



May 19, 2022

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

RE: Monthly Ambient Air Monitoring Report
April 2022
Clean Harbors Canada, Inc. Approval 10348-03-00

To whom it may concern:

Clean Harbors Canada, Inc. (Clean Harbors) is presenting this Monthly Ambient Air Monitoring Report, which was prepared by GHD (Consultant), for the reporting period of April 2022, to Alberta Environment and Parks (AEP). 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 Environmental Protection and Enhancement Act (EPEA) Approval, Approval No. 10348-03-00 (Approval). As part of the Approval requirements, the Facility submitted a proposal for a New Ambient Air Monitoring Program, which was subsequently approved on June 24, 2009 by the AEP (formally AENV). Operating under the Approval and the approved proposal, Clean Harbors operates two ambient air monitoring stations: AEP Station ID 00010348-I-1 and AEP Station ID 00010348-C-1.

Included in this report are the following:

- Summary of the ambient air monitoring program for April 2022
- Summary of AMD Electronic Transfer System submittals
- Results for Particulate Matter ≤ 10 microns (PM_{10}) reported in $\mu\text{g}/\text{m}^3$
- Results for water-soluble cations; metal or anions if the PM_{10} results were $>50 \mu\text{g}/\text{m}^3$
- 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.

A handwritten signature in blue ink that reads "Stan Yuha".

Stan Yuha

Facility Manager
Ryley Facility



Alberta Environment and Parks (AEP)
Monthly Ambient Air Monitoring Report
April 2022
Report Completed on May 19, 2022

Clean Harbors Environmental Services Inc.
Approval Number: 10348-03-00
Ryley Facility, Alberta

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- Appendix B Sampling Field Sheets
- Appendix C Wind Class Frequency Distribution Graphs and Wind Rose
- Appendix D Chain of Custody Forms and Laboratory Analytical Reports

1. Introduction

The Facility operates two ambient air monitoring stations to assess ambient air quality at and around the Facility. One intermittent monitoring station, known as the Ryley Lift Station (AEP Station ID 00010348-I-1), is located on Secondary Road 854, approximately 350 metres southeast of the Facility. At this location, samples are collected and analyzed for the following: particulate matter less than or equal to 10 micrometers (μm) in diameter (PM_{10}), volatile organic compounds (VOCs), and total non-methane organic compounds (TNMOC). Additionally, PM_{10} samples that exceed 50 micrograms per cubic metre ($50 \mu\text{g}/\text{m}^3$) are analyzed for a target list of metals, anions, and cations. Sampling is conducted every 12 days as required by the Facility's Approval.

The second station, located at the Facility (AEP Station ID 00010348-C-1), is a continuous meteorological station that collects wind speed and wind direction data.

All sampling and monitoring is conducted in accordance with the Facility's Approval 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.

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 Specialist/Project Manager
Company: GHD Limited
Responsibilities: Senior QA/QC
Address: 3445-114th Ave. SE, Suite 103 Calgary, AB
Phone: 403-271-2000
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: 9426 – 51st Avenue NW, Suite 101 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 April 2022.

<i>Activity</i>	<i>Completed (Y/N)</i>	<i>Date(s)</i>
Wind Speed/Direction Sensor Calibration	N	March 18, 2022 ⁽¹⁾
Changes to the Wind Speed/Direction Sensor	N	-
PM ₁₀ Sampling Station Calibration	N	-
Changes to the PM ₁₀ Sampling Station	N	-
PM ₁₀ Samples Collected	Y	April 5, 2022 April 17, 2022 April 29, 2022
VOC and TNMOC Samples Collected	Y	April 5, 2022 April 17, 2022 April 29, 2022
Metal Analysis Conducted	N	-
Maintenance Activities	Y	April 5, 2022 April 17, 2022 April 29, 2022
Dust Suppression Activities	N	-
<p>Note: (1) The wind speed/direction sensor was checked for calibration on March 18, 2022 and was shown to be within the allowable tolerances and was then re-installed after calibration.</p>		

3. Summary of Electronic Transfer System (ETS) Submittals

In addition to the April 2022 monthly report, the following summarized items were submitted to the ETS:

3.1 AMD XML Schema

An XML formatted Schema file was submitted to the AEP via the ETS portal. The XML Schema file contains the results from AEP Station ID 00010348-I-1 and AEP Station ID 00010348-C-1.

3.2 Ambient Air Monitoring Program Laboratory Reports

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

3.3 Ambient Air Monitoring Program Calibration Reports

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

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

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

The meteorological station was taken down and calibrated on March 18, 2022. The station was shown to be within all allowable tolerances, as required by the manufacturer. Provided in Appendix A is the calibration report and record of installation.

There were no changes to the meteorological station during April 2022.

4.2 PM₁₀ Sampling Station (AEP Station ID 00010348-I-1)

Maintenance activities for the Partisol Federal Reference Method PM₁₀ Sampler included inlet cleaning and leak checks that were conducted before each sampling event in April 2022. The pre-sampling maintenance activities are recorded in the field sampling sheets provided in Appendix B.

5. Ambient Air Monitoring Results

The following section presents the results from the ambient air monitoring program for AEP Station ID 00010348-C-1 and AEP Station ID 00010348-I-1 conducted in April 2022. Where applicable, comparisons were made to Alberta Ambient Air Quality Objectives (AAAQO) for parameters that had 24-hour average objectives. These parameters include o,m,p-xylene, hexane, and toluene. For

all other parameters, AAAQO have not been established or the limits have averaging periods other than 24-hours.

5.1 Meteorological Data for Wind Speed and Direction (AEP Station ID 00010348-C-1)

In accordance with the Approval and the AMD, the Facility is required to collect wind speed and directional data continuously when operations are occurring on site. Table 1 presents the hourly and 24-hour average wind speeds for April 2022. Table 2 presents the hourly and 24-hour average wind direction data (degrees from north) for April 2022. Table 3 presents the Wind Class Frequency Distribution for April 2022. Appendix C provides a graphical representation of the Wind Class Frequency Distribution and the Wind Roses based on Tables 1, 2 and 3.

5.1.1 Data Verification and Validation and Uptime

Based on the verification and validation process conducted for the meteorological data that was collected in April 2022, it was determined that 100 percent of the data is valid, which represents 100 percent uptime of the meteorological station. This is above the 90 percent uptime limit required for compliance, as per the Approval.

5.2 PM₁₀ Concentrations (AEP Station ID 00010348-I-1)

Table 4 presents the results of the sampling conducted for PM₁₀. Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

AAAQO are specified for total suspended particulates (TSP) at 100 µg/m³ and PM_{2.5} at 29 µg/m³ (24-hour averaging period). There is currently no AAAQO specified for PM₁₀ for a 24-hour averaging period in Alberta. In accordance with the Facility's Approval, PM₁₀ samples that exceed 50 µg/m³ are analyzed for a target list of metals, anions, and cations.

5.3 Metal Concentrations

All of the PM₁₀ samples collected in April 2022 were below 50 µg/m³ and as such analysis for metals, anions, and cations was not conducted on those samples.

5.4 VOC and TNMOC Concentrations

Table 5 presents the VOC and TNMOC concentrations measured in April 2022. There are three VOC parameters that have corresponding AAAQO with 24-hour averaging periods including o,p,m-xylene, hexane and toluene. There were no exceedances for these parameters in April 2022. 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 Dust Suppression

There was no dust suppression activities, which include using leachate spread on the surface of the active landfill, conducted during April 2022.

6. Conclusions

The following summarizes the Ambient Air Monitoring Program that was conducted in April 2022.

- 1 The PM₁₀ concentrations measured on April 5, April 17, and April 29, 2022 were 6.255 µg/m³, 4.754 µg/m³, and 15.466 µg/m³ respectively.
- 2 Based on the ambient air monitoring results, 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 April 2022.
- 3 During April 2022, the wind station operated at 100 percent uptime. Based on the data verification and validation procedure conducted, this is in compliance with the minimum 90 percent uptime required by the AMD.

