MONTANA RESOURCES LLP

DATA REPORT FOR TSP AND PM_{10} MONITORING STATION AT GREELEY SCHOOL IN BUTTE, MONTANA

QUARTER 2, 2024

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CERTIFICATION OF DATA INTEGRITY

Bison Engineering, Inc. certifies the data in this report is an accurate summary of the air quality and meteorological conditions measured at the Greeley School ambient monitoring site. Every reasonable effort was made to obtain accurate and representative data and to comply with the procedures set forth in the project-specific *Quality Assurance Project Plan (QAPP)*, *State of Montana Ambient Air Monitoring Program Quality Assurance Project Plan (April 2013)*, and the Environmental Protection Agency's *Volume II: Ambient Air Quality Program (January 2017) and Volume IV: Meteorological Measurements.*

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1.0 INTRODUCTION

Particulate monitoring has been conducted in the Greeley School area for many years, since the days of the Anaconda Company operation during the 1970s. Montana Department of Environmental Quality (MDEQ) and Butte-Silver Bow (BSB) County are currently performing the following monitoring:

- Continuous monitoring for PM_{10} using a Met One Model 1020 Beta Attenuation Monitor (BAM-1020).

- Continuous monitoring for $PM_{2.5}$ using a second Met One BAM-1020.

- Episodic monitoring for $PM_{2.5}$ using a BGI Model PQ-200 sampler. This sampler collects particulate matter on a filter over a 24-hour period, which is subsequently analyzed gravimetrically to determine the average airborne $PM_{2.5}$ concentration during the sampling period. The filter is then analyzed by an EPA laboratory for trace elements and mineralized compounds. This episodic sampling is performed every six days, concurrent with EPA's national one-in-six-day sampling schedule.

- The Greeley School site includes meteorological instruments that measure wind speed, wind direction and temperature.

MDEQ/BSB's monitoring provides continuous, real-time hourly $PM_{2.5}$ and PM_{10} concentrations, as well as $PM_{2.5}$ chemical composition data. In March 2019 and at Montana Resources' (MR) request, Bison Engineering Inc. (Bison) installed additional collocated monitoring equipment at the Greeley School:

- Total Suspended Particulate Sampler: A Met One E-Sampler that continuously measures hourly total suspended particulate (TSP) concentrations using a nephelometric technique that relates light scattering to ambient particulate concentration. Additionally, the sampler includes a filter that is analyzed for total particulate mass and trace elements. Prior to this study, no ongoing TSP monitoring was being performed,

- PM_{10} Particulate Sampler: A BGI Model PQ-200 sampler that collects 24-hour inhalable particulate (PM_{10}) samples on a filter, concurrent with the EPA one-in-six-day sampling schedule. The filter is analyzed for particulate mass and for selected trace elements. The MDEQ BAM-1020 that is used for PM_{10} hourly monitoring does not produce a filter suitable for chemical analysis.

This report presents and analyzes the data collected during the second quarter of 2024. In addition, a description of the monitoring system operations is presented, together with summaries of quality assurance activities including calibrations and performance audits. Tabular summaries of data completeness and periods of missing and/or invalid data also are presented.

Figure 1: Greeley School / Montana Resources LLP Vicinity

2.0 MONITORING SYSTEM OPERATIONS

At MR's request, Bison currently operates two particulate monitors at the Greeley School site:[1]

- PM_{10} sampling is accomplished with a BGI PQ-2000 sampler using filters that collect particulate matter for a 24-hour period based on the EPA national one-in-six-day schedule. Those filters are analyzed gravimetrically, and for selected trace elements. The 24-hour PM_{10} averages from the filters also will be compared against concurrent hourly data from the MDEQ/BSB BAM-1020 monitor, to provide a check on data comparability.

- TSP measurements are accomplished with a Met One AC-powered E-Sampler. It includes an external relative humidity sensor, as well as ambient temperature and pressure sensors housed within the sampler. The TSP sampler is not an EPA Reference or Equivalent Method[2] sampler, and this monitoring does not attempt to determine compliance with the historic TSP standard that was superseded by a PM_{10} standard in 1987. However, the E-Sampler provides hourly estimated TSP measurements that may be compared with on-site wind data to indicate primary TSP source areas. Additionally, it includes a particulate filter suitable for gravimetric and chemical analysis. Because the E-Sampler operates at a flowrate of only 2.0 liters per minute, sampling filters were exposed for periods ranging from 5-8 days so that sufficient particulate mass was collected for chemical analysis. Additionally, the E-Sampler includes a cellular modem to enable remote data downloading. Bison downloads and reviews hourly data collected by the E-Sampler at least once per week.

In addition to the monitoring described above, MDEQ/BSB operates a meteorological station at the Greeley site. That information is also summarized in this report. This meteorological data may prove useful for interpretation of the particulate data. More specifically:

- Wind speed and wind direction data collected by MDEQ/BSB at the Greeley School site may, from time to time, be compared to hourly TSP readings to aid in the identification of TSP (which includes the smaller PM_{10} and $PM_{2.5}$ fractions) source areas. Additionally, the ambient temperature data collected by MDEQ/BSB may also be used for data interpretation and analysis. In particular, the temperature data is used to identify relative humidity thresholds that indicate the presence of fog.

The MR samplers are visited approximately every five to eight days by BSB personnel. They remove the exposed particulate filters from both samplers and install pre-weighed clean filters for the next sampling episode. The primary operational difference between the two samplers is that the E-Sampler (TSP) filter is exposed continuously from the time of

[1] In July 2023 additional monitoring was initiated at two new locations in the Greeley area. Those monitoring results are being reported separately.
[2] Reference and Equivalent Methods are defined in 40 CFR 50.1.

installation until the time of removal, while the BGI PM_{10} sampler filter is exposed for only a single 24-hour episode. The difference in filter exposure periods is necessary because the BGI unit operates at approximately 16.7 liters per minute (lpm) while the E-Sampler operates at 2.0 lpm. This operating scheme results in comparable air sample volumes between the two instruments: approximately 24 cubic meters (m^3) for the BGI sampler versus roughly 14 m^3 to 22 m^3 for the E-Sampler (based on five to eight days between filter exchanges during the second quarter). After retrieval, BSB mails the exposed filters to Bison's Billings office for gravimetric analysis. Following particulate mass determination, Bison submits the weighed filters to Energy Laboratories, Inc. (ELI) in Billings for chemical analysis.

Once per month, Bison conducts calibration checks on both samplers; results of the calibrations are presented in Section 6.0. Once in each calendar quarter, Bison conducts a performance audit of both samplers. The audits are performed by a different person than the monthly calibration checks, using separate NIST-traceable flow standards. The audit performed in June 2024 is documented in this report.

Appendix A presents hourly data for all relevant monitoring parameters, including:

- Hourly TSP data collected by Bison Engineering;
- Hourly relative humidity data collected by Bison Engineering;[3]
- Hourly temperature and wind data collected by BSB/MDEQ; these data are integral to the reporting and analysis of the hourly TSP data being collected by Bison.

The hourly PM_{10} and $PM_{2.5}$ and meteorological data collected by BSB/MDEQ were provided to Bison by MDEQ.

[3] The E-Sampler also collects hourly values of temperature and barometric pressure, but those values are typically not reported herein. The barometric pressure data are not relevant to the analyses in this report, and the ambient temperature data collected by the MDEQ/BSB monitor are generally superior to those collected by the E-Sampler. However, temperature data from the E-Sampler are reported during periods of missing or invalid MDEQ temperature data.

3.0 PM_{10} SAMPLING DATA

The National Ambient Air Quality Standards (NAAQS) for PM_{10} were first promulgated in 1987 and have been modified several times since (1997, 2000 and 2006). The current form of the standard is found at 40 CFR 50.6. The form of the standard is ambient concentration measured and reported at local temperature and pressure (LTP). Although Bison employs typical PM_{10} monitoring procedures and instrumentation, this monitoring is not being performed as a formal demonstration of compliance with the PM_{10} NAAQS; rather, the monitoring aims to provide PM_{10} samples suitable for chemical analysis. Such samples are not necessarily being collected under the existing monitoring program.

Table 1 briefly summarizes the PM_{10} data collected during the second quarter of 2024. For comparison it also shows concurrent 24-hour PM_{10} and $PM_{2.5}$ averages calculated from the hourly values reported by the MDEQ/BSB BAM-1020 monitor. These results show reasonable consistency between the two PM_{10} measurement methods, with three notable exceptions:

- On April 12, the BGI sampler measured a PM_{10} concentration of 19.1 $\mu g/m^3$ while the BAM-1020 reported 29.5 $\mu g/m^3$, giving a relative percent difference (RPD) of 43%. The $PM_{2.5}$ average for that date was 5.2 $\mu g/m^3$. On average, PM_{10} concentrations at the Greeley School have been roughly three times the $PM_{2.5}$ concentrations.

- On May 6, the BGI sampler measured a PM_{10} concentration of 7.8 $\mu g/m^3$ while the BAM-1020 reported 16.8 $\mu g/m^3$, giving a relative percent difference (RPD) of 73%. The $PM_{2.5}$ average for that date was only 1.6 $\mu g/m^3$. Thus, the BGI PM_{10} concentration was approximately five times the $PM_{2.5}$ concentration while the BAM-1020 PM_{10} concentration was ten times greater.

- On May 18, the BGI sampler measured a PM_{10} concentration of 4.8 $\mu g/m^3$ while the BAM-1020 reported -3.5 $\mu g/m^3$. No meaningful RPD could be calculated due to the negative value. The $PM_{2.5}$ average for that date was 2.3 $\mu g/m^3$. These results indicate the BAM-1020 PM_{10} sampler readings were affected by negative zero drift.

Although not the focus of this study, these results show that the maximum 24-hour PM_{10} concentrations (20 $\mu g/m^3$ for the BGI sampler on April 24 and 30 $\mu g/m^3$ for the BAM-1020 monitor on April 12)[4] were well below the 24-hour standard of 150 $\mu g/m^3$.[5] The quarterly PM_{10} averages from both samplers (10 $\mu g/m^3$ and 13 $\mu g/m^3$) were well below the Montana Annual PM_{10} standard of 50 $\mu g/m^3$.[6]

[4] The BAM-1020 monitor also reported a value of 45 $\mu g/m^3$ on January 13. The BGI sampler failed to run due to extreme cold.
[5] 40 CFR 50.6.
[6] The NAAQS annual PM_{10} standard was repealed October 17, 2006. Montana, however, has retained an annual PM_{10} standard of 50 $\mu g/m^3$. *(ARM17.8.223)*

Data used to calculate average PM_{10} concentrations from gravimetric analysis are presented in Appendix B. Chemical analysis results for Bison's PM_{10} filters are presented in Section 5.0 of this report.

Table 1: Summary of PM_{10} Monitoring Data for Quarter 2, 2024

Sample Collection Date (2024)	BGI PM10[1] (µg/m³)	BAM-1020[1] PM10 (µg/m³)	Arithmetic Difference (µg/m³)	Relative Difference (%)		BAM-1020[1] PM2.5 (µg/m³)
Apr 06	5.7	4.3	1.4	28		3.6
Apr 12	19.1	29.5	-10.4	43		5.2
Apr 18	12.3	10.7	1.6	14		3.5
Apr 24	20.1	26.0	-5.9	26		7.5
Apr 30	4.8	-3.5	8.3	N/A		2.3
May 06	7.8	16.8	-9.0	73		1.6
May 12	11.6	11.6	0.0	0		4.5
May 18	7.8	11.5	-3.7	38		3.4
May 24	8.0	8.6	-0.6	7		2.9
May 30	6.2	11.8	-5.6	62		2.3
Jun 05	11.9	14.4	-2.5	19		2.6
Jun 11	11.4	14.3	-2.9	23		4.0
Jun 17	2.8	4.3	-1.5	42		2.4
Jun 23	18.2	22.8	-4.6	22		6.4
Jun 29	8.9	10.9	-2.0	20		4.2
Average	**10.4**	**12.9**	**-2.5**	**21[2]**		**3.8**

[1]All values at local temperature and pressure (LTP).
[2]Denotes relative percent difference of the quarterly averages.

4.0 TSP SAMPLING DATA

Hourly TSP data were collected by the Bison E-Sampler beginning on March 1, 2019, at 1500 MST. Data were also collected continuously throughout the second quarter of 2024.

As noted previously, the E-Sampler does not make a direct TSP measurement. It measures the visual light scattering (90^{o} to the light beam) of the sampled air, and then calculates hourly TSP averages based on a user-entered calibration multiplier. The appropriate multiplier varies by location depending on the nature of the airborne particulate and can also vary seasonally. For this project, the multiplier is determined approximately once per week using the gravimetrically obtained data from the TSP filter (used for metals analysis) as a means of calibration. The sample filter used during monitoring is analyzed gravimetrically to determine an *empirical* correction factor; those results then are used to appropriately calibrate (correct) all collected TSP data prior to reporting.

As noted previously, the purpose of this monitoring is not to obtain rigorous TSP measurements to ascertain compliance with published (or historical) standards. While the E-Sampler is not a Reference Method monitor, it provides unique dual capabilities to satisfy important objectives of this project:

- Obtain hourly TSP values that can be compared to other particulate data (PM_{10} and $PM_{2.5}$). It may also be used to investigate diurnal patterns along with specific episodic conditions. The hourly data may also prove useful in source contribution investigations by comparing the results with on-site wind speed and direction data to identify potential sources of airborne particulate, and

- Collect TSP material on filters that may be analyzed gravimetrically, and for selected trace elements. The material collected on the TSP filters includes all airborne particle sizes, in contrast to the PM_{10} sampler filters which exclude all material of greater than 10-micron diameter.

One limitation of this nephelometric method is that false high TSP readings can occur during periods of fog. For this reason, all hourly data collected during periods with an ambient relative humidity above 90 percent of the possible value[7] have been excluded from the reported data. A total of 66 hours of E-Sampler data were excluded from analysis during the second quarter for that reason.

[7] The maximum possible reading from an ambient relative humidity sensor varies with temperature. At temperatures of 0°C or greater it is 100 percent. At subfreezing temperatures, it decreases by 0.8 percent relative humidity for every 1°C drop in temperature. For example, at a temperature of -20°C the maximum possible reported relative humidity is 84%. At that temperature, all TSP data associated with a reported relative humidity of 75.6 % (calculated as 0.9 x 84%) or higher would be excluded from analysis due to possible fog effects.

4.1 TSP Data Summary

Monthly and quarterly average TSP data for the second quarter are summarized in Table 2 and are compared with concurrent PM_{10} and $PM_{2.5}$ data from the MDEQ/BSB monitors. Daily average concentrations for each parameter are presented in Tables 2a through 2c.[8] To facilitate direct comparability with the TSP data, hourly PM_{10} and $PM_{2.5}$ values during suspected fog periods (and whenever TSP data were missing for other reasons) have been excluded from the calculations below, although the PM_{10} and $PM_{2.5}$ monitors in use at the Greeley School are generally unaffected by fog.

