The high volume motors were inspected at both locations, they were in good working condition when GHD arrived on site.
- Sample filter pans were cleaned.
- Pressure tap tubing in fair condition.
- All seals, gaskets and fittings are in good condition (no action required).
- Filter holder and screen in good condition (no action required).
- Main power connection wire in good condition (no action required).

All of Which is Respectfully Submitted,

GHD

Pooya Shariaty, Ph.D, P.Eng.

Appendices

Appendix A
Quarterly Audit Forms

Site and Calibration Information

Site		Calibration Orifice	
Location:	Facility Sampler	**Make:**	Tisch Environmental
Date:	Jun 30, 2023	**Model:**	TE-5028A
Tech.:	S. Davey & P. Shariaty	**Serial:**	1203
Sampler:	TE-5170V	**Qa Slope (m):**	0.97323
Serial #:	P8580 TSP VFC	**Qa Int (b):**	-0.01459
VFC G-Factor:	0.0909523500	**Calibration due date:**	02/20/24

Ambient Conditions

Temp (deg F):	82.22		
Ta (deg K):	301	**Barometric Press (in Hg):**	27.61
Ta (deg C):	27.9	**Pa (mm Hg):**	701.3

Calibration Information

Run Number	Orifice "H2O	Qa m3/min	Sampler "H2O	Pf mm Hg	Po/Pa	Calculated m3/min	% of Diff
1	3.58	1.288	6.01	11.216	0.984	1.295	0.47
2	3.49	1.272	6.90	12.877	0.982	1.292	1.49
3	3.47	1.269	7.20	13.437	0.981	1.290	1.73
4	3.42	1.260	8.31	15.509	0.978	1.286	2.14
5	3.38	1.252	9.89	18.457	0.974	1.281	2.24

Calculate Total Air Volume Using G-Factor

Enter Average Temperature During Sampling Duration (Deg F)	82.22
Average Temperature During Sampling Duration (Deg K)	300.90
Enter Average Barometric Pressure During Sampling Duration (In Hg)	27.61
Average Barometric Pressure During Sampling (mm Hg)	701.31
Enter Clean Filter Sampler Inches of Water	3.58
Enter Dirty Filter Sampler Inches of Water	3.38
Average Filter Sampler (mm Hg)	6.49
Enter Total Runtime in Hours (xx.xx)	0.25
Po/Pa :	0.991
Calculated Flow Rate (m3/min):	1.304
Total Flow (m3):	19.56

Calculations

Calibrator Flow (Qa) = 1/Slope*(SQRT(H20*(Ta/Pa))-Intercept)

Pressure Ratio (Po/Pa) = 1-Pf/Pa

% Difference = (Look Up Flow-Calibrator Flow)/Calibrator Flow*100

NOTE: Ensure calibration orifice has been certified within 12 months of use

Site and Calibration Information

Site		Calibration Orifice	
Location:	Ryley School Sampler	**Make:**	Tisch Environmental
Date:	Jun 30, 2023	**Model:**	TE-5028A
Tech.:	S. Davey & P. Shariaty	**Serial:**	1203
Sampler:	TE-5170V	**Qa Slope (m):**	0.97323
Serial #:	P8581 TSP VFC	**Qa Int (b):**	-0.01459
VFC G-Factor:	0.0906771980	**Calibration due date:**	02/20/24

Ambient Conditions

Temp (deg F):	73.8		
Ta (deg K):	296	**Barometric Press (in Hg):**	27.58
Ta (deg C):	23.2	**Pa (mm Hg):**	700.6

Calibration Information

Run Number	Orifice "H2O	Qa m3/min	Sampler "H2O	Pf mm Hg	Po/Pa	Calculated m3/min	% of Diff
1	3.50	1.265	6.21	11.590	0.983	1.285	1.58
2	3.47	1.260	6.83	12.747	0.982	1.282	1.83
3	3.40	1.247	7.71	14.389	0.979	1.279	2.57
4	3.36	1.240	8.75	16.330	0.977	1.275	2.90
5	3.28	1.225	10.10	18.849	0.973	1.270	3.67