Clean Harbors will continue 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 April 2022 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)
AEP Station ID 00010348-C-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
April 2022

Ryley Wind Speed Data (m/s) - Month of April 2022																								
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	4.6	4.4	4.6	4.5	4.2	4.1	3.4	2.5	2.8	3.2	3.4	3.7	3.2	1.7	1.6	2.2	3.5	2.7	3.1	4.1	3.3	3.5	3.3	3.2
2	4.5	5.1	5.0	5.0	5.5	5.0	3.9	3.2	3.8	3.6	2.4	3.2	4.7	4.5	4.7	3.6	3.2	3.0	1.5	1.9	2.4	3.8	4.5	4.4
3	4.7	4.9	4.9	4.9	5.5	4.6	3.6	2.0	3.0	3.9	5.2	6.6	7.8	7.1	6.5	7.5	6.4	5.3	3.7	2.9	2.5	2.7	1.9	3.1
4	3.3	2.8	3.8	3.0	2.8	2.0	3.3	2.3	4.7	5.5	6.7	6.6	7.2	6.5	4.7	6.3	4.9	4.6	4.4	5.0	4.6	4.1	3.2	4.0
5	5.4	8.3	8.8	8.8	9.6	10.2	10.1	10.1	10.9	11.1	11.9	12.6	14.0	11.6	9.3	10.9	11.0	7.8	4.5	3.0	2.9	1.5	1.1	1.3
6	1.5	3.2	3.4	4.1	5.6	7.5	7.9	7.8	8.0	8.7	9.2	9.8	9.0	9.1	8.4	9.3	8.3	7.9	6.6	5.7	3.3	3.1	3.5	3.5
7	3.9	1.7	0.5	1.5	3.7	2.6	1.4	1.9	3.1	4.9	6.1	7.6	8.3	7.9	8.2	8.2	9.2	8.6	8.6	7.1	5.9	6.6	9.6	10.4
8	9.4	8.1	7.6	6.7	5.9	5.5	6.3	6.2	6.5	7.0	6.2	5.5	2.7	1.7	3.1	3.9	4.2	4.1	8.1	10.4	6.5	3.7	3.1	3.5
9	4.7	7.2	10.2	11.0	10.2	9.3	12.9	12.6	13.8	16.6	15.4	15.5	16.0	14.9	15.8	16.0	14.7	13.1	12.7	12.0	13.1	13.2	11.7	11.5
10	11.2	11.2	11.1	11.2	11.6	11.8	11.3	12.3	12.8	14.0	14.2	13.9	13.9	13.9	13.2	12.0	12.0	11.6	9.5	8.4	7.8	7.4	6.5	8.0
11	6.7	7.0	7.4	8.0	8.0	6.9	8.1	9.1	8.9	8.8	9.3	9.2	9.1	9.9	10.0	10.9	10.6	10.7	9.8	9.3	8.7	8.1	7.7	9.0
12	9.0	9.3	8.9	8.2	8.6	8.0	9.0	8.8	7.6	8.6	8.2	8.1	8.7	8.8	9.2	9.2	7.7	7.2	7.3	7.4	6.6	6.3	7.1	7.6
13	7.9	7.1	6.6	6.1	6.5	5.9	5.8	6.1	6.2	6.5	6.7	6.2	6.5	6.8	6.4	6.7	6.9	6.6	5.9	5.8	5.7	5.9	5.7	4.5
14	3.0	4.0	3.3	3.7	4.2	4.0	4.0	4.9	5.6	5.6	5.7	5.7	6.1	5.6	5.7	5.8	5.5	5.7	5.3	5.7	4.2	3.7	3.1	2.3
15	3.1	2.0	2.7	3.2	3.1	3.0	3.2	2.3	2.2	2.6	2.7	3.2	3.5	3.5	2.9	1.6	2.3	2.2	2.2	2.5	1.6	1.3	2.1	2.3
16	1.3	1.1	1.7	1.9	2.1	2.1	2.0	2.6	4.0	4.3	5.3	4.8	4.7	4.1	3.2	3.4	3.9	4.5	3.4	3.0	2.8	2.2	2.1	1.6
17	1.5	1.6	1.1	0.6	0.6	0.6	1.0	0.7	0.3	0.5	0.9	1.3	2.1	2.5	3.9	2.6	2.9	2.7	1.6	0.8	1.1	1.8	2.0	2.3
18	3.4	3.4	4.2	3.4	1.9	1.8	2.4	2.9	3.3	4.0	4.3	5.6	7.7	8.9	8.5	8.6	9.1	9.0	9.5	8.5	7.3	6.4	7.4	9.0
19	10.1	9.4	8.6	8.9	10.1	9.3	9.0	8.7	8.7	9.2	9.1	10.2	9.7	10.3	8.8	10.3	9.3	8.2	9.1	6.7	7.0	6.9	6.7	7.7
20	7.7	8.4	6.8	3.8	3.6	4.6	4.5	4.8	5.3	4.7	4.3	4.2	4.2	3.3	2.2	2.6	3.1	3.3	3.1	2.9	2.5	3.1	3.4	3.1
21	3.3	3.4	3.3	4.5	5.2	4.2	4.0	3.8	6.2	8.2	9.5	9.9	9.6	9.0	9.3	8.6	7.5	7.0	7.1	6.3	4.9	4.1	3.1	3.1
22	3.3	3.6	3.3	2.8	2.6	2.7	2.1	2.2	3.4	4.2	3.7	3.6	3.8	2.9	2.4	2.2	1.7	2.5	2.9	2.9	2.1	2.5	2.6	1.8
23	1.8	2.0	2.5	3.2	2.5	2.8	1.3	1.0	1.2	1.4	1.0	1.1	1.6	1.3	1.8	1.7	1.7	0.7	1.5	3.5	4.1	2.9	1.6	2.8
24	2.6	2.9	3.2	3.2	2.0	3.0	1.3	0.0	0.3	1.7	3.8	3.3	2.8	2.8	2.2	2.6	2.4	4.2	4.5	5.4	4.5	5.8	6.2	6.3
25	7.3	8.0	8.4	8.5	8.1	8.1	8.7	10.2	10.8	11.4	11.5	12.0	12.2	11.9	11.2	11.1	10.6	11.3	10.6	9.9	7.7	9.1	9.7	9.0
26	8.9	8.0	4.9	4.2	5.4	5.5	5.5	6.3	7.0	6.4	5.9	6.5	6.3	6.8	8.8	9.3	7.9	6.9	7.7	6.4	3.7	6.8	9.0	7.8
27	7.9	7.6	6.2	4.8	5.9	6.5	5.1	5.0	2.9	8.0	8.6	8.3	7.6	5.6	8.5	8.6	8.4	8.3	6.8	5.2	2.1	2.1	3.3	3.2
28	3.0	3.5	3.7	4.2	4.3	4.2	3.4	3.2	4.3	5.0	6.1	5.5	6.0	5.7	5.9	4.8	4.5	2.6	4.2	5.4	4.0	2.5	1.4	2.6
29	2.5	3.3	3.9	2.5	2.4	3.2	2.8	3.0	4.6	4.6	4.7	5.7	4.6	4.9	4.4	4.5	4.1	4.4	3.8	3.9	3.5	2.4	2.3	2.1
30	1.8	1.2	1.1	1.2	1.3	0.9	1.5	1.7	1.3	1.6	3.0	4.2	5.1	4.4	4.0	4.4	4.4	4.7	4.6	4.5	2.8	3.6	4.3	4.1

TABLE 2

Average Wind Direction (degrees from North)
AEP Station ID 00010348-C-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
April 2022

Ryley Wind Direction Data (degrees, blowing from) - Month of April 2022																								
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	316	306	309	311	304	304	312	313	317	298	209	166	93	190	167	96	49	84	99	103	116	134	147	146
2	153	152	158	158	159	162	166	165	173	193	258	227	48	34	26	32	43	59	117	185	219	252	254	248
3	253	255	250	245	245	241	229	194	168	170	168	168	169	175	177	174	183	196	188	164	196	192	170	166
4	174	185	208	178	166	152	148	125	145	151	158	153	143	143	134	151	134	104	52	41	49	85	121	189
5	276	327	328	330	326	329	330	330	329	332	332	336	338	341	305	331	330	344	196	222	241	185	69	129
6	191	236	236	273	304	315	318	320	317	326	327	329	327	320	333	331	328	338	324	322	311	295	278	265
7	252	243	197	182	240	225	169	162	176	188	180	181	176	178	178	174	173	170	163	163	155	158	157	159
8	157	159	157	157	160	155	155	154	155	157	155	155	175	130	82	110	123	120	250	225	48	168	319	288
9	271	304	309	311	310	306	316	317	318	324	326	327	330	326	327	328	329	327	327	328	326	327	327	327
10	329	328	327	327	329	326	326	326	330	330	330	334	333	338	339	334	335	322	193	157	115	203	340	299
11	346	340	278	335	328	226	283	306	284	300	308	331	326	319	301	238	127	128	59	31	26	13	16	9
12	13	23	19	17	30	26	22	20	49	33	185	273	272	219	155	50	63	46	22	18	22	36	30	30
13	35	38	31	33	28	30	30	23	18	20	28	64	41	37	104	58	57	15	18	33	39	34	40	51
14	59	52	36	20	19	17	77	169	11	14	25	43	25	25	25	31	30	31	35	32	40	26	34	93
15	115	214	50	61	64	68	73	97	98	63	39	29	34	49	63	106	112	119	123	141	142	173	198	194
16	183	154	143	145	150	156	155	159	147	145	148	152	153	155	146	124	100	92	86	100	134	125	128	112
17	145	152	172	168	85	129	126	63	78	170	249	260	260	198	71	269	188	158	171	149	138	179	187	176
18	187	188	193	192	178	152	155	161	155	150	155	141	143	142	148	152	159	158	142	136	130	124	121	125
19	129	134	134	114	116	115	113	113	114	113	111	111	121	98	85	78	63	49	46	53	39	40	40	41
20	35	34	39	108	325	330	337	174	314	302	260	43	13	243	281	311	271	258	250	232	212	202	192	182
21	182	181	160	146	158	160	153	144	154	151	152	149	149	139	141	138	145	142	152	152	151	140	142	139
22	131	148	148	129	135	156	132	134	116	122	124	123	129	134	135	108	114	147	154	178	194	219	232	221
23	167	177	170	181	206	224	199	169	261	123	119	116	235	238	169	155	192	164	99	181	245	247	191	168
24	179	232	245	277	272	295	209	181	180	99	108	122	131	122	109	128	168	126	130	120	124	119	125	132
25	140	141	143	143	145	144	137	137	140	141	140	138	141	143	139	142	131	129	126	123	120	123	124	126
26	131	122	124	117	114	114	114	114	113	121	115	118	126	122	115	114	114	116	112	98	78	73	87	106
27	110	113	112	84	79	95	99	78	118	320	314	310	299	287	299	305	303	309	315	307	305	247	205	248
28	239	243	250	263	272	261	236	238	242	248	275	264	262	257	271	275	287	268	200	251	339	74	220	268
29	281	317	321	292	278	276	286	308	320	316	307	307	302	305	313	303	313	208	79	14	22	37	53	55
30	141	244	158	243	120	108	122	136	97	79	91	101	99	96	107	97	73	78	75	80	111	133	106	78