Overall, the daily TSP averages from the E-Sampler TSP monitor were slightly higher than the PM_{10} values from the BAM-1020 PM_{10} monitor. This indicates that most of the airborne particulate was smaller than 10 microns. It should be noted that the TSP measurements are made using a nephelometric technique while the hourly PM_{10} measurements are made using beta attenuation. The monthly average fraction of $PM_{2.5}$ ranged between 20 and 25.

Average temperatures were slightly above normal in April and June, and slightly below normal in May. Precipitation was well below normal in all three months.

Table 2: TSP, PM_{10} and $PM_{2.5}$ Averages for Quarter 2, 2024

Period 2024	TSP (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
April	18	13	4.5
May	13	12	3.3
June	17	16	3.7
Quarter 2	**16**	**14**	**3.8**

[8] Monthly and quarterly average values shown in Tables 2, 2a, 2b and 2c are calculated using all hourly values for time periods shown. Any apparent inconsistencies among monthly and quarterly averages reflect differences in data recovery among the three months, as shown in Section 8.0.

Table 2a: TSP, PM_{10} and $PM_{2.5}$ Daily Averages for April 2024

Date 2024	TSP (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
Apr 1	16	18	4.2
Apr 2	31	27	6.9
Apr 3	29	21	4.9
Apr 4	9	5	2.4
Apr 5	21	16	4.9
Apr 6	6	5	3.0
Apr 7	5	4	2.5
Apr 8	11	8	3.4
Apr 9	15	13	4.5
Apr 10	14	8	3.3
Apr 11	32	25	5.2
Apr 12	35	30	5.2
Apr 13	17	10	3.5
Apr 14	42	28	6.5
Apr 15	21	16	5.1
Apr 16	12	17	4.4
Apr 17	5	9	3.5
Apr 18	8	11	3.5
Apr 19	12	11	5.3
Apr 20	20	16	7.2
Apr 21	24	27	6.9
Apr 22	10	13	3.2
Apr 23	18	13	5.1
Apr 24	40	25	7.5
Apr 25	21	7	5.5
Apr 26	14	4	3.4
Apr 27	13	0	4.8
Apr 28	8	-2	3.3
Apr 29	11	2	2.9
Apr 30	6	-3	2.3
Average	**18**	**13**	**4.5**

Table 2b: TSP, PM_{10} and $PM_{2.5}$ Daily Averages for May 2024

Date 2024	TSP (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
May 1	16	26	2.8
May 2	18	19	3.5
May 3	11	9	3.9
May 4	22	13	4.0
May 5	10	6	2.3
May 6	10	17	1.6
May 7	15	19	3.1
May 8	3	5	1.8
May 9	12	7	3.0
May 10	20	12	5.5
May 11	16	13	4.0
May 12	14	12	4.5
May 13	18	17	4.8
May 14	11	9	3.4
May 15	12	11	3.6
May 16	17	14	3.4
May 17	25	40	3.7
May 18	16	11	3.4
May 19	9	6	3.0
May 20	13	6	3.6
May 21	18	14	4.6
May 22	8	3	4.3
May 23	5	7	2.9
May 24	6	8	1.9
May 25	6	6	2.3
May 26	6	9	2.3
May 27	9	9	3.1
May 28	12	15	3.4
May 29	6	5	1.4
May 30	12	12	2.3
May 31	22	16	3.5
Average	**13**	**12**	**3.3**

Table 2c: TSP, PM_{10} and $PM_{2.5}$ Daily Averages for June 2024

Date 2024	TSP (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
Jun 1	20	15	3.6
Jun 2	13	8	3.6
Jun 3	8	6	2.6
Jun 4	14	11	2.0
Jun 5	17	14	2.6
Jun 6	30	19	3.6
Jun 7	40	46	4.2
Jun 8	30	25	4.9
Jun 9	24	24	5.1
Jun 10	12	9	3.4
Jun 11	18	14	4.0
Jun 12	17	17	3.2
Jun 13	18	18	4.8
Jun 14	17	21	4.4
Jun 15	11	24	3.5
Jun 16	6	8	2.9
Jun 17	2	4	2.1
Jun 18	5	7	2.4
Jun 19	8	10	2.5
Jun 20	15	18	3.0
Jun 21	19	18	4.3
Jun 22	24	18	5.7
Jun 23	28	23	6.4
Jun 24	21	18	4.3
Jun 25	18	18	3.5
Jun 26	19	21	4.7
Jun 27	10	11	2.4
Jun 28	5	6	2.2
Jun 29	12	11	4.2
Jun 30	12	15	3.8
Average	**17**	**16**	**3.7**

It is also instructive to examine variations in TSP concentration with wind speed and direction:

- Figure 2 presents a wind rose for all hours in the second quarter.

- Figure 3 presents a wind rose for only those periods when the reported hourly TSP concentration was above 25 μg/m^3; this represents the upper 15 percent of valid TSP values.

- Figure 4 presents a wind rose for only those periods when the hourly TSP concentration was below 8 μg/m^3; this represents the lower 31 percent of valid TSP values.

- Appendix C presents the corresponding tables for these wind roses, which show exact numerical frequencies and averages. The discussions below rely on data from those tables.

Figure 2 shows a strong emphasis for northwesterly winds, with roughly 60 percent of all winds blowing from that quadrant. Easterly winds were again less common than in many previous quarters. The average wind speed was 1.8 m/s (4.0 mph).

Figure 3 shows a wind rose for high[9] (>25 μg/m^3) TSP concentrations. Wind directions during these periods showed a stronger emphasis for winds from the north-northwest through north-northeast, but the overall distribution was not greatly different from that shown in Figure 2. Wind speeds were noticeably lower than for the quarter overall, averaging 1.3 m/s (2.9 mph).

Figure 4 shows a wind rose for low (<8 μg/m^3) TSP concentrations. Wind directions during those periods were very similar to those for the quarter overall, with a strong emphasis for winds from the northwest quadrant. Wind speeds during low-TSP periods were slightly higher than for the quarter overall, averaging 2.0 m/s (4.5 mph).

4.2 TSP vs PM_{10}

A comparison was made between the gravimetrically-determined TSP data and the concurrent hourly data for PM_{10}. Unlike the data presented in Section 4.1, the TSP gravimetric data was collected over periods typically ranging from 5–8 days. The reason for the long sampling period was explained in Section 2.0 and relates to the volumetric collection needs for a valid mass sample. For interest, the gravimetric TSP sample results were compared against the hourly PM_{10} data obtained from beta attenuation over concurrent periods. Table 3 provides this comparison.

The table shows that overall, the gravimetrically determined TSP concentrations from the

[9] The descriptor "high" is used only in a relative sense, as all the TSP data presented in this analysis indicate concentrations far below any historical standards.

E-Sampler were slightly higher than the concurrent PM_{10} concentrations from the BAM-1020 monitor. This comparison indicates that most (~80 percent) of the airborne particulate was smaller than 10 microns; this is consistent with the analysis presented in Section 4.1.

Table 3: Summary: Gravimetric TSP vs Hourly PM_{10} for Quarter 2, 2024

Sampling Period (2024)	Average Gravimetric TSP ($\mu g/m^3$)	Average BAM-1020 PM_{10} ($\mu g/m^3$)
03/26-04/02	14.1	12.3
04/02-04/10	14.7	10.2
04/10-04/15	29.1	20.8
04/15-04/23	13.0	14.9
04/23-04/29	18.9	6.9
04/29-05/01	7.8	-1.4
05/01-05/10	13.9	13.5
05/10-05/14	14.8	12.7
05/14-05/21	15.4	15.1
05/21-05/29	7.7	8.1
05/29-06/03	15.4	11.5
06/03-06/07	21.5	14.6
06/07-06/12	22.4	22.5
06/12-06/20	10.8	14.1
06/20-06/24	22.3	18.7
Average	**16.1**	**13.0**

Figure 2. Quarterly Wind Rose, Greeley School (All Hours)

Second Quarter 2024 (direction wind was from)

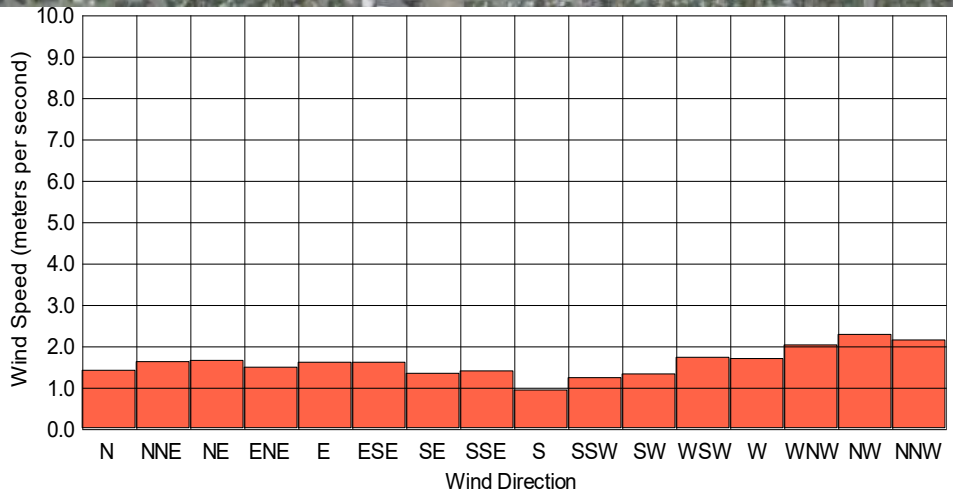


Figure 3. Quarterly Wind Rose, Greeley School (TSP >25 µg/m³)

Second Quarter 2024 (direction wind was from)

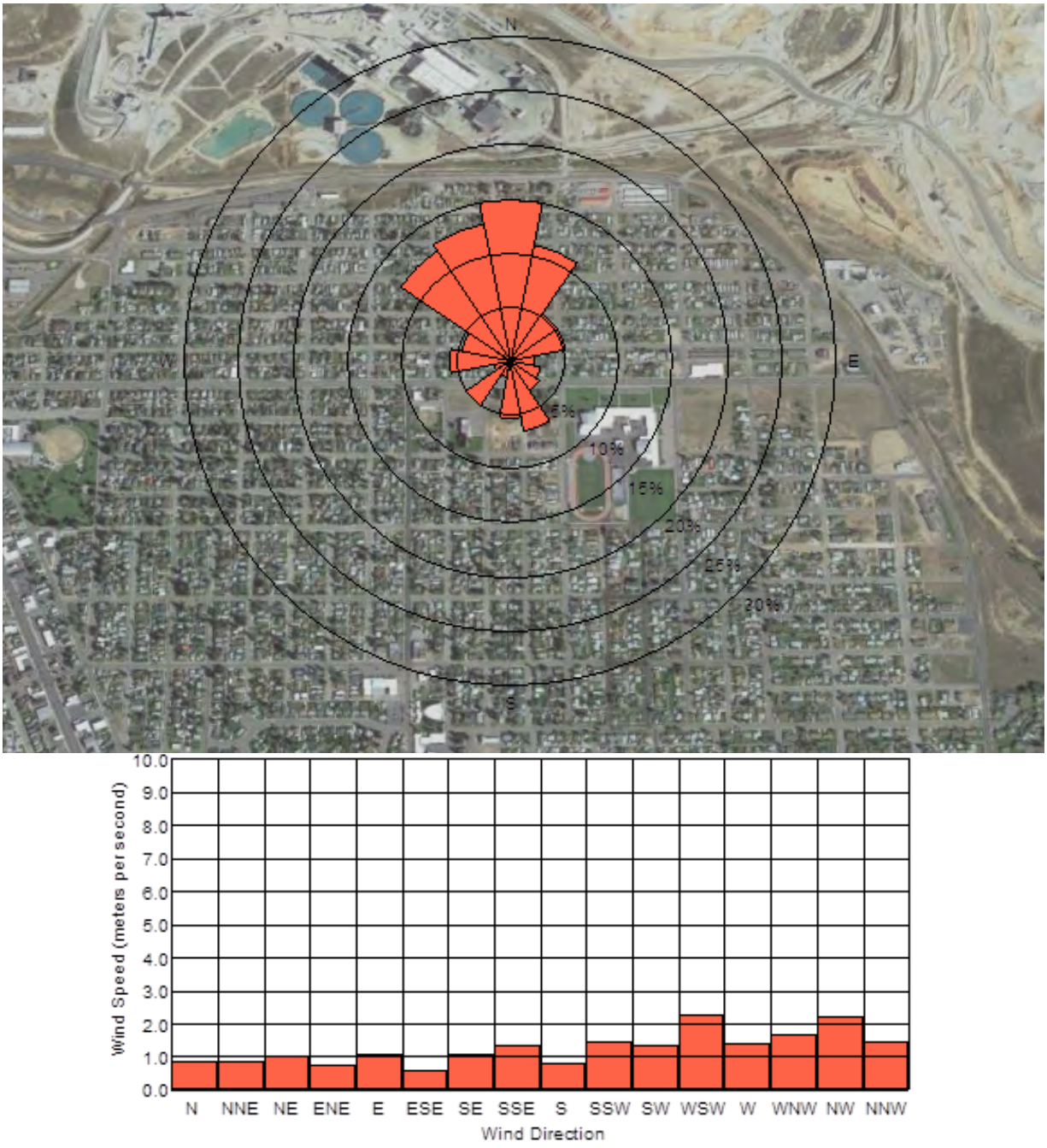
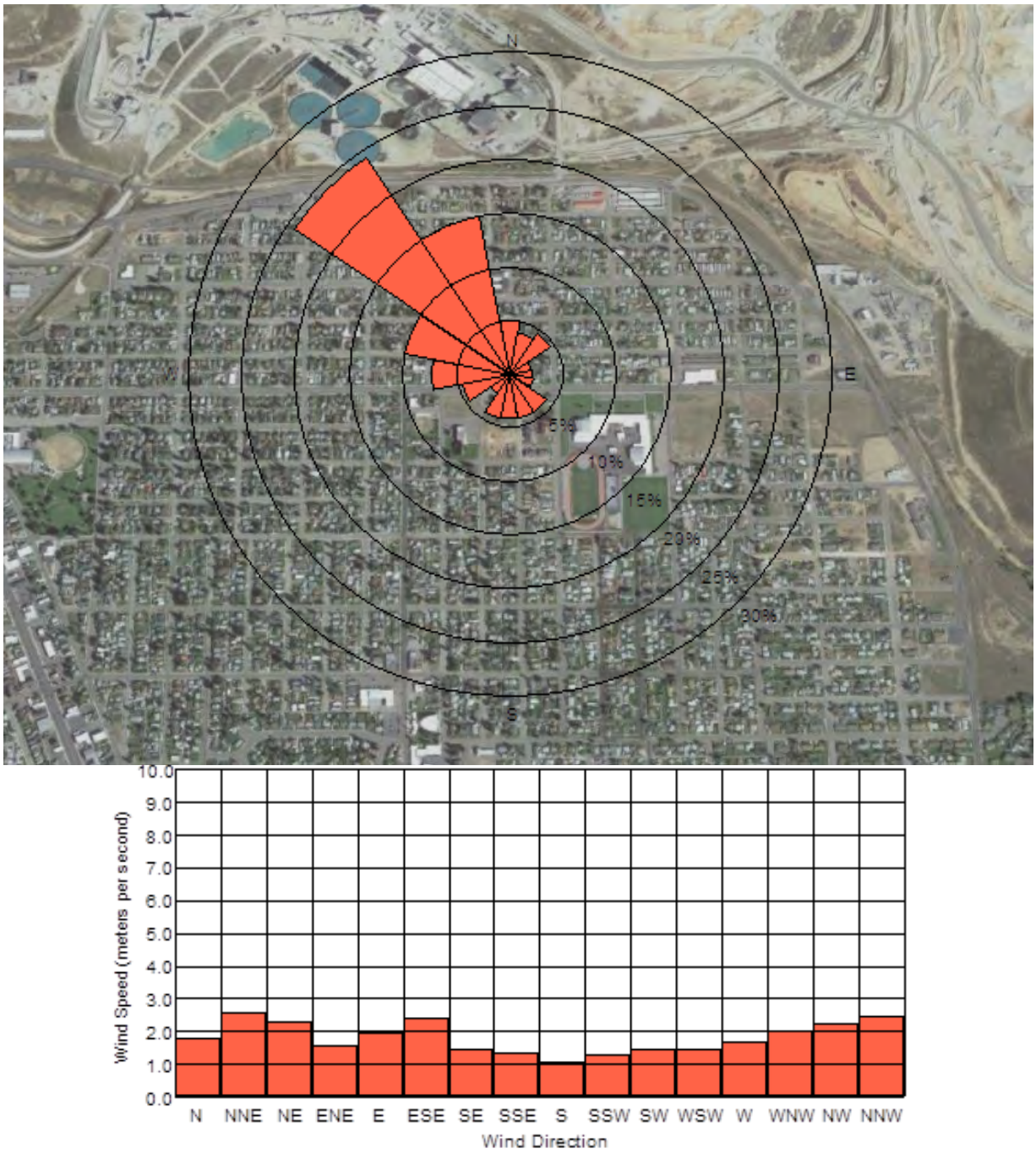


