August 29, 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
July 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 July 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 July 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

Facility Manager
Ryley Facility

Alberta Environment and Protected Areas (AEPA)
Monthly Ambient Air Monitoring Report
July 2023
Report Completed on August 29, 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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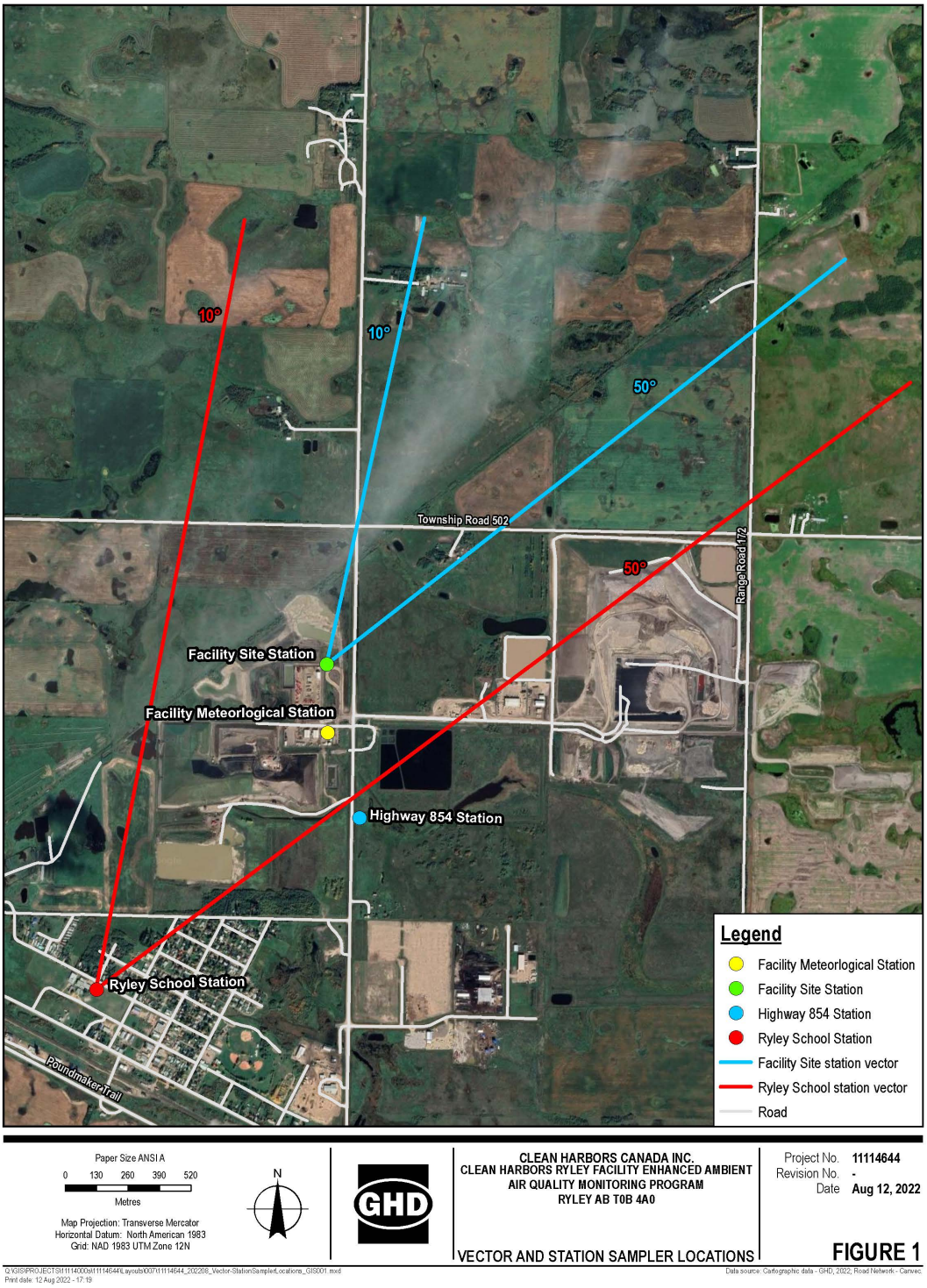
1. Introduction

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 meter (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 (PM10 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 PM10 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 July 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	N	June 30, 2023
Changes to the Wind Speed/Direction Sensor	N	-
TSP – Facility Site Station		
TSP Hi-Vol Sampler Calibration	N	-
Changes to the TSP Hi-Vol Sampler	N	-
TSP Samples Collected	Y	July 1 – August 1, 2023
TSP Metal Analysis Conducted	Y	August 1, 2023
TSP Sampler Maintenance Activities	Y	August 1, 2023
TSP – Ryley School Station		
TSP Hi-Vol Sampler Calibration	N	-
Changes to the TSP Hi-Vol Sampler	N	-
TSP Samples Collected	Y	July 1 – August 1, 2023
TSP Metal Analysis Conducted	Y	August 1, 2023
TSP Sampler Maintenance Activities	Y	August 1, 2023
TSP, PM_{10}, VOC and TNMOC – Highway 854 Lift Station		
TSP Hi-Vol Sampler Calibration	N	-
PM_{10} Sampler Calibration	N	-
Changes to the TSP Hi-Vol Sampler	N	-
Changes to the PM_{10} Sampling Station	N	-
TSP Samples Collected	Y	July 5, 2023 July 11, 2023 July 17, 2023 July 23, 2023 July 29, 2023
PM_{10} Samples Collected	Y	July 5, 2023 July 11, 2023

Activity	*Completed (Y/N)*	*Date(s)*
		July 17, 2023 July 23, 2023 July 29, 2023
VOC and TNMOC Samples Collected	Y	July 5, 2023 July 11, 2023 July 17, 2023 July 23, 2023 July 29, 2023
TSP Metal Analysis Conducted	Y	July 17, 2023 July 23, 2023
PM_{10} Metal Analysis Conducted	Y	July 17, 2023 July 23, 2023
TSP Sampler Maintenance Activities	Y	July 5, 2023 July 11, 2023 July 17, 2023 July 23, 2023 July 29, 2023
PM_{10} Sampler Maintenance Activities	Y	July 5, 2023 July 11, 2023 July 17, 2023 July 23, 2023 July 29, 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 July 2023 monthly report, the following summarized items were submitted to the ETS:

3.1 AMD Approval Contravention Form

An AMD Approval contravention form (AMD1), for AEPA Reference No. 417300, was submitted to the AEPA via the ETS portal. The contravention form was completed due to the Ryley School Station experiencing an anemometer instrument failure between July 12, 2023 and July 24, 2023, resulting in an uptime less than the 90% required under Chapter 6, Section 4.1.3 of the AMD.

3.2 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.

3.3 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.

3.4 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 and AEPA Station ID 00010348-I-3.

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.

There were no changes to the meteorological station during July 2023.

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.

There were no changes to the meteorological station during July 2023.

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 July 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 July 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 convert 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 to 3 present the hourly and 24-hour average wind speeds, Tables 4 to 6 present the hourly and 24-hour most frequent wind direction data (degrees from north), and Tables 7 to 9 present the Wind Class Frequency Distribution for July 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 to 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 July 2023, it was determined that 100.00% of the data is valid, which represents 100.00% uptime of the meteorological station. This is above the 90% 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 in May 2023 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 July 2023, it was determined that 62.90% of the data is valid, which represents 62.90% uptime of the meteorological station. This is below the 90% 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. The TSP sample collected in July 2023 was shown to have an elevated TSP concentration of 114.043 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 July 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.

5.2.2 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 July 2023 was shown to have an elevated TSP concentration of 105.698 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 July 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 July 2023. There were no exceedances for the parameters with AAAQO in July 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 July 2023 was above 50 µg/m^3 and as such, analysis for metals was conducted on the sample. Facility Test #104 (HV-23-02-07) was shown to have an elevated TSP concentration of 114.043 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 July 2023.

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

The TSP sample collected in July 2023 was above 50 µg/m^3 and as such, analysis for metals was conducted on the sample. School Test #104 (HV-23-02-08) was shown to have an elevated TSP

concentration of 105.698 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 July 2023.

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

TSP

Two of the TSP samples collected in July 2023 were above 50 µg/m^3 and as such, analysis for metals was conducted on the samples. Facility Test #852 (HVF-23-03-15) and Facility Test #853 (HVF-23-03-18) were shown to have elevated TSP concentrations of 53.513 µg/m^3 and 55.610 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 #852 and Test #853 can be found in Table 17 of this report. There were no exceedances for the parameters with AAAQO in July 2023.

PM_{10}

None of the PM_{10} samples collected in July 2023 was above 50 µg/m^3. The PM_{10} concentrations measured for Facility Test #852 (HVF-23-03-15) and Facility Test #853 (HVF-23-03-18) were less than the 50 µg/m^3 threshold, 31.911 µg/m^3 and 28.834 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 #852 and Test #853 can be found in Table 18 of this report. There were no exceedances for the parameters with AAAQO in July 2023.

The remainder of the TSP and PM_{10} samples collected in July 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 July 2023.

6. Conclusions

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

1. During July 2023, the Facility Meteorological Station (AEPA Station ID 00010348-C-1) operated at 100.00% uptime. Based on the data verification and validation procedure conducted, this is in compliance with the minimum 90% uptime required by the AMD.
2. During July 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 July 2023, the continuous Ryley School wind Station operated at 62.90% uptime. Based on the data verification and validation procedure conducted, this is not in compliance with the minimum 90% uptime required by the AMD.
4. The TSP concentration measured at the intermittent Facility Site Station from July 1, 2023 to August 1, 2023 was 114.043 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.

5. The TSP concentration measured at the intermittent Ryley School Station from July 1, 2023 to August 1, 2023 was 105.698 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 July 5, July 11, July 17, July 23, and July 29 were 41.934 µg/m^3, 20.762 µg/m3, 53.513 µg/m^3, 55.610 µg/m^3, and 21.027 µg/m^3, respectively.
7. The PM10 concentrations measured at the intermittent Highway 854 Lift Station (AEPA Station ID 00010348-I-1) on July 5, July 11, July 17, July 23, and July 29 were 17.665 µg/m^3, 8.370 µg/m^3, 31.911 µg/m^3, 28.834 µg/m^3, and 6.391 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 July 2023.
9. The TSP concentration measured for Facility Test #104 (HV-23-02-07), conducted from July 1, 2023 to August 1, 2023, was above the 50 µg/m3 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 #104 (HV-23-02-08), conducted from July 1, 2023 to August 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 #852 (HVF-23-03-15) and Facility Test #853 (HVF-23-03-18) 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 #852 and Test #853 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 #852 (C1170465) and Facility Test #853 (C1170470) 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 #852 and Test #853 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 July 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
July 2023

Ryley Wind Direction Data (degrees, blowing from) - Month of July 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	2.2	2.2	1.8	1.0	2.1	3.5	3.4	6.3	6.3	6.1	4.2	1.8	1.8	3.0	7.9	9.1	9.1	8.3	5.3	4.2	4.1	2.0	3.5	4.4
2	4.4	4.2	4.2	5.7	6.1	5.4	5.1	5.3	7.4	9.4	9.2	7.5	8.1	9.3	11.5	11.2	8.6	9.5	10.7	10.6	8.9	9.0	7.0	6.1
3	6.6	8.1	7.3	5.9	6.1	6.0	6.1	6.6	7.6	8.4	8.7	8.1	8.3	8.4	8.2	9.4	9.1	9.3	8.7	6.7	6.2	4.1	2.3	3.0
4	2.5	1.5	1.0	0.8	2.8	2.1	2.9	3.1	2.8	2.5	3.1	3.5	3.1	3.2	3.1	2.7	3.2	2.4	1.9	1.1	0.6	1.7	2.5	3.5
5	2.9	2.1	1.4	1.1	1.2	1.3	1.7	2.5	3.0	3.6	4.0	4.0	4.0	2.8	1.9	2.2	2.2	2.2	0.8	1.1	1.3	0.7	1.4	1.3
6	1.7	2.6	3.4	3.1	3.8	4.5	1.6	1.6	3.3	3.6	2.1	1.6	1.8	1.8	2.0	2.3	2.8	3.1	3.0	2.7	2.6	2.0	0.8	0.2
7	1.5	1.5	1.1	0.9	1.7	0.9	1.2	1.4	1.2	1.6	2.9	3.4	2.7	3.2	3.3	2.9	2.2	3.0	3.2	2.8	1.9	2.0	1.8	1.8
8	2.1	2.3	2.3	1.8	1.3	0.7	1.3	2.2	2.6	3.2	2.9	3.0	2.0	2.1	3.1	3.8	3.4	3.1	2.6	2.0	1.5	0.7	1.3	2.4
9	3.7	4.7	4.3	4.9	5.3	5.0	4.2	3.2	2.1	3.0	3.1	3.8	3.6	4.3	4.1	4.5	3.5	3.3	2.4	1.6	1.7	0.6	0.8	1.0
10	0.9	1.7	3.0	3.4	3.1	2.9	1.4	4.3	7.2	6.3	6.3	7.1	5.5	7.0	7.7	8.0	6.5	5.7	5.9	5.4	3.7	3.0	3.0	2.9
11	3.1	3.7	3.9	4.4	4.5	3.2	2.7	4.1	2.5	3.6	3.7	3.6	3.3	3.3	2.9	2.5	2.1	2.3	2.1	1.3	1.8	1.6	2.6	2.9
12	3.0	3.5	3.6	3.8	3.4	3.3	2.6	2.9	2.5	2.9	3.1	3.3	3.4	3.5	4.2	4.4	3.0	1.8	0.9	1.9	3.6	3.6	3.8	1.9
13	3.4	3.7	3.7	4.2	3.9	3.7	3.6	4.2	4.4	3.9	4.4	4.8	5.7	5.6	6.2	5.6	5.1	5.0	4.5	4.1	3.1	3.8	4.0	4.4
14	4.3	4.2	4.1	4.7	5.3	5.3	4.8	5.2	5.1	5.4	5.2	5.5	6.3	6.7	5.3	6.2	6.3	5.1	4.1	2.9	1.7	1.0	1.6	3.0
15	3.1	4.1	4.2	4.1	3.2	3.3	3.3	2.7	2.8	2.4	2.1	2.5	2.2	2.2	2.0	1.9	1.4	1.2	1.5	2.1	1.5	1.2	1.6	1.9
16	2.5	2.5	2.7	1.2	2.7	3.7	3.4	3.3	3.3	4.0	4.1	3.7	4.1	4.2	4.6	4.6	5.4	5.7	5.9	5.1	4.8	4.4	5.5	5.4
17	5.9	6.5	3.4	1.9	5.1	5.9	4.5	5.2	2.6	3.5	7.0	7.2	4.8	2.9	2.6	2.4	5.0	6.9	8.0	7.3	5.4	3.9	4.8	5.3
18	7.5	7.9	7.8	10.1	9.3	9.4	11.3	11.4	11.0	12.1	12.4	10.6	10.2	10.4	8.7	9.5	8.8	7.4	8.8	7.1	6.7	5.8	5.1	4.6
19	3.9	3.0	2.6	3.3	3.4	3.2	3.2	2.8	3.3	4.5	4.1	3.9	3.5	3.5	2.8	2.2	2.0	2.2	1.6	2.2	1.5	1.7	2.4	2.4
20	2.4	2.7	2.5	3.1	3.5	4.1	4.1	3.8	3.1	2.4	3.6	4.6	3.7	3.1	2.5	2.0	1.7	2.0	1.9	2.2	1.9	1.1	0.6	0.2
21	0.5	0.4	1.2	0.7	1.0	0.6	0.5	0.4	0.5	1.5	2.7	2.0	2.4	2.3	1.7	1.8	2.3	2.1	2.6	2.4	2.1	3.0	2.0	2.2
22	2.7	2.2	2.1	1.9	2.8	2.5	2.8	3.3	3.4	4.1	4.1	5.4	5.9	5.9	5.7	5.0	4.4	4.0	3.4	2.1	3.1	3.3	2.8	2.5
23	2.3	2.5	2.8	2.0	3.8	5.1	3.7	1.9	3.5	2.8	3.0	1.8	2.1	2.4	2.3	1.9	1.7	2.5	3.0	3.1	3.1	3.8	4.0	3.7
24	4.4	5.1	5.2	9.6	9.6	7.1	7.2	6.3	6.8	8.0	8.3	6.1	4.2	2.8	3.4	3.7	3.7	3.9	4.2	3.1	2.6	4.0	5.6	6.1
25	6.9	4.8	9.5	8.7	6.4	4.8	3.8	4.1	5.8	10.2	9.5	6.8	8.2	7.8	8.2	9.0	8.1	8.1	7.8	4.6	2.1	2.0	1.6	0.9
26	1.9	3.5	3.5	2.1	2.2	5.2	5.6	3.0	2.1	2.7	4.8	7.1	8.5	9.2	9.5	9.5	9.5	8.9	8.6	8.4	8.0	6.6	6.3	4.3
27	5.3	5.1	3.8	3.9	3.5	3.7	3.7	4.2	4.6	4.2	6.0	5.2	4.8	5.3	5.3	5.1	4.9	3.8	3.0	3.3	2.3	1.8	1.9	1.4
28	1.2	1.1	1.7	1.5	1.7	1.8	1.3	0.9	1.5	1.5	1.3	1.6	1.3	1.7	2.5	1.6	3.3	3.5	1.8	1.3	0.5	1.2	0.9	1.9
29	1.4	1.7	1.5	1.2	1.6	0.8	0.7	1.8	2.8	3.3	3.9	5.1	5.1	4.4	4.0	5.1	4.8	4.4	5.1	5.4	3.8	3.4	3.1	3.3
30	3.7	3.6	3.2	2.6	2.5	2.2	2.0	2.8	4.4	5.9	5.6	6.3	8.2	8.0	8.1	7.2	6.7	5.7	4.3	3.6	4.7	6.8	6.2	2.0
31	1.7	1.8	3.4	3.2	2.6	1.9	2.5	1.8	0.7	3.2	4.2	4.4	3.9	2.2	2.3	2.5	2.0	2.3	3.1	3.4	3.8	1.9	1.4	2.0