TABLE 3

Wind Frequency Distribution
AEP Station ID 00010348-C-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
April 2022

Frequency Distribution Report: Ryley, Alberta - April 2022									
Direction	Angle	Wind Speed (m/s) and Number of Occurrences (minutes)						%	Total Occurrences by Direction
		< 0.5	0.5 to < 1.5	1.5 to < 2.5	2.5 to < 3.5	3.5 to < 4.5	>= 4.5		
North	> 337.5 - 22.5	40	186	427	620	842	4941	16.3%	7056
Northeast	> 22.5 - 67.5	91	298	496	731	628	2500	11.0%	4744
East	> 67.5 - 112.5	87	302	426	531	576	1578	8.1%	3500
Southeast	> 112.5 - 157.5	89	570	1320	1249	1133	6038	24.1%	10399
South	> 157.5 - 202.5	83	502	1132	1222	852	2054	13.5%	5845
Southwest	> 202.5 - 247.5	50	105	372	756	409	337	4.7%	2029
West	> 247.5 - 292.5	68	131	286	569	571	721	5.4%	2346
Northwest	> 292.5 - 337.5	63	218	494	681	659	5166	16.9%	7281
Missing/Invalid Hours								0.0%	0
Total Occurrences by Speed		571	2312	4953	6359	5670	23335		43200
Occurrences by %		1.3%	5.4%	11.5%	14.7%	13.1%	54.0%	100.00%	

TABLE 4

Particulate Matter PM₁₀ Results
AEP Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
April 2022

Filter ID	C9456946	C9460886	C9456945
Test ID	794	795	796
Sample Start Date/Time	22/04/05 00:00:00	22/04/17 00:00:00	22/04/29 00:00:00
Sample End Date/Time	22/04/06 00:00:00	22/04/18 00:00:00	22/04/30 00:00:00
Sampling Time (hours)	24	24	24
Flow Rate (l/min)	16.7	16.7	16.7
Volume (m³)	23.5	24.4	23.6
PM₁₀ Mass (mg)	0.147	0.116	0.365
PM₁₀ Concentration (ug/m³)	6.255	4.754	15.466
Sampler Name	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905

TABLE 5

VOC and TNMOC Analytical Results
AEP Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
April 2022

Parameter	Units	Date	5-Apr-22	17-Apr-22	29-Apr-22
		Sample ID AAAQO ⁽¹⁾	794	795	796
Total Non-Methane Organic Carbon	ppmv	-	< 0.08	< 0.08	< 0.08
1,2,3-Trimethylbenzene	ppbv	-	< 0.08	0.21	0.13
1,2,4-Trimethylbenzene	ppbv	-	< 0.05	0.38	< 0.05
1,3,5-Trimethylbenzene	ppbv	-	< 0.05	0.32	0.09
1-Butene/Isobutylene	ppbv	-	< 0.10	0.13	< 0.10
1-Hexene/2-Methyl-1-pentene	ppbv	-	< 0.12	< 0.10	< 0.11
1-Pentene	ppbv	-	< 0.05	< 0.04	0.18
2,2,4-Trimethylpentane	ppbv	-	< 0.03	< 0.03	0.13
2,2-Dimethylbutane	ppbv	-	< 0.03	< 0.03	< 0.03
2,3,4-Trimethylpentane	ppbv	-	< 0.03	< 0.03	0.07
2,3-Dimethylbutane	ppbv	-	< 0.15	< 0.14	< 0.14
2,3-Dimethylpentane	ppbv	-	< 0.03	0.05	0.10
2,4-Dimethylpentane	ppbv	-	< 0.05	< 0.04	< 0.05
2-Methylheptane	ppbv	-	< 0.03	< 0.03	0.13
2-Methylhexane	ppbv	-	< 0.05	< 0.04	0.18
2-Methylpentane	ppbv	-	< 0.03	0.08	< 0.03
3-Methylheptane	ppbv	-	< 0.05	< 0.04	0.10
3-Methylhexane	ppbv	-	< 0.03	< 0.03	< 0.03
3-Methylpentane	ppbv	-	< 0.03	< 0.03	0.20
Benzene	ppbv	-	< 0.05	0.09	0.21
cis-2-Butene	ppbv	-	< 0.05	< 0.04	< 0.05
cis-2-Pentene	ppbv	-	< 0.03	< 0.03	< 0.03
Cyclohexane	ppbv	-	< 0.07	< 0.06	0.08
Cyclopentane	ppbv	-	< 0.03	< 0.03	< 0.03
Ethylbenzene	ppbv	-	< 0.05	0.21	1.05
Isobutane	ppbv	-	< 0.05	0.20	1.62
Isopentane	ppbv	-	< 0.07	< 0.06	0.85
Isoprene	ppbv	-	< 0.03	< 0.03	< 0.03
Isopropylbenzene	ppbv	-	< 0.07	0.15	< 0.06
m,p-Xylene	ppbv	161	0.12	0.38	3.66
m-Diethylbenzene	ppbv	-	< 0.03	0.24	0.11
m-Ethyltoluene	ppbv	-	< 0.05	0.19	0.29
Methylcyclohexane	ppbv	-	< 0.03	< 0.03	0.31
Methylcyclopentane	ppbv	-	< 0.08	< 0.08	0.18
n-Butane	ppbv	-	< 0.03	0.45	8.07
n-Decane	ppbv	-	< 0.10	0.20	0.37
n-Dodecane	ppbv	-	< 0.5	< 0.4	< 0.5
n-Heptane	ppbv	-	< 0.07	0.09	0.49
n-Hexane	ppbv	1990	< 0.05	0.08	0.41
n-Nonane	ppbv	-	< 0.07	0.11	0.31
n-Octane	ppbv	-	< 0.03	0.06	0.24
n-Pentane	ppbv	-	< 0.07	0.10	0.55
n-Propylbenzene	ppbv	-	< 0.10	0.47	0.10
n-Undecane	ppbv	-	< 0.8	< 0.8	< 0.8
o-Ethyltoluene	ppbv	-	< 0.03	0.19	0.14
o-Xylene	ppbv	161	< 0.05	0.25	1.25
p-Diethylbenzene	ppbv	-	< 0.03	0.26	0.15
p-Ethyltoluene	ppbv	-	< 0.07	0.19	< 0.06
Styrene	ppbv	-	0.15	0.40	0.15
Toluene	ppbv	106	0.97	0.24	3.70
trans-2-Butene	ppbv	-	< 0.05	< 0.04	< 0.05
trans-2-Pentene	ppbv	-	< 0.03	< 0.03	< 0.03
Total VOCs ⁽²⁾	ppbv	-	5.000	7.930	27.780

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.