Figure 4. Quarterly Wind Rose, Greeley School (TSP <8 µg/m³)

Second Quarter 2024 (direction wind was from)



5.0 CHEMICAL ANALYSIS DATA

Following gravimetric analysis, the particulate samples were submitted to Energy Laboratories, Inc. (ELI) in Billings, Montana, for elemental analysis including arsenic, cadmium, copper, lead, manganese, molybdenum and zinc. This analyte list is subject to modification as results from this monitoring are obtained, and as other information becomes available.

All samples were digested and then analyzed by ICP-MS using EPA Method E200.8. Laboratory results are presented in Appendix D and are reported in units of micrograms (µg) per filter. Fifteen TSP samples and fifteen PM_{10} samples collected during the second quarter were analyzed for trace elements, as well as four Field Blanks and five filter lot blanks (Lab Blanks). All samples were successfully collected in the normal manner.

Tables 4a and 4b summarize the total particulate mass and ELI analytical results for samples collected during the second quarter. Detectable results were usually obtained for copper, molybdenum and zinc, while no detectable results were obtained for arsenic or cadmium during the second quarter. Table 4c shows the Field Blank and Lab Blank results associated with the second quarter samples. The bottom row of Table 4c shows the laboratory's range of Method Blank (MB) Method Detection Limit (MDL) during the quarter, which represents the minimum detectable amount of each trace element per filter. Field Blank, Lab (filter) Blank and MB concentrations for the second quarter were non-detectable, with the following exceptions:

- Copper, lead and zinc were (all) detected in the Lab blank for analysis batch B24081674. The zinc result of 2.3 µg/filter was actually higher in the Lab blank than in any of the field samples in that same analysis batch. No obvious explanation could be found for this behavior; the net particulate mass for the Lab Blank filter (0.005 mg, or 5 µg) was typical for a Lab Blank. The Field Blank results for this batch were non-detectable for all analytes. Finally, there are no indications from the results that the Lab Blank filter somehow got switched with a sample filter prior to analysis. The filter sample results for this batch were all within normal ranges and are reported. herein.[10]

- A low level of manganese (just above the laboratory MDL) was detected in the Lab blank for analysis batch B24061641.

Tables 5a and 5b show the calculated airborne concentration of each trace element over the indicated sampling periods. To facilitate data interpretation, the number of leading zeroes in the results has been minimized by expressing results in units of ***nanograms*** (ng) per cubic meter rather than micrograms.

- All trace element concentrations in the individual TSP samples were well below the applicable Guideline values. The closest approach to a Guideline was for manganese

[10] Note that only two of the field samples for this batch were collected in the second quarter of 2024; six samples were collected in the third quarter and will be presented in the next report.

in the sample collected from June 20 to June 24, with a concentration of 24 ng/m^3, or 48% of the lifetime exposure Guideline value of 50 ng/m^3. All quarterly averages were far below the applicable Guideline values.

- All trace element concentrations in the individual PM_{10} samples were also below the applicable Guideline values. The closest approach to a Guideline was for manganese in the sample collected on June 23, with a concentration of 14 ng/m^3, or 28% of the lifetime exposure Guideline value of 50 ng/m^3. All quarterly averages were far below the applicable Guideline values.

Table 6 shows the sources of the "Guideline" values used for these analyses, and their derivations.[11] Additionally, Table 6 shows the approximate airborne concentration corresponding to each MDL range listed in Table 4c. The detectable airborne concentrations are different for TSP and PM_{10} due to differences in typical sample volumes. A detailed table showing commonly accepted values from regulatory agencies and reputable private organizations is provided in Appendix E.

[11] The guideline values were updated (starting with the 4th quarter report 2020) to be consistent with those from the Montana Department of Public Health and Human Services (MDPHHS). Guidelines for copper and molybdenum are lower than those used in previous quarterly reports. Although MDPHHS suggested a higher guideline for manganese, the lower previously reported value was retained. Guidelines for arsenic, cadmium, lead and zinc are unchanged.

Table 4a: Summary of Analytical Results – TSP

DATE	PART MASS (µg)	As (µg)	Cd (µg)	Cu (µg)	Mn (µg)	Mo (µg)	Pb (µg)	Zn (µg)
04/02-04/10	315	ND	ND	0.66	ND	ND	ND	ND
04/10-04/15	420	ND	ND	0.85	ND	0.052	0.063	ND
04/15-04/23	286	ND	ND	1.3	0.40	0.11	0.089	0.66
04/23-04/29	312	ND	ND	1.0	0.26	0.079	0.054	0.48
04/29-05/01	43	ND	ND	ND	ND	0.0097	ND	ND
05/01-05/10	338	ND	ND	0.79	0.24	0.049	0.073	0.54
05/10-05/14	169	ND	ND	0.51	ND	0.059	ND	ND
05/14-05/21	296	ND	ND	0.74	0.19	0.029	0.045	0.41
05/21-05/29	168	ND	ND	0.40	ND	0.044	ND	0.68
05/29-06/03	213	ND	ND	0.40	ND	0.22	ND	0.31
06/03-06/07	236	ND	ND	0.40	ND	0.10	0.056	1.9
06/07-06/12	307	ND	ND	0.76	0.25	0.057	0.070	0.46
06/12-06/20	238	ND	ND	0.59	0.19	0.078	ND	0.35
06/20-06/24	245	ND	ND	0.63	0.26	0.45	0.056	0.31
06/24-07/02	286	ND	ND	0.83	0.20	0.045	0.044	0.42

All values expressed as micrograms per filter. ND denotes not detected.

Table 4b: Summary of Analytical Results – PM_{10}

DATE	PART MASS (µg)	As (µg)	Cd (µg)	Cu (µg)	Mn (µg)	Mo (µg)	Pb (µg)	Zn (µg)
04/06	137	ND	ND	0.44	ND	ND	ND	ND
04/12	460	ND	ND	0.69	ND	ND	0.043	ND
04/18	296	ND	ND	0.48	0.23	0.028	ND	0.33
04/24	484	ND	ND	1.9	0.30	0.040	0.10	1.3
04/30	115	ND	ND	0.44	ND	0.053	ND	0.38
05/06	187	ND	ND	0.40	ND	0.020	0.067	0.44
05/12	279	ND	ND	1.0	ND	0.49	0.065	0.52
05/18	187	ND	ND	0.46	ND	0.053	ND	0.42
05/24	193	ND	ND	0.55	ND	0.14	0.050	0.89
05/30	150	ND	ND	0.49	ND	0.040	ND	ND
06/05	287	ND	ND	0.55	0.20	0.033	0.043	0.44
06/11	275	ND	ND	0.88	0.25	0.16	0.052	0.32
06/17	68	ND	ND	ND	ND	0.015	ND	ND
06/23	437	ND	ND	0.63	0.33	0.078	0.073	0.52
06/29	213	ND	ND	1.6	0.20	0.090	0.044	0.69

All values expressed as micrograms per filter. ND denotes not detected.

Table 4c: Summary of Analytical Results – Blanks

DATE	PART MASS (µg)	As (µg)	Cd (µg)	Cu (µg)	Mn (µg)	Mo (µg)	Pb (µg)	Zn (µg)
05/08-LB	4	ND	ND	ND	ND	ND	ND	ND
06/27-LB	1	ND	ND	ND	ND	ND	ND	ND
05/10-FFB	-4	ND	ND	ND	ND	ND	ND	ND
06/27-LB	-3	ND	ND	ND	ND	0.0073	ND	ND
05/30-FFB	1	ND	ND	ND	ND	ND	ND	ND
06/24-FFB	20	ND	ND	ND	ND	ND	ND	ND
08/26-LB	3	ND	ND	ND	ND	ND	ND	ND
08/26-LB	5	ND	ND	0.73	ND	ND	0.12	2.3
07/22-FFB	16	ND	ND	ND	ND	ND	ND	ND
Lab Method Blank MDL		0.06	0.004-0.006	0.2	0.2	0.005-0.006	0.04	0.3

All values expressed as micrograms per filter. ND denotes not detected.
LB denotes laboratory filter blank. FFB denotes field filter blank.

Table 5a: Summary of Airborne Trace Element Concentrations – TSP

DATE	Sample Volume (m^3)	As (ng/m^3)	Cd (ng/m^3)	Cu (ng/m^3)	Mn (ng/m^3)	Mo (ng/m^3)	Pb (ng/m^3)	Zn (ng/m^3)
04/02-04/10	21.39	ND	ND	31	ND	ND	ND	ND
04/10-04/15	14.41	ND	ND	59	ND	3.6	4.4	ND
04/15-04/23	21.96	ND	ND	59	18	5.0	4.1	30
04/23-04/29	16.47	ND	ND	61	16	4.8	3.3	29
04/29-05/01	5.49	ND	ND	ND	ND	1.8	ND	ND
05/01-05/10	24.25	ND	ND	33	9.9	2.0	3.0	22
05/10-05/14	11.44	ND	ND	45	ND	5.2	ND	ND
05/14-05/21	19.22	ND	ND	39	9.9	1.5	2.3	21
05/21-05/29	21.85	ND	ND	18	ND	2.0	ND	31
05/29-06/03	13.84	ND	ND	29	ND	16	ND	22
06/03-06/07	10.98	ND	ND	36	ND	9.1	5.1	173
06/07-06/12	13.73	ND	ND	55	18	4.2	5.1	34
06/12-06/20	21.96	ND	ND	27	8.7	3.6	ND	16
06/20-06/24	10.98	ND	ND	57	24	41	5.1	28
06/24-07/02	21.62	ND	ND	38	9.3	2.1	2.0	19
Average (ng/m^3) *		1.8	0.15	40	10	7.1	2.8	32
Guideline (ng/m^3) **		15	10	2,000	50	400	150	47,619

* Rather than treat non detectable (ND) data as zero, the mean was calculated using ½ of the detectable value (Table 6) for the parameter and sample group in question.

**The guideline values, except lead (Pb), are applicable to a lifetime or chronic exposure. The lead (Pb) guideline is an ambient air quality standard applicable to a 3-month average. The quarterly average lead concentration of 2.8 ng/m^3 was 2 percent of the guideline value; non-detect lead concentrations were set at ½ of the lead detection limit for the sample group in question.

Table 5b: Summary of Airborne Trace Element Concentrations – PM_{10}

DATE	Sample Volume (m^3)	As (ng/m^3)	Cd (ng/m^3)	Cu (ng/m^3)	Mn (ng/m^3)	Mo (ng/m^3)	Pb (ng/m^3)	Zn (ng/m^3)
04/06	24.03	ND	ND	18	ND	ND	ND	ND
04/12	24.03	ND	ND	29	ND	ND	1.8	ND
04/18	24.03	ND	ND	20	9.6	1.2	ND	14
04/24	24.03	ND	ND	79	12	1.7	4.2	54
04/30	24.03	ND	ND	18	ND	2.2	ND	16
05/06	24.03	ND	ND	17	ND	0.83	2.8	18
05/12	24.03	ND	ND	42	ND	20	2.7	22
05/18	24.03	ND	ND	19	ND	2.2	ND	17
05/24	24.03	ND	ND	23	ND	5.8	2.1	37
05/30	24.02	ND	ND	20	ND	1.7	ND	ND
06/05	24.03	ND	ND	23	8.3	1.4	1.8	18
06/11	24.03	ND	ND	37	10	6.7	2.2	13
06/17	24.03	ND	ND	ND	ND	0.62	ND	ND
06/23	24.03	ND	ND	26	14	3.2	3.0	22
06/29	24.02	ND	ND	67	8.3	3.7	1.8	29
Average (ng/m^3)		1.3	0.10	29	6.6	3.4	1.8	19
Guideline (ng/m^3) *		15	10	2,000	50	400	150	47,619

* Rather than treat non detectable (ND) data as zero, the mean was calculated using ½ of the detectable value (Table 6) for the parameter and date in question.

**The guideline values, except lead (Pb), are applicable to a lifetime or chronic exposure. The lead (Pb) guideline is an ambient air quality standard applicable to a 3-month average.