TABLE 2

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

Ryley Wind Speed Data (m/s) - Month of July 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)
31	(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
July 2023

Ryley Wind Speed Data (m/s) - Month of July 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	1.4	1.3	1.1	0.4	0.9	1.4	1.8	3.3	2.6	3.1	2.9	1.6	1.1	2.2	3.8	3.6	3.7	3.6	2.3	2.1	1.6	0.9	0.8	2.1
2	2.5	1.9	2.0	2.5	1.8	1.8	1.9	2.3	4.4	5.2	5.0	3.5	4.6	5.0	6.8	5.8	5.1	5.9	7.0	6.4	5.4	5.3	4.1	3.4
3	3.2	3.4	3.6	2.7	3.1	2.5	3.3	3.9	4.1	5.3	5.4	5.0	5.2	5.3	4.5	4.1	4.6	3.8	3.2	2.8	3.1	2.5	1.4	1.4
4	1.0	0.2	0.1	0.4	0.2	0.1	0.1	0.9	1.7	1.2	1.6	2.4	1.8	1.8	1.9	1.6	1.9	1.5	1.1	0.6	0.8	1.1	1.6	1.9
5	2.3	1.4	1.1	1.2	1.4	1.5	1.8	2.3	2.6	3.2	3.3	3.2	2.8	1.6	1.5	1.2	1.4	0.9	0.8	0.3	0.3	0.2	0.2	0.4
6	0.2	0.3	0.2	0.1	0.2	0.7	0.2	0.5	1.8	1.5	1.4	1.2	1.8	1.5	1.2	1.8	1.9	1.8	1.8	1.5	0.9	0.7	0.1	0.1
7	0.2	0.3	0.4	0.3	0.7	0.4	0.3	1.0	1.0	1.4	2.3	2.0	2.0	1.8	1.9	1.8	1.8	1.8	1.6	1.2	0.9	1.2	0.9	1.1
8	1.4	1.6	1.5	1.3	0.6	0.1	1.3	1.0	1.2	1.6	2.0	2.0	1.2	1.2	1.2	1.7	1.9	1.7	1.5	1.0	0.5	0.0	0.1	0.2
9	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.9	1.7	2.0	2.2	2.2	2.6	2.7	2.0	1.7	1.3	0.7	0.5	0.1	0.1	0.3
10	0.2	0.8	2.0	2.4	2.5	1.9	1.0	3.6	4.9	4.1	3.3	2.7	3.8	5.3	6.4	6.0	4.8	4.2	5.3	4.2	2.7	2.2	2.1	2.1
11	2.3	3.0	3.1	3.8	3.6	2.6	2.3	3.1	2.1	3.3	3.2	3.1	3.0	2.8	2.6	2.4	2.0	2.0	1.5	1.1	1.5	1.1	1.3	0.8
12	0.5	0.5	0.8	0.7	0.8	0.8	0.9	0.8	1.6	1.8	2.7	2.2	1.7	1.2	1.4	(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)	4.3	3.1	3.2	4.0	5.0	6.1	7.0	5.2	3.4	2.6	2.9	3.0	3.2	3.4	3.4	1.9	1.0	2.0	3.7	3.9
25	4.9	3.0	3.9	3.3	2.9	2.7	2.1	2.3	3.0	5.7	5.3	4.4	4.9	5.4	4.9	5.1	4.2	3.7	4.0	2.3	0.7	1.2	1.0	0.3
26	0.7	0.6	1.4	0.9	1.2	1.7	1.8	1.3	2.0	1.8	1.1	1.2	1.5	2.3	3.7	3.6	3.8	4.5	3.9	4.2	4.3	3.1	3.4	2.3
27	3.0	2.9	2.6	2.5	2.5	2.5	1.7	1.8	2.2	1.9	2.9	2.6	2.1	2.7	2.8	2.8	2.5	1.9	1.5	1.6	0.9	0.5	0.4	0.3
28	0.5	0.6	0.8	0.6	0.7	0.9	0.7	0.4	1.0	1.1	1.1	1.4	1.3	1.1	1.2	0.9	2.5	2.6	1.4	0.8	0.5	0.0	0.2	0.1
29	0.0	0.2	0.5	0.2	0.6	0.6	0.6	1.9	2.4	3.2	3.3	4.6	4.4	4.0	4.0	4.3	4.3	3.7	4.3	4.0	2.8	2.6	2.5	2.8
30	2.4	2.6	2.3	1.9	2.1	2.1	1.7	2.4	3.8	4.9	4.6	5.4	6.5	6.9	6.3	5.7	5.9	4.4	3.1	2.7	4.2	5.4	3.3	1.0
31	0.8	1.0	1.6	0.9	1.0	0.8	0.8	0.7	0.6	1.9	2.9	2.8	2.1	1.3	1.5	1.5	1.3	1.5	1.7	2.3	1.5	0.9	0.4	0.7

Notes:
- (X) - Equipment Malfunction

TABLE 4

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

Ryley Wind Direction Data (degrees, blowing from) - Month of July 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	101	134	115	85	197	50	259	267	28	55	60	121	301	269	321	329	319	320	327	308	185	81	240	259
2	267	265	269	256	250	251	255	259	265	269	261	257	258	265	272	266	269	285	289	280	276	275	268	268
3	257	255	261	255	260	258	268	274	272	280	278	275	277	287	305	318	312	323	327	318	308	282	290	286
4	296	274	278	120	221	233	221	240	268	260	279	275	281	286	293	311	112	164	163	113	150	164	171	179
5	193	183	164	158	125	124	124	145	155	159	169	166	173	198	225	205	252	297	182	275	322	129	147	238
6	236	256	245	245	236	232	285	255	298	328	91	101	115	204	272	288	313	299	302	320	298	34	94	142
7	266	273	271	255	278	303	276	169	78	55	59	58	94	112	205	179	235	119	22	32	46	84	116	128
8	129	120	149	151	173	178	172	201	203	205	198	193	213	235	254	239	276	279	296	309	332	298	239	217
9	214	218	222	216	214	217	214	214	226	246	269	313	318	227	274	297	232	185	303	135	296	296	136	149
10	156	109	113	95	99	102	152	81	83	78	109	130	67	87	114	122	95	95	95	96	88	76	74	91
11	88	108	115	128	142	113	104	117	119	101	117	116	124	116	128	131	104	93	83	70	94	139	188	202
12	201	203	203	205	202	204	202	211	193	187	182	189	206	219	240	263	230	269	294	219	223	242	262	162
13	259	256	259	263	264	266	270	274	281	286	301	291	283	308	319	323	323	315	307	291	274	258	259	249
14	255	259	253	259	277	274	281	286	299	306	314	316	311	311	310	317	314	315	311	310	300	297	275	223
15	234	208	206	227	233	238	247	261	277	276	271	271	290	287	295	293	288	279	322	65	107	123	123	135
16	115	105	125	132	70	116	152	149	151	147	150	138	130	137	138	119	112	113	105	108	99	96	104	109
17	104	105	130	133	95	93	89	96	205	130	104	109	122	138	216	271	279	288	237	223	189	259	241	294
18	304	297	304	305	290	295	298	297	294	295	298	297	294	296	296	302	305	304	310	310	313	304	309	294
19	314	290	266	253	259	254	263	263	268	280	278	283	272	280	269	295	232	242	243	210	199	181	188	187
20	192	191	193	201	206	206	203	222	225	235	242	248	237	242	243	240	269	278	309	175	181	248	289	153
21	190	203	244	175	138	192	195	222	124	78	91	97	83	87	69	80	73	83	80	56	57	52	61	89
22	104	109	118	93	108	120	105	87	81	92	110	113	123	119	124	128	133	110	91	83	76	77	94	87
23	92	100	118	107	205	316	328	55	91	92	314	114	114	135	109	119	96	87	71	35	31	39	51	62
24	72	80	134	251	304	18	49	65	88	95	103	115	102	100	114	126	100	101	92	68	58	59	74	68
25	88	199	311	325	306	297	296	303	289	266	278	270	269	290	292	296	306	308	300	294	270	173	193	201
26	222	226	203	212	201	204	235	178	113	180	208	223	225	235	255	248	258	263	263	267	268	262	273	265
27	271	276	283	276	279	292	316	337	230	156	21	15	41	61	170	151	33	28	92	256	323	316	313	306
28	298	289	278	280	297	317	324	169	85	60	78	70	85	92	40	61	67	130	122	230	228	237	120	184
29	170	193	161	153	146	154	164	117	96	97	104	132	127	110	116	129	131	114	97	110	101	102	102	110
30	113	112	108	101	100	105	100	104	121	128	106	116	110	119	119	110	106	97	87	83	106	179	277	145
31	137	80	189	254	260	272	269	231	211	254	279	286	291	285	285	296	293	264	286	294	313	276	305	255

TABLE 5

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

Ryley Wind Direction Data (degrees, blowing from) - Month of July 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)
31	(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
July 2023

Ryley Wind Direction Data (degrees, blowing from) - Month of July 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	107	126	122	65	212	62	244	173	53	65	92	128	176	260	323	331	317	319	286	280	167	114	260	269
2	272	267	271	260	256	257	260	261	269	273	266	265	268	270	275	270	277	285	286	282	278	277	272	273
3	264	262	265	262	268	265	271	274	273	281	280	275	280	287	299	308	306	325	334	316	299	281	283	290
4	266	261	193	177	245	245	205	261	275	271	278	279	280	283	291	264	178	143	215	191	177	147	160	176
5	197	179	133	133	116	120	123	139	161	173	176	180	178	195	200	207	277	254	240	204	242	301	172	245
6	266	244	258	263	255	273	276	253	300	279	85	160	117	158	233	201	280	300	308	265	242	71	121	191
7	270	279	313	249	286	308	230	121	127	126	72	84	141	121	262	215	232	193	87	61	73	88	123	129
8	120	115	138	157	173	184	186	201	210	211	200	191	211	228	235	261	270	269	280	299	324	262	233	243
9	275	258	240	250	205	208	233	238	238	253	272	309	292	286	303	307	295	176	225	275	283	251	185	185
10	148	107	111	98	97	100	172	92	96	89	152	172	172	172	172	172	172	172	172	172	172	172	172	172
11	172	172	136	125	131	111	111	116	116	109	115	121	120	117	128	131	127	133	105	105	100	152	189	226
12	224	231	222	229	222	213	210	215	203	188	186	199	219	228	255	(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)	278	41	67	75	98	104	110	117	114	120	123	121	112	110	99	70	65	69	87	81
25	98	234	317	330	305	294	289	299	287	271	279	274	277	285	291	297	307	314	299	291	218	170	192	204
26	257	236	215	256	224	230	264	188	136	191	231	247	242	251	257	254	256	263	263	268	270	267	275	272
27	275	277	281	282	279	287	314	317	219	93	30	52	46	97	88	169	66	45	97	291	323	307	303	305
28	271	264	291	287	297	338	299	138	140	83	103	129	102	114	72	172	92	122	104	170	221	249	144	164
29	167	194	165	131	142	153	156	114	106	109	116	135	122	119	118	129	124	115	106	112	110	109	109	111
30	112	112	108	109	110	108	106	108	123	127	112	116	117	123	118	112	117	107	97	90	120	209	282	149
31	194	101	221	260	256	275	255	221	214	271	285	289	294	238	284	294	302	268	292	296	290	279	248	253

Notes:
- (X) - Equipment Malfunction

TABLE 7

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

Frequency Distribution Report: Ryley, Alberta - July 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	83	849	688	677	288	26	6	5.9%	2617
Northeast	> 22.5 - 67.5	90	826	1012	512	214	5	1	6.0%	2660
East	> 67.5 - 112.5	124	1434	2885	2180	1293	104	1	18.0%	8021
Southeast	> 112.5 - 157.5	166	1583	1564	1496	618	68	5	12.3%	5500
South	> 157.5 - 202.5	128	1145	1333	480	53	29	11	7.1%	3179
Southwest	> 202.5 - 247.5	151	902	1713	1673	286	101	24	10.9%	4850
West	> 247.5 - 292.5	132	1596	2699	2768	1849	821	328	22.8%	10193
Northwest	> 292.5 - 337.5	107	1508	1348	1797	1687	795	377	17.1%	7619
Missing/Invalid Minutes									0.002%	1
Total Occurences by Speed		981	9843	13242	11583	6288	1949	753		**44640**
Occurences by %		2.2%	22.0%	29.7%	25.9%	14.1%	4.4%	1.7%	**100.000%**	

TABLE 8

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

Frequency Distribution Report: Ryley, Alberta - July 2023										
		Wind Speed (m/s) and Number of Occurences (minutes)								Total Occurrences
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	%	by Direction
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%**	44640
Total Occurences by Speed		0	0	0	0	0	0	0		**44640**
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
July 2023