Appendix A

Meteorological Station Calibration Report

R. M. YOUNG COMPANY WIND SENSOR CALIBRATION CERTIFICATE

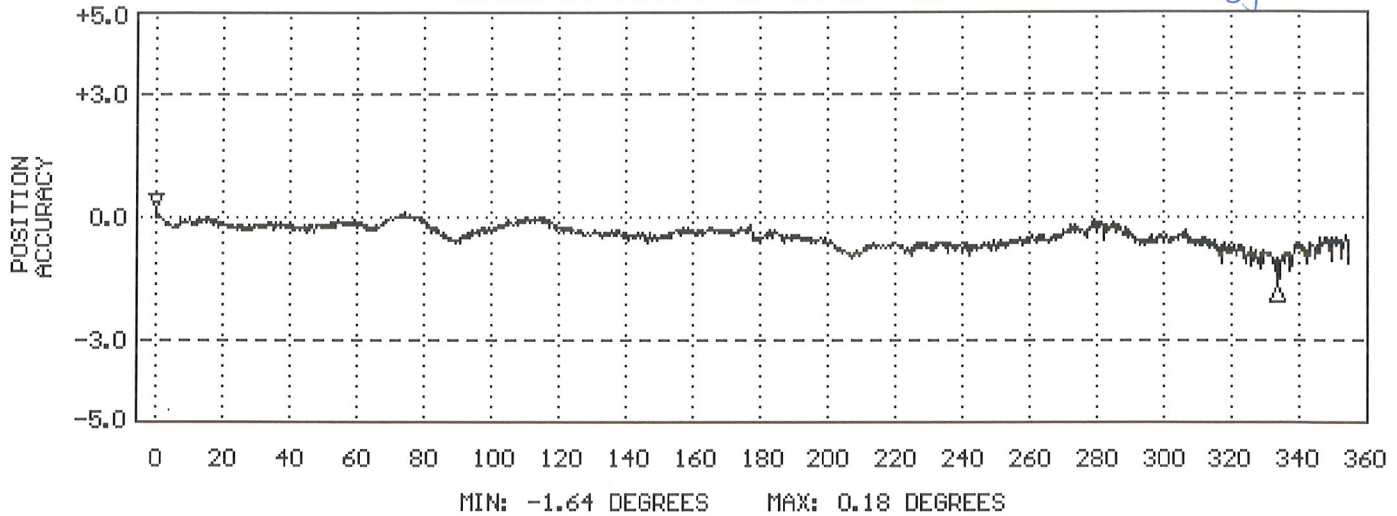
SENSOR: 05305-10A WIND MONITOR-AQ
SENSOR SERIAL NUMBER: WM149768
BEARINGS: SHIELDED/OIL LUBE
DATE: AUG 3 2016

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:

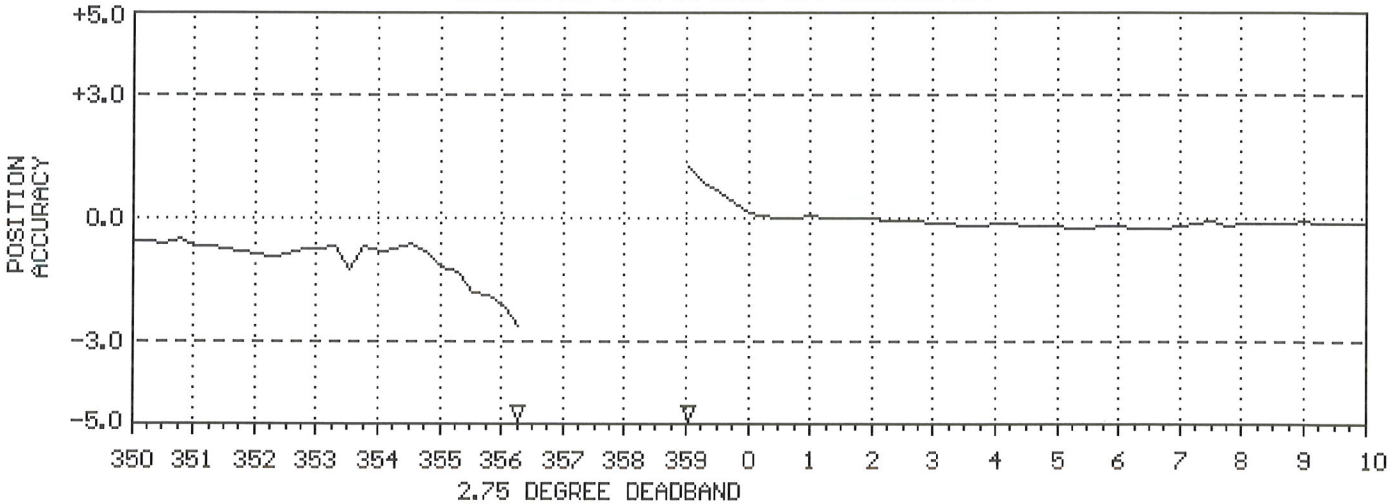
[Signature]
Insp. By

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

AZIMUTH POSITION vs ACCURACY



AZIMUTH POSITION vs ACCURACY



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:	Mar 18, 2022		Model:	05305		
Tech.:	P. Shariaty & S. Davey		Serial #:	149768		
Instrument:	Continuous Wind Monitor		Calibration due:	Annually		
Time:	10:15 AM - 2:00 PM		Temperature:	4°C		
Pre-Calibration Inspection				Y/N		
Is the wind direction < +/- 10° from compass observation?				Y		
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)	
180	181	Y	26.1	26.0	Y	
210	213	Y	20.5	20.4	Y	
240	242	Y	15.4	15.3	Y	
270	272	Y	10.2	10.2	Y	
300	303	Y	5.1	5.1	Y	
330	332	Y				
0	4	Y				
30	31	Y				
60	61	Y				
90	90	Y				
120	122	Y				
150	151	Y				
Comments				Conversion Factors		
Wind monitor (SN:149768) was removed from tower, inspected and the calibration was checked on March 18, 2022. Mechanical bearings and shaft alignment were inspected. Bearings were replaced and instrument was cleaned of any dust buildup. Alignment was in good condition. Other than the bearings and cleaning, no additional maintenance was required. It is recommended that instrument be cleaned biannually and bearings checked/replaced at the 2023 calibration interval. After calibration check, wind monitor was re-installed and sited back to original position.				m/s	RPM	
				19.456	3800	
				15.360	3000	
				12.800	2500	
				9.216	1800	
				7.680	1500	
				5.632	1100	
4.096	800					
2.560	500					
1.024	200					
Calibration Adjustment Required?: No						

Appendix B

Sampling Field Sheets

FIELD SHEET			
PM ₁₀ (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RILEY, ALBERTA			
A) GENERAL INFORMATION			
Filter ID:	C9456946		
PO Number:	224494		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 794		
Sample Date:	22/04/05	yy/mm/dd	
Shipping Date to Laboratory:	22/04/07		
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	22/04/05		
Sampling Start Time:	00:00		
Current Instrument Date:	22/04/01		
Current Instrument Time:	13:19		
Ambient Temperature °C:	6.7		
Barometric Pressure (mm Hg):	699		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	cloudy, rainy		
Weather Conditions set up:	mostly cloudy		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	22/04/06		
Sampling End Time:	00:00		
Current Instrument Date:	22/04/06		
Current Instrument Time:	8:01		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m ³):	23.5		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	2.8		
Barometric Pressure (mm Hg) :	706		
Sample Filter Temperature °C :	4.4		
Flow Rate Coefficient of Variation (%CV):	0.1		
Weather Conditions :	partly cloudy		
Leak Check:	Pass	(Pass/Fail)	
FIELD BLANK			
Was a field blank collected	No	(Once every quarter)	
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:	None		
Comments:			

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

A) GENERAL INFORMATION

Sample Identification Number: Organic Test 794
 Sample Canister Location: Ryley Lift Station -Shed
 Sampled by: T. Webb
 Sampler Name: Test 794
 Sample Date: 22/04/05 yy/mm/dd
 Shipping Date to Laboratory: 22/04/07
 Canister Type (ie. 1 Litre/6 Litre/Other): 6L
 Canister Serial No.: 28916
 Flow Controller Serial No.: H/L578699/A0334390-5

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	22/04/01	22/04/05
Ambient Temperature °C (inside shed):	23.9	10.3
Barometric Pressure (mm Hg):	699	706
Canister Pressure Gauge Reading (- Inches Hg):	(-)27	(-)6
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: cloudy, rainy

Describe facility operations that may affect sampling event: None

Comments: _____

FIELD SHEET			
PM ₁₀ (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RILEY, ALBERTA			
A) GENERAL INFORMATION			
Filter ID:	C9460886		
PO Number:	224494		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 795		
Sample Date:	22/04/17	yy/mm/dd	
Shipping Date to Laboratory:	22/04/19		
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	22/04/17		
Sampling Start Time:	00:00		
Current Instrument Date:	22/04/14		
Current Instrument Time:	13:06		
Ambient Temperature °C:	-1.6		
Barometric Pressure (mm Hg):	705		
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:	22/04/18		
Sampling End Time:	00:00		
Current Instrument Date:	22/04/18		
Current Instrument Time:	9:44		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m ³):	24.4		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	2.9		
Barometric Pressure (mm Hg) :	704		
Sample Filter Temperature °C :	4.4		
Flow Rate Coefficient of Variation (%CV):	0.2		
Weather Conditions :	partly cloudy		
Leak Check:	Pass	(Pass/Fail)	
FIELD BLANK			
Was a field blank collected	No	(Once every quarter)	
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:	None		
Comments:			