Calculate Total Air Volume Using G-Factor

Enter Average Temperature During Sampling Duration (Deg F)	73.83
Average Temperature During Sampling Duration (Deg K)	296.24
Enter Average Barometric Pressure During Sampling Duration (In Hg)	27.58
Average Barometric Pressure During Sampling (mm Hg)	700.56
Enter Clean Filter Sampler Inches of Water	3.50
Enter Dirty Filter Sampler Inches of Water	3.28
Average Filter Sampler (mm Hg)	6.33
Enter Total Runtime in Hours (xx.xx)	0.25
Po/Pa :	0.991
Calculated Flow Rate (m3/min):	1.295
Total Flow (m3):	19.42

Calculations

Calibrator Flow (Qa) = 1/Slope*(SQRT(H20*(Ta/Pa))-Intercept)

Pressure Ratio (Po/Pa) = 1-Pf/Pa

% Difference = (Look Up Flow-Calibrator Flow)/Calibrator Flow*100

NOTE: Ensure calibration orifice has been certified within 12 months of use

Site and Calibration Information

Site		Calibration Orifice	
Location:	Lift Station Sampler	**Make:**	Tisch Environmental
Date:	Jun 30, 2023	**Model:**	TE-5028A
Tech.:	S. Davey & P. Shariaty	**Serial:**	1203
Sampler:	TE-5170V	**Qa Slope (m):**	0.97323
Serial #:	P11162 TSP VFC	**Qa Int (b):**	-0.01459
VFC G-Factor:	0.0864333900	**Calibration due date:**	02/20/24

Ambient Conditions

Temp (deg F):	85.10		
Ta (deg K):	303	**Barometric Press (in Hg):**	27.61
Ta (deg C):	29.5	**Pa (mm Hg):**	701.3

Calibration Information

Run Number	Orifice "H2O	Qa m3/min	Sampler "H2O	Pf mm Hg	Po/Pa	Calculated m3/min	% of Diff
1	3.57	1.290	5.88	10.974	0.984	1.293	0.23
2	3.53	1.283	6.35	11.851	0.983	1.291	0.62
3	3.49	1.276	7.45	13.904	0.980	1.287	0.94
4	3.44	1.267	8.30	15.490	0.978	1.284	1.34
5	3.37	1.254	10.25	19.129	0.973	1.277	1.83

Calculate Total Air Volume Using G-Factor

Enter Average Temperature During Sampling Duration (Deg F)	85.10
Average Temperature During Sampling Duration (Deg K)	302.50
Enter Average Barometric Pressure During Sampling Duration (In Hg)	27.61
Average Barometric Pressure During Sampling (mm Hg)	701.31
Enter Clean Filter Sampler Inches of Water	3.57
Enter Dirty Filter Sampler Inches of Water	3.37
Average Filter Sampler (mm Hg)	6.48
Enter Total Runtime in Hours (xx.xx)	0.25
Po/Pa :	0.991
Calculated Flow Rate (m3/min):	1.302
Total Flow (m3):	19.53

Calculations

Calibrator Flow (Qa) = 1/Slope*(SQRT(H20*(Ta/Pa))-Intercept)

Pressure Ratio (Po/Pa) = 1-Pf/Pa

% Difference = (Look Up Flow-Calibrator Flow)/Calibrator Flow*100

NOTE: Ensure calibration orifice has been certified within 12 months of use

Appendix B
Calibration Certificates

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VANCOUVER
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Calibration Certificate

Customer: *ITM Edmonton*

Certificate: C542640-00-03

Unit Identification

Manufacturer: **Fluke**
Model: **1551A Ex**
Description: **Stik Thermometer**
Serial: **4893012**
Unit ID: **I-2902**

Calibration Date

Calibration Date: **19-Dec-2022**
Due Date: **19-Dec-2023**

Calibration Conditions

Temperature: **21.9°C**
Humidity: **22.2 %**
Barometric Pressure: **N/A**

General Information

Remark:**N/A**

Standards Used

Unit ID	Manufacturer	Model	Cal Date	Due Date
I-1969	Ametek	RTC-157A	3-Mar-2022	3-Mar-2023
I-2040	Fluke	1523	26-May-2021	26-May-2023
I-2374	Fluke	5608	28-May-2021	28-May-2023

The calibration was performed using measurement standards traceable to the National Measurement Institute Standards (NMIS) part of the National Research Council of Canada (NRC) or the National Institute of Standards and Technology (NIST), or to accepted instrinsic standards or measurement, or is derived by ratio type self-calibration techniques. Measurement uncertainties given in this report are based on a coverage factor of k=2 corresponding to a confidence level of approximately 95%.