Frequency Distribution Report: Ryley, Alberta - July 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	434	1525	707	211	27	1	0	6.5%	2905
Northeast	> 22.5 - 67.5	191	566	143	24	1	0	0	2.1%	925
East	> 67.5 - 112.5	210	1417	1432	743	218	10	0	9.0%	4030
Southeast	> 112.5 - 157.5	372	1494	978	775	272	20	0	8.8%	3911
South	> 157.5 - 202.5	445	1196	794	372	190	13	3	6.7%	3013
Southwest	> 202.5 - 247.5	835	858	150	19	5	3	0	4.2%	1870
West	> 247.5 - 292.5	1195	2598	1906	1346	657	39	7	17.4%	7748
Northwest	> 292.5 - 337.5	594	1549	893	514	124	4	0	8.2%	3678
Missing/Invalid Minutes									37.1%	16560
Total Occurences by Speed		4276	11203	7003	4004	1494	90	10		**44640**
Occurences by %		9.6%	25.1%	15.7%	9.0%	3.3%	0.2%	0.0%	**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
July 2023

Filter ID	HV-23-02-07
Test ID	Facility Test # 104
Sample Start Date/Time	23/07/01 13:00:00
Sample End Date/Time	23/08/01 13:00:00
Sampling Time (hours)	28.47
Flow Rate (m^3/min)	1.304
Volume (m^3)	2227.23
TSP Mass (mg)	254
TSP Concentration (ug/m^3)	114.043
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
July 2023

Filter ID	HV-23-02-08
Test ID	School Test # 104
Sample Start Date/Time	23/07/01 13:00:00
Sample End Date/Time	23/08/01 13:00:00
Sampling Time (hours)	23.50
Flow Rate (m^3/min)	1.295
Volume (m^3)	1825.95
TSP Mass (mg)	193
TSP Concentration (ug/m^3)	105.698
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
July 2023

Filter ID	HVF-23-03-16	HVF-23-03-14	HVF-23-03-15	HVF-23-03-18	HVF-23-06-02
Test ID	850	851	852	853	854
Sample Start Date/Time	23/07/05 00:00:00	23/07/11 00:00:00	23/07/17 00:00:00	23/07/23 00:00:00	23/07/29 00:00:00
Sample End Date/Time	23/07/06 00:00:00	23/07/12 00:00:00	23/07/18 00:00:00	23/07/24 00:00:00	23/07/30 00:00:00
Sampling Time (hours)	24.36	24.23	24.16	24.4	24.29
Flow Rate (m^3/min)	1.302	1.302	1.302	1.302	1.302
Volume (m^3)	1903.00	1892.85	1887.38	1906.13	1897.53
TSP Mass (mg)	79.8	39.3	101	106	39.9
TSP Concentration (ug/m^3)	41.934	20.762	53.513	55.610	21.027
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
July 2023

Filter ID	C1170466	C1170471	C1170465	C1170470	C1170468
Test ID	850	851	852	853	854
Sample Start Date/Time	23/07/05 00:00:00	23/07/11 00:00:00	23/07/17 00:00:00	23/07/23 00:00:00	23/07/29 00:00:00
Sample End Date/Time	23/07/06 00:00:00	23/07/12 00:00:00	23/07/18 00:00:00	23/07/24 00:00:00	23/07/30 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)	22.7	22.7	22.5	22.3	23
PM_{10} Mass (mg)	0.401	0.190	0.718	0.643	0.147
PM_{10} Concentration (ug/m^3)	17.665	8.370	31.911	28.834	6.391
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
July 2023

Parameter	Units	Date / Sample ID / AAAQO[1]	5-Jul-23 850	11-Jul-23 851	17-Jun-23 852	23-Jun-23 853	29-Jul-23 854
Total Non-Methane Organic Carbon	ppmv	-	< 0.09	< 0.09	< 0.08	< 0.09	< 0.09
1,2,3-Trimethylbenzene	ppbv	-	0.16	< 0.09	< 0.08	< 0.09	< 0.09
1,2,4-Trimethylbenzene	ppbv	-	0.08	0.06	0.26	0.40	< 0.05
1,3,5-Trimethylbenzene	ppbv	-	0.06	< 0.06	< 0.05	0.13	< 0.05
1-Butene/Isobutylene	ppbv	-	< 0.10	< 0.11	< 0.10	0.13	< 0.11
1-Hexene/2-Methyl-1-pentene	ppbv	-	0.13	< 0.13	< 0.12	< 0.12	< 0.13
1-Pentene	ppbv	-	< 0.05	< 0.06	< 0.05	< 0.05	< 0.05
2,2,4-Trimethylpentane	ppbv	-	0.05	< 0.04	< 0.03	< 0.03	< 0.04
2,2-Dimethylbutane	ppbv	-	< 0.04	< 0.04	< 0.03	< 0.03	< 0.04
2,3,4-Trimethylpentane	ppbv	-	< 0.04	< 0.04	< 0.03	< 0.03	< 0.04
2,3-Dimethylbutane	ppbv	-	< 0.16	< 0.17	< 0.15	< 0.15	< 0.16
2,3-Dimethylpentane	ppbv	-	0.06	< 0.04	< 0.03	< 0.03	< 0.04
2,4-Dimethylpentane	ppbv	-	< 0.05	< 0.06	< 0.05	< 0.05	< 0.05
2-Methylheptane	ppbv	-	< 0.04	< 0.04	< 0.03	< 0.03	< 0.04
2-Methylhexane	ppbv	-	< 0.05	< 0.06	< 0.05	< 0.05	< 0.05
2-Methylpentane	ppbv	-	< 0.04	0.13	< 0.03	< 0.03	< 0.04
3-Methylheptane	ppbv	-	< 0.05	< 0.06	< 0.05	< 0.05	< 0.05
3-Methylhexane	ppbv	-	0.06	< 0.04	0.06	< 0.03	< 0.04
3-Methylpentane	ppbv	-	0.07	< 0.04	0.05	0.05	< 0.04
Benzene	ppbv	-	0.10	< 0.06	0.14	0.14	< 0.05
cis-2-Butene	ppbv	-	< 0.05	< 0.06	< 0.05	< 0.05	< 0.05
cis-2-Pentene	ppbv	-	< 0.04	< 0.04	< 0.03	< 0.03	< 0.04
Cyclohexane	ppbv	-	< 0.07	< 0.08	0.09	0.08	< 0.07
Cyclopentane	ppbv	-	< 0.04	< 0.04	< 0.03	< 0.03	< 0.04
Ethylbenzene	ppbv	-	0.08	< 0.06	0.12	0.18	< 0.05
Isobutane	ppbv	-	0.23	0.26	1.05	0.47	< 0.05
Isopentane	ppbv	-	0.56	0.29	0.77	0.55	0.10
Isoprene	ppbv	-	0.18	0.15	0.05	0.23	0.07
Isopropylbenzene	ppbv	-	< 0.07	< 0.08	< 0.07	< 0.07	< 0.07
m,p-Xylene	ppbv	161	0.18	0.13	0.25	0.19	< 0.07
m-Diethylbenzene	ppbv	-	0.15	< 0.04	< 0.03	< 0.03	< 0.04
m-Ethyltoluene	ppbv	-	0.15	0.15	0.07	0.06	< 0.05

Methylcyclohexane	ppbv	-	0.05	< 0.04	0.06	0.04	< 0.04
Methylcyclopentane	ppbv	-	< 0.09	< 0.09	< 0.08	< 0.09	< 0.09
n-Butane	ppbv	-	0.63	0.49	1.04	0.46	0.15
n-Decane	ppbv	-	0.14	0.13	< 0.10	< 0.10	< 0.11
n-Dodecane	ppbv	-	< 0.5	< 0.6	< 0.5	0.6	< 0.5
n-Heptane	ppbv	-	0.07	< 0.08	0.09	0.08	< 0.07
n-Hexane	ppbv	1990	0.11	0.08	0.11	0.13	< 0.05
n-Nonane	ppbv	-	< 0.07	< 0.08	< 0.07	< 0.07	< 0.07
n-Octane	ppbv	-	0.05	< 0.04	0.07	0.06	< 0.04
n-Pentane	ppbv	-	0.16	0.15	0.16	< 0.07	< 0.07
n-Propylbenzene	ppbv	-	0.12	< 0.11	< 0.10	0.11	< 0.11
n-Undecane	ppbv	-	< 0.9	< 0.9	< 0.8	< 0.9	< 0.9
o-Ethyltoluene	ppbv	-	0.06	< 0.04	< 0.03	0.14	< 0.04
o-Xylene	ppbv	161	0.08	< 0.06	0.10	0.16	< 0.05
p-Diethylbenzene	ppbv	-	0.16	0.15	< 0.03	< 0.03	< 0.04
p-Ethyltoluene	ppbv	-	< 0.07	< 0.08	< 0.07	< 0.07	< 0.07
Styrene	ppbv	-	0.14	< 0.08	< 0.07	< 0.07	< 0.07
Toluene	ppbv	106	0.15	< 0.06	0.30	0.10	< 0.05
trans-2-Butene	ppbv	-	< 0.05	< 0.06	< 0.05	< 0.05	< 0.05
trans-2-Pentene	ppbv	-	< 0.04	< 0.04	< 0.03	< 0.03	< 0.04
Total VOCs [(2)]	ppbv	-	6.830	6.070	7.860	6.950	4.470

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
July 2023

Parameter	Date / Sample ID / Lab Results [1]		1-Aug-23 HV-23-02-07 (ug/m^3)[2]	AAAQO[2] (ug/m^3)
Antimony	231	ng/Filter	2.65E-04	-
Arsenic	8660	ng/Filter	9.93E-03	0.10
Barium	< 300	ng/Filter	3.44E-04	-
Beryllium	20.7	ng/Filter	2.37E-05	-
Boron	< 60.0	ng/Filter	6.88E-05	-
Cadmium	389	ng/Filter	4.46E-04	-
Chromium	4910	ng/Filter	5.63E-03	1.0
Cobalt	12500	ng/Filter	1.43E-02	-
Copper	106000	ng/Filter	1.22E-01	-
Iron	2500000	ng/Filter	2.87E+00	-
Lead	7190	ng/Filter	8.24E-03	1.5
Manganese	63400	ng/Filter	7.27E-02	-
Mercury	< 0.70	ng/Filter	8.03E-07	-
Nickel	52400	ng/Filter	6.01E-02	6
Selenium	839	ng/Filter	9.62E-04	-
Silver	61.2	ng/Filter	7.02E-05	-
Thallium	< 0.20	ng/Filter	2.29E-07	-
Tin	248	ng/Filter	2.84E-04	-
Uranium	< 0.200	ng/Filter	2.29E-07	-
Vanadium	8580	ng/Filter	9.84E-03	-
Zinc	< 1000	ng/Filter	1.15E-03	-
Sampling Time (hours)	28.47			
Flow Rate (m3/min)	1.304			
Volume Sampled (m^3)	2227.23			

Notes:
(1) These results are from a 28.47 hour averaging period that took place on July 1 to August 1, 2023
(2) Measured data have been converted from the measured 28.47 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
July 2023

Parameter	Date / Sample ID / Lab Results [1]		(ug/m^3)[2]	AAAQO[2] (ug/m^3)
	1-Aug-23 / HV-23-02-08			
Antimony	388	ng/Filter	5.14E-04	-
Arsenic	6360	ng/Filter	8.43E-03	0.10
Barium	< 300	ng/Filter	3.98E-04	-
Beryllium	15.6	ng/Filter	2.07E-05	-
Boron	< 60.0	ng/Filter	7.95E-05	-
Cadmium	480	ng/Filter	6.36E-04	-
Chromium	5950	ng/Filter	7.89E-03	1.0
Cobalt	6600	ng/Filter	8.75E-03	-
Copper	244000	ng/Filter	3.23E-01	-
Iron	1450000	ng/Filter	1.92E+00	-
Lead	9810	ng/Filter	1.30E-02	1.5
Manganese	72400	ng/Filter	9.60E-02	-
Mercury	< 0.70	ng/Filter	9.28E-07	-
Nickel	26700	ng/Filter	3.54E-02	6
Selenium	911	ng/Filter	1.21E-03	-
Silver	130	ng/Filter	1.72E-04	-
Thallium	< 0.20	ng/Filter	2.65E-07	-
Tin	202	ng/Filter	2.68E-04	-
Uranium	< 0.200	ng/Filter	2.65E-07	-
Vanadium	3830	ng/Filter	5.08E-03	-
Zinc	< 1000	ng/Filter	1.33E-03	-
Sampling Time (hours)	23.50			
Flow Rate (m3/min)	1.295			
Volume Sampled (m^3)	1825.95			

Notes:

(1) These results are from a 23.50 hour averaging period that took place on July 1 to August 1, 2023

(2) Measured data have been converted from the measured 23.50 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
July 2023

Parameter	Date / Sample ID	Lab Results [1]		(ug/m^3)[3]	Date / Sample ID	Lab Results [1]		(ug/m^3)[3]	AAAQO[3] (ug/m^3)
		17-Jul-23 / 852				23-Jul-23 / 853			
Antimony		209	ng/Filter	2.70E-04		170	ng/Filter	2.18E-04	-
Arsenic		5310	ng/Filter	6.86E-03		6040	ng/Filter	7.75E-03	0.10
Barium		< 300	ng/Filter	3.88E-04		< 300	ng/Filter	3.85E-04	-
Beryllium		48.6	ng/Filter	6.28E-05		11.3	ng/Filter	1.45E-05	-
Boron		786000	ng/Filter	1.02E+00		< 60.0	ng/Filter	7.70E-05	-
Cadmium		304	ng/Filter	3.93E-04		245	ng/Filter	3.14E-04	-
Chromium		6970	ng/Filter	9.01E-03		4740	ng/Filter	6.08E-03	1.0
Cobalt		3090	ng/Filter	3.99E-03		1370	ng/Filter	1.76E-03	-
Copper		203000	ng/Filter	2.62E-01		278000	ng/Filter	3.57E-01	-
Iron		1430000	ng/Filter	1.85E+00		1140000	ng/Filter	1.46E+00	-
Lead		14000	ng/Filter	1.81E-02		9010	ng/Filter	1.16E-02	1.5
Manganese		81300	ng/Filter	1.05E-01		49800	ng/Filter	6.39E-02	-
Mercury		5.48	ng/Filter	7.08E-06		3.24	ng/Filter	4.16E-06	-
Nickel		13600	ng/Filter	1.76E-02		7820	ng/Filter	1.00E-02	6
Selenium		1330	ng/Filter	1.72E-03		1330	ng/Filter	1.71E-03	-
Silver		150	ng/Filter	1.94E-04		178	ng/Filter	2.28E-04	-
Thallium		< 0.20	ng/Filter	2.58E-07		< 0.20	ng/Filter	2.57E-07	-
Tin		224	ng/Filter	2.90E-04		261	ng/Filter	3.35E-04	-
Uranium		< 0.200	ng/Filter	2.58E-07		< 0.200	ng/Filter	2.57E-07	-
Vanadium		5860	ng/Filter	7.57E-03		3460	ng/Filter	4.44E-03	-
Zinc		< 1000	ng/Filter	1.29E-03		< 1000	ng/Filter	1.28E-03	-
Sampling Time (hours)		24.16				24.4			
Flow Rate (l/min)		1.302				1.302			
Volume Sampled (m^3)		1887.38				1906.13			

Notes:

(1) These results are from an approximately 24 hour averaging period that took place on July 17 and July 23, 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
July 2023