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

A) GENERAL INFORMATION

Sample Identification Number: Organic Test 795
 Sample Canister Location: Ryley Lift Station -Shed
 Sampled by: T. Webb
 Sampler Name: Test 795
 Sample Date: 22/04/17 yy/mm/dd
 Shipping Date to Laboratory: 22/04/19
 Canister Type (ie. 1 Litre/6 Litre/Other): 6L
 Canister Serial No.: 28916
 Flow Controller Serial No.: H/L578699/A0334390-5

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	22/04/14	22/04/18
Ambient Temperature °C (inside shed):	18.9	19.5
Barometric Pressure (mm Hg):	705	704
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.2	(-)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: cloudy

Describe facility operations that may affect sampling event: None

Comments: _____

FIELD SHEET			
PM ₁₀ (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RILEY, ALBERTA			
A) GENERAL INFORMATION			
Filter ID:	C9456945		
PO Number:	224494		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 796		
Sample Date:	22/04/29	yy/mm/dd	
Shipping Date to Laboratory:	22/05/03		
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	22/04/29		
Sampling Start Time:	00:00		
Current Instrument Date:	22/04/28		
Current Instrument Time:	14:48		
Ambient Temperature °C:	12.1		
Barometric Pressure (mm Hg):	696		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	mostly cloudy		
Weather Conditions set up:	mostly cloudy		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	22/04/30		
Sampling End Time:	00:00		
Current Instrument Date:	22/05/02		
Current Instrument Time:	13:53		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m ³):	23.6		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	17.5		
Barometric Pressure (mm Hg) :	697		
Sample Filter Temperature °C :	18.5		
Flow Rate Coefficient of Variation (%CV):	0		
Weather Conditions :	Sunny		
Leak Check:	Pass	(Pass/Fail)	
FIELD BLANK			
Was a field blank collected	No	(Once every quarter)	
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:	None		
Comments:			

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

A) GENERAL INFORMATION

Sample Identification Number: Organic Test 796
 Sample Canister Location: Ryley Lift Station -Shed
 Sampled by: T. Webb
 Sampler Name: Test 796
 Sample Date: 22/04/29 yy/mm/dd
 Shipping Date to Laboratory: 22/05/03
 Canister Type (ie. 1 Litre/6 Litre/Other): 6L
 Canister Serial No.: 32263
 Flow Controller Serial No.: H/L578699/A0334390-5

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	22/04/28	22/05/02
Ambient Temperature °C (inside shed):	22.0	25.7
Barometric Pressure (mm Hg):	696	697
Canister Pressure Gauge Reading (- Inches Hg):	(-)27	(-)3
Sample Time:	24	24

C) OBSERVATIONS

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

Describe general weather conditions during sampling event: mostly cloudy

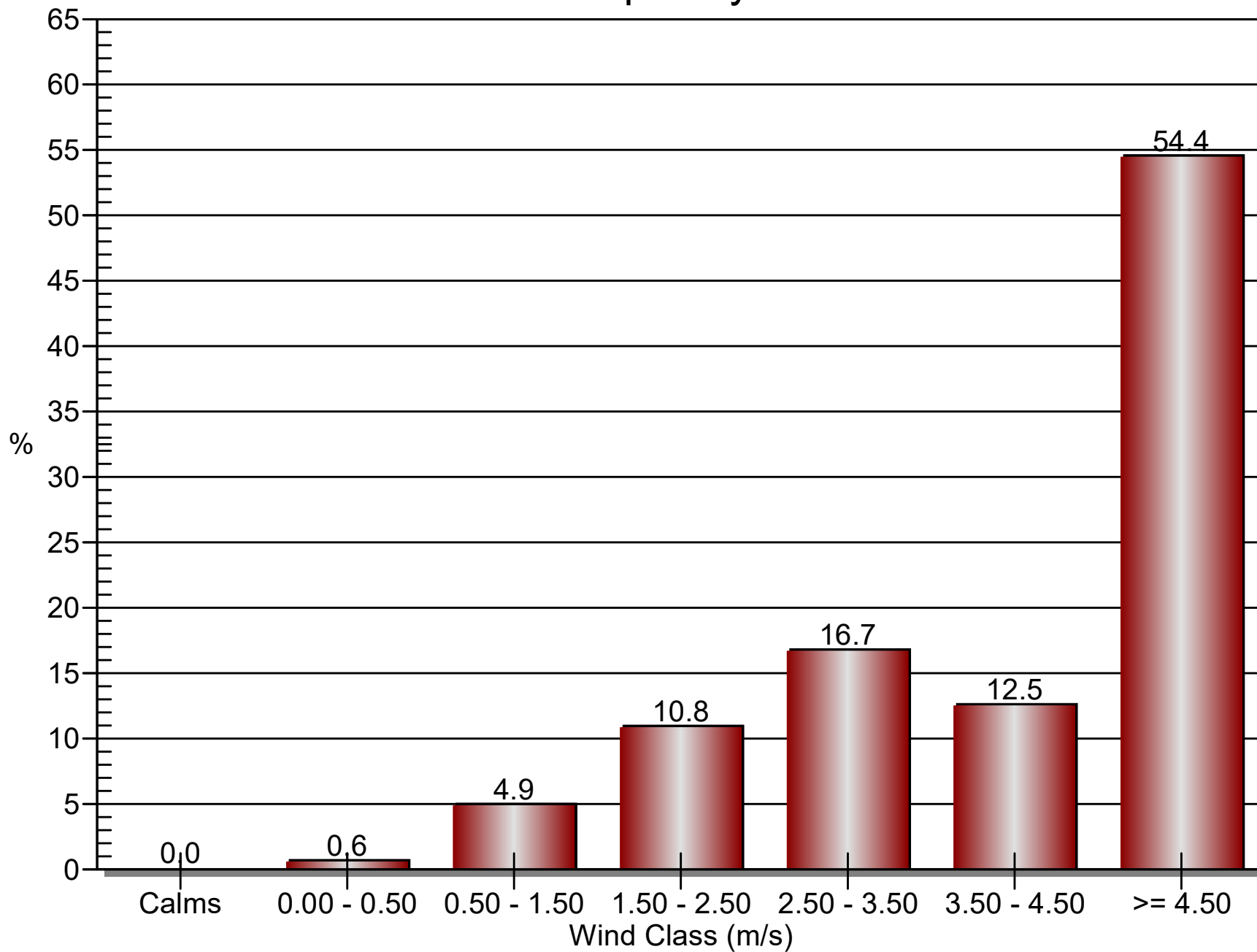
Describe facility operations that may affect sampling event: None