Calibrated by: *J. Wilson*

Jordan Wilson

Approved by:

Test Results
Procedure: **FLUKE 1551A EX_RTC-157A,Fluke 1523** Rev: **1**
Data Type: **As Found** Results: **Pass**

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert
TEMPERATURE ACCURACY TEST						
-39.9430 °C		-39.923 °C	-39.993 °C	-39.893 °C	Pass	5.0e-002 °C
-24.9690 °C		-24.959 °C	-25.019 °C	-24.919 °C	Pass	5.0e-002 °C
-0.0010 °C		-0.004 °C	-0.051 °C	0.049 °C	Pass	5.0e-002 °C
99.9630 °C		99.949 °C	99.913 °C	100.013 °C	Pass	5.0e-002 °C
154.9230 °C		154.955 °C	154.873 °C	154.973 °C	Pass	5.0e-002 °C

Test Results
Procedure: **No Procedure** Rev: **1**
Data Type: **pending** Results:

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert

Results Run: 2.00

TISCH Environmental

RECALIBRATION DUE DATE:
February 20, 2024

Certificate of Calibration

Calibration Certification Information

Cal. Date:	February 20, 2023	**Rootsmeter S/N:** 438320	**Ta:** 294	°K
Operator:	Jim Tisch		**Pa:** 741.17	mm Hg
Calibration Model #:	TE-5028A	**Calibrator S/N:** **1203**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.2300	4.3	1.50
2	3	4	1	0.9590	7.1	2.50
3	5	6	1	0.8670	8.5	3.00
4	7	8	1	0.8040	9.9	3.50
5	9	10	1	0.6110	17.0	6.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9828	0.7990	1.2177	0.9942	0.8083	0.7714
0.9790	1.0209	1.5720	0.9904	1.0328	0.9958
0.9772	1.1271	1.7221	0.9885	1.1402	1.0909
0.9753	1.2130	1.8600	0.9866	1.2272	1.1783
0.9658	1.5807	2.4354	0.9771	1.5991	1.5427
QSTD	**m=**	**1.55422**	**QA**	**m=**	**0.97323**
	b=	**-0.02303**		**b=**	**-0.01459**
	r=	**0.99992**		**r=**	**0.99992**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	**Qa=**	$1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg

Key
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (°K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30.

Tisch Environmental, Inc.
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Calibration Certificate

Customer: *GHD Ltd.*

Certificate: C542161-00-01

Unit Identification

Manufacturer: **Dwyer**
Model: **475-0-FM**
Description: **Digital Manometer**
Serial: **N/A**
Unit ID: **MAN-CAL-001**

Calibration Date

Calibration Date: **1-Dec-2022**
Due Date: **1-Dec-2023**

Calibration Conditions

Temperature: **21.7°C**
Humidity: **15 %**
Barometric Pressure: **N/A**

General Information

Remark:**N/A**

Standards Used

Unit ID	Manufacturer	Model	Cal Date	Due Date
CAL0224	Fluke	750P01	12-Sep-2022	12-Mar-2023

The calibration was performed using measurement standards traceable to the National Measurement Institute Standards (NMIS) part of the National Research Council of Canada (NRC) or the National Institute of Standards and Technology (NIST), or to accepted instrinsic standards or measurement, or is derived by ratio type self-calibration techniques. Measurement uncertainties given in this report are based on a coverage factor of k=2 corresponding to a confidence level of approximately 95%.