Table 6: Summary of Airborne Trace Element Concentration Guidelines (ng/m³)

Analyte	Dose/ Risk[A]	Source	Description	Time Period	Detectable TSP[D]	Detectable PM_{10}[E]
Arsenic (inorganic)	15	EPA / DPHHS[G]	RfC[B]	Lifetime	3.64	2.50
Cadmium	10	ATSDR / DPHHS[G]	Non-cancer / CV[G]	Chronic	0.24-0.36	0.17-0.25
	200	IRIS	Cancer	Chronic		
Copper	2,000	DPHHS[G] / Michigan DEQ	RfC[B]	Chronic	12.1	8.33
Lead	150	EPA / ATSDR / DPHHS[G]	National Ambient Air Quality Standard [C]	3-month	2.43	1.67
Manganese	50	EPA	RfC[B]	Lifetime	12.1	8.33
Molybdenum	11,905 (=500,000/42) [F]	CAL/OSHA, ACGIH	CAL/OSHA, ACGIH	Chronic [F]	0.30-0.36	0.21-0.25
	400	DPHHS[G] / Michigan DEQ	CV	Chronic		
Zinc	47,619 (=2,000,000/42) [F]	ACGIH TLV	ACGIH TLV	Chronic [F]	18.2	12.5

[A] See Appendix E for definitions and listing of dose and risk assessment values reviewed to produce this summary table.
[B] RfC = Reference Concentration (EPA) is an estimate (with uncertainty added) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime.
[C] This standard is based on a three-month average.
[D] Based on average 6-day sampling period and total sample volume of 16.47 m³. Range reflects maximum and minimum laboratory MDLs during Q2 2024.
[E] Based on 24-hour sampling period and total sample volume of 24 m³. Range reflects maximum and minimum laboratory MDLs during Q2 2024.
[F] This value derived by dividing the OSHA/NIOSH exposure limit by 42. This was done to include a factor of 10 to account for a general population, not just healthy adults and then including another factor of 4.2 to include a year-long exposure as opposed to 8 hours per day, 5 days a week and 52 weeks per year.
[G] Reference information from letter and analysis by DPHHS (regarding Greeley School ambient data) to Butte-Silver Bow Health Department dated October 28,2020.

EPA = Environmental Protection Agency
ATSDR = Agency for Toxic Substances & Disease Registry
CV = "Comparison Value" – a term used by DPHHS (10/28/20 letter) to indicate an ATSDR (or other) guideline or reference value
DPHHS = Montana Department of Health and Human Services
RfC = Reference Concentration (see above)
RSL = EPA Regional Screening Levels (https://www.epa.gov.gov/risk/regional-screening-levels-rsls-generic-tables)
OSHA = Occupational Safety and Health Administration
ACGIH = American Congress of Governmental Industrial Hygienists
NIOSH= National Institute of Occupational Safety and Health
TLV = Threshold limit value

6.0 CALIBRATION DATA

Calibration checks of the BGI PM_{10} sampler and the Met One E-Sampler are performed in at least two months of each quarter. In the third month, an audit is performed by a different person using different calibration standards. Monthly verification checks were performed on both samplers on April 11, May 28 and June 14.[12] An additional check was performed on the BGI PM_{10} sampler on June 24 with a new calibration standard.

Table 7 summarizes the verification checks performed each month and the applicable acceptance criteria. In the event of unsatisfactory results, corrective actions are performed as specified in the rightmost column of Table 7. Note that the E-Sampler flow rate, temperature, pressure and relative humidity sensors can only be checked and adjusted at a single point.

Table 8 summarizes the results of the calibration checks performed during the second quarter, as well as any corrective actions. Detailed verification check results are shown in Appendix F. Appendix G presents certifications for flow calibration standards used during the quarter.

Table 7: Summary of Montana Resources – Greeley School Site Calibration/ Audit Activities and Acceptance Criteria

Activity	**Acceptance Criteria / Actions**	
PM_{10} Sampler Calibration Checks		
Flow Verification	±4%	Multipoint recalibration if flow error exceeds ±2%
Leak Check	Investigate / correct if vacuum drop exceeds 4 cm of water in 2 minutes	
Temperature Verification	±2.0°C	Multipoint recalibration if error exceeds ±2.0°C
Pressure	±10 mmHg	Adjust calibration if error exceeds ±10 mmHg
E-Sampler Calibration Checks		
Flow Verification	±5%	Adjust calibration if error exceeds ±4%
Leak Check	≤0.3 LPM	Investigate / correct leak problem
Temperature Verification	±2.0°C	Adjust calibration if error exceeds ±2.0°C
Pressure	±10 mmHg	Adjust calibration if error exceeds ±10 mmHg
Relative Humidity	≤7% RH	Adjust calibration if error exceeds ±7% RH
Other		
PM_{10} Inlet Head	Disassemble and clean	
TSP Inlet Head	Disassemble and clean	

[12] The calibration checks performed on July 18, 2024, also are shown to demonstrate data validity through the end of the quarter.

Table 8: Summary of Quarter 2, 2024 Calibration Verification Results

Date	Calibration Check	Results	Limits	Actions
04/11/2024	BGI PM_{10} Flow Verification (A)	0.0%	±4%	
	BGI PM_{10} Flow Verification (B)	0.0%	±4%	
	BGI Ambient Temperature	+0.2°C	±2.0°C	
	BGI Filter Temperature	-0.3°C	±2.0°C	
	BGI Ambient Pressure	-4.0 mm Hg	±10 mmHg	
	BGI Leak Test (pressure drop)	1 cm H_2O	≤4 cm H_20	
	E-Sampler Flow Verification (A)	+2.0%	±5%	
	E-Sampler Flow Verification (B)	-2.0%	±5%	
	E-Sampler Ambient Temperature	+0.8°C	±2.0°C	
	E-Sampler Ambient Pressure	+71 Pa	±1333 Pa	
	E-Sampler Leak Test	0.0 LPM	≤0.3 LPM	
	E-Sampler Relative Humidity	+1.5% RH	±7% RH	
05/28/2024	BGI PM_{10} Flow Verification (A)	-2.5%	±4%	
	BGI PM_{10} Flow Verification (B)	+2.5%	±4%	
	BGI Ambient Temperature	-0.3°C	±2.0°C	
	BGI Filter Temperature	-0.4°C	±2.0°C	
	BGI Ambient Pressure	-4.0 mm Hg	±10 mmHg	
	BGI Leak Test (pressure drop)	1 cm H_2O	≤4 cm H_20	
	E-Sampler Flow Verification (A)	+4.2%	±5%	C
	E-Sampler Flow Verification (B)	-4.2%	±5%	C
	E-Sampler Ambient Temperature	+0.9°C	±2.0°C	
	E-Sampler Ambient Pressure	+96 Pa	±1333 Pa	
	E-Sampler Leak Test	0.0 LPM	≤0.3 LPM	
	E-Sampler Relative Humidity	-0.6% RH	±7% RH	
06/14/2024	BGI PM_{10} Flow Verification (A)	+1.1%	±4%	
	BGI PM_{10} Flow Verification (B)	-1.1%	±4%	
	BGI Ambient Temperature	+0.2°C	±2.0°C	
	BGI Filter Temperature	+0.3°C	±2.0°C	
	BGI Ambient Pressure	-4.1 mm Hg	±10 mmHg	
	BGI Leak Test (pressure drop)	1 cm H_2O	≤4 cm H_20	
	E-Sampler Flow Verification (A)	+4.2%	±5%	D
	E-Sampler Flow Verification (B)	-4.0%	±5%	D
	E-Sampler Ambient Temperature	+1.1°C	±2.0°C	
	E-Sampler Ambient Pressure	+117 Pa	±1333 Pa	
	E-Sampler Leak Test	0.0 LPM	≤0.3 LPM	
	E-Sampler Relative Humidity	-2.1% RH	±7% RH	
06/24/2024	BGI PM_{10} Flow Verification (A)	+6.5%	±4%	E
	BGI PM_{10} Flow Verification (B)	-6.1%	±4%	E
	BGI Ambient Temperature	0.0°C	±2.0°C	
	BGI Filter Temperature	+0.2°C	±2.0°C	
	BGI Ambient Pressure	-3.9 mm Hg	±10 mmHg	
	BGI Leak Test (pressure drop)	1 cm H_2O	≤4 cm H_20	

Date	Calibration Check	Results	Limits	Actions
07/18/2024	BGI PM_{10} Flow Verification (A)	+1.2%	±4%	
	BGI PM_{10} Flow Verification (B)	-1.2%	±4%	
	BGI Ambient Temperature	-0.1°C	±2.0°C	
	BGI Filter Temperature	-0.6°C	±2.0°C	
	BGI Ambient Pressure	-2.9 mm Hg	±10 mmHg	
	BGI Leak Test (pressure drop)	2 cm H_2O	≤4 cm H_20	
	E-Sampler Flow Verification (A)	+2.0%	±5%	
	E-Sampler Flow Verification (B)	-2.0%	±5%	
	E-Sampler Ambient Temperature	+0.8°C	±2.0°C	
	E-Sampler Ambient Pressure	+133 Pa	±1333 Pa	
	E-Sampler Leak Test	0.0 LPM	≤0.3 LPM	
	E-Sampler Relative Humidity	-3.1% RH	±7% RH	

Codes:
A = Difference of reported flow from reference standard flow.
B = Difference of reference standard flow from design flow (16.7 LPM for BGI, 2.0 LPM for E-Sampler).
C = Flow adjusted to 1.98 LPM.
D = Flow adjusted to 1.97 LPM.
E = Multipoint calibration performed; flow adjusted to 16.60 LPM.

7.0 QUARTERLY AUDIT/CALIBRATION RESULTS

An audit is performed once in each full calendar quarter. The checks and acceptance criteria are identical to those for monthly calibrations (see Table 7). The primary difference is that the audits are performed by a different person, using different calibration standards. Calibration adjustments then are made as necessary, based on the as-found audit results. The second quarter audit was performed on June 14, 2024. Results for the PM_{10} sampler flow rate exceeded the audit criteria; a multipoint flow calibration was performed immediately following the audit. Results for the TSP sampler were satisfactory.

Table 9: Quarter 2, 2024 Audit Results

BGI PQ200 PM10 Sampler – Performance Audit			
Date: 06/14/2024	Time: 1105-11040 MST	Sampler Serial Number: 1622 (Greeley)	
Performed By: Daniel Bitz		Observer: Steve Heck	
1) BGI Delta Cal S/N 1288 (Flow + BP) 2) Tetra Cal S/N 149645 (Temp)		Certification Date: 1) 01/03/2024 2) 12/04/2023	
Barometric Pressure Sensor Verification			
Reading (mm Hg)	Sampler (a)	Audit (b)	Difference (a - b) (must be ≤ ± 10)
Ambient Pressure	626.2	620.9	+5.3
Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Audit (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	26.3	25.9	+0.4
Filter Temperature	27.8	27.1	+0.7
Leak Check			
Vacuum Readings (cm H_2O)	Start 96	End 95	Pass ~~Fail~~
Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Audit (b)	% Difference 100*(a – b)/b (must be ≤ ± 4%)
Operating flow rate check	16.70	15.90	+5.0%
Reading (liters per minute)	Audit (b)	Design Flow Rate Standard (c)	% Difference 100*(b–16.7)/16.7 (must be ≤ ± 5%)
Design flow rate calculation	15.90	16.70	-4.8 %
Comments: Performed multipoint flow calibration following audit.			

Met One E-Sampler – ~~Monthly Calibration Check~~ / Quarterly Audit			
Date: 06/142024	Time: 1120-1145 MST	Sampler Serial Number: X24429	
Performed By: Daniel Bitz		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Swift 6.0 SN C14999 (flow & BP) 2) Tetra Cal S/N 149645 (temperature)		Certification Date: 1) 07-28-2023 2) 12-04-2023	
Barometric Pressure Sensor Verification			
Reading (Pascals)	Sampler (a)	Reference Standard (b)	Difference (a - b) (limit ≤ ±1333 Pa)
Ambient Pressure	82,864 Pa	621.7 mmHg =82,887 Pa	-23 Pa
Pascals = mmHg * 133.322		Limit of ±1333 Pascals = ±10 mmHg	
Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ±2ºC)
Ambient Temperature	28.8 C	27.9 C	+0.9 C
Leak Check			
Leak Check Flow Rate	0.0 LPM	(must be <0.4 LPM)	**Pass** ~~Fail~~
Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ±5%)
Audit standard flow rate check	2.0	1.93	+3.6%
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–2.0)/2.0 (must be ≤ ±5%)
Design flow rate check	1.93	2.0	-3.5%
Relative Humidity Verification (checked with Assmann Psychrometer)			
Dry Bulb Temp. °C	N/A	Calculated RH (a)	N/A
Wet Bulb Temp. °C	N/A	Sampler RH (b)	N/A
BP Inches Hg	N/A	Difference = a – b (must be ≤7% RH)	N/A

Relative humidity checked just prior to audit. Sensor Read 17% vs known of 19.1%

8.0 DATA COMPLETENESS

The percentages of data recovery for each Greeley School monitoring parameter reported by MR during the second quarter of 2024 are given in Table 10. The quarterly data recovery goal for hourly TSP is ≥80 percent,[13] and for relative humidity is ≥90 percent. The net data recovery was 99.9 percent for TSP and 100.0 percent for relative humidity. The only TSP data loss beyond normal QA/QC activity was caused by brief power outages.

Data recovery statistics for the particulate filter samples are presented in Table 11. The quarterly data recovery goal for TSP and PM_{10} filter samples is ≥80 percent for both the gravimetric and trace element analyses. The actual data recovery was 100.0 percent for both TSP and PM_{10}, for both the gravimetric and trace element analyses.

[13] The number of possible hourly TSP values counts only hours when the ambient relatively humidity was less than 90 percent of the possible maximum. This determination is discussed in Section 4.0.

Table 10: Quarterly Data Completeness Summary – Hourly Data

Montana Resources LLP – Greeley School					
Parameter	Readings Possible[A]	Valid Readings	Percent Recovery	QA/QC Hours[B]	Net Percent Recovery
April 2024					
TSP	700	693	99.0	6	99.9
Relative Humidity	720	720	100.0	0	100.0
Total	1420	1413	99.5	6	99.9
May 2024					
TSP	713	707	99.2	6	100.0
Relative Humidity	744	744	100.0	0	100.0
Total	1457	1451	99.6	6	100.0
June 2024					
TSP	705	697	98.9	7	99.9
Relative Humidity	720	720	100.0	0	100.0
Total	1425	1417	99.4	7	99.9
Quarter 2, 2024					
TSP	2118	2097	99.0	19	99.9
Relative Humidity	2184	2184	100.0	0	100.0
Total	4302	4281	99.5	19	100.0

[A] Only hours with relative humidity <90 percent of maximum value are counted as ***possible*** TSP data hours. See discussion in Section 4.1.
[B] Includes hours affected by filter changes, which usually occur every 5 to 7 days.