	Date		17-Jul-23	Date		23-Jul-23	
	Sample ID		852	Sample ID		853	
Parameter	**Lab Results [1]**		**(ug/m^3)[2]**	**Lab Results [1]**		**(ug/m^3)[2]**	**AAAQO[2] (ug/m^3)**
Antimony	1.30	ng/Filter	1.41E-04	0.71	ng/Filter	7.75E-05	-
Arsenic	7.14	ng/Filter	7.73E-04	8.26	ng/Filter	9.02E-04	0.10
Barium	180	ng/Filter	1.95E-02	77.7	ng/Filter	8.48E-03	-
Beryllium	0.30	ng/Filter	3.25E-05	0.18	ng/Filter	1.97E-05	-
Boron	284	ng/Filter	3.07E-02	368	ng/Filter	4.02E-02	-
Cadmium	2.23	ng/Filter	2.41E-04	1.86	ng/Filter	2.03E-04	-
Chromium	26	ng/Filter	2.81E-03	23	ng/Filter	2.51E-03	1.0
Cobalt	15.5	ng/Filter	1.68E-03	2.86	ng/Filter	3.12E-04	-
Copper	192	ng/Filter	2.08E-02	154	ng/Filter	1.68E-02	-
Iron	8480	ng/Filter	9.18E-01	4900	ng/Filter	5.35E-01	-
Lead	49.4	ng/Filter	5.35E-03	23.4	ng/Filter	2.55E-03	1.5
Manganese	372	ng/Filter	4.03E-02	169	ng/Filter	1.85E-02	-
Mercury	0.22	ng/Filter	2.38E-05	0.16	ng/Filter	1.75E-05	-
Nickel	61.4	ng/Filter	6.64E-03	19.2	ng/Filter	2.10E-03	6
Selenium	13.4	ng/Filter	1.45E-03	14.7	ng/Filter	1.60E-03	-
Silver	0.46	ng/Filter	4.98E-05	0.31	ng/Filter	3.38E-05	-
Thallium	0.31	ng/Filter	3.35E-05	0.26	ng/Filter	2.84E-05	-
Tin	2.28	ng/Filter	2.47E-04	1.03	ng/Filter	1.12E-04	-
Uranium	0.446	ng/Filter	4.83E-05	0.221	ng/Filter	2.41E-05	-
Vanadium	40.5	ng/Filter	4.38E-03	16.3	ng/Filter	1.78E-03	-
Zinc	1900	ng/Filter	2.06E-01	371	ng/Filter	4.05E-02	-
Sampling Time (hours)	24			24			
Flow Rate (l/min)	16.7			16.7			
Volume Sampled (m^3)	22.5			22.3			

Notes:
(1) These results are from an approximately 24 hour averaging period that took place on July 17 and July 23, 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.

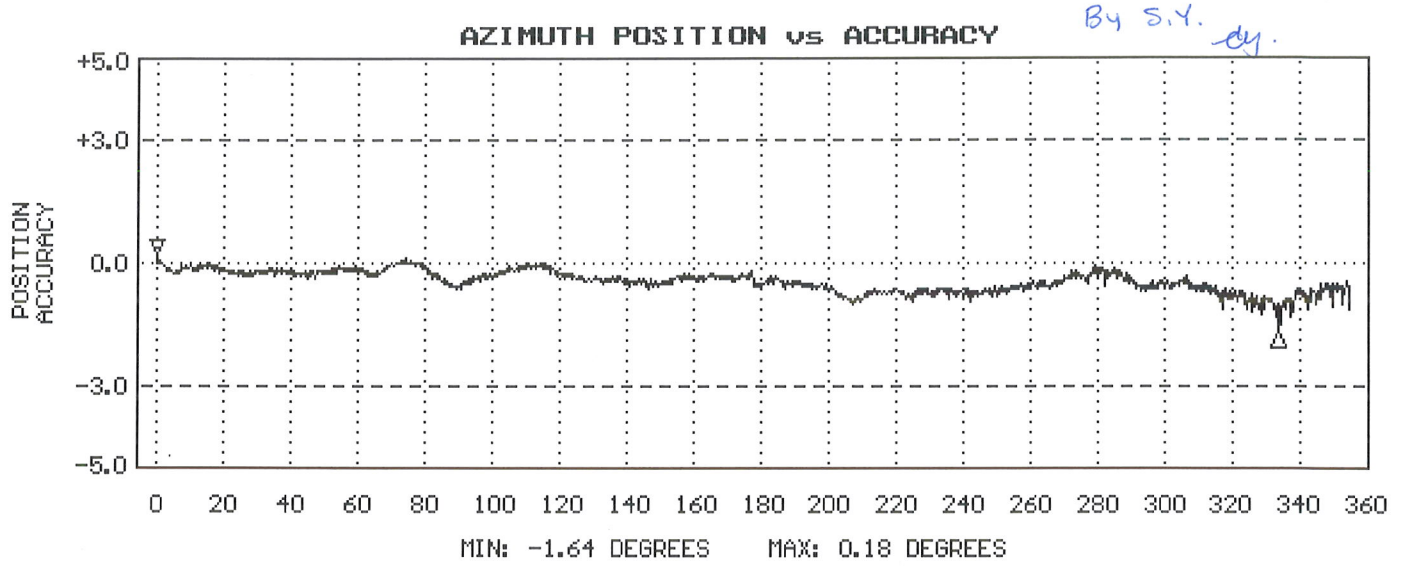
Appendix A
Meteorological Station Calibration Report

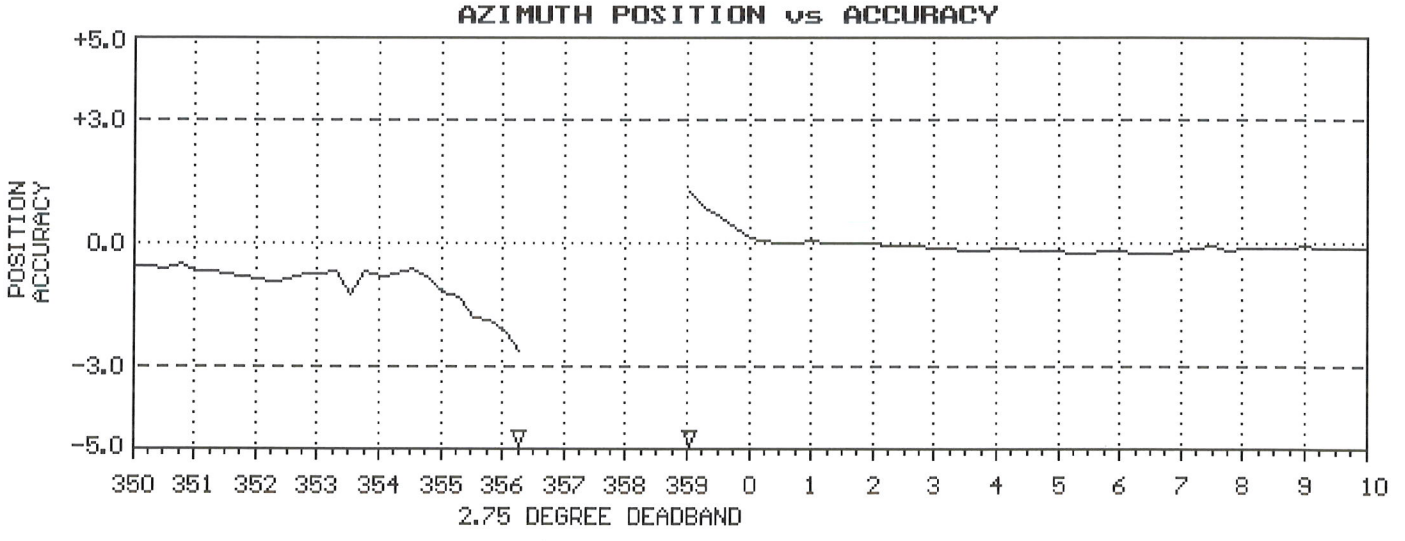
R. M. YOUNG COMPANY WIND SENSOR CALIBRATION CERTIFICATE

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:	C1170466		
PO Number:	234633		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 850		
Sample Date:	23/07/05	yy/mm/dd	
Shipping Date to Laboratory:	23/07/11		
PM10 Analysis Trigger Weight (mg):	1.14	weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	23/07/05		
Sampling Start Time:	00:00		
Current Instrument Date:	23/06/30		
Current Instrument Time:	17:14		
Ambient Temperature °C:	32.2		
Barometric Pressure (mm Hg):	700		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	passing clouds		
Weather Conditions set up:	scattered clouds		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	23/07/06		
Sampling End Time:	00:00		
Current Instrument Date:	23/07/10		
Current Instrument Time:	7:58		
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 :	17.0		
Barometric Pressure (mm Hg) :	699		
Sample Filter Temperature °C :	16.6		
Flow Rate Coefficient of Variation (%CV):	0		
Weather Conditions :	cloudy, hazy		
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 850	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 850	
Sample Date:	23/07/05	yy/mm/dd
Shipping Date to Laboratory:	23/07/11	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	29016	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/06/30	23/07/10
Ambient Temperature °C (inside shed):	20.2	16.4
Barometric Pressure (mm Hg):	700	699
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:	passing clouds
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 #850				
Lab Filter ID	HVF-23-03-16				
Start Sampling	7 mm	5 dd	0 hr	2023	
Stop Sampling	7 mm	6 dd	0 hr	2023	
Timer Initial:	728.55				
Timer Final:	752.91				
	24.36				
Total Sampling Time	24 hr		22 min		1462
Average Flow Rate		cfm			
Actual m3/min	1.302				
Air Volume	1903.0	cubic metres			
Net TSP Weight		g			
TSP Concentration		mg/m3			
TSP Analysis Trigger Weight	95.2	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:	C1170471		
PO Number:	234633		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 851		
Sample Date:	23/07/11	yy/mm/dd	
Shipping Date to Laboratory:	23/07/14		
PM10 Analysis Trigger Weight (mg):	1.14	weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	23/07/11		
Sampling Start Time:	00:00		
Current Instrument Date:	23/07/10		
Current Instrument Time:	8:11		
Ambient Temperature °C:	17.5		
Barometric Pressure (mm Hg):	699		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	Cloudy		
Weather Conditions set up:	Mostly Cloudy		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	23/07/12		
Sampling End Time:	00:00		
Current Instrument Date:	23/07/13		
Current Instrument Time:	13:49		
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 :	25.3		
Barometric Pressure (mm Hg) :	700		
Sample Filter Temperature °C :	26.0		
Flow Rate Coefficient of Variation (%CV):	0.2		
Weather Conditions :	Mostly 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?	Yes		
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 851	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 851	
Sample Date:	23/07/11	yy/mm/dd
Shipping Date to Laboratory:	23/07/14	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	29004	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/07/10	23/07/13
Ambient Temperature °C (inside shed):	16.4	28.2
Barometric Pressure (mm Hg):	699	700
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)9
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: Mostly 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 #851				
Lab Filter ID	HVF-23-03-14				
Start Sampling	7	11	0	2023	
	mm	dd	hr		
Stop Sampling	7	12	0	2023	
	mm	dd	hr		
Timer Initial:	752.91				
Timer Final:	777.14				
	24.23				
Total Sampling Time	24 hr		14 min	1454	
Average Flow Rate	cfm				
Actual m3/min	1.302				
Air Volume	1892.8 cubic metres				
Net TSP Weight	g				
TSP Concentration	mg/m3				
TSP Analysis Trigger Weight	94.6 mg		weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

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.
- 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:	C1170465			
PO Number:	234633			
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905			
Test number :	Particulate Test 852			
Sample Date:	23/07/17		yy/mm/dd	
Shipping Date to Laboratory:	23/07/20			
PM10 Analysis Trigger Weight (mg):	1.13		weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION				
SAMPLE START				
Sampling Start Date:	23/07/17			
Sampling Start Time:	00:00			
Current Instrument Date:	23/07/13			
Current Instrument Time:	14:05			
Ambient Temperature °C:	25.3			
Barometric Pressure (mm Hg):	700			
Leak Check:	Pass		(Pass/Fail)	
Clean PM10 Inlet:	Yes		(Yes/No)	
Weather Conditions Sampling date :	Scattered Showers			
Weather Conditions set up:	Foggy			
SAMPLE RETRIEVAL				
Sampled by	T. Webb			
Sampling End Date:	23/07/19			
Sampling End Time:	00:00			
Current Instrument Date:	23/07/19			
Current Instrument Time:	8:41			
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 :	17.0			
Barometric Pressure (mm Hg) :	707			
Sample Filter Temperature °C :	16.1			
Flow Rate Coefficient of Variation (%CV):	0.1			
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?	Yes			
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 852	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 852	
Sample Date:	23/07/17	yy/mm/dd
Shipping Date to Laboratory:	23/07/20	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	32228	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/07/13	23/07/19
Ambient Temperature °C (inside shed):	28.2	15.7
Barometric Pressure (mm Hg):	700	707
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)4
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: Scattered Showers

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 #852			
Lab Filter ID	HVF-23-03-15			
Start Sampling	7	17	0	2023
	mm	dd	hr	
Stop Sampling	7	18	0	2023
	mm	dd	hr	
Timer Initial:	777.14			
Timer Final:	801.30			
	24.16			
Total Sampling Time	24 hr	10 min	1450	
Average Flow Rate	cfm			
Actual m3/min	1.302			
Air Volume	1887.4 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	94.4 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

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.
- 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:	C1170470		
PO Number:	234633		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 853		
Sample Date:	23/07/23	yy/mm/dd	
Shipping Date to Laboratory:	23/07/27		
PM10 Analysis Trigger Weight (mg):	1.12	weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	23/07/23		
Sampling Start Time:	00:00		
Current Instrument Date:	23/07/19		
Current Instrument Time:	8:48		
Ambient Temperature °C:	17.5		
Barometric Pressure (mm Hg):	707		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	Mostly Sunny		
Weather Conditions set up:	Mostly Sunny		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	23/07/24		
Sampling End Time:	00:00		
Current Instrument Date:	23/07/26		
Current Instrument Time:	8:56		
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 :	15.5		
Barometric Pressure (mm Hg) :	698		
Sample Filter Temperature °C :	15.2		
Flow Rate Coefficient of Variation (%CV):	0.1		
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 853	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 853	
Sample Date:	23/07/23	yy/mm/dd
Shipping Date to Laboratory:	23/07/24	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	29014	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/07/19	23/07/26
Ambient Temperature °C (inside shed):	15.7	15.9
Barometric Pressure (mm Hg):	707	698
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: Mostly 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 #853				
Lab Filter ID	HVF-23-03-18				
Start Sampling	7	23	0	2023	
	mm	dd	hr		
Stop Sampling	7	24	0	2023	
	mm	dd	hr		
Timer Initial:	801.30				
Timer Final:	825.70				
	24.40				
Total Sampling Time	24 hr		24 min	1464	
Average Flow Rate	cfm				
Actual m3/min	1.302				
Air Volume	1906.1 cubic metres				
Net TSP Weight	g				
TSP Concentration	mg/m3				
TSP Analysis Trigger Weight	95.3 mg		weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

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.
- 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:	C1170468		
PO Number:	234633		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 854		
Sample Date:	23/07/29	yy/mm/dd	
Shipping Date to Laboratory:	23/08/03		
PM10 Analysis Trigger Weight (mg):	1.15	weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	23/07/29		
Sampling Start Time:	00:00		
Current Instrument Date:	23/07/27		
Current Instrument Time:	16:46		
Ambient Temperature °C:	16.5		
Barometric Pressure (mm Hg):	706		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	Mostly Cloudy		
Weather Conditions set up:	Scattered Showers		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	23/07/30		
Sampling End Time:	00:00		
Current Instrument Date:	23/06/03		
Current Instrument Time:	7:52		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m^3):	23		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	17.0		
Barometric Pressure (mm Hg) :	702		
Sample Filter Temperature °C :	16.6		
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 854	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 854	
Sample Date:	23/07/29	yy/mm/dd
Shipping Date to Laboratory:	23/07/30	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	28939	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/07/27	23/08/03
Ambient Temperature °C (inside shed):	20.3	16.3
Barometric Pressure (mm Hg):	706	702
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: Mostly 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 #854				
Lab Filter ID	HVF-23-06-02				
Start Sampling	7	29	0	2023	
	mm	dd	hr		
Stop Sampling	7	30	0	2023	
	mm	dd	hr		
Timer Initial:	825.70				
Timer Final:	849.99				
	24.29				
Total Sampling Time	24 hr		17 min	1457	
Average Flow Rate	cfm				
Actual m3/min	1.302				
Air Volume	1897.5 cubic metres				
Net TSP Weight	g				
TSP Concentration	mg/m3				
TSP Analysis Trigger Weight	94.9 mg		weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

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.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

_____

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

1. SAMPLING INFORMATION

Sample ID	Facility Test # 104			
Lab Filter ID	HV-23-02-07			
Start Sampling	7	1	13	2023
	mm	dd	hr	
Stop Sampling	8	1	13	2023
	mm	dd	hr	
Timer Initial:	3123.28			
Timer Final:	3151.75			

Total Sampling Time	28 hr	28 min	1708	
Average Flow Rate	cfm			
Actual m3/min	1.304			
Air Volume	2227.2 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			

3. OBSERVATIONS

Comments: The wind data recorder did not record data from July 13 to 23rd. Seems like it may have been a power issue but uncertain.