Calibrated by: *D. Gano*

Approved by:

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Test Results
Procedure: **Pressure Gauge 10.00 IN.W.C 0.5% FS /750P01** Rev: **1.1**
Data Type: **As Found** Results: **Pass**

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert
Tolerance used (additive if more than one listed): 0.5% of full scale						
UUT is set to the nominal value, Reading is the actual pressure read by the system instrument.						
1.000 inH2O		1.003 inH2O	0.950 inH2O	1.050 inH2O	Pass	1.6e-002 inH2O
2.000 inH2O		1.983 inH2O	1.950 inH2O	2.050 inH2O	Pass	1.6e-002 inH2O
4.000 inH2O		3.982 inH2O	3.950 inH2O	4.050 inH2O	Pass	1.6e-002 inH2O
6.000 inH2O		5.978 inH2O	5.950 inH2O	6.050 inH2O	Pass	1.6e-002 inH2O
8.000 inH2O		7.969 inH2O	7.950 inH2O	8.050 inH2O	Pass	1.6e-002 inH2O
10.000 inH2O		9.974 inH2O	9.950 inH2O	10.050 inH2O	Pass	1.6e-002 inH2O

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Calibration Certificate

Customer: *GHD LTD*

Certificate: C542157-00-01

Unit Identification

Manufacturer: **TSI**
Model: **9555-X / 960**
Description: **VelociCalc**

Serial: **9555X1002005**
Unit ID: **VEL-CAL-002**

Calibration Date

Calibration Date: **20-Dec-2022**

Due Date: **20-Dec-2023**

Calibration Conditions

Temperature: **22.5°C**
Humidity: **34.8 %**
Barometric Pressure: **103.0kPa**

General Information

Remark:**N/A**

Standards Used

Unit ID	Manufacturer	Model	Cal Date	Due Date
M-012	Airflow Development	83FSL	********** No Calibration Required **********	
M-110	Love Controls	HM3531DLF600	11-Oct-2022	11-Oct-2023
M-115	Rotronic	M22W	10-Jul-2022	10-Jul-2023
M-130	Fluke	1552A	13-May-2022	13-May-2023

The calibration was performed using measurement standards traceable to the National Measurement Institute Standards (NMIS) part of the National Research Council of Canada (NRC) or the National Institute of Standards and Technology (NIST), or to accepted instrinsic standards or measurement, or is derived by ratio type self-calibration techniques. Measurement uncertainties given in this report are based on a coverage factor of k=2 corresponding to a confidence level of approximately 95%.

Calibrated by: ***R. Chaaya***

Approved by:

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Test Results
Procedure: **TSI 9555-P C/W 964 Probe** Rev: **2**
Data Type: **As Found** Results: **Pass**

Test Description	True Value	Reading	Lower Limit	Upper Limit	Test Status	Exp Uncert
TEMPERATURE TEST ACCURACY °C						
0.0 °C		0.1 °C	-0.3 °C	0.3 °C	Pass	1.2e-001 °C
25.0 °C		24.9 °C	24.7 °C	25.3 °C	Pass	1.2e-001 °C
60.0 °C		60.0 °C	59.7 °C	60.3 °C	Pass	1.2e-001 °C
VELOCITY TEST ACCURACY ft/min						
100 ft/min		99 ft/min	97 ft/min	103 ft/min	Pass	5.8e-001 t/min
200 ft/min		201 ft/min	194 ft/min	206 ft/min	Pass	5.8e-001 t/min
300 ft/min		303 ft/min	291 ft/min	309 ft/min	Pass	5.8e-001 t/min
400 ft/min		402 ft/min	388 ft/min	412 ft/min	Pass	5.8e-001 t/min
500 ft/min		496 ft/min	485 ft/min	515 ft/min	Pass	5.8e-001 t/min
750 ft/min		754 ft/min	727 ft/min	773 ft/min	Pass	5.8e-001 t/min
1000 ft/min		993 ft/min	970 ft/min	1030 ft/min	Pass	5.8e-001 t/min
1500 ft/min		1507 ft/min	1455 ft/min	1545 ft/min	Pass	5.8e-001 t/min
2000 ft/min		2018 ft/min	1939 ft/min	2061 ft/min	Pass	5.8e-001 t/min
3000 ft/min		3005 ft/min	2910 ft/min	3090 ft/min	Pass	5.8e-001 t/min
4000 ft/min		3986 ft/min	3880 ft/min	4120 ft/min	Pass	5.8e-001 t/min
5000 ft/min		5011 ft/min	4850 ft/min	5150 ft/min	Pass	5.8e-001 t/min

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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