Table 11: Quarterly Data Completeness Summary – Filter Analysis Data

Montana Resources LLP – Greeley School			
Parameter	Readings Possible	Valid Readings	Percent Recovery
April 2024			
TSP – Gravimetric	5	5	100.0
TSP – Trace Elements	35	35	100.0
PM_{10} – Gravimetric	5	5	100.0
PM_{10} – Trace Elements	35	35	100.0
Total	80	80	100.0
May 2024			
TSP – Gravimetric	5	5	100.0
TSP – Trace Elements	35	35	100.0
PM_{10} – Gravimetric	5	5	100.0
PM_{10} – Trace Elements	35	35	100.0
Total	80	80	100.0
June 2024			
TSP – Gravimetric	5	5	100.0
TSP – Trace Elements	35	35	100.0
PM_{10} – Gravimetric	5	5	100.0
PM_{10} – Trace Elements	35	35	100.0
Total	80	80	100.0
Quarter 2, 2024			
TSP – Gravimetric	15	15	100.0
TSP – Trace Elements	105	105	100.0
PM_{10} – Gravimetric	15	15	100.0
PM_{10} – Trace Elements	105	105	100.0
Total	240	240	100.0
Note: The TSP sample collected from Mar 26 to Apr 02, 2024, is not included in this tabulation because it was collected primarily in March, and was included in the Quarter 1, 2024 report.			

9.0 COMPARISON TO AMBIENT AIR QUALITY STANDARDS

This study is not intended to determine compliance with the NAAQS[14] or the Montana ambient air quality standards[15] (MAAQS). Nonetheless, a generalized comparison is possible. The filter-based PM_{10} data collected by MR indicate ambient PM_{10} concentrations far below the 24-hour standard of 150 μg/m³ that otherwise applies to the NAAQS and MAAQS.

Similarly, the lead concentrations analyzed from the exposed TSP filters indicate quarterly average airborne concentrations well below the 0.15 μg/m³ ambient NAAQS based on a 3-month average of the 24-hour samples. The MAAQS is 1.5 μg/m³ and is based on a 90-day rolling average of 24-hour samples. The TSP samples presented herein were typically collected over 5- to 8-day periods, at a much lower sampling rate (2.0 liters per minute) compared to the standard method (≥40 standard cubic feet per minute). Nonetheless, the results indicate quarterly average ambient lead concentrations below the MAAQS and NAAQS. Table 12 summarizes these comparisons through the second quarter of 2024.

Additionally, the analyses presented in Section 5.0 indicate that individual (per sample) airborne concentrations of the other six trace elements were each below the Guidelines presented in Table 6. The quarterly average concentrations for all COCs were well below their respective ***Lifetime*** Guideline values.

Table 12: Summary of Airborne Concentration vs. NAAQS

Analyte	Observed Concentration (μg/m³)	Averaging Period	Ambient Standard (μg/m³)	Authority
PM_{10}	20[1]	24-hour (max)	150	NAAQS & MAAQS
Pb	0.005[2] 0.003[3]	90-day	1.50	MAAQS
		3-month	0.15	NAAQS
TSP	16[4]	Annual	75[4]	NAAQS & MAAQS

[1] Denotes maximum value from BGI filter-based PM_{10} sampler. Maximum value from MDEQ BAM-1020 sampler on sixth-day runs was 30 μg/m³.

[2] This value was the maximum from the filter-based TSP sampler, collected over an 8-day sampling period.

[3] This value was the quarterly average from the filter-based TSP sampler. Non-detect results were set to ½ of the sample group detection limit when calculating the average.

[4] Historical TSP standard shown for comparison purposes is no longer in effect. NAAQS standard for TSP was based on geometric mean and MAAQS on arithmetic average. Value shown represents arithmetic average for monitoring period of Quarter 2, 2024, based on gravimetric filter analysis.

[14] 40 CFR 50 *et seq.*
[15] ARM 17.8.223

APPENDIX A: VALIDATED AMBIENT MONITORING DATA BY MONTH, SECOND QUARTER 2024

TABLE A-1: MISSING DATA CODES[1]			
Letter Code	**Mnemonic Code**	**Description**	**Number Code**
AF	Sc	Scheduled but Not Collected	9972
AH	Fl	Sample Flow Rate Out of Limits / Flow Fail Alarm	9974
AK	Lk	Filter Leak	9977
AM	Mi	Miscellaneous Void	9979
AN	ND	Machine Malfunction	9980
AO	Wx	Bad Weather[2]	9981
AQ	Co	Collection Error	9983
AV	Pw	Power Failure	9988
AZ	Au	QC Audit (internal audit)	9992
BA	Ma	Maintenance[3]	9993
BC	Ca	Multipoint Calibration	9995
BF	Pz	Zero / Span / Precision Check (used for single-point calibration checks and leak checks)	9998

[1]The list of codes in this table is not exhaustive but includes those most commonly used for this site (and includes all codes applicable to the data collected during the current quarter).

[2]For this project, denotes that hourly TSP value is considered unreliable due to ambient relative humidity exceeding 90 percent of the maximum value.

[3]Includes routine changeout of sampling filters in TSP monitor.

Montana Resources LLP
Greeley School Air Monitoring Summary
TSP - Met One E-Sampler (micrograms per cubic meter)
April 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	36	32	20	AO	AO	AO	44	25	46	25	11	7	5	3	5	4	5	5	8	8	5	9	9	22	16	46	3
2	34	52	27	27	24	42	50	40	32	47	9	10	BA	12	12	12	16	14	15	38	38	46	58	56	31	58	9
3	85	83	38	36	43	54	62	76	47	33	14	9	9	14	15	7	9	6	12	8	6	18	7	12	29	85	6
4	AO	AO	AO	AO	18	3	1	10	21	8	7	7	6	3	12	7	10	9	8	13	7	12	8	6	9	21	1
5	7	9	24	16	21	24	25	26	49	39	33	20	18	16	20	22	17	14	7	7	AO	AO	AO	AO	21	49	7
6	AO	AO	AO	AO	AO	AO	6	3	8	7	5	7	3	3	12	6	5	15	3	3	1	6	3	5	6	15	1
7	3	2	5	2	3	2	5	5	5	5	6	6	16	10	3	3	3	8	7	5	2	3	3	7	5	16	2
8	6	3	6	5	3	5	15	14	7	6	6	7	7	3	6	7	13	6	3	7	13	23	62	37	11	62	3
9	32	45	14	12	35	33	18	52	8	3	3	2	2	3	6	7	6	6	3	6	6	10	36	13	15	52	2
10	8	8	6	5	7	15	22	BA	9	10	10	6	7	7	5	9	7	9	11	64	47	29	16	7	14	64	5
11	27	9	11	19	17	39	88	77	72	46	20	22	19	BF	15	12	14	16	20	35	44	34	47	41	32	88	9
12	30	66	39	65	85	55	55	61	57	27	19	15	35	22	14	10	14	16	19	16	29	19	42	24	35	85	10
13	11	21	16	9	12	21	20	21	14	12	10	11	12	11	11	15	11	22	20	19	21	21	22	36	17	36	9
14	50	36	60	78	25	17	30	37	52	47	40	27	17	17	16	22	19	106	21	25	57	85	45	67	42	106	16
15	27	25	22	27	36	30	49	61	30	16	22	16	16	BA	12	8	14	14	12	10	13	12	11	9	21	61	8
16	11	9	12	12	14	13	23	22	13	12	9	9	8	9	12	9	9	7	11	19	14	8	6	9	12	23	6
17	7	12	6	5	4	5	11	6	4	3	4	4	4	4	7	4	3	6	5	4	2	2	4	3	5	12	2
18	4	4	6	4	6	10	30	12	13	9	3	5	3	4	3	6	6	8	7	9	9	7	9	10	8	30	3
19	10	10	9	11	10	13	11	14	10	12	11	11	9	10	9	11	8	7	9	17	23	13	9	32	12	32	7
20	32	12	13	28	24	22	32	34	23	20	21	14	11	7	7	9	9	8	7	8	23	27	32	54	20	54	7
21	90	75	26	30	22	16	30	45	41	16	10	10	18	16	13	18	17	14	12	23	7	6	13	11	24	90	6
22	6	10	11	9	17	11	32	8	9	6	6	5	4	8	6	9	9	7	9	10	10	11	15	8	10	32	4
23	9	6	11	19	12	23	32	29	27	20	9	9	7	BA	11	11	10	16	15	13	21	28	27	45	18	45	6
24	28	22	47	40	57	50	56	61	64	67	40	41	26	23	23	33	53	AV	30	32	28	27	22	48	40	67	22
25	21	21	23	21	26	30	38	32	34	28	23	18	14	17	14	15	11	15	21	17	13	12	17	14	21	38	11
26	17	20	16	12	13	17	16	14	13	17	14	16	14	14	11	10	13	12	13	15	16	17	13	11	14	20	10
27	11	10	10	11	9	7	12	AO	7	11	12	10	10	9	9	6	2	3	4	30	21	46	19	23	13	46	2
28	16	AO	AO	12	3	1	1	2	2	3	3	4	4	7	13	12	13	13	15	11	12	11	9	12	8	16	1
29	14	13	11	13	35	16	22	32	16	15	15	9	3	BA	2	1	2	7	2	4	6	8	5	5	11	35	1
30	2	3	4	4	19	11	4	3	5	3	4	5	4	6	4	5	3	4	2	9	5	7	8	12	6	19	2
Avg	23	23	18	20	21	21	28	29	25	19	13	11	11	10	10	10	11	14	11	16	17	19	20	22	18	47	6
Max	90	83	60	78	85	55	88	77	72	67	40	41	35	23	23	33	53	106	30	64	57	85	62	67	42	106	22
Min	2	2	4	2	3	1	1	2	2	3	3	2	2	3	2	1	2	3	2	3	1	2	3	3	5	12	1

Montana Resources LLP
Greeley School Air Monitoring Summary
TSP - Met One E-Sampler (micrograms per cubic meter)
May 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	5	9	2	3	10	105	17	7	2	4	5	10	6	BA	4	71	7	7	4	10	11	25	19	15	16	105	2
2	10	11	10	45	63	48	89	49	10	11	7	8	8	4	5	5	7	7	8	7	4	10	7	7	18	89	4
3	3	8	10	11	11	14	22	10	12	11	8	10	5	8	10	5	5	7	5	5	7	5	42	34	11	42	3
4	42	26	53	12	12	36	71	55	40	11	8	4	7	4	8	10	7	11	11	18	23	16	16	26	22	71	4
5	11	11	11	16	11	8	14	12	12	11	11	15	10	11	8	7	10	12	8	5	4	4	16	8	10	16	4
6	3	0	4	1	1	1	3	3	4	5	33	37	18	14	15	27	19	11	3	11	7	5	7	3	10	37	0
7	3	3	8	4	11	10	10	10	15	16	16	10	23	15	25	16	46	26	20	34	15	AO	AO	4	15	46	3
8	1	4	AO	AO	AO	AO	AO	0	1	0	1	0	1	3	3	4	1	4	1	3	4	7	4	14	3	14	0
9	5	7	5	4	3	12	7	11	19	16	10	11	12	11	12	15	8	8	11	11	11	22	20	44	12	44	3
10	96	AO	AO	AO	AO	AO	46	33	26	BA	13	13	10	10	7	9	8	7	10	12	14	15	22	13	20	96	7
11	12	15	21	25	19	17	19	25	34	26	12	9	10	6	6	8	9	10	8	14	20	19	15	17	16	34	6
12	11	15	11	10	17	10	10	21	34	11	8	8	8	10	11	9	11	12	12	18	24	21	15	18	14	34	8
13	12	10	10	13	17	20	23	35	41	37	12	7	8	12	14	14	17	19	15	20	28	18	21	18	18	41	7
14	32	22	15	13	7	8	10	6	10	10	9	7	8	BA	8	8	10	10	10	10	9	10	10	8	11	32	6
15	9	5	8	6	9	12	13	23	19	16	10	8	8	8	12	16	13	12	12	16	13	14	10	9	12	23	5
16	12	9	6	9	18	18	16	36	23	9	10	16	18	13	10	13	27	17	16	10	23	30	21	16	17	36	6
17	12	9	19	19	14	16	13	10	17	28	8	16	45	78	28	74	74	39	8	10	12	13	16	10	25	78	8
18	10	34	14	17	18	28	17	30	16	12	12	14	12	14	16	12	9	14	13	16	14	13	13	14	16	34	9
19	18	38	12	17	8	12	AO	AO	5	9	3	4	1	4	4	6	4	4	5	8	9	16	12	9	9	38	1
20	13	6	6	13	19	27	17	13	19	8	9	9	9	17	17	18	16	16	16	10	13	6	9	13	13	27	6
21	12	14	23	5	58	25	22	39	30	13	13	10	9	BA	4	4	3	5	5	8	15	20	68	8	18	68	3
22	11	6	6	6	14	11	13	17	15	10	7	12	9	4	1	3	3	3	4	5	1	AO	AO	AO	8	17	1
23	AO	AO	AO	AO	AO	AO	AO	AO	1	2	3	3	3	4	4	4	4	4	3	4	10	7	12	14	5	14	1
24	AO	AO	AO	AO	AO	AO	14	20	13	3	3	2	3	3	2	3	3	3	3	3	13	11	3	7	6	20	2
25	10	5	9	11	4	10	10	10	11	12	5	3	3	3	5	2	10	1	2	4	5	5	1	2	6	12	1
26	3	3	6	4	6	4	4	7	5	4	3	3	5	11	10	9	9	7	4	7	6	6	5	6	6	11	3
27	4	5	9	9	10	13	10	20	26	7	3	3	5	5	6	6	5	3	7	12	15	17	10	5	9	26	3
28	17	19	10	7	8	17	17	24	26	14	14	BF	6	12	10	9	6	13	9	9	9	9	10	8	12	26	6
29	9	5	3	3	1	3	3	4	3	3	2	2	BA	7	10	9	9	9	10	17	12	5	12	3	6	17	1
30	5	9	5	7	12	21	3	9	16	16	24	31	10	10	9	7	7	10	9	9	9	9	22	16	12	31	3
31	5	10	24	10	12	22	47	57	35	14	26	14	9	9	10	19	22	12	16	29	41	33	28	24	22	57	5
Avg	14	11	12	11	15	20	20	21	17	12	10	10	10	11	9	14	13	10	9	11	13	13	16	13	13	40	4
Max	96	38	53	45	63	105	89	57	41	37	33	37	45	78	28	74	74	39	20	34	41	33	68	44	25	105	9
Min	1	0	2	1	1	1	3	0	1	0	1	0	1	3	1	2	1	1	1	3	1	4	1	2	3	11	0