Comments: _____

Appendix C

Wind Class Frequency Distribution Graphs and Wind Rose

Wind Class Frequency Distribution

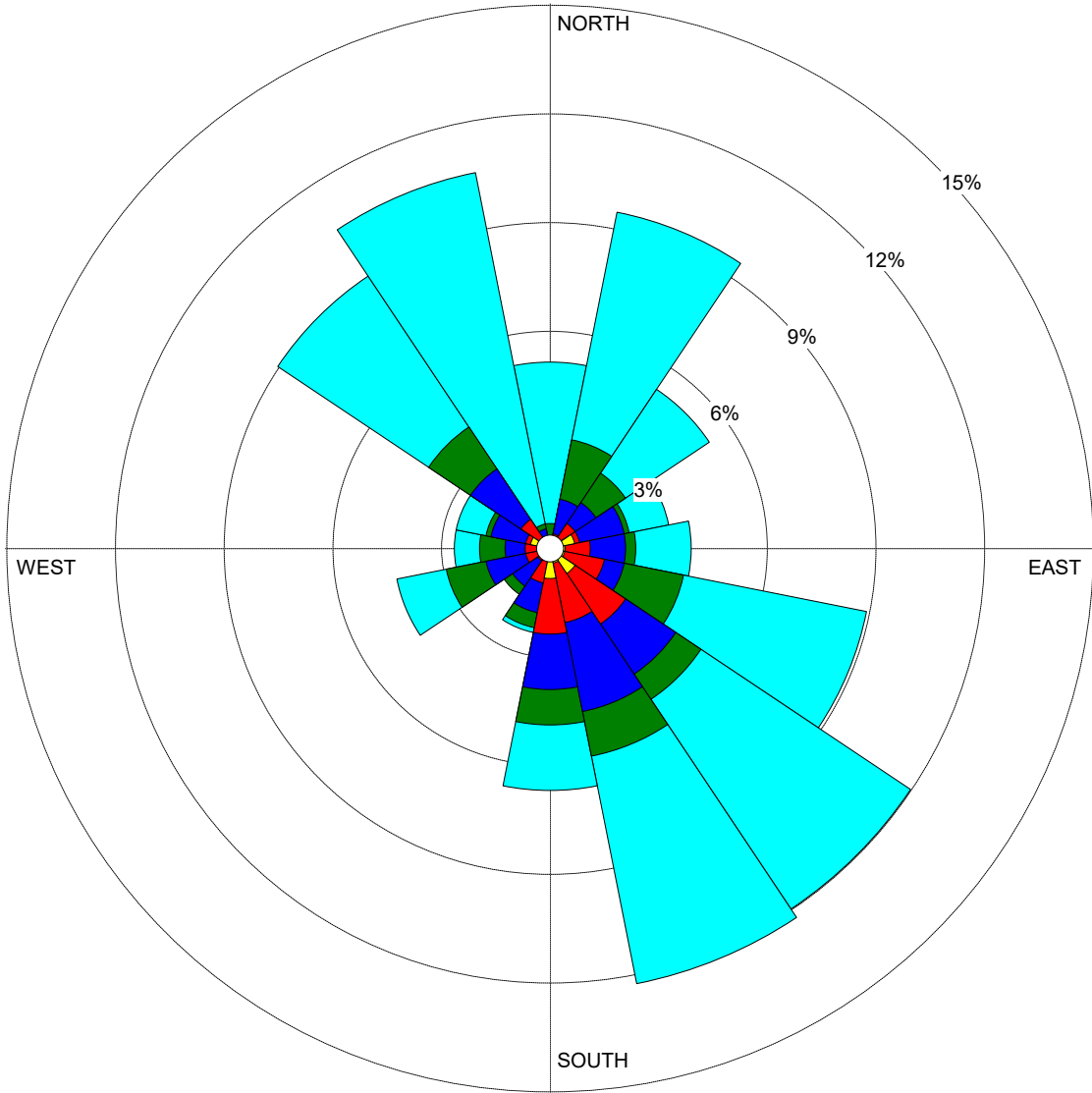


WIND ROSE PLOT:

**Wind Rose Plot - Ryley, AB
April 2022**

DISPLAY:

**Wind Speed
Direction (blowing from)**



**WIND SPEED
(m/s)**

- >= 4.50
 - 3.50 - 4.50
 - 2.50 - 3.50
 - 1.50 - 2.50
 - 0.50 - 1.50
 - 0.00 - 0.50
- Calms: 0.00%

COMMENTS:

DATA PERIOD:

**Start Date: 4/1/2022 - 00:00
End Date: 4/30/2022 - 23:00**

COMPANY NAME:

Clean Harbors

MODELER:

GHD

CALM WINDS:

0.00%

TOTAL COUNT:

719 hrs.

AVG. WIND SPEED:

5.57 m/s

DATE:

5/19/2022

PROJECT NO.:

11114644



Appendix D

Chain of Custody Forms and Laboratory Analytical Reports



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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

<p>RESULTS: Todd Webb Clean Harbors Environmental PO Box 390 2 km N of Hwy 14 on Sec Road 854 50114 RR 173 Ryley AB TOB 4A0</p> <p>INVOICE: Robbi Gooding PO Box 390 2 km N of Hwy 14 on Sec Road 854 50114 RR 173 Ryley AB TOB 4A0</p>	<p style="text-align: center;">CLIENT SAMPLE ID Filter #: C9456946, PM10 Test # 794</p> <p>CANISTER ID:</p> <p>PRIORITY: Normal</p> <p>DESCRIPTION: PM 10 Filter</p> <p>DATE SAMPLED: 05-Apr-22 0:00</p> <p>REPORT CREATED: 21-Apr-22</p>	<p style="text-align: center;">Matrix Air Filter</p> <p>DATE RECEIVED: 08-Apr-22</p> <p>REPORT NUMBER: 22040069</p> <p>VERSION: Version 01</p>
--	--	---

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22040069-002	Particulate Weight		0.147 mg	0.004	AC-029	11-Apr-22

CLIENT SAMPLE ID VOCs and TNMOC Test # 794	CANISTER ID 28916	Matrix Ambient Air	DATE SAMPLED 05-Apr-22 0:00
DESCRIPTION: Air Canister			
REPORT NUMBER: 22040069	REPORT CREATED: 21-Apr-22		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22040069-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08 ppmv	0.08	NA-028	11-Apr-22
22040069-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08 ppbv	0.08	AC-058	12-Apr-22
22040069-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	1-Butene/Isobutylene	K, T, U	< 0.10 ppbv	0.10	AC-058	12-Apr-22
22040069-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.12 ppbv	0.12	AC-058	12-Apr-22
22040069-001	1-Pentene	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	2,2,4-Trimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	2,2-Dimethylbutane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	2,3,4-Trimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	2,3-Dimethylbutane	K, T, U	< 0.15 ppbv	0.15	AC-058	12-Apr-22
22040069-001	2,3-Dimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	2,4-Dimethylpentane	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	2-Methylheptane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	2-Methylhexane	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	2-Methylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	3-Methylheptane	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	3-Methylhexane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	3-Methylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	Benzene	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	cis-2-Butene	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	cis-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	Cyclohexane	K, T, U	< 0.07 ppbv	0.07	AC-058	12-Apr-22
22040069-001	Cyclopentane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	Ethylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: April 21, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca

CLIENT SAMPLE ID VOCs and TNMOC Test # 794	CANISTER ID 28916	Matrix Ambient Air	DATE SAMPLED 05-Apr-22 0:00
DESCRIPTION: Air Canister			
REPORT NUMBER: 22040069	REPORT CREATED: 21-Apr-22		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22040069-001	Isobutane	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	Isopentane	K, T, U	< 0.07 ppbv	0.07	AC-058	12-Apr-22
22040069-001	Isoprene	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	Isopropylbenzene	K, T, U	< 0.07 ppbv	0.07	AC-058	12-Apr-22
22040069-001	m,p-Xylene	I	0.12 ppbv	0.07	AC-058	12-Apr-22
22040069-001	m-Diethylbenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	m-Ethyltoluene	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	Methylcyclohexane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	Methylcyclopentane	K, T, U	< 0.08 ppbv	0.08	AC-058	12-Apr-22
22040069-001	n-Butane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	n-Decane	K, T, U	< 0.10 ppbv	0.10	AC-058	12-Apr-22
22040069-001	n-Dodecane	K, T, U	< 0.5 ppbv	0.5	AC-058	12-Apr-22
22040069-001	n-Heptane	K, T, U	< 0.07 ppbv	0.07	AC-058	12-Apr-22
22040069-001	n-Hexane	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	n-Octane	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	n-Pentane	K, T, U	< 0.07 ppbv	0.07	AC-058	12-Apr-22
22040069-001	n-Propylbenzene	K, T, U	< 0.10 ppbv	0.10	AC-058	12-Apr-22
22040069-001	n-Undecane	K, T, U	< 0.8 ppbv	0.8	AC-058	12-Apr-22
22040069-001	n-Nonane	K, T, U	< 0.07 ppbv	0.07	AC-058	12-Apr-22
22040069-001	o-Ethyltoluene	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	o-Xylene	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	p-Diethylbenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22
22040069-001	p-Ethyltoluene	K, T, U	< 0.07 ppbv	0.07	AC-058	12-Apr-22
22040069-001	Styrene	I	0.15 ppbv	0.07	AC-058	12-Apr-22
22040069-001	Toluene		0.97 ppbv	0.05	AC-058	12-Apr-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: April 21, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID VOCs and TNMOC Test # 794	CANISTER ID 28916	Matrix Ambient Air	DATE SAMPLED 05-Apr-22 0:00
DESCRIPTION: Air Canister			
REPORT NUMBER: 22040069	REPORT CREATED: 21-Apr-22		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22040069-001	trans-2-Butene	K, T, U	< 0.05 ppbv	0.05	AC-058	12-Apr-22
22040069-001	trans-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	12-Apr-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: April 21, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Revision History

Order ID	Ver	Date	Reason
22040069	01	21-Apr-22	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

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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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Order Comments

22040069

Send results to Stan Yuha. Project ID: Test # 794.