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: 

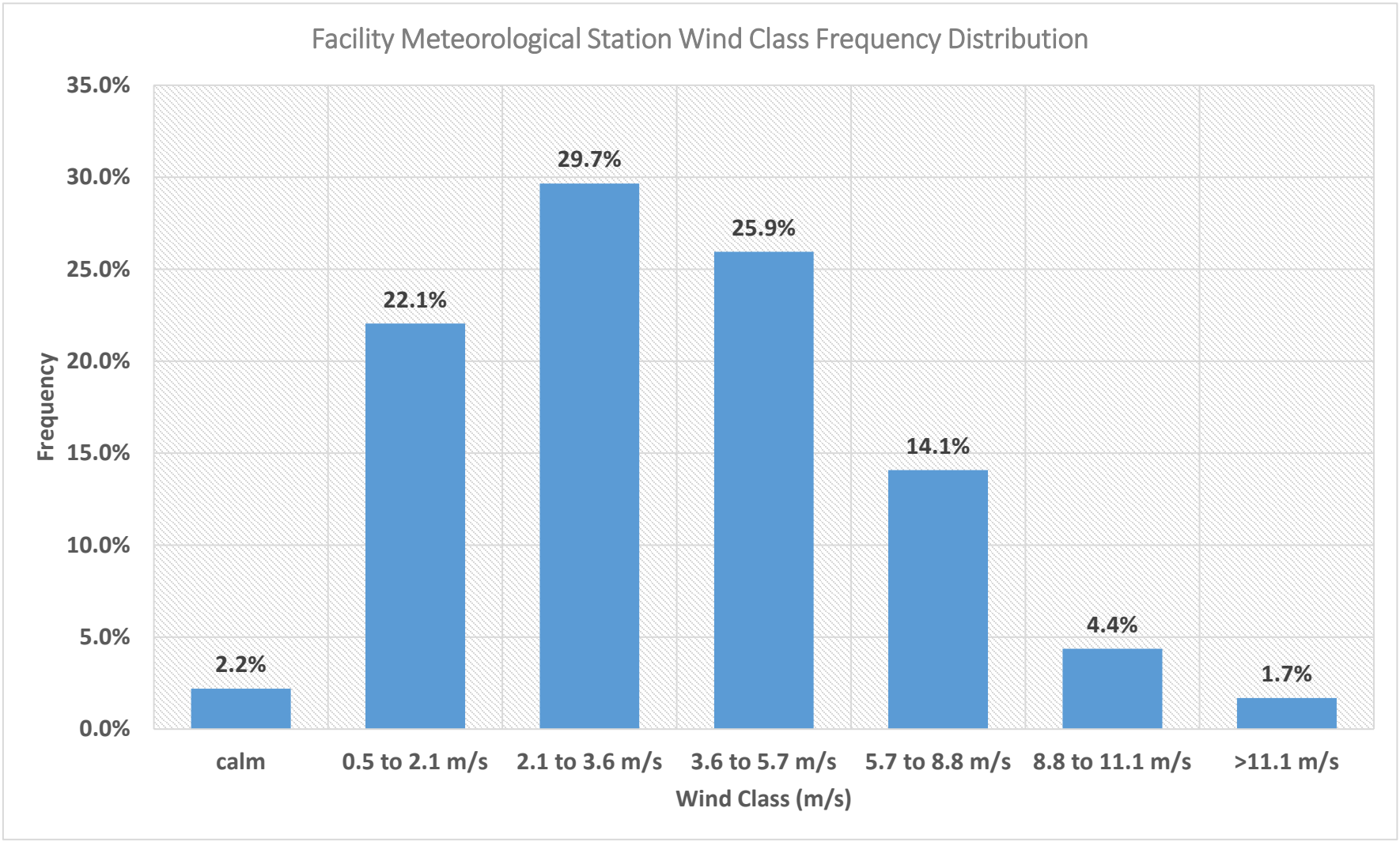
Comments:

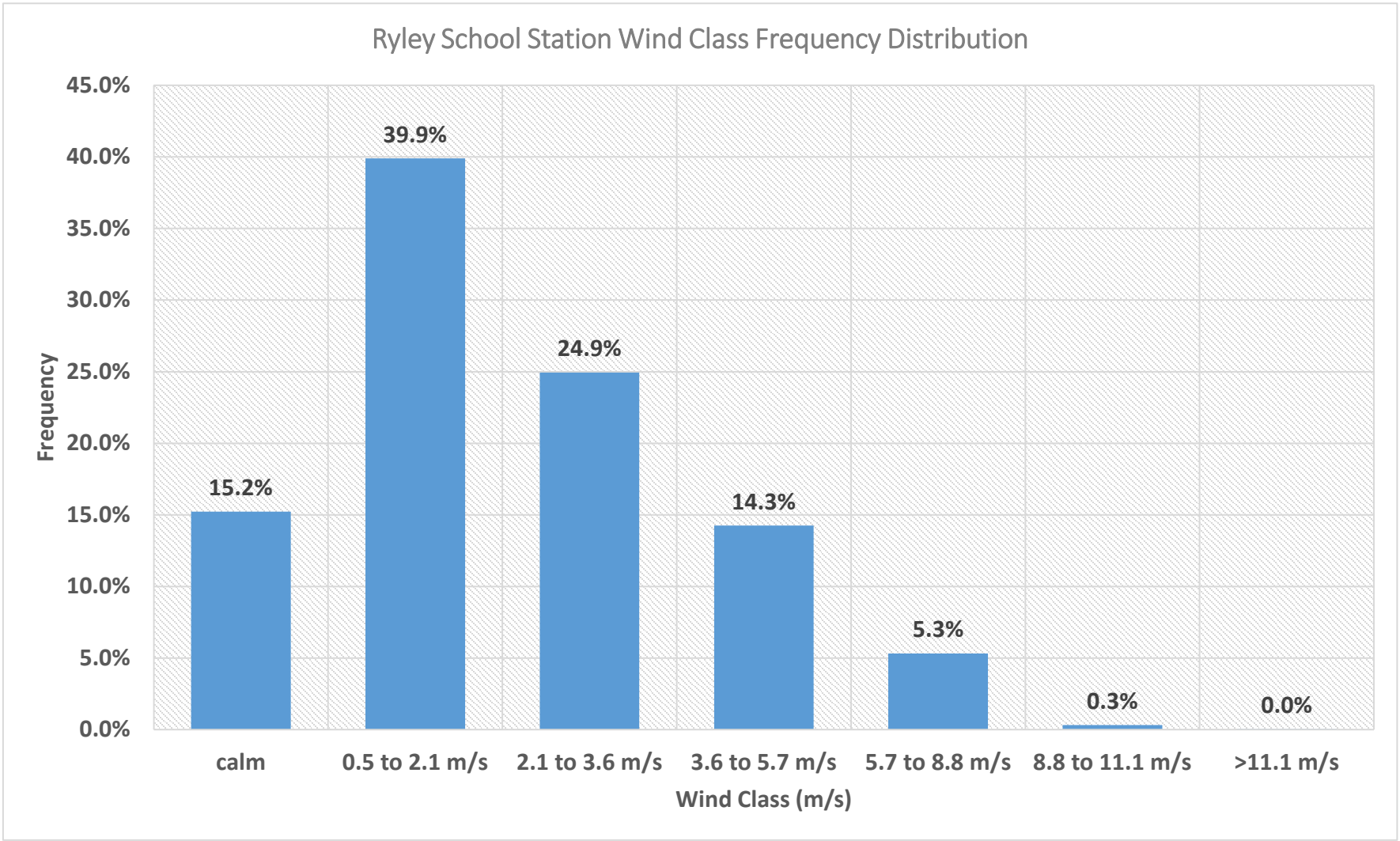
2. SAMPLING INFORMATION

Sample ID	School Test # 104			
Lab Filter ID	HV-23-02-08			
Start Sampling	7	1	13	2023
	mm	dd	hr	
Stop Sampling	8	1	13	2023
	mm	dd	hr	
Timer Initial:	2525.52			
Timer Final:	2549.01			

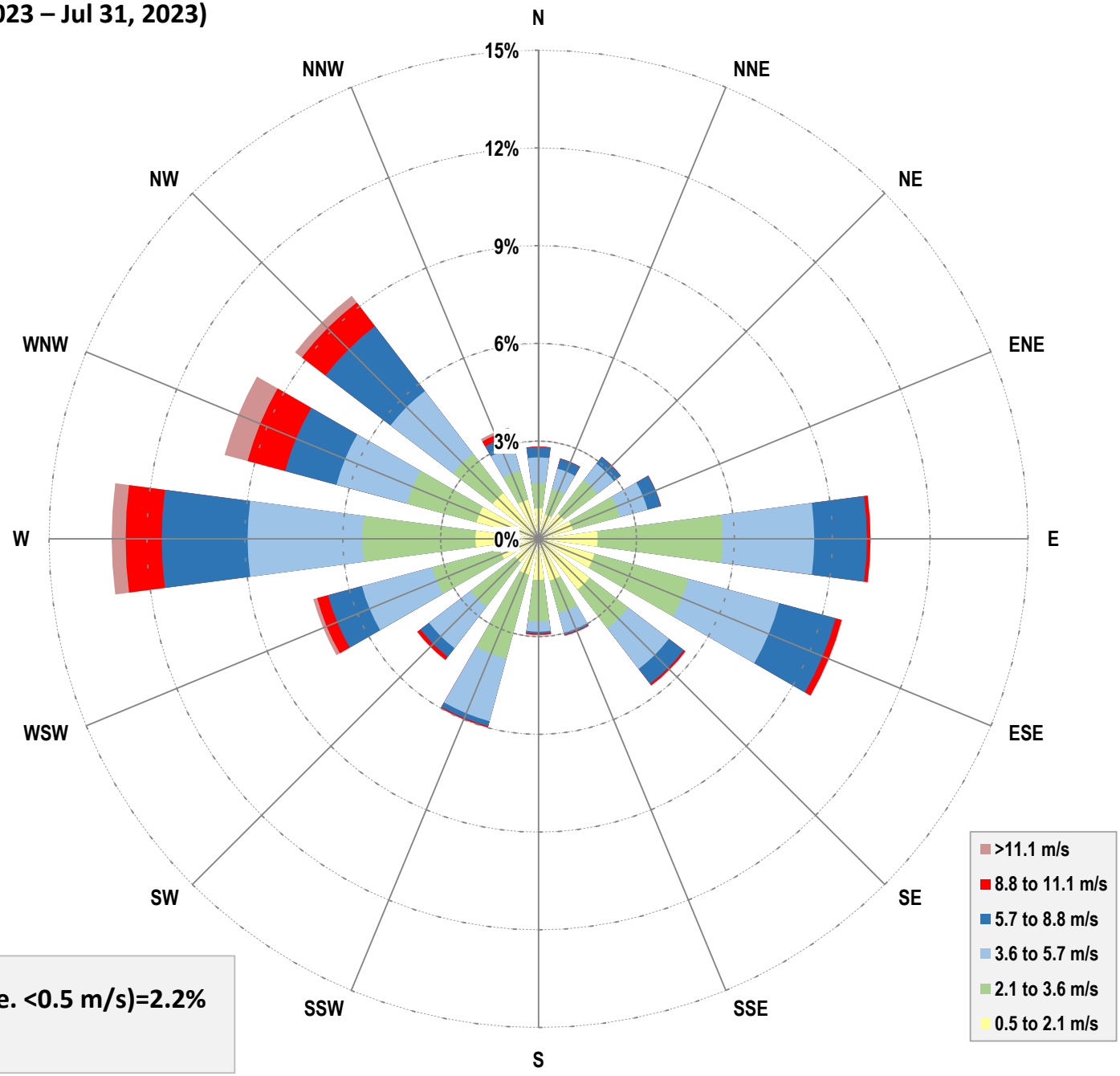
Total Sampling Time	23	hr	30	min	1410
Average Flow Rate		cfm			
Actual m3/min	1.295				
Air Volume	1826.0	cubic metres			
Net TSP Weight		g			
TSP Concentration		mg/m3			

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
2.2%
22.1%
29.7%
25.9%
14.1%
4.4%
1.7%
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)