Montana Resources LLP
Greeley School Air Monitoring Summary
TSP - Met One E-Sampler (micrograms per cubic meter)
June 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	12	24	21	10	14	10	10	45	57	29	21	17	9	17	16	10	35	10	35	5	9	10	33	28	20	57	5
2	9	7	AV	AO	AO	AO	17	14	14	17	14	10	9	9	12	12	16	12	12	14	17	16	21	14	13	21	7
3	28	21	7	7	7	12	3	3	5	5	2	2	12	BA	4	7	7	11	11	6	4	9	7	13	8	28	2
4	13	11	7	7	13	19	24	13	20	15	9	11	15	13	15	9	19	19	7	15	20	19	13	9	14	24	7
5	7	11	15	13	17	22	11	20	9	44	15	9	9	9	13	20	15	13	22	37	20	24	15	13	17	44	7
6	11	13	9	17	17	26	54	94	96	26	28	15	11	22	24	20	17	26	22	22	17	28	44	67	30	96	9
7	20	31	33	28	46	83	33	100	44	13	17	20	22	BA	111	51	45	91	39	14	16	24	19	11	40	111	11
8	15	9	13	14	98	121	50	49	43	18	10	14	28	19	18	23	19	28	39	13	26	26	18	16	30	121	9
9	15	13	15	14	13	55	40	21	21	19	21	56	54	21	16	19	25	18	19	16	14	AO	AO	AO	24	56	13
10	9	AO	9	4	8	AO	9	6	10	10	9	10	11	10	15	15	18	18	14	14	15	19	19	15	12	19	4
11	19	15	19	18	14	15	28	53	40	21	19	18	9	10	9	9	13	11	10	18	18	16	19	15	18	53	9
12	13	16	16	20	20	24	24	19	15	10	11	11	11	BA	12	15	11	9	11	14	12	20	11	57	17	57	9
13	43	19	21	51	13	11	12	29	26	27	11	14	16	14	10	13	6	9	9	8	16	13	18	18	18	51	6
14	11	13	12	15	28	21	22	33	26	14	11	AZ	BF	12	13	9	9	10	17	30	18	18	16	12	17	33	9
15	11	12	12	9	6	7	8	10	13	14	11	12	13	11	10	24	20	24	8	7	8	5	4	4	11	24	4
16	5	4	3	4	22	8	9	4	3	3	4	4	5	2	4	4	5	8	8	10	7	9	5	6	6	22	2
17	4	3	1	1	2	AO	AO	AO	4	2	3	3	3	2	3	3	1	2	0	1	1	3	5	3	2	5	0
18	3	5	4	10	6	7	11	2	0	6	7	2	1	3	9	8	4	3	5	8	3	3	3	8	5	11	0
19	5	5	5	AO	AO	AO	7	16	20	6	6	2	5	3	5	11	16	7	8	8	6	6	4	8	8	20	2
20	8	6	6	8	10	22	59	51	27	21	15	10	5	BA	6	6	8	10	13	15	15	13	9	10	15	59	5
21	10	15	9	11	15	29	34	43	29	23	16	15	15	11	10	20	16	18	13	16	20	19	21	21	19	43	9
22	16	20	19	14	14	15	19	47	59	29	15	23	19	21	19	15	13	15	19	29	19	25	52	40	24	59	13
23	26	37	33	42	32	29	21	25	53	34	34	49	35	20	21	16	19	18	16	18	20	23	23	25	28	53	16
24	21	20	19	21	24	26	29	48	25	28	26	18	15	BA	17	13	20	16	17	16	20	11	17	21	21	48	11
25	9	11	12	11	12	16	15	62	21	36	17	19	12	21	13	13	12	12	9	19	32	25	17	15	18	62	9
26	13	12	13	19	33	29	37	24	24	21	17	19	20	33	21	16	13	16	13	9	22	22	9	12	19	37	9
27	8	4	11	11	9	7	15	AO	9	8	12	15	12	12	12	11	8	11	8	13	9	5	8	8	10	15	4
28	4	3	11	3	5	8	4	4	5	5	3	4	4	5	4	7	5	3	3	4	7	12	9	9	5	12	3
29	8	9	15	16	15	16	13	17	15	12	12	8	7	8	8	7	5	11	9	15	16	17	22	13	12	22	5
30	11	8	11	11	12	12	12	12	13	13	13	13	16	15	7	5	8	7	8	15	21	28	13	7	12	28	5
Avg	13	13	13	15	19	25	22	31	25	18	14	15	14	13	15	14	14	16	14	14	15	16	16	17	17	43	7
Max	43	37	33	51	98	121	59	100	96	44	34	56	54	33	111	51	45	91	39	37	32	28	52	67	40	121	16
Min	3	3	1	1	2	7	3	2	0	2	2	2	1	2	3	3	1	2	0	1	1	3	3	3	2	5	0

Montana Resources LLP
Greeley School Air Monitoring Summary
Relative Humidity (% RH)
April 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	81	83	86	86	87	87	86	69	58	49	40	41	39	37	34	33	32	32	36	43	48	50	53	63	56	87	32
2	73	77	79	81	83	85	85	72	54	53	38	35	33	28	26	24	23	23	28	37	49	53	58	63	53	85	23
3	70	75	77	81	82	82	80	67	52	40	34	33	32	32	39	45	57	58	75	86	85	85	89	89	64	89	32
4	91	92	92	90	87	89	86	87	82	73	68	65	58	51	46	39	35	31	29	27	30	41	65	67	63	92	27
5	72	73	77	77	74	75	66	40	29	29	29	29	30	37	36	35	44	63	73	84	90	94	94	94	60	94	29
6	94	94	94	94	94	94	89	78	79	74	71	71	67	64	62	59	60	65	81	82	80	76	64	62	77	94	59
7	64	78	74	68	70	75	77	78	74	64	63	65	71	62	56	51	54	58	57	64	64	61	59	63	65	78	51
8	61	59	61	62	63	62	62	51	45	44	40	41	39	37	34	37	39	41	44	47	53	56	63	64	50	64	34
9	63	65	61	61	64	63	60	60	57	62	65	73	72	63	51	44	36	36	46	57	57	56	55	51	57	73	36
10	55	77	76	79	84	85	80	65	54	50	38	30	28	25	23	23	23	23	26	32	41	48	54	60	49	85	23
11	64	66	69	73	77	79	79	61	47	38	28	24	19	19	20	19	20	21	26	31	36	42	49	48	44	79	19
12	47	52	51	47	56	65	69	54	41	30	27	24	18	16	17	16	17	18	26	35	42	48	53	49	38	69	16
13	45	49	48	55	60	68	74	59	47	39	34	28	23	23	19	19	20	23	38	41	51	58	61	71	44	74	19
14	73	77	81	83	84	86	84	68	52	40	31	23	18	16	16	16	19	24	31	33	39	49	59	64	49	86	16
15	67	71	75	76	78	80	80	68	55	46	42	38	39	34	34	33	30	34	39	40	42	45	46	49	52	80	30
16	51	54	60	59	65	56	69	58	44	38	34	29	24	23	25	31	33	36	39	40	42	42	42	46	43	69	23
17	46	60	71	71	76	64	60	58	51	49	43	42	39	43	45	38	40	43	45	48	49	54	54	55	52	76	38
18	52	54	55	54	55	58	62	50	43	36	31	31	29	27	25	29	41	37	47	55	55	56	61	62	46	62	25
19	63	61	61	66	69	65	50	47	42	39	36	34	32	30	28	28	26	29	33	37	42	54	61	65	46	69	26
20	67	68	71	74	76	78	76	59	50	41	38	33	30	26	24	21	22	26	28	32	41	49	54	60	48	78	21
21	63	65	66	67	68	67	65	54	39	30	31	32	32	33	35	36	35	31	27	28	31	35	35	36	43	68	27
22	39	41	43	49	54	58	58	41	36	32	30	26	24	21	17	16	17	20	22	25	26	29	35	40	33	58	16
23	46	51	57	62	64	66	65	47	37	28	21	18	18	17	16	17	15	16	18	20	27	34	39	42	35	66	15
24	49	54	59	62	64	66	63	47	37	30	19	16	16	16	16	20	25	33	35	38	39	43	45	51	39	66	16
25	62	67	69	65	64	66	63	59	53	41	38	34	30	30	29	33	31	32	36	41	38	39	49	56	47	69	29
26	60	62	62	67	74	70	71	63	55	50	46	42	38	51	45	40	39	43	46	49	52	53	57	60	54	74	38
27	63	63	67	75	80	85	89	90	88	86	84	83	79	73	72	72	73	66	68	74	80	83	88	88	78	90	63
28	89	90	92	89	85	79	75	72	59	48	45	40	38	33	28	26	25	27	32	41	45	45	47	49	54	92	25
29	54	59	67	71	72	74	72	64	54	51	60	58	60	68	77	69	58	77	75	63	58	59	65	60	64	77	51
30	60	66	69	70	73	68	61	60	40	35	33	36	32	36	41	51	35	46	50	65	64	64	78	80	55	80	32
Avg	63	67	69	70	73	73	72	62	52	46	41	39	37	36	35	34	34	37	42	47	50	53	58	60	52	77	30
Max	94	94	94	94	94	94	89	90	88	86	84	83	79	73	77	72	73	77	81	86	90	94	94	94	78	94	63
Min	39	41	43	47	54	56	50	40	29	28	19	16	16	16	16	16	15	16	18	20	26	29	35	36	33	58	15

Montana Resources LLP
Greeley School Air Monitoring Summary
Relative Humidity (% RH)
May 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	81	79	70	77	82	83	73	51	45	39	36	35	30	32	34	48	41	50	45	47	46	51	52	55	53	83	30
2	63	65	69	73	74	76	72	54	47	40	33	32	31	29	28	29	30	29	36	48	51	57	69	68	50	76	28
3	61	61	53	60	77	82	72	61	55	48	38	34	30	26	26	25	24	25	31	32	36	39	41	47	45	82	24
4	54	59	63	62	64	67	58	47	42	32	30	28	27	24	24	24	24	25	26	28	28	29	31	32	39	67	24
5	39	38	36	38	49	66	73	71	64	54	56	51	49	48	46	46	40	46	56	75	77	77	77	80	56	80	36
6	75	77	80	76	75	69	63	56	55	49	43	42	42	40	36	29	29	35	38	44	48	53	52	56	53	80	29
7	60	58	53	52	53	55	53	49	40	39	39	41	42	43	45	51	59	72	73	80	88	90	90	89	59	90	39
8	87	89	91	92	93	94	93	75	71	71	71	74	74	71	71	67	66	70	70	71	73	78	78	78	78	94	66
9	79	81	80	81	81	85	85	84	79	73	67	65	59	52	48	48	41	37	43	55	59	69	77	83	67	85	37
10	86	90	91	92	93	93	83	73	65	51	36	33	29	22	19	19	18	16	15	23	31	42	50	59	51	93	15
11	65	71	75	79	80	81	69	59	53	37	30	25	21	18	16	15	16	19	20	24	28	34	42	50	43	81	15
12	58	63	66	69	72	73	60	51	45	34	31	24	22	20	19	19	20	21	21	26	31	37	46	53	41	73	19
13	59	63	67	70	73	74	61	58	55	39	27	21	20	17	16	15	15	17	17	19	26	32	36	42	39	74	15
14	47	54	56	73	80	83	79	70	64	59	52	73	60	54	40	35	33	36	41	51	53	50	58	65	57	83	33
15	62	68	79	83	88	89	78	69	54	42	34	31	27	26	26	26	29	30	32	35	40	44	50	56	50	89	26
16	63	65	68	69	70	71	67	55	40	32	27	24	22	23	24	20	18	19	19	20	29	36	37	40	40	71	18
17	40	33	43	53	50	51	39	33	34	31	34	33	23	19	19	33	41	45	52	41	40	43	44	40	38	53	19
18	43	53	55	59	64	66	48	37	31	25	21	20	19	17	16	15	16	19	23	29	31	31	33	35	34	66	15
19	40	45	49	53	67	84	91	93	85	72	84	72	66	45	42	48	52	48	44	46	54	65	74	79	62	93	40
20	80	84	86	86	87	87	77	68	60	42	39	37	34	33	29	32	37	37	38	39	51	58	61	63	56	87	29
21	68	75	78	78	78	79	68	64	66	67	52	42	36	36	33	34	32	32	31	39	44	53	57	59	54	79	31
22	58	56	57	56	59	73	71	70	67	66	58	52	61	77	73	77	85	88	87	89	85	91	93	93	73	93	52
23	93	92	93	93	94	94	95	94	83	79	75	74	72	60	55	52	49	53	50	59	64	74	82	89	76	95	49
24	91	92	92	93	92	91	85	80	64	51	44	38	36	35	29	28	28	30	32	35	41	50	61	67	58	93	28
25	70	74	79	81	79	78	64	57	53	52	43	40	41	39	52	47	48	52	51	65	68	69	71	70	60	81	39
26	66	59	53	55	59	60	57	52	48	42	38	35	34	32	28	28	27	28	29	33	36	40	44	44	43	66	27
27	61	69	73	75	79	79	65	60	53	39	34	31	31	29	27	23	23	23	25	29	36	46	54	61	47	79	23
28	67	73	77	80	82	81	64	56	46	32	27	21	19	22	20	20	22	34	37	44	50	67	57	58	48	82	19
29	60	73	73	81	87	82	81	72	66	58	57	54	62	58	46	36	31	34	37	41	41	43	48	71	58	87	31
30	66	68	74	77	73	72	60	48	43	35	31	29	26	25	22	22	21	23	28	29	34	39	45	55	44	77	21
31	61	66	70	74	75	73	55	52	39	30	29	26	23	21	19	17	17	20	21	23	29	36	45	53	41	75	17
Avg	65	68	69	72	75	77	70	62	55	47	42	40	38	35	33	33	33	36	38	43	47	52	57	61	52	81	29
Max	93	92	93	93	94	94	95	94	85	79	84	74	74	77	73	77	85	88	87	89	88	91	93	93	78	95	66
Min	39	33	36	38	49	51	39	33	31	25	21	20	19	17	16	15	15	16	15	19	26	29	31	32	34	53	15