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Sample Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

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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

<p>RESULTS: Todd Webb Clean Harbors Environmental PO Box 390 2 km N of Hwy 14 on Sec Road 854 50114 RR 173 Ryley AB TOB 4A0</p> <p>INVOICE: Robbi Gooding PO Box 390 2 km N of Hwy 14 on Sec Road 854 50114 RR 173 Ryley AB TOB 4A0</p>	<p style="text-align: center;">CLIENT SAMPLE ID Filter #: C9460886, PM10 Test # 795</p> <p>MATRIX: Air Filter</p> <p>CANISTER ID:</p> <p>PRIORITY: Normal</p> <p>DESCRIPTION: PM 10 Filter</p> <p>DATE SAMPLED: 17-Apr-22 0:00</p> <p>REPORT CREATED: 06-May-22</p>	<p>DATE RECEIVED: 21-Apr-22</p> <p>REPORT NUMBER: 22040158</p> <p>VERSION: Version 01</p>
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Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22040158-002	Particulate Weight		0.116 mg	0.004	AC-029	25-Apr-22

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 795	32225	Ambient Air	17-Apr-22 0:00
DESCRIPTION:	Air Canister		
REPORT NUMBER:	22040158	REPORT CREATED:	06-May-22
		VERSION:	Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22040158-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08 ppmv	0.08	NA-028	25-Apr-22
22040158-001	1,2,3-Trimethylbenzene		0.21 ppbv	0.08	AC-058	30-Apr-22
22040158-001	1,2,4-Trimethylbenzene		0.38 ppbv	0.04	AC-058	30-Apr-22
22040158-001	1,3,5-Trimethylbenzene		0.32 ppbv	0.04	AC-058	30-Apr-22
22040158-001	1-Butene/Isobutylene	I	0.13 ppbv	0.09	AC-058	30-Apr-22
22040158-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.10 ppbv	0.10	AC-058	30-Apr-22
22040158-001	1-Pentene	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Apr-22
22040158-001	2,2,4-Trimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	2,2-Dimethylbutane	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	2,3,4-Trimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	2,3-Dimethylbutane	K, T, U	< 0.14 ppbv	0.14	AC-058	30-Apr-22
22040158-001	2,3-Dimethylpentane	I	0.05 ppbv	0.03	AC-058	30-Apr-22
22040158-001	2,4-Dimethylpentane	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Apr-22
22040158-001	2-Methylheptane	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	2-Methylhexane	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Apr-22
22040158-001	2-Methylpentane	I	0.08 ppbv	0.03	AC-058	30-Apr-22
22040158-001	3-Methylheptane	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Apr-22
22040158-001	3-Methylhexane	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	3-Methylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	Benzene	I	0.09 ppbv	0.04	AC-058	30-Apr-22
22040158-001	cis-2-Butene	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Apr-22
22040158-001	cis-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	Cyclohexane	K, T, U	< 0.06 ppbv	0.06	AC-058	30-Apr-22
22040158-001	Cyclopentane	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	Ethylbenzene	I	0.21 ppbv	0.04	AC-058	30-Apr-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: May 6, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca

CLIENT SAMPLE ID VOCs and TNMOC Test # 795	CANISTER ID 32225	Matrix Ambient Air	DATE SAMPLED 17-Apr-22 0:00
DESCRIPTION: Air Canister			
REPORT NUMBER: 22040158	REPORT CREATED: 06-May-22		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22040158-001	Isobutane		0.20 ppbv	0.04	AC-058	30-Apr-22
22040158-001	Isopentane	K, T, U	< 0.06 ppbv	0.06	AC-058	30-Apr-22
22040158-001	Isoprene	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	Isopropylbenzene	I	0.15 ppbv	0.06	AC-058	30-Apr-22
22040158-001	m,p-Xylene	I	0.38 ppbv	0.06	AC-058	30-Apr-22
22040158-001	m-Diethylbenzene		0.24 ppbv	0.03	AC-058	30-Apr-22
22040158-001	m-Ethyltoluene		0.19 ppbv	0.04	AC-058	30-Apr-22
22040158-001	Methylcyclohexane	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22
22040158-001	Methylcyclopentane	K, T, U	< 0.08 ppbv	0.08	AC-058	30-Apr-22
22040158-001	n-Butane		0.45 ppbv	0.03	AC-058	30-Apr-22
22040158-001	n-Decane		0.20 ppbv	0.09	AC-058	30-Apr-22
22040158-001	n-Dodecane	K, T, U	< 0.4 ppbv	0.4	AC-058	30-Apr-22
22040158-001	n-Heptane	I	0.09 ppbv	0.06	AC-058	30-Apr-22
22040158-001	n-Hexane	I	0.08 ppbv	0.04	AC-058	30-Apr-22
22040158-001	n-Octane	I	0.06 ppbv	0.03	AC-058	30-Apr-22
22040158-001	n-Pentane	I	0.10 ppbv	0.06	AC-058	30-Apr-22
22040158-001	n-Propylbenzene		0.47 ppbv	0.09	AC-058	30-Apr-22
22040158-001	n-Undecane	K, T, U	< 0.8 ppbv	0.8	AC-058	30-Apr-22
22040158-001	n-Nonane	I	0.11 ppbv	0.06	AC-058	30-Apr-22
22040158-001	o-Ethyltoluene		0.19 ppbv	0.03	AC-058	30-Apr-22
22040158-001	o-Xylene	I	0.25 ppbv	0.04	AC-058	30-Apr-22
22040158-001	p-Diethylbenzene		0.26 ppbv	0.03	AC-058	30-Apr-22
22040158-001	p-Ethyltoluene	I	0.19 ppbv	0.06	AC-058	30-Apr-22
22040158-001	Styrene		0.40 ppbv	0.06	AC-058	30-Apr-22
22040158-001	Toluene	I	0.24 ppbv	0.04	AC-058	30-Apr-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: May 6, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID VOCs and TNMOC Test # 795	CANISTER ID 32225	Matrix Ambient Air	DATE SAMPLED 17-Apr-22 0:00
DESCRIPTION: Air Canister			
REPORT NUMBER: 22040158	REPORT CREATED: 06-May-22		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22040158-001	trans-2-Butene	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Apr-22
22040158-001	trans-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Apr-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: May 6, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

Revision History

Order ID	Ver	Date	Reason
22040158	01	06-May-22	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

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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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Order Comments

22040158

Send results to Stan Yuha. Project ID: Test # 795.



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ENVIRONMENTAL ANALYTICAL SERVICES

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Sample Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

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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: Todd Webb Clean Harbors Environmental PO Box 390 2 km N of Hwy 14 on Sec Road 854 50114 RR 173 Ryley AB TOB 4A0	CLIENT SAMPLE ID C9456945, PM10 Test #: 796		Matrix Air Filter
	CANISTER ID: PRIORITY: Normal DESCRIPTION: PM10 Filter		
INVOICE: Robbi Gooding PO Box 390 2 km N of Hwy 14 on Sec Road 854 50114 RR 173 Ryley AB TOB 4A0	DATE SAMPLED: 29-Apr-22 0:00	DATE RECEIVED: 04-May-22	
	REPORT CREATED: 11-May-22	REPORT NUMBER: 22050019 VERSION: Version 01	

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22050019-002	Particulate Weight		0.365 mg	0.004	AC-029	05-May-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: May 11, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca

CLIENT SAMPLE ID VOCs and TNMOC Test #: 796	CANISTER ID 32263	Matrix Ambient Air	DATE SAMPLED 29-Apr-22 0:00
DESCRIPTION: Canister			
REPORT NUMBER: 22050019	REPORT CREATED: 11-May-22		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22050019-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08 ppmv	0.08	NA-028	05-May-22
22050019-001	1,2,3-Trimethylbenzene	I	0.13 ppbv	0.08	AC-058	06-May-22
22050019-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	06-May-22
22050019-001	1,3,5-Trimethylbenzene	I	0.09 ppbv	0.05	AC-058	06-May-22
22050019-001	1-Butene/Isobutylene	K, T, U	< 0.10 ppbv	0.10	AC-058	06-May-22
22050019-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.11 ppbv	0.11	AC-058	06-May-22
22050019-001	1-Pentene		0.18 ppbv	0.05	AC-058	06-May-22
22050019-001	2,2,4-Trimethylpentane	I	0.13 ppbv	0.03	AC-058	06-May-22
22050019-001	2,2-Dimethylbutane	K, T, U	< 0.03 ppbv	0.03	AC-058	06-May-22
22050019-001	2,3,4-Trimethylpentane	I	0.07 ppbv	0.03	AC-058	06-May-22
22050019-001	2,3-Dimethylbutane	K, T, U	< 0.14 ppbv	0.14	AC-058	06-May-22
22050019-001	2,3-Dimethylpentane	I	0.10 ppbv	0.03	AC-058	06-May-22
22050019-001	2,4-Dimethylpentane	K, T, U	< 0.05 ppbv	0.05	AC-058	06-May-22
22050019-001	2-Methylheptane	I	0.13 ppbv	0.03	AC-058	06-May-22
22050019-001	2-Methylhexane		0.18 ppbv	0.05	AC-058	06-May-22
22050019-001	2-Methylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	06-May-22
22050019-001	3-Methylheptane	I	0.10 ppbv	0.05	AC-058	06-May-22
22050019-001	3-Methylhexane	K, T, U	< 0.03 ppbv	0.03	AC-058	06-May-22
22050019-001	3-Methylpentane		0.20 ppbv	0.03	AC-058	06-May-22
22050019-001	Benzene	I	0.21 ppbv	0.05	AC-058	06-May-22
22050019-001	cis-2-Butene	K, T, U	< 0.05 ppbv	0.05	AC-058	06-May-22
22050019-001	cis-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	06-May-22
22050019-001	Cyclohexane	I	0.08 ppbv	0.06	AC-058	06-May-22
22050019-001	Cyclopentane	K, T, U	< 0.03 ppbv	0.03	AC-058	06-May-22
22050019-001	Ethylbenzene		1.05 ppbv	0.05	AC-058	06-May-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: May 11, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca

CLIENT SAMPLE ID VOCs and TNMOC Test #: 796	CANISTER ID 32263	Matrix Ambient Air	DATE SAMPLED 29-Apr-22 0:00
DESCRIPTION: Canister			
REPORT NUMBER: 22050019	REPORT CREATED: 11-May-22		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22050019-001	Isobutane		1.62 ppbv	0.05	AC-058	06-May-22
22050019-001	Isopentane		0.85 ppbv	0.06	AC-058	06-May-22
22050019-001	Isoprene	K, T, U	< 0.03 ppbv	0.03	AC-058	06-May-22
22050019-001	Isopropylbenzene	K, T, U	< 0.06 ppbv	0.06	AC-058	06-May-22
22050019-001	m,p-Xylene		3.66 ppbv	0.06	AC-058	06-May-22
22050019-001	m-Diethylbenzene	I	0.11 ppbv	0.03	AC-058	06-May-22
22050019-001	m-Ethyltoluene		0.29 ppbv	0.05	AC-058	06-May-22
22050019-001	Methylcyclohexane		0.31 ppbv	0.03	AC-058	06-May-22
22050019-001	Methylcyclopentane		0.18 ppbv	0.08	AC-058	06-May-22
22050019-001	n-Butane		8.07 ppbv	0.03	AC-058	06-May-22
22050019-001	n-Decane		0.37 ppbv	0.10	AC-058	06-May-22
22050019-001	n-Dodecane	K, T, U	< 0.5 ppbv	0.5	AC-058	06-May-22
22050019-001	n-Heptane		0.49 ppbv	0.06	AC-058	06-May-22
22050019-001	n-Hexane		0.41 ppbv	0.05	AC-058	06-May-22
22050019-001	n-Octane		0.24 ppbv	0.03	AC-058	06-May-22
22050019-001	n-Pentane		0.55 ppbv	0.06	AC-058	06-May-22
22050019-001	n-Propylbenzene	I	0.10 ppbv	0.10	AC-058	06-May-22
22050019-001	n-Undecane	K, T, U	< 0.8 ppbv	0.8	AC-058	06-May-22
22050019-001	n-Nonane		0.31 ppbv	0.06	AC-058	06-May-22
22050019-001	o-Ethyltoluene	I	0.14 ppbv	0.03	AC-058	06-May-22
22050019-001	o-Xylene		1.25 ppbv	0.05	AC-058	06-May-22
22050019-001	p-Diethylbenzene	I	0.15 ppbv	0.03	AC-058	06-May-22
22050019-001	p-Ethyltoluene	K, T, U	< 0.06 ppbv	0.06	AC-058	06-May-22
22050019-001	Styrene	I	0.15 ppbv	0.06	AC-058	06-May-22
22050019-001	Toluene		3.70 ppbv	0.05	AC-058	06-May-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: May 11, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID VOCs and TNMOC Test #: 796	CANISTER ID 32263	Matrix Ambient Air	DATE SAMPLED 29-Apr-22 0:00
DESCRIPTION: Canister			
REPORT NUMBER: 22050019	REPORT CREATED: 11-May-22		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22050019-001	trans-2-Butene	K, T, U	< 0.05 ppbv	0.05	AC-058	06-May-22
22050019-001	trans-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	06-May-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: May 11, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

Revision History

Order ID	Ver	Date	Reason
22050019	01	11-May-22	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

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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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Order Comments

22050019

Send results to Stan Yuha. Test #: 796



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Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Sample Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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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.*

CHAIN OF CUSTODY FORM

Sample ID: 22040069-001 **Priority:** Normal

Customer ID: Clean Harbours
Test Samp ID: VOCs and TNMOC Test # 794
Client reporting information

<p> Company: Clean Harbours 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@cleanharbours.com, Yuha.Stan@cleanharbours.com </p>	<p> Client Billing Information Contact: Robbi Gooding Phone: 780-663-3828 Email: Gooding.Robbi@cleanharbours.com Project ID: Test 794 PO #: </p>	<p> Turnaround Time <input checked="" type="checkbox"/> Normal (10 business days) <input type="checkbox"/> Rush Note: Rush service not available for all tests. Confirm rush requests with InnoTech Alberta. </p>
<p> Special Instructions/Comments <div style="border: 2px solid blue; padding: 5px; display: inline-block; text-align: center;"> RECEIVED APR 08 2022 </div> </p>		

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: 794	Canister	28916	05/04/22	00:00	VOC PAMS & TNMOC
2	PM10 Test Number: 794	PM10 filter	C9456946	06/04/22	00:00	FLT Particulate Weight

Client Authorization:  _____ Laboratory Personnel: _____
 (Signature) (Signature)

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



Canister ID: 28916

This cleaned canister meets or exceeds TO-15 Method Specifications

FEB 07 2022

Proofed by: _____ on: _____

Evacuated: FEB 10 2022 Recertified: FEB 22 2022

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

Laboratory Contact Number: 780-632-8403

Sample ID: Test 794

Sampled By: T. Webb

Starting Vacuum:

-27 "Hg

End Vacuum: KB

-6 "Hg/psig

Sample ID: 22040069-001 Priority: Normal



Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 794

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

Sample ID: 22040158-001 Priority: Normal

 Customer ID: Clean Harbours
 Cust Samp ID: VOCs and TNMOC Test # 795
Special Reporting Information

Company: Clean Harbours 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@cleanharbours.com,
Yuha.Stan@cleanharbours.com

Client Billing Information

Contact: Robbi Gooding
 Phone: 780-663-3828
 Email: Gooding.Robbi@cleanharbours.com
 Project ID: Test 795
 PO #: 0000224494

Turnaround Time

X Normal (10 business days)

Rush


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

Date Received – Lab Use Only



Special Instructions/Comments

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: 795	Canister	32225	17/04/22	00:00	VOC PAMS & TNMOC
	PM10 Test Number: 795	PM10 filter	C9460886	18/04/22	00:00	FLT Particulate Weight

Client Authorization:  Laboratory Personnel: _____ (Signature)
 This "Chain of Custody" form is subject to InnoTech Alberta standard terms and conditions.



Canister ID: 32225

This cleaned canister meets or exceeds TO-15 Method Specifications

Sample ID: Test 795

Proofed by: _____ on: FEB 25 2022

Sampled By: T. Webb

Evacuated: FEB 28 2022 Recertified: _____

Starting Vacuum: -27.2 "Hg

End Vacuum: KG
-4 "Hg/psig

(Use within: 3 months from evacuation or recertification date)
Laboratory Contact Number: 780-632-8403

Sample ID: 22040158-001 Priority: Normal



Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 795



A SUBSIDIARY OF ALBI

Sample ID 22050019-001

Priority: Normal

FORM

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

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



Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test #: 796

Bill Information

Contact: Robbi Gooding
Phone: 780-663-3828
Email: Gooding.Robbi@cleanharbours.com
Project ID: Test 796
PO #: 0000224494

Turnaround Time

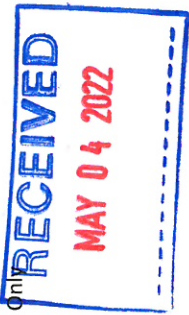
X Normal (10 business days)

Rush

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

Special Instructions/Comments

Date Received - Lab Use Only



Jup

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: 796	Canister	32263	29/04/22	00:00	VOC PAMS & TNMOC
2	PM10 Test Number: 796	PM10 filter	C9456945	30/04/22	00:00	FLT Particulate Weight

[Signature]
(Signature)

Laboratory Personnel: _____

(Signature)


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

Sample ID 22050019-001 Priority: Normal



Customer ID: Clean Harbours

Cust Smp ID: VOCs and TNMOC Test #: 796

 <p>Canister ID: <u>32263</u></p> <p>This cleaned canister meets or exceeds TO-15 Method Specifications</p> <p>Proofed by: _____ on: <u>FEB 08 2022</u></p> <p>Evacuated: <u>FEB 10 2022</u> Recertified: <u>MAR 08 2022</u></p> <p>(Use within: 3 months from evacuation or recertification date)</p> <p>Laboratory Contact Number: 780-632-9403</p>	<p>Sample ID: <u>Test 796</u></p> <p>Sampled By: <u>T. Webb</u></p> <p>Starting Vacuum: <u>-27</u> "Hg</p> <p>End Vacuum: <u>-3</u> "Hg/psig</p>
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