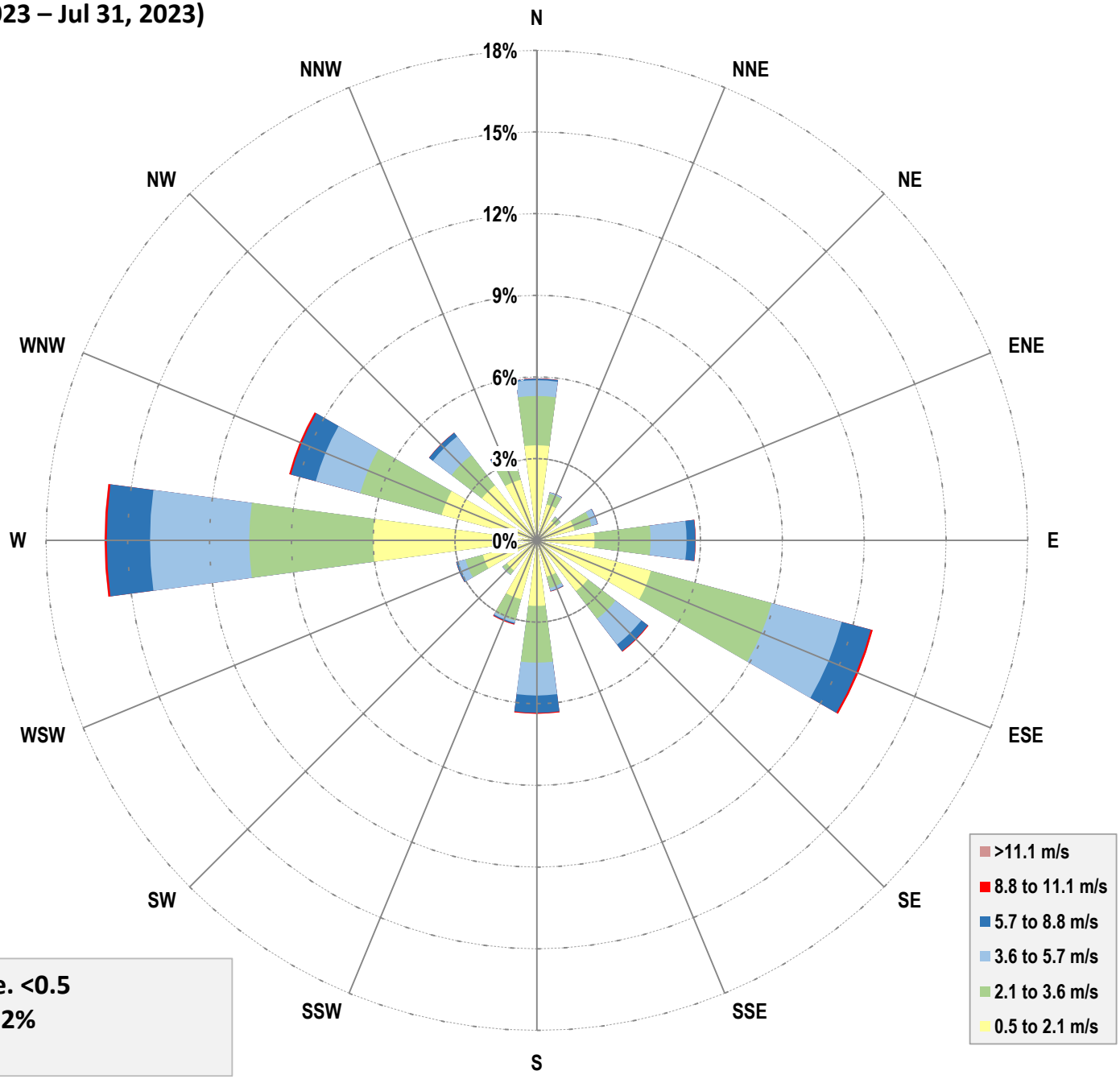

Ryley School Station Wind Class Frequency Distribution
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Frequency
15.2%
39.9%
24.9%
14.3%
5.3%
0.3%
0.0%
calm
0.5 to 2.1 m/s
2.1 to 3.6 m/s
3.6 to 5.7 m/s
5.7 to 8.8 m/s
8.8 to 11.1 m/s
>11.1 m/s
Wind Class (m/s)

Clean Harbors Facility Meteorological Station
(Jul 1, 2023 – Jul 31, 2023)



calms (i.e. <0.5 m/s)=2.2%

Clean Harbors Ryley School Station
(Jul 1, 2023 – Jul 31, 2023)



calms (i.e. <0.5 m/s)=15.2%

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 # 104 - HV-23-02-07
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION:
DATE SAMPLED: 01-Jul-23
DATE RECEIVED: 08-Aug-23
REPORT CREATED: 29-Aug-23
REPORT NUMBER: 23080075
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23080075-001	Antimony		231	ng/Filter	0.30	AC-021	23-Aug-23
23080075-001	Arsenic		8660	ng/Filter	0.30	AC-021	23-Aug-23
23080075-001	Barium	K, T, U	< 300	ng/Filter	300	AC-021	23-Aug-23
23080075-001	Beryllium		20.7	ng/Filter	0.60	AC-021	23-Aug-23
23080075-001	Boron	K, T, U	< 60.0	ng/Filter	60.0	AC-021	23-Aug-23
23080075-001	Cadmium		389	ng/Filter	0.80	AC-021	23-Aug-23
23080075-001	Chromium		4910	ng/Filter	20	AC-021	23-Aug-23
23080075-001	Cobalt		12500	ng/Filter	0.50	AC-021	23-Aug-23
23080075-001	Copper		106000	ng/Filter	20	AC-021	23-Aug-23
23080075-001	Iron		2500000	ng/Filter	80	AC-021	23-Aug-23
23080075-001	Lead		7190	ng/Filter	0.70	AC-021	23-Aug-23
23080075-001	Manganese		63400	ng/Filter	1.0	AC-021	23-Aug-23
23080075-001	Mercury	K, T, U	< 0.70	ng/Filter	0.70	AC-021	23-Aug-23
23080075-001	Nickel		52400	ng/Filter	5.0	AC-021	23-Aug-23
23080075-001	Selenium		839	ng/Filter	4.0	AC-021	23-Aug-23
23080075-001	Silver		61.2	ng/Filter	0.50	AC-021	23-Aug-23
23080075-001	Thallium	K, T, U	< 0.20	ng/Filter	0.20	AC-021	23-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: August 29, 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
Ryley Facility Test # 104 - HV-23-02-07		Air Filter	01-Jul-23

DESCRIPTION:

REPORT NUMBER: 23080075 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23080075-001	Tin		248	ng/Filter	0.20	AC-021	23-Aug-23
23080075-001	Uranium	K, T, U	< 0.200	ng/Filter	0.200	AC-021	23-Aug-23
23080075-001	Vanadium		8580	ng/Filter	0.40	AC-021	23-Aug-23
23080075-001	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	23-Aug-23
23080075-001	Particulate Weight		254	mg	0.1	Research	10-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: August 29, 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//

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
Ryley School Test # 104 - HV-23-02-08		Air Filter	01-Jul-23

DESCRIPTION:

REPORT NUMBER: 23080075 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23080075-002	Antimony		388	ng/Filter	0.30	AC-021	23-Aug-23
23080075-002	Arsenic		6360	ng/Filter	0.30	AC-021	23-Aug-23
23080075-002	Barium	K, T, U	< 300	ng/Filter	300	AC-021	23-Aug-23
23080075-002	Beryllium		15.6	ng/Filter	0.60	AC-021	23-Aug-23
23080075-002	Boron	K, T, U	< 60.0	ng/Filter	60.0	AC-021	23-Aug-23
23080075-002	Cadmium		480	ng/Filter	0.80	AC-021	23-Aug-23
23080075-002	Chromium		5950	ng/Filter	20	AC-021	23-Aug-23
23080075-002	Cobalt		6600	ng/Filter	0.50	AC-021	23-Aug-23
23080075-002	Copper		244000	ng/Filter	20	AC-021	23-Aug-23
23080075-002	Iron		1450000	ng/Filter	80	AC-021	23-Aug-23
23080075-002	Lead		9810	ng/Filter	0.70	AC-021	23-Aug-23
23080075-002	Manganese		72400	ng/Filter	1.0	AC-021	23-Aug-23
23080075-002	Mercury	K, T, U	< 0.70	ng/Filter	0.70	AC-021	23-Aug-23
23080075-002	Nickel		26700	ng/Filter	5.0	AC-021	23-Aug-23
23080075-002	Selenium		911	ng/Filter	4.0	AC-021	23-Aug-23
23080075-002	Silver		130	ng/Filter	0.50	AC-021	23-Aug-23
23080075-002	Thallium	K, T, U	< 0.20	ng/Filter	0.20	AC-021	23-Aug-23
23080075-002	Tin		202	ng/Filter	0.20	AC-021	23-Aug-23
23080075-002	Uranium	K, T, U	< 0.200	ng/Filter	0.200	AC-021	23-Aug-23
23080075-002	Vanadium		3830	ng/Filter	0.40	AC-021	23-Aug-23
23080075-002	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	23-Aug-23
23080075-002	Particulate Weight		193	mg	0.1	Research	10-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: August 29, 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//

Revision History

Order ID	Ver	Date	Reason
23080075	01	29-Aug-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

PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
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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

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

Order Comments

23080075

Quote ID: QT140005. Send results to Stan Yuha

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

Sample Comments

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

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 # 8450 - HVF-23-03-16
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION:
DATE SAMPLED: 05-Jul-23 0:00
DATE RECEIVED: 12-Jul-23
REPORT CREATED: 04-Aug-23
REPORT NUMBER: 23070149
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070149-003	Particulate Weight		79.8	mg	0.1	Research	14-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: August 4, 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 # 850 - C1170466		Air Filter	05-Jul-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070149 **REPORT CREATED:** 04-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070149-002	Particulate Weight		0.401	mg	0.004	AC-029	13-Jul-23

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

Date: August 4, 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
VOCs and TMNOC Test # 850	29016	Ambient Air	05-Jul-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070149 **REPORT CREATED:** 04-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070149-001	Total Non-Methane Organic Carbon	K, T, U	< 0.09	ppmv	0.09	NA-028	14-Jul-23
23070149-001	1,2,3-Trimethylbenzene	I	0.16	ppbv	0.09	AC-058	18-Jul-23
23070149-001	1,2,4-Trimethylbenzene	I	0.08	ppbv	0.05	AC-058	18-Jul-23
23070149-001	1,3,5-Trimethylbenzene	I	0.06	ppbv	0.05	AC-058	18-Jul-23
23070149-001	1-Butene/Isobutylene	K, T, U	< 0.10	ppbv	0.10	AC-058	18-Jul-23
23070149-001	1-Hexene/2-Methyl-1-pentene	I	0.13	ppbv	0.12	AC-058	18-Jul-23
23070149-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Jul-23
23070149-001	2,2,4-Trimethylpentane	I	0.05	ppbv	0.04	AC-058	18-Jul-23
23070149-001	2,2-Dimethylbutane	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Jul-23
23070149-001	2,3,4-Trimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Jul-23
23070149-001	2,3-Dimethylbutane	K, T, U	< 0.16	ppbv	0.16	AC-058	18-Jul-23
23070149-001	2,3-Dimethylpentane	I	0.06	ppbv	0.04	AC-058	18-Jul-23
23070149-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Jul-23
23070149-001	2-Methylheptane	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Jul-23
23070149-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Jul-23
23070149-001	2-Methylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Jul-23
23070149-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Jul-23
23070149-001	3-Methylhexane	I	0.06	ppbv	0.04	AC-058	18-Jul-23
23070149-001	3-Methylpentane	I	0.07	ppbv	0.04	AC-058	18-Jul-23
23070149-001	Benzene	I	0.10	ppbv	0.05	AC-058	18-Jul-23
23070149-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Jul-23
23070149-001	cis-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Jul-23
23070149-001	Cyclohexane	K, T, U	< 0.07	ppbv	0.07	AC-058	18-Jul-23
23070149-001	Cyclopentane	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Jul-23
23070149-001	Ethylbenzene	I	0.08	ppbv	0.05	AC-058	18-Jul-23

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

Date: August 4, 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 # 850	29016	Ambient Air	05-Jul-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070149 **REPORT CREATED:** 04-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070149-001	Isobutane		0.23	ppbv	0.05	AC-058	18-Jul-23
23070149-001	Isopentane		0.56	ppbv	0.07	AC-058	18-Jul-23
23070149-001	Isoprene		0.18	ppbv	0.04	AC-058	18-Jul-23
23070149-001	Isopropylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	18-Jul-23
23070149-001	m,p-Xylene	I	0.18	ppbv	0.07	AC-058	18-Jul-23
23070149-001	m-Diethylbenzene	I	0.15	ppbv	0.04	AC-058	18-Jul-23
23070149-001	m-Ethyltoluene	I	0.15	ppbv	0.05	AC-058	18-Jul-23
23070149-001	Methylcyclohexane	I	0.05	ppbv	0.04	AC-058	18-Jul-23
23070149-001	Methylcyclopentane	K, T, U	< 0.09	ppbv	0.09	AC-058	18-Jul-23
23070149-001	n-Butane		0.63	ppbv	0.04	AC-058	18-Jul-23
23070149-001	n-Decane	I	0.14	ppbv	0.10	AC-058	18-Jul-23
23070149-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	18-Jul-23
23070149-001	n-Heptane	I	0.07	ppbv	0.07	AC-058	18-Jul-23
23070149-001	n-Hexane	I	0.11	ppbv	0.05	AC-058	18-Jul-23
23070149-001	n-Octane	I	0.05	ppbv	0.04	AC-058	18-Jul-23
23070149-001	n-Pentane	I	0.16	ppbv	0.07	AC-058	18-Jul-23
23070149-001	n-Propylbenzene	I	0.12	ppbv	0.10	AC-058	18-Jul-23
23070149-001	n-Undecane	K, T, U	< 0.9	ppbv	0.9	AC-058	18-Jul-23
23070149-001	n-Nonane	K, T, U	< 0.07	ppbv	0.07	AC-058	18-Jul-23
23070149-001	o-Ethyltoluene	I	0.06	ppbv	0.04	AC-058	18-Jul-23
23070149-001	o-Xylene	I	0.08	ppbv	0.05	AC-058	18-Jul-23
23070149-001	p-Diethylbenzene	I	0.16	ppbv	0.04	AC-058	18-Jul-23
23070149-001	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	18-Jul-23
23070149-001	Styrene	I	0.14	ppbv	0.07	AC-058	18-Jul-23
23070149-001	Toluene	I	0.15	ppbv	0.05	AC-058	18-Jul-23

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

Date: August 4, 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 # 850	29016	Ambient Air	05-Jul-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070149 **REPORT CREATED:** 04-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070149-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Jul-23
23070149-001	trans-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Jul-23

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

Date: August 4, 2023

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

Revision History

Order ID	Ver	Date	Reason
23070149	01	04-Aug-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

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Order Comments

23070149

Send resultst to yuha.stan@cleanharbors.com. Test # 850

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(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 #: 851 - HVF-23-03-14

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: HiVol Filter

DATE SAMPLED: 11-Jul-23 0:00

DATE RECEIVED: 18-Jul-23

REPORT CREATED: 08-Aug-23

REPORT NUMBER: 23070226

VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070226-003	Particulate Weight		39.3	mg	0.1	Research	24-Jul-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: August 8, 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 #: 851 - C1170471		Air Filter	11-Jul-23 0:00

DESCRIPTION: PM10 Filter

REPORT NUMBER: 23070226 **REPORT CREATED:** 08-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070226-002	Particulate Weight		0.190	mg	0.004	AC-029	24-Jul-23

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

Date: August 8, 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 #: 851	29004	Ambient Air	11-Jul-23 0:00

DESCRIPTION: Canister

REPORT NUMBER: 23070226 **REPORT CREATED:** 08-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070226-001	Total Non-Methane Organic Carbon	K, T, U	< 0.09	ppmv	0.09	NA-028	19-Jul-23
23070226-001	1,2,3-Trimethylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	19-Jul-23
23070226-001	1,2,4-Trimethylbenzene	I	0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	1,3,5-Trimethylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	1-Butene/Isobutylene	K, T, U	< 0.11	ppbv	0.11	AC-058	19-Jul-23
23070226-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.13	ppbv	0.13	AC-058	19-Jul-23
23070226-001	1-Pentene	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	2,2,4-Trimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	2,2-Dimethylbutane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	2,3,4-Trimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	2,3-Dimethylbutane	K, T, U	< 0.17	ppbv	0.17	AC-058	19-Jul-23
23070226-001	2,3-Dimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	2,4-Dimethylpentane	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	2-Methylheptane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	2-Methylhexane	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	2-Methylpentane	I	0.13	ppbv	0.04	AC-058	19-Jul-23
23070226-001	3-Methylheptane	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	3-Methylhexane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	3-Methylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	Benzene	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	cis-2-Butene	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	cis-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	Cyclohexane	K, T, U	< 0.08	ppbv	0.08	AC-058	19-Jul-23
23070226-001	Cyclopentane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	Ethylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23