Montana Resources LLP
Greeley School Air Monitoring Summary
Relative Humidity (% RH)
June 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	59	64	67	68	73	70	55	49	41	29	24	21	19	15	15	20	25	31	58	72	73	78	85	85	50	85	15
2	82	84	84	90	90	91	83	76	63	57	49	41	34	33	35	35	35	36	37	40	46	55	57	61	58	91	33
3	62	62	58	61	61	64	61	57	49	50	51	45	57	75	64	66	62	58	53	50	51	54	53	52	57	75	45
4	47	50	54	53	60	60	57	48	42	41	38	36	33	33	39	40	36	40	42	46	50	51	54	60	46	60	33
5	67	70	63	57	60	55	45	41	38	33	31	28	24	20	17	16	17	17	20	20	22	22	26	33	35	70	16
6	43	51	55	60	64	63	44	41	36	26	23	21	19	16	14	15	16	17	18	21	23	27	36	44	33	64	14
7	48	54	59	64	69	67	51	45	33	27	24	21	21	19	18	17	17	18	20	27	31	35	44	52	37	69	17
8	58	62	68	71	75	74	55	49	41	31	25	24	22	23	20	19	18	17	17	19	30	37	42	52	40	75	17
9	55	59	62	65	71	71	62	51	52	44	38	34	31	26	25	32	44	50	78	85	88	91	90	91	58	91	25
10	89	91	87	78	86	91	71	67	55	45	39	34	30	27	25	26	25	26	27	29	33	39	51	60	51	91	25
11	67	70	74	78	79	76	60	55	45	33	29	22	22	22	22	22	20	18	19	24	30	35	38	38	42	79	18
12	39	41	44	53	63	65	47	40	34	23	17	12	10	9	10	10	11	11	15	17	19	22	28	35	28	65	9
13	39	46	54	59	59	56	41	37	27	20	18	16	16	14	12	10	7	7	10	13	24	28	34	41	29	59	7
14	50	53	59	60	50	46	42	37	30	24	21	17	16	17	18	17	18	19	21	25	26	28	29	29	31	60	16
15	33	39	39	54	58	76	79	70	62	49	44	45	45	52	46	39	42	50	41	36	42	44	42	43	49	79	33
16	47	53	58	62	63	61	54	43	36	31	27	23	20	18	17	18	21	26	30	29	35	44	52	52	38	63	17
17	70	74	77	82	89	91	93	93	88	80	68	61	72	83	84	88	88	84	79	80	78	80	81	77	81	93	61
18	76	78	82	85	82	86	81	70	59	56	55	70	53	48	69	68	51	46	46	44	58	66	71	72	66	86	44
19	80	86	88	91	93	90	75	73	62	45	38	27	25	24	24	23	24	26	30	36	40	50	61	70	53	93	23
20	76	79	80	82	83	81	64	58	47	37	33	27	20	19	18	19	17	16	19	21	28	29	34	43	43	83	16
21	51	54	57	58	67	65	49	45	39	33	32	25	24	21	19	15	13	15	17	20	25	27	40	49	36	67	13
22	57	61	66	68	73	69	54	46	39	26	21	18	18	18	15	15	15	17	18	19	29	35	44	51	37	73	15
23	55	63	67	70	72	69	51	45	38	25	18	16	15	13	13	15	15	15	11	17	25	29	35	43	35	72	11
24	51	53	56	65	70	71	58	54	43	34	28	17	15	14	13	11	12	14	18	18	20	20	26	34	34	71	11
25	40	46	51	57	60	61	47	39	29	24	20	18	16	14	12	13	14	14	15	19	27	27	31	41	31	61	12
26	45	50	56	58	59	59	47	41	36	30	28	27	25	27	29	27	27	31	40	42	45	49	54	58	41	59	25
27	69	73	86	86	81	85	88	90	89	72	61	57	40	29	28	25	25	27	30	33	39	44	44	43	56	90	25
28	50	58	60	61	64	60	54	49	44	42	40	35	35	36	36	34	41	41	48	55	53	54	59	67	49	67	34
29	70	74	79	80	78	78	59	54	48	42	36	32	30	27	24	22	24	25	30	33	33	37	44	47	46	80	22
30	45	56	61	65	71	72	64	57	47	46	39	37	36	37	59	58	43	38	39	56	64	64	69	79	54	79	36
Avg	57	62	65	68	71	71	60	54	46	39	34	30	28	28	28	28	27	28	32	35	40	43	48	53	45	75	23
Max	89	91	88	91	93	91	93	93	89	80	68	70	72	83	84	88	88	84	79	85	88	91	90	91	81	93	61
Min	33	39	39	53	50	46	41	37	27	20	17	12	10	9	10	10	7	7	10	13	19	20	26	29	28	59	7

Montana Resources LLP
Greeley School Air Monitoring Summary
Temperature - MDEQ monitor (degrees Celsius)
April 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	-5.0	-5.5	-6.0	-6.4	-6.6	-6.8	-6.3	-3.2	0.9	2.7	5.2	5.6	6.8	8.2	9.6	9.9	10.6	10.4	8.8	6.7	5.3	5.2	4.5	1.5	2.3	10.6	-6.8
2	-0.8	-1.7	-2.2	-2.9	-3.5	-4.0	-4.0	-1.7	3.9	5.9	9.6	11.3	13.3	15.4	16.7	17.2	17.8	17.0	15.2	11.2	7.9	6.8	4.9	3.9	6.6	17.8	-4.0
3	2.2	1.0	0.4	-0.6	-1.0	-1.3	-0.2	3.1	7.8	11.7	14.6	14.8	15.2	15.0	13.1	12.8	11.1	10.5	7.9	6.4	5.8	5.0	4.0	4.2	6.8	15.2	-1.3
4	3.8	3.7	3.9	4.5	4.8	4.3	4.3	4.6	5.7	7.0	7.6	7.5	8.4	10.0	12.3	13.7	14.3	14.1	12.8	11.7	10.9	9.3	5.7	4.9	7.9	14.3	3.7
5	4.0	3.6	3.1	3.1	2.8	1.9	3.6	7.8	10.9	11.3	11.9	12.4	12.4	11.7	12.2	11.8	10.2	7.0	4.3	2.8	1.0	0.3	0.4	0.1	6.3	12.4	0.1
6	0.2	0.0	0.0	-0.1	-0.1	-0.5	-0.8	-0.3	0.0	0.8	1.1	0.9	0.9	1.1	1.4	1.7	1.8	1.2	-0.1	-0.2	-0.4	-0.5	-0.1	0.0	0.3	1.8	-0.8
7	-0.2	-1.2	-1.0	-0.6	-0.8	-1.2	-1.3	-1.2	-0.1	1.0	1.5	1.5	1.4	2.6	3.3	3.9	3.5	2.6	2.2	1.5	1.0	1.0	0.8	-0.1	0.8	3.9	-1.3
8	0.0	0.0	-0.2	-0.3	-0.4	-0.6	-1.3	-0.5	1.5	2.1	3.4	3.1	4.3	5.3	6.5	5.8	5.4	4.6	3.8	2.8	1.6	1.0	-0.4	0.0	2.0	6.5	-1.3
9	0.9	0.6	1.4	1.8	1.6	2.1	2.8	3.4	4.5	4.8	4.7	4.6	5.3	7.1	8.6	9.3	9.9	9.0	6.8	5.4	4.9	4.2	3.8	4.0	4.6	9.9	0.6
10	3.9	2.0	1.7	1.1	0.4	0.2	0.2	1.4	3.6	4.0	5.3	7.0	8.2	9.4	10.8	11.1	11.5	11.3	9.6	7.0	5.5	3.5	2.1	0.7	5.1	11.5	0.2
11	0.2	-0.1	-0.5	-1.6	-2.5	-3.0	-3.2	0.1	4.6	7.6	10.3	11.7	14.0	14.8	15.1	14.9	14.7	14.3	13.1	11.5	10.0	8.6	7.2	6.3	7.0	15.1	-3.2
12	6.2	5.7	6.4	7.3	5.1	3.1	2.4	5.9	11.0	14.4	17.2	17.6	19.1	19.3	19.4	19.9	19.5	19.4	16.6	13.9	11.1	9.3	8.6	10.1	12.0	19.9	2.4
13	11.1	10.7	10.7	9.5	9.0	6.9	5.4	8.5	12.0	14.2	16.2	17.8	18.8	18.8	20.2	20.6	20.0	18.5	14.9	13.9	11.9	9.5	8.0	5.8	13.0	20.6	5.4
14	4.8	3.6	2.5	1.4	1.0	0.3	0.2	4.1	9.0	12.9	16.0	18.1	19.5	20.3	20.2	19.8	18.5	16.7	14.6	13.7	11.6	9.3	7.0	5.7	10.4	20.3	0.2
15	4.5	3.7	2.8	2.3	1.9	1.7	2.1	5.0	9.7	11.3	11.6	12.7	12.8	14.2	13.7	13.7	13.7	12.2	10.5	9.4	8.3	7.4	6.6	5.7	8.2	14.2	1.7
16	5.5	5.3	3.3	3.5	1.9	3.0	0.3	2.9	5.7	6.7	7.4	9.4	10.4	11.3	10.5	8.4	7.5	6.2	4.7	3.0	2.1	2.1	1.5	0.5	5.1	11.3	0.3
17	0.2	-1.2	-2.0	-2.0	-2.5	-2.2	-2.5	-2.9	-2.0	-1.3	-0.2	-0.2	0.7	0.6	0.8	1.4	0.4	0.0	-0.8	-1.7	-2.2	-2.5	-2.7	-3.0	-1.2	1.4	-3.0
18	-3.7	-4.3	-4.6	-5.1	-5.6	-6.4	-7.3	-4.5	-2.5	-0.6	1.3	1.7	2.8	3.9	4.7	3.3	2.1	2.3	1.1	-0.2	-1.1	-1.7	-3.0	-3.7	-1.3	4.7	-7.3
19	-4.0	-3.7	-3.9	-4.6	-5.1	-4.5	-4.4	-4.0	-2.7	-1.2	0.5	1.5	2.1	2.7	3.5	3.4	4.4	3.6	1.9	0.4	-1.1	-3.4	-4.9	-5.8	-1.2	4.4	-5.8
20	-6.6	-7.1	-8.1	-8.6	-9.3	-9.6	-8.8	-4.6	-1.8	1.1	3.1	5.8	7.7	9.2	9.8	11.7	12.0	10.9	9.4	7.2	4.8	2.9	1.5	-0.1	1.4	12.0	-9.6
21	-1.0	-1.2	-1.6	-1.7	-1.8	-1.7	-0.6	3.0	7.8	10.8	11.4	12.2	13.8	13.6	12.7	11.4	10.4	10.0	8.2	6.3	5.0	3.7	2.8	2.0	5.6	13.8	-1.8
22	1.4	0.8	0.0	-1.7	-3.4	-4.1	-3.7	0.7	2.8	4.3	5.4	7.6	8.9	10.2	11.0	11.1	11.1	10.2	9.3	7.7	6.7	5.1	2.8	1.0	4.4	11.1	-4.1
23	-0.8	-1.8	-3.0	-4.0	-4.9	-5.5	-4.9	0.0	3.9	7.9	9.9	11.3	12.8	13.5	14.2	14.2	15.6	15.1	13.7	11.3	8.5	5.8	3.8	3.0	5.8	15.6	-5.5
24	1.5	0.3	-1.0	-1.2	-1.8	-2.2	-1.8	3.2	7.6	11.2	15.5	16.9	18.1	18.5	19.0	17.9	17.0	14.6	13.7	12.8	12.2	11.2	10.4	8.9	9.3	19.0	-2.2
25	7.2	6.5	6.1	5.9	5.8	5.5	5.8	6.6	8.3	11.0	12.1	13.4	14.7	14.8	15.5	14.0	14.7	13.9	12.4	10.6	10.3	9.6	7.5	6.1	9.9	15.5	5.5
26	5.3	5.1	5.1	4.9	4.6	4.9	5.2	5.9	8.3	9.1	9.5	10.4	11.7	9.6	10.4	10.8	10.6	9.7	8.8	8.0	7.4	7.3	6.8	6.4	7.7	11.7	4.6
27	5.9	5.6	5.2	4.2	3.6	3.0	2.2	1.9	2.4	3.2	3.9	4.7	5.8	7.0	7.2	6.8	6.8	7.9	7.7	6.7	5.5	4.4	4.0	3.3	5.0	7.9	1.9
28	2.5	2.7	2.3	2.7	2.9	3.2	3.2	3.8	5.5	7.0	7.2	8.0	9.2	10.7	11.5	12.3	12.4	10.9	10.3	8.2	7.1	6.6	6.1	5.4	6.7	12.4	2.3
29	4.5	3.4	2.0	1.1	1.4	1.3	2.0	3.7	6.4	7.1	6.6	6.9	5.9	5.0	4.0	4.9	5.3	2.1	2.0	1.9	0.9	0.8	0.2	-0.3	3.3	7.1	-0.3
30	-0.8	-2.0	-2.7	-3.4	-4.0	-2.7	-1.5	-1.2	0.6	1.7	2.3	2.4	3.9	3.4	3.0	2.6	4.0	2.9	2.1	0.1	-0.3	-0.5	-1.6	-2.0	0.3	4.0	-4.0
Avg	1.8	1.2	0.7	0.3	-0.2	-0.5	-0.4	1.7	4.5	6.3	7.7	8.6	9.6	10.2	10.7	10.7	10.6	9.6	8.2	6.7	5.4	4.4	3.3	2.5	5.1	11.5	-1.1
Max	11.1	10.7	10.7	9.5	9.0	6.9	5.8	8.5	12.0	14.4	17.2	18.1	19.5	20.3	20.2	20.6	20.0	19.4	16.6	13.9	12.2	11.2	10.4	10.1	13.0	20.6	5.5
Min	-6.6	-7.1	-8.1	-8.6	-9.3	-9.6	-8.8	-4.6	-2.7	-1.3	-0.2	-0.2	0.7	0.6	0.8	1.4	0.4	0.0	-0.8	-1.7	-2.2	-3.4	-4.9	-5.8	-1.3	1.4	-9.6