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

Date: August 8, 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 #: 851	29004	Ambient Air	11-Jul-23 0:00

DESCRIPTION: Canister

REPORT NUMBER: 23070226 **REPORT CREATED:** 08-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070226-001	Isobutane		0.26	ppbv	0.06	AC-058	19-Jul-23
23070226-001	Isopentane		0.29	ppbv	0.08	AC-058	19-Jul-23
23070226-001	Isoprene	I	0.15	ppbv	0.04	AC-058	19-Jul-23
23070226-001	Isopropylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	19-Jul-23
23070226-001	m,p-Xylene	I	0.13	ppbv	0.08	AC-058	19-Jul-23
23070226-001	m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	m-Ethyltoluene	I	0.15	ppbv	0.06	AC-058	19-Jul-23
23070226-001	Methylcyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	Methylcyclopentane	K, T, U	< 0.09	ppbv	0.09	AC-058	19-Jul-23
23070226-001	n-Butane		0.49	ppbv	0.04	AC-058	19-Jul-23
23070226-001	n-Decane	I	0.13	ppbv	0.11	AC-058	19-Jul-23
23070226-001	n-Dodecane	K, T, U	< 0.6	ppbv	0.6	AC-058	19-Jul-23
23070226-001	n-Heptane	K, T, U	< 0.08	ppbv	0.08	AC-058	19-Jul-23
23070226-001	n-Hexane	I	0.08	ppbv	0.06	AC-058	19-Jul-23
23070226-001	n-Octane	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	n-Pentane	I	0.15	ppbv	0.08	AC-058	19-Jul-23
23070226-001	n-Propylbenzene	K, T, U	< 0.11	ppbv	0.11	AC-058	19-Jul-23
23070226-001	n-Undecane	K, T, U	< 0.9	ppbv	0.9	AC-058	19-Jul-23
23070226-001	n-Nonane	K, T, U	< 0.08	ppbv	0.08	AC-058	19-Jul-23
23070226-001	o-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23
23070226-001	o-Xylene	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	p-Diethylbenzene	I	0.15	ppbv	0.04	AC-058	19-Jul-23
23070226-001	p-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	19-Jul-23
23070226-001	Styrene	K, T, U	< 0.08	ppbv	0.08	AC-058	19-Jul-23
23070226-001	Toluene	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23

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

Date: August 8, 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 #: 851	29004	Ambient Air	11-Jul-23 0:00

DESCRIPTION: Canister

REPORT NUMBER: 23070226 **REPORT CREATED:** 08-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070226-001	trans-2-Butene	K, T, U	< 0.06	ppbv	0.06	AC-058	19-Jul-23
23070226-001	trans-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	19-Jul-23

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

Date: August 8, 2023

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

Revision History

Order ID	Ver	Date	Reason
23070226	01	08-Aug-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

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Order Comments

23070226

Project: Test # 851. Report also to Stan Yuha.

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(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.

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Stan Yuha 780 663-2509
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 Number: 852

Matrix
Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION:

DATE SAMPLED: 17-Jul-23 0:00

DATE RECEIVED: 21-Jul-23

REPORT CREATED: 29-Aug-23

REPORT NUMBER: 23070305

VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070305-003	Antimony		209	ng/Filter	0.30	AC-021	23-Aug-23
23070305-003	Arsenic		5310	ng/Filter	0.30	AC-021	23-Aug-23
23070305-003	Barium	K, T, U	< 300	ng/Filter	300	AC-021	23-Aug-23
23070305-003	Beryllium		48.6	ng/Filter	0.60	AC-021	23-Aug-23
23070305-003	Boron		786000	ng/Filter	60.0	AC-021	23-Aug-23
23070305-003	Cadmium		304	ng/Filter	0.80	AC-021	23-Aug-23
23070305-003	Chromium		6970	ng/Filter	20	AC-021	23-Aug-23
23070305-003	Cobalt		3090	ng/Filter	0.50	AC-021	23-Aug-23
23070305-003	Copper		203000	ng/Filter	20	AC-021	23-Aug-23
23070305-003	Iron		1430000	ng/Filter	80	AC-021	23-Aug-23
23070305-003	Lead		14000	ng/Filter	0.70	AC-021	23-Aug-23
23070305-003	Manganese		81300	ng/Filter	1.0	AC-021	23-Aug-23
23070305-003	Mercury		5.48	ng/Filter	0.70	AC-021	23-Aug-23
23070305-003	Nickel		13600	ng/Filter	5.0	AC-021	23-Aug-23
23070305-003	Selenium		1330	ng/Filter	4.0	AC-021	23-Aug-23
23070305-003	Silver		150	ng/Filter	0.50	AC-021	23-Aug-23
23070305-003	Thallium	K, T, U	< 0.20	ng/Filter	0.20	AC-021	23-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: August 29, 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 Number: 852		Air Filter	17-Jul-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070305 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070305-003	Tin		224	ng/Filter	0.20	AC-021	23-Aug-23
23070305-003	Uranium	K, T, U	< 0.200	ng/Filter	0.200	AC-021	23-Aug-23
23070305-003	Vanadium		5860	ng/Filter	0.40	AC-021	23-Aug-23
23070305-003	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	23-Aug-23
23070305-003	Particulate Weight		101	mg	0.1	Research	26-Jul-23

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

Date: August 29, 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 Number: 852		Air Filter	17-Jul-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070305 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070305-002	Antimony		1.30	ng/filter	0.03	AC-021	18-Aug-23
23070305-002	Arsenic		7.14	ng/filter	0.03	AC-021	18-Aug-23
23070305-002	Barium		180	ng/filter	0.3	AC-021	18-Aug-23
23070305-002	Beryllium		0.30	ng/filter	0.06	AC-021	18-Aug-23
23070305-002	Boron		284	ng/filter	0.6	AC-021	18-Aug-23
23070305-002	Cadmium		2.23	ng/filter	0.08	AC-021	18-Aug-23
23070305-002	Chromium		26	ng/filter	2	AC-021	18-Aug-23
23070305-002	Cobalt		15.5	ng/filter	0.05	AC-021	18-Aug-23
23070305-002	Copper		192	ng/filter	2	AC-021	18-Aug-23
23070305-002	Iron		8480	ng/filter	8	AC-021	18-Aug-23
23070305-002	Lead		49.4	ng/filter	0.07	AC-021	18-Aug-23
23070305-002	Manganese		372	ng/filter	0.1	AC-021	18-Aug-23
23070305-002	Mercury	I	0.22	ng/filter	0.07	AC-021	18-Aug-23
23070305-002	Nickel		61.4	ng/filter	0.5	AC-021	18-Aug-23
23070305-002	Selenium		13.4	ng/filter	0.4	AC-021	18-Aug-23
23070305-002	Silver		0.46	ng/filter	0.05	AC-021	18-Aug-23
23070305-002	Thallium		0.31	ng/filter	0.02	AC-021	18-Aug-23
23070305-002	Tin		2.28	ng/filter	0.02	AC-021	18-Aug-23
23070305-002	Uranium		0.446	ng/filter	0.020	AC-021	18-Aug-23
23070305-002	Vanadium		40.5	ng/filter	0.04	AC-021	18-Aug-23
23070305-002	Zinc		1900	ng/filter	1	AC-021	18-Aug-23
23070305-002	Particulate Weight		0.718	mg	0.004	AC-029	25-Jul-23

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

Date: August 29, 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 Number: 852	32228	Ambient Air	17-Jul-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070305 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070305-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08	ppmv	0.08	NA-028	25-Jul-23
23070305-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	28-Jul-23
23070305-001	1,2,4-Trimethylbenzene	I	0.26	ppbv	0.05	AC-058	28-Jul-23
23070305-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jul-23
23070305-001	1-Butene/Isobutylene	K, T, U	< 0.10	ppbv	0.10	AC-058	28-Jul-23
23070305-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.12	ppbv	0.12	AC-058	28-Jul-23
23070305-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jul-23
23070305-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	2,3,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	2,3-Dimethylbutane	K, T, U	< 0.15	ppbv	0.15	AC-058	28-Jul-23
23070305-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jul-23
23070305-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jul-23
23070305-001	2-Methylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jul-23
23070305-001	3-Methylhexane	I	0.06	ppbv	0.03	AC-058	28-Jul-23
23070305-001	3-Methylpentane	I	0.05	ppbv	0.03	AC-058	28-Jul-23
23070305-001	Benzene	I	0.14	ppbv	0.05	AC-058	28-Jul-23
23070305-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jul-23
23070305-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	Cyclohexane	I	0.09	ppbv	0.07	AC-058	28-Jul-23
23070305-001	Cyclopentane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	Ethylbenzene	I	0.12	ppbv	0.05	AC-058	28-Jul-23

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

Date: August 29, 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 Number: 852	32228	Ambient Air	17-Jul-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070305 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070305-001	Isobutane		1.05	ppbv	0.05	AC-058	28-Jul-23
23070305-001	Isopentane		0.77	ppbv	0.07	AC-058	28-Jul-23
23070305-001	Isoprene	I	0.05	ppbv	0.03	AC-058	28-Jul-23
23070305-001	Isopropylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	28-Jul-23
23070305-001	m,p-Xylene	I	0.25	ppbv	0.07	AC-058	28-Jul-23
23070305-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	m-Ethyltoluene	I	0.07	ppbv	0.05	AC-058	28-Jul-23
23070305-001	Methylcyclohexane	I	0.06	ppbv	0.03	AC-058	28-Jul-23
23070305-001	Methylcyclopentane	K, T, U	< 0.08	ppbv	0.08	AC-058	28-Jul-23
23070305-001	n-Butane		1.04	ppbv	0.03	AC-058	28-Jul-23
23070305-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	28-Jul-23
23070305-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Jul-23
23070305-001	n-Heptane	I	0.09	ppbv	0.07	AC-058	28-Jul-23
23070305-001	n-Hexane	I	0.11	ppbv	0.05	AC-058	28-Jul-23
23070305-001	n-Octane	I	0.07	ppbv	0.03	AC-058	28-Jul-23
23070305-001	n-Pentane	I	0.16	ppbv	0.07	AC-058	28-Jul-23
23070305-001	n-Propylbenzene	K, T, U	< 0.10	ppbv	0.10	AC-058	28-Jul-23
23070305-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	28-Jul-23
23070305-001	n-Nonane	K, T, U	< 0.07	ppbv	0.07	AC-058	28-Jul-23
23070305-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	o-Xylene	I	0.10	ppbv	0.05	AC-058	28-Jul-23
23070305-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23
23070305-001	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	28-Jul-23
23070305-001	Styrene	K, T, U	< 0.07	ppbv	0.07	AC-058	28-Jul-23
23070305-001	Toluene	I	0.30	ppbv	0.05	AC-058	28-Jul-23

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

Date: August 29, 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 Number: 852	32228	Ambient Air	17-Jul-23 0:00

DESCRIPTION:

REPORT NUMBER: 23070305 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070305-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jul-23
23070305-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jul-23

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

Date: August 29, 2023

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

Revision History

Order ID	Ver	Date	Reason
23070305	01	29-Aug-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

23070305

Project ID: Test 852. Report also to webb.todd@cleanharbours.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: Hi-Vol Test #: 853, HVF-23-03-18
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION: Hi-Vol Filter
DATE SAMPLED: 23-Jul-23 0:00
DATE RECEIVED: 28-Jul-23
REPORT CREATED: 29-Aug-23
REPORT NUMBER: 23070386
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070386-003	Antimony		170	ng/Filter	0.30	AC-021	23-Aug-23
23070386-003	Arsenic		6040	ng/Filter	0.30	AC-021	23-Aug-23
23070386-003	Barium	K, T, U	< 300	ng/Filter	300	AC-021	23-Aug-23
23070386-003	Beryllium		11.3	ng/Filter	0.60	AC-021	23-Aug-23
23070386-003	Boron	K, T, U	< 60.0	ng/Filter	60.0	AC-021	23-Aug-23
23070386-003	Cadmium		245	ng/Filter	0.80	AC-021	23-Aug-23
23070386-003	Chromium		4740	ng/Filter	20	AC-021	23-Aug-23
23070386-003	Cobalt		1370	ng/Filter	0.50	AC-021	23-Aug-23
23070386-003	Copper		278000	ng/Filter	20	AC-021	23-Aug-23
23070386-003	Iron		1140000	ng/Filter	80	AC-021	23-Aug-23
23070386-003	Lead		9010	ng/Filter	0.70	AC-021	23-Aug-23
23070386-003	Manganese		49800	ng/Filter	1.0	AC-021	23-Aug-23
23070386-003	Mercury		3.24	ng/Filter	0.70	AC-021	23-Aug-23
23070386-003	Nickel		7820	ng/Filter	5.0	AC-021	23-Aug-23
23070386-003	Selenium		1330	ng/Filter	4.0	AC-021	23-Aug-23
23070386-003	Silver		178	ng/Filter	0.50	AC-021	23-Aug-23
23070386-003	Thallium	K, T, U	< 0.20	ng/Filter	0.20	AC-021	23-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: August 29, 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 #: 853, HVF-23-03-18		Air Filter	23-Jul-23 0:00

DESCRIPTION: Hi-Vol Filter

REPORT NUMBER: 23070386 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070386-003	Tin		261	ng/Filter	0.20	AC-021	23-Aug-23
23070386-003	Uranium	K, T, U	< 0.200	ng/Filter	0.200	AC-021	23-Aug-23
23070386-003	Vanadium		3460	ng/Filter	0.40	AC-021	23-Aug-23
23070386-003	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	23-Aug-23
23070386-003	Particulate Weight		106	mg	0.1	Research	03-Aug-23

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

Date: August 29, 2023

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test #: 853, C1170470		Air Filter	23-Jul-23 0:00

DESCRIPTION: PM10 Filter

REPORT NUMBER: 23070386 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070386-002	Antimony		0.71	ng/filter	0.03	AC-021	18-Aug-23
23070386-002	Arsenic		8.26	ng/filter	0.03	AC-021	18-Aug-23
23070386-002	Barium		77.7	ng/filter	0.3	AC-021	18-Aug-23
23070386-002	Beryllium		0.18	ng/filter	0.06	AC-021	18-Aug-23
23070386-002	Boron		368	ng/filter	0.6	AC-021	18-Aug-23
23070386-002	Cadmium		1.86	ng/filter	0.08	AC-021	18-Aug-23
23070386-002	Chromium		23	ng/filter	2	AC-021	18-Aug-23
23070386-002	Cobalt		2.86	ng/filter	0.05	AC-021	18-Aug-23
23070386-002	Copper		154	ng/filter	2	AC-021	18-Aug-23
23070386-002	Iron		4900	ng/filter	8	AC-021	18-Aug-23
23070386-002	Lead		23.4	ng/filter	0.07	AC-021	18-Aug-23
23070386-002	Manganese		169	ng/filter	0.1	AC-021	18-Aug-23
23070386-002	Mercury	I	0.16	ng/filter	0.07	AC-021	18-Aug-23
23070386-002	Nickel		19.2	ng/filter	0.5	AC-021	18-Aug-23
23070386-002	Selenium		14.7	ng/filter	0.4	AC-021	18-Aug-23
23070386-002	Silver		0.31	ng/filter	0.05	AC-021	18-Aug-23
23070386-002	Thallium		0.26	ng/filter	0.02	AC-021	18-Aug-23
23070386-002	Tin		1.03	ng/filter	0.02	AC-021	18-Aug-23
23070386-002	Uranium		0.221	ng/filter	0.020	AC-021	18-Aug-23
23070386-002	Vanadium		16.3	ng/filter	0.04	AC-021	18-Aug-23
23070386-002	Zinc		371	ng/filter	1	AC-021	18-Aug-23
23070386-002	Particulate Weight		0.643	mg	0.004	AC-029	31-Jul-23

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

Date: August 29, 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 #: 853	29014	Ambient Air	23-Jul-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23070386 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070386-001	Total Non-Methane Organic Carbon	K, T, U	< 0.09	ppmv	0.09	NA-028	31-Jul-23
23070386-001	1,2,3-Trimethylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	31-Jul-23
23070386-001	1,2,4-Trimethylbenzene		0.40	ppbv	0.05	AC-058	31-Jul-23
23070386-001	1,3,5-Trimethylbenzene	I	0.13	ppbv	0.05	AC-058	31-Jul-23
23070386-001	1-Butene/Isobutylene	I	0.13	ppbv	0.10	AC-058	31-Jul-23
23070386-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.12	ppbv	0.12	AC-058	31-Jul-23
23070386-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	31-Jul-23
23070386-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	2,3,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	2,3-Dimethylbutane	K, T, U	< 0.15	ppbv	0.15	AC-058	31-Jul-23
23070386-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	31-Jul-23
23070386-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	31-Jul-23
23070386-001	2-Methylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	31-Jul-23
23070386-001	3-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	3-Methylpentane	I	0.05	ppbv	0.03	AC-058	31-Jul-23
23070386-001	Benzene	I	0.14	ppbv	0.05	AC-058	31-Jul-23
23070386-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	31-Jul-23
23070386-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	Cyclohexane	I	0.08	ppbv	0.07	AC-058	31-Jul-23
23070386-001	Cyclopentane	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	Ethylbenzene	I	0.18	ppbv	0.05	AC-058	31-Jul-23

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

Date: August 29, 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 #: 853	29014	Ambient Air	23-Jul-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23070386 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070386-001	Isobutane		0.47	ppbv	0.05	AC-058	31-Jul-23
23070386-001	Isopentane		0.55	ppbv	0.07	AC-058	31-Jul-23
23070386-001	Isoprene		0.23	ppbv	0.03	AC-058	31-Jul-23
23070386-001	Isopropylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	31-Jul-23
23070386-001	m,p-Xylene	I	0.19	ppbv	0.07	AC-058	31-Jul-23
23070386-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	m-Ethyltoluene	I	0.06	ppbv	0.05	AC-058	31-Jul-23
23070386-001	Methylcyclohexane	I	0.04	ppbv	0.03	AC-058	31-Jul-23
23070386-001	Methylcyclopentane	K, T, U	< 0.09	ppbv	0.09	AC-058	31-Jul-23
23070386-001	n-Butane		0.46	ppbv	0.03	AC-058	31-Jul-23
23070386-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	31-Jul-23
23070386-001	n-Dodecane	I	0.6	ppbv	0.5	AC-058	31-Jul-23
23070386-001	n-Heptane	I	0.08	ppbv	0.07	AC-058	31-Jul-23
23070386-001	n-Hexane	I	0.13	ppbv	0.05	AC-058	31-Jul-23
23070386-001	n-Octane	I	0.06	ppbv	0.03	AC-058	31-Jul-23
23070386-001	n-Pentane	K, T, U	< 0.07	ppbv	0.07	AC-058	31-Jul-23
23070386-001	n-Propylbenzene	I	0.11	ppbv	0.10	AC-058	31-Jul-23
23070386-001	n-Undecane	K, T, U	< 0.9	ppbv	0.9	AC-058	31-Jul-23
23070386-001	n-Nonane	K, T, U	< 0.07	ppbv	0.07	AC-058	31-Jul-23
23070386-001	o-Ethyltoluene	I	0.14	ppbv	0.03	AC-058	31-Jul-23
23070386-001	o-Xylene	I	0.16	ppbv	0.05	AC-058	31-Jul-23
23070386-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23
23070386-001	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	31-Jul-23
23070386-001	Styrene	K, T, U	< 0.07	ppbv	0.07	AC-058	31-Jul-23
23070386-001	Toluene	I	0.10	ppbv	0.05	AC-058	31-Jul-23

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

Date: August 29, 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 #: 853	29014	Ambient Air	23-Jul-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23070386 **REPORT CREATED:** 29-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070386-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	31-Jul-23
23070386-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	31-Jul-23

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

Date: August 29, 2023

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

Revision History

Order ID	Ver	Date	Reason
23070386	01	29-Aug-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

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Order Comments

23070386

Report also to Stan Yuha. Project ID: Test # 853

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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 # 854 - HVF-23-06-02
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION: Hi-Vol Filter
DATE SAMPLED: 29-Jul-23 0:00
DATE RECEIVED: 08-Aug-23
REPORT CREATED: 28-Aug-23
REPORT NUMBER: 23080074
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23080074-003	Particulate Weight		39.9	mg	0.1	Research	10-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: August 28, 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 # 854 - C1170468		Air Filter	29-Jul-23 0:00

DESCRIPTION: PM10 Filter

REPORT NUMBER: 23080074 **REPORT CREATED:** 28-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23080074-002	Particulate Weight		0.147	mg	0.004	AC-029	09-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: August 28, 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 #: 854	28939	Ambient Air	29-Jul-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23080074 **REPORT CREATED:** 28-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23080074-001	Total Non-Methane Organic Carbon	K, T, U	< 0.09	ppmv	0.09	NA-028	08-Aug-23
23080074-001	1,2,3-Trimethylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	08-Aug-23
23080074-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	1-Butene/Isobutylene	K, T, U	< 0.11	ppbv	0.11	AC-058	08-Aug-23
23080074-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.13	ppbv	0.13	AC-058	08-Aug-23
23080074-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	2,2,4-Trimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	2,2-Dimethylbutane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	2,3,4-Trimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	2,3-Dimethylbutane	K, T, U	< 0.16	ppbv	0.16	AC-058	08-Aug-23
23080074-001	2,3-Dimethylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	2-Methylheptane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	2-Methylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	3-Methylhexane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	3-Methylpentane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	Benzene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	cis-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	Cyclohexane	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Aug-23
23080074-001	Cyclopentane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	Ethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: August 28, 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 #: 854	28939	Ambient Air	29-Jul-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23080074 **REPORT CREATED:** 28-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23080074-001	Isobutane	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	Isopentane	I	0.10	ppbv	0.07	AC-058	08-Aug-23
23080074-001	Isoprene	I	0.07	ppbv	0.04	AC-058	08-Aug-23
23080074-001	Isopropylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Aug-23
23080074-001	m,p-Xylene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Aug-23
23080074-001	m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	Methylcyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	Methylcyclopentane	K, T, U	< 0.09	ppbv	0.09	AC-058	08-Aug-23
23080074-001	n-Butane	I	0.15	ppbv	0.04	AC-058	08-Aug-23
23080074-001	n-Decane	K, T, U	< 0.11	ppbv	0.11	AC-058	08-Aug-23
23080074-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	08-Aug-23
23080074-001	n-Heptane	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Aug-23
23080074-001	n-Hexane	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	n-Octane	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	n-Pentane	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Aug-23
23080074-001	n-Propylbenzene	K, T, U	< 0.11	ppbv	0.11	AC-058	08-Aug-23
23080074-001	n-Undecane	K, T, U	< 0.9	ppbv	0.9	AC-058	08-Aug-23
23080074-001	n-Nonane	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Aug-23
23080074-001	o-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	o-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23
23080074-001	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Aug-23
23080074-001	Styrene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Aug-23
23080074-001	Toluene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: August 28, 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 #: 854	28939	Ambient Air	29-Jul-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23080074 **REPORT CREATED:** 28-Aug-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23080074-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Aug-23
23080074-001	trans-2-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	08-Aug-23

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: August 28, 2023

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

Revision History

Order ID	Ver	Date	Reason
23080074	01	28-Aug-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

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Order Comments

23080074

Send results to Stan Yuha. Project ID: Test # 854

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(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.

Sample ID: 23080075-001 Priority: Normal

Customer ID: Clean Harbours

Cust Samp ID: Ryley Facility Test # 104 - HV-23-02-07

l Services

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): _____

Rec'd By: _____

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:

PO # 235393

Quote ID: QT140005

RUSH (Surcharge): ☐

RECEIVED
AUG 08 2023

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 # 104	Filter Number # HV-23-02-07	1/07/23		Particulate weight ICP-MS analysis
		1/08/23	28.47 hrs	
Ryley School Test # 104	Filter Number # HV-23-02-08	1/07/23		Particulate weight ICP-MS analysis
		1/08/23	23.49 hrs	

Sample ID: 23070149-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TMNOC Test # 850

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 850	
Email:	Webb.Todd@cleanharbors.com, Yuha.Stan@cleanharbors.com	PO #:	0000234633	

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): 89.7 mg

Date Received – Lab Use Only

RECEIVED
JUL 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: 850	Canister	29016	05/07/23	00:00	VOC PAMS & TNMOC
				06/07/23	00:00	
2	PM10 Test Number: 850	PM10 filter	C1170466	05/07/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				06/07/23	00:00	
3	HI-VOL Test Number: 850	HI-VOL Filter	HVF-23-03-16	05/07/23	00:00	Particulate Weight (& metals if over trigger weight)*
				06/07/23	00:00	
					Total: 23.36 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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

Sample ID: 23070149-002 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: PM10 Test # 850 - C1170466

Filter Shipping Record

RECEIVED
JUL 12 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 6 ~~2023~~

Project: Clean Harbors

Prepared by: [signature]

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1170466 test 850

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: 24016.

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: 1523 on: MAY 16 2023

Evacuated: MAY 26 2023 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: Test 850

Sampled By: T. Wells

Starting Vacuum:	End Vacuum:
-27.1 "Hg	-7 "Hg/ psig

Sample ID: 23070149-001 Priority: Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TMNOC Test # 850

{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.

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.

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.

Sample ID: 23070149-003 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: HI-VOL Test # 8450 - HVF-23-03-16

Sample ID: 23070226-001 Priority: Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test #: 851

Y 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 Reporti

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

Billing Information

Contact:	Stephanie Dennis
Phone:	780-663-3828
Email:	Dennis.Stephanie@cleanharbors.com
Project ID:	Test 851
PO #:	0000234633

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): 1.14 mg

Trigger Weight for Analysis (HI-VOL): 89.2 mg

Date Received – Lab Use Only

RECEIVED
JUL 18 2023

JMP

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: 851	Canister	29004	11/07/23	00:00	VOC PAMS & TNMOC
				12/07/23	00:00	
2	PM10 Test Number: 851	PM10 filter	C1170471	11/07/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				12/07/23	00:00	
3	HI-VOL Test Number: 851	HI-VOL Filter	HVF-23-03-14	11/07/23	00:00	Particulate Weight (& metals if over trigger weight)*
				12/07/23	00:00	
					Total: 24.23 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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

{00004084;2}

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(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.

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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.

n and rights and parties thereto shall be governed by and construed according to rovince of Alberta. The parties hereby submit to the jurisdiction of the Courts of

Sample ID: 23070226-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test #. 851

Sample ID: 23070226-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test #: 851

Filter Shipping Record

RECEIVED
JUL 18 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 31 23

Project: Clean Harbors

Prepared by:

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1170471 test 851

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

Sample ID: 23070226-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test #: 851

InnoTech ALBERTA

Canister ID: 29004

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: 1523 on: MAY 16 2023

Evacuated: MAY 26 2023 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: Test 851

Sampled By: T. Webb

-10 "Hg JWP

Starting Vacuum: -27.1 "Hg

End Pressure: -9 "Hg/psig

Sample ID: 23070305-001 Priority: Normal

OF CUSTODY FORM

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TMNOC Test Number: 852

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 852	
Email:	Webb.Todd@cleanharbors.com, Yuha.Stan@cleanharbors.com	PO #:	0000234633	

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): 94.4 mg

Date Received – Lab Use Only

RECEIVED
JUL 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: 852	Canister	32228	17/07/23	00:00	VOC PAMS & TNMOC
				18/07/23	00:00	
	PM10 Test Number: 852	PM10 filter	C1170465	17/07/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				18/07/23	00:00	
	HI-VOL Test Number: 852	HI-VOL Filter	HVF-23-03-15	17/07/23	00:00	Particulate Weight (& metals if over trigger weight)*
				18/07/23	00:00	
					Total: 24.16 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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

{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).

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.

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.

Sample ID: 23070305-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TMNOC Test Number: 852

Sample ID: 23070305-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TMNOC Test Number: 852

RECEIVED
JUL 21 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	C1170465 Test 852

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

Sample ID: 23070305-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TMNOC Test Number: 852

InnoTech ALBERTA

Canister ID: 32228

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ3 on: MAY 16 2023

Evacuated: MAY 26 2023 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: Test 852

Sampled By: T. Webb

Starting Vacuum: -27.1 "Hg

End Vacuum: -4 "Hg/psig MW

A SUBSIDIARY OF

Sample ID: 23070386-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test #: 853

DY 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 853	
Email:	Webb.Todd@cleanharbors.com, Yuha.Stan@cleanharbors.com	PO #:	0000234633	

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): 95.3 mg

Date Received – Lab Use Only

RECEIVED
JUL 28 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: 853	Canister	29014	23/07/23	00:00	VOC PAMS & TNMOC
				24/07/23	00:00	
2	PM10 Test Number: 853	PM10 filter	C1170470	23/07/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				24/07/23	00:00	
3	HI-VOL Test Number: 853	HI-VOL Filter	HVF-23-03-18	23/07/23	00:00	Particulate Weight (& metals if over trigger weight)*
				24/07/23	00:00	
					Total: 24.40 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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

{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.

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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.

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

Sample ID: 23070386-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test #: 853

Sample ID: 23070386-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test #: 853

RECEIVED
JUL 28 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 31/23

Project: Clean Harbors

Prepared by: S Mulenka

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1170470 Test 853

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

Sample ID: 23070386-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test #: 853

InnoTech ALBERTA

Canister ID: 29014

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ4 on: MAY 0 1 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 853

Sampled By: T. Webb

Starting Vacuum:	End Vacuum:
-27.1 "Hg	-7 "Hg/ psig

Sample ID: 23080074-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test #: 854

AIN 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 854
PO #:	0000234633

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): 1.15 mg

Trigger Weight for Analysis (HI-VOL): 94.9 mg

Date Received – Lab Use Only

RECEIVED
AUG 08 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: 854	Canister	28939	29/07/23	00:00	VOC PAMS & TNMOC
				30/07/23	00:00	
	PM10 Test Number: 854	PM10 filter	C1170468	29/07/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				30/07/23	00:00	
	HI-VOL Test Number: 854	HI-VOL Filter	HVF-23-06-02	29/07/23	00:00	Particulate Weight (& metals if over trigger weight)*
				30/07/23	00:00	
					Total: 24.29 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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

Sample ID: 23080074-002 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: PM10 Test # 854 - C1170468

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 31/23

Project: Clean Harbors

Prepared by: Melanie

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1170468 test 854

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: 28939

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: JUN 0 8 2023

Evacuated: JUN 2 8 2023 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: Test 854

Sampled By: T. Webb

Starting Vacuum: -27.1 "Hg

End Vacuum: -7 "Hg/psig JMP

Sample ID: 23080074-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test #: 854

{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.

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Sample ID: 23080074-003 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: Hi-Vol Test # 854 - HVF-23-06-02

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.