Montana Resources LLP
Greeley School Air Monitoring Summary
Temperature - MDEQ monitor (degrees Celsius)
May 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	-2.4	-2.2	-2.0	-3.7	-5.3	-6.0	-3.7	-1.2	-0.1	1.1	1.9	3.2	4.4	4.8	5.5	2.6	3.5	2.3	2.4	1.7	1.3	0.7	0.4	-0.3	0.4	5.5	-6.0
2	-2.2	-2.7	-3.7	-4.5	-5.1	-5.5	-4.3	-0.6	1.7	3.5	5.5	5.4	6.1	6.8	7.5	7.4	7.5	7.8	6.3	4.3	3.6	2.6	1.2	1.1	2.1	7.8	-5.5
3	0.8	0.1	-0.2	-1.6	-2.0	-2.9	-1.6	0.5	1.9	3.1	5.0	5.3	6.0	7.3	7.6	8.4	9.0	8.3	7.4	6.5	5.1	4.4	3.5	2.0	3.5	9.0	-2.9
4	0.0	-1.2	-2.0	-2.0	-2.5	-3.2	-0.8	3.2	6.8	10.3	10.8	11.6	12.3	14.0	14.6	14.6	14.2	13.8	13.4	12.7	12.4	11.8	11.4	11.3	7.8	14.6	-3.2
5	11.0	10.0	10.1	11.1	9.6	7.9	7.1	8.2	10.0	11.5	10.8	12.4	13.5	13.2	13.9	13.6	14.6	12.9	10.7	7.5	6.6	6.6	6.0	5.6	10.2	14.6	5.6
6	5.6	4.7	4.3	4.1	4.0	3.9	3.7	4.0	4.7	5.4	6.0	6.5	6.8	7.6	8.3	9.5	8.9	8.1	7.3	5.9	4.9	4.3	4.1	3.5	5.7	9.5	3.5
7	2.8	2.9	3.1	2.6	2.3	2.1	2.3	2.9	3.4	3.2	3.7	3.8	4.0	4.6	4.7	3.5	2.3	1.2	0.8	0.4	0.1	0.1	0.1	0.3	2.4	4.7	0.1
8	0.4	0.3	0.2	0.0	0.0	0.3	0.9	2.5	2.9	3.1	3.5	3.6	4.2	5.2	5.2	5.6	5.0	4.4	4.3	4.2	4.0	3.4	3.5	3.6	2.9	5.6	0.0
9	3.6	3.7	3.9	4.0	4.0	3.7	4.0	4.5	5.7	7.2	8.0	8.2	10.0	11.2	12.3	12.5	13.8	14.6	12.3	10.6	9.7	8.0	6.0	4.3	7.7	14.6	3.6
10	3.0	1.7	1.0	-0.4	-1.2	-1.2	1.2	4.9	8.6	11.4	13.5	15.1	16.3	18.1	19.6	20.0	20.8	20.8	19.5	17.2	14.1	11.1	9.0	7.0	10.5	20.8	-1.2
11	5.5	4.0	2.9	1.8	1.1	0.8	3.2	7.2	10.6	15.1	18.4	19.4	20.8	21.3	21.8	22.0	21.9	21.4	20.5	18.8	17.4	15.6	12.0	9.5	13.0	22.0	0.8
12	7.8	6.5	5.7	5.0	4.2	3.7	6.5	10.3	13.6	16.7	17.9	19.5	20.6	22.0	22.5	22.5	22.3	21.7	20.9	19.1	17.0	14.0	11.2	9.6	14.2	22.5	3.7
13	7.5	6.3	5.4	4.5	3.5	3.3	6.4	8.3	10.0	15.3	18.7	19.7	20.2	20.9	21.3	21.5	20.5	19.7	18.8	17.1	15.3	14.2	11.4	8.7	13.3	21.5	3.3
14	8.4	6.9	6.5	7.0	6.6	6.6	7.5	9.1	9.9	10.4	11.8	8.0	10.8	12.5	14.2	15.5	15.9	15.1	13.7	12.0	11.0	11.2	10.2	9.1	10.4	15.9	6.5
15	9.3	8.0	5.8	4.5	3.0	2.4	4.6	8.2	11.3	13.3	15.0	15.7	16.7	17.7	17.7	17.8	16.7	16.4	15.8	14.6	12.9	11.7	9.8	8.4	11.6	17.8	2.4
16	7.3	6.8	6.3	6.4	6.2	6.2	7.1	10.6	15.1	17.5	19.3	20.2	21.3	20.7	20.5	21.5	22.2	21.3	19.7	18.3	15.5	12.3	10.3	9.0	14.2	22.2	6.2
17	9.0	11.6	8.4	6.2	6.8	6.4	9.9	11.8	11.7	12.9	12.9	12.7	13.7	13.4	12.6	8.6	6.2	5.3	3.9	4.1	3.8	2.5	1.8	2.3	8.3	13.7	1.8
18	1.6	-0.4	-0.8	-1.8	-2.7	-3.0	0.5	4.1	6.8	8.4	10.2	11.7	13.3	14.5	15.2	15.7	15.5	14.5	13.1	11.2	9.8	9.1	8.6	7.7	7.6	15.7	-3.0
19	5.8	4.3	3.2	3.6	2.8	1.1	1.0	0.7	2.3	3.8	2.7	3.5	4.4	7.1	7.4	6.5	6.0	6.6	6.9	5.7	4.4	2.3	1.4	0.4	3.9	7.4	0.4
20	-0.4	-1.7	-2.4	-2.9	-3.5	-3.7	-1.5	1.9	4.4	5.5	6.1	6.9	7.7	7.9	9.1	8.6	8.7	9.3	8.0	7.2	5.9	4.7	3.9	3.5	3.9	9.3	-3.7
21	2.1	0.0	-1.2	-1.3	-1.2	-1.8	0.4	3.4	4.5	5.5	8.1	9.2	10.5	10.2	10.8	10.8	11.7	11.6	11.0	9.2	7.7	5.5	4.7	4.2	5.6	11.7	-1.8
22	5.0	6.0	6.4	6.0	5.9	4.9	5.1	5.6	6.2	7.0	8.2	9.4	8.3	5.8	6.5	6.3	5.4	3.4	3.5	3.3	2.8	1.0	0.7	0.6	5.1	9.4	0.6
23	0.2	0.2	-0.2	-0.3	-0.4	-0.5	0.1	0.8	1.9	2.1	3.2	3.3	3.7	5.4	7.0	7.5	8.0	7.8	7.9	6.7	6.1	4.7	2.7	0.9	3.3	8.0	-0.5
24	-0.3	-1.1	-1.6	-2.0	-2.4	-2.0	-0.5	1.9	5.7	8.4	10.5	11.7	12.3	12.6	13.5	14.4	14.0	13.2	12.1	11.1	9.3	7.2	5.3	4.0	6.6	14.4	-2.4
25	3.2	2.4	1.5	1.1	1.6	1.8	4.5	6.4	7.9	8.4	11.2	11.8	12.1	12.9	10.5	12.1	11.3	10.7	10.4	9.2	8.6	8.0	7.0	6.2	7.5	12.9	1.1
26	5.6	5.0	4.8	4.7	4.4	4.1	4.7	5.8	6.5	8.0	10.0	11.3	12.3	13.1	14.2	13.9	13.8	12.8	12.1	11.0	10.0	9.2	8.3	8.3	8.9	14.2	4.1
27	4.7	2.9	1.9	1.5	0.3	0.2	3.3	6.3	9.6	12.7	14.1	16.0	16.6	17.5	18.6	20.4	20.5	20.0	19.1	17.8	15.3	12.4	10.3	8.6	11.3	20.5	0.2
28	7.2	5.9	4.8	3.9	3.2	3.5	6.9	10.8	14.3	17.8	20.2	23.2	23.6	21.5	23.0	23.4	22.7	18.7	17.5	15.7	14.7	12.9	14.0	13.5	14.3	23.6	3.2
29	13.2	11.2	10.6	9.1	8.4	8.4	8.2	9.2	9.2	10.5	11.3	11.8	9.6	9.8	11.4	11.9	12.2	10.8	9.7	8.2	7.2	6.9	6.1	3.7	9.5	13.2	3.7
30	3.7	3.1	2.5	2.2	2.0	2.4	3.8	5.2	5.6	6.7	8.6	9.3	10.3	10.7	11.7	12.0	12.6	12.0	10.5	9.5	8.1	7.0	5.3	2.7	7.0	12.6	2.0
31	1.2	0.0	-0.8	-1.7	-2.2	-1.7	2.6	5.4	7.9	9.7	11.1	12.5	14.4	15.5	16.8	17.4	17.7	16.5	15.6	14.5	12.2	10.6	7.6	5.7	8.7	17.7	-2.2
Avg	4.2	3.4	2.7	2.2	1.7	1.4	3.0	5.2	7.1	8.9	10.3	11.0	11.8	12.4	13.1	13.2	13.1	12.4	11.5	10.2	8.9	7.6	6.4	5.3	7.8	14.0	0.7
Max	13.2	11.6	10.6	11.1	9.6	8.4	9.9	11.8	15.1	17.8	20.2	23.2	23.6	22.0	23.0	23.4	22.7	21.7	20.9	19.1	17.4	15.6	14.0	13.5	14.3	23.6	6.5
Min	-2.4	-2.7	-3.7	-4.5	-5.3	-6.0	-4.3	-1.2	-0.1	1.1	1.9	3.2	3.7	4.6	4.7	2.6	2.3	1.2	0.8	0.4	0.1	0.1	0.1	-0.3	0.4	4.7	-6.0

Montana Resources LLP
Greeley School Air Monitoring Summary
Temperature - MDEQ monitor (degrees Celsius)
June 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	4.1	3.5	2.3	1.7	0.6	1.1	4.7	8.1	11.1	14.6	16.8	18.7	20.7	21.9	22.1	20.3	18.3	16.9	12.4	10.5	10.2	9.4	8.5	8.3	11.1	22.1	0.6
2	8.0	7.9	7.6	6.7	6.1	5.7	7.7	9.0	10.6	11.7	13.4	14.7	16.3	16.3	16.1	16.0	16.5	16.8	16.4	15.8	14.8	13.5	12.7	11.9	12.2	16.8	5.7
3	11.9	11.7	12.2	11.7	11.8	11.5	11.9	12.6	14.6	14.2	14.4	16.0	12.9	8.9	10.3	10.5	9.8	10.1	9.3	9.3	8.2	7.3	6.9	6.4	11.0	16.0	6.4
4	6.4	5.7	5.2	4.8	2.7	3.1	3.9	6.6	8.8	10.8	12.9	14.9	17.0	17.0	15.8	15.6	17.2	15.9	15.2	14.8	14.3	14.2	14.0	13.0	11.2	17.2	2.7
5	11.9	11.5	11.6	11.8	10.5	11.2	12.7	13.5	14.6	16.1	16.8	18.0	19.2	20.4	21.3	21.7	21.4	21.4	19.6	18.2	16.6	15.3	13.0	10.8	15.8	21.7	10.5
6	8.1	6.3	5.0	4.2	3.4	3.7	8.5	11.8	15.2	18.8	20.8	23.1	24.8	26.5	27.6	27.6	26.7	25.8	25.1	23.8	22.0	20.1	16.8	14.4	17.1	27.6	3.4
7	12.9	11.2	9.9	8.7	7.6	7.9	11.6	14.8	18.9	20.3	21.3	23.2	24.4	25.4	25.8	26.5	25.9	25.3	24.1	22.4	20.6	18.5	15.2	13.0	18.1	26.5	7.6
8	11.4	10.3	9.0	8.0	7.0	7.1	11.4	14.8	17.3	19.9	21.9	23.0	24.8	24.7	25.9	26.1	25.9	25.7	24.5	23.1	20.0	17.8	16.0	13.0	17.9	26.1	7.0
9	11.7	10.7	9.6	9.0	7.7	7.4	9.6	12.7	12.9	15.3	18.1	20.4	22.7	24.4	25.6	22.0	19.1	18.4	14.6	13.8	13.6	13.1	12.7	12.5	14.9	25.6	7.4
10	12.6	12.6	12.3	12.2	10.4	9.9	12.3	13.8	15.1	16.4	17.5	18.7	19.8	20.9	21.3	21.7	22.4	21.7	20.6	19.3	18.1	15.9	12.9	10.9	16.2	22.4	9.9
11	10.1	9.0	8.1	7.0	6.3	6.7	10.4	13.7	16.8	19.3	21.7	24.1	24.7	25.5	25.4	25.5	25.2	25.6	24.9	23.4	21.3	19.8	18.6	18.0	18.0	25.6	6.3
12	16.9	15.7	14.6	12.0	9.8	9.5	13.6	15.3	16.7	18.1	19.5	21.1	22.5	23.3	24.1	24.3	23.5	22.7	21.6	19.8	17.9	15.9	13.1	10.7	17.6	24.3	9.5
13	9.1	7.0	5.4	4.0	3.3	3.6	7.5	11.1	14.1	16.6	19.1	21.6	22.5	24.3	25.5	27.0	28.0	27.6	26.4	25.4	21.1	18.9	16.5	14.3	16.7	28.0	3.3
14	12.1	10.9	9.8	9.8	11.8	12.5	14.2	16.5	19.0	23.1	24.7	26.0	26.9	27.2	26.2	26.7	26.3	25.3	23.6	21.2	19.4	18.1	17.0	15.9	19.3	27.2	9.8
15	14.7	13.7	13.6	11.9	11.6	10.0	9.9	11.5	13.6	16.1	17.0	16.7	14.8	12.5	12.9	13.9	11.5	8.3	9.1	9.1	7.3	6.4	6.1	5.1	11.6	17.0	5.1
16	3.7	2.5	1.4	0.8	0.6	1.8	3.5	5.7	7.3	9.0	10.2	11.5	12.6	13.5	13.6	13.3	13.2	12.4	10.8	10.2	9.9	8.5	6.6	6.3	7.9	13.6	0.6
17	4.2	3.9	3.3	2.6	2.0	1.5	0.9	1.5	2.9	4.9	6.6	7.2	6.0	4.6	4.3	3.0	3.3	3.7	3.6	3.5	3.7	3.5	3.3	3.3	3.6	7.2	0.9
18	3.3	3.2	2.7	2.2	2.1	1.3	2.7	4.6	7.1	7.4	7.7	6.0	10.3	10.2	6.7	7.5	10.8	11.4	10.2	9.3	8.2	6.9	6.4	5.6	6.4	11.4	1.3
19	3.8	2.4	1.5	0.4	-0.2	0.3	3.5	6.1	8.7	11.1	13.0	15.5	15.8	16.5	16.5	16.6	16.4	15.1	15.0	13.7	12.3	10.0	7.5	5.7	9.5	16.6	-0.2
20	4.5	3.5	3.1	2.5	2.1	2.4	6.4	9.0	11.7	14.9	17.0	19.7	21.4	20.9	21.9	22.0	23.0	22.5	21.4	19.9	17.6	16.8	14.2	11.9	13.8	23.0	2.1
21	10.2	9.3	8.4	7.6	6.0	6.7	11.0	13.6	16.2	19.3	21.2	22.7	23.0	25.1	25.2	26.3	25.8	25.6	24.5	23.4	21.4	19.3	15.3	12.7	17.5	26.3	6.0
22	11.1	9.8	8.5	7.4	6.4	7.0	10.4	14.7	17.8	21.2	23.8	25.7	26.1	26.1	27.9	28.2	28.7	27.3	27.0	26.1	22.4	19.1	16.8	14.9	18.9	28.7	6.4
23	13.6	12.0	11.1	10.0	9.5	10.0	13.9	17.3	20.5	25.1	28.5	29.0	29.6	30.8	30.5	29.5	29.2	29.4	29.9	26.8	23.1	21.0	18.3	15.8	21.4	30.8	9.5
24	14.0	12.9	11.9	10.4	9.3	9.2	12.2	14.1	17.6	20.3	22.4	26.1	27.2	27.5	27.8	29.0	28.6	27.3	25.2	23.8	21.8	20.4	17.5	14.3	19.6	29.0	9.2
25	12.2	10.5	9.2	7.9	7.3	7.2	10.2	13.8	17.9	20.8	23.6	25.2	26.9	27.9	28.7	28.5	28.0	27.8	27.1	25.3	21.1	20.1	18.3	15.2	19.2	28.7	7.2
26	13.9	12.4	11.0	10.7	10.8	10.9	13.9	16.4	19.0	22.0	23.5	24.9	25.7	24.1	24.8	26.2	25.8	24.0	21.9	21.5	20.5	19.2	18.1	16.7	19.1	26.2	10.7
27	15.1	13.7	12.2	12.2	13.1	12.4	12.4	12.1	12.5	15.4	14.9	15.5	18.3	19.8	19.5	19.9	19.3	17.4	15.7	14.2	12.4	11.4	11.1	10.7	14.6	19.9	10.7
28	9.2	8.1	7.7	7.2	7.0	8.4	9.7	11.2	12.1	13.0	13.5	15.3	15.8	15.9	15.9	16.2	15.7	15.6	14.3	12.9	12.3	11.6	10.5	9.3	12.0	16.2	7.0
29	8.5	7.7	6.5	6.2	6.3	6.5	10.0	12.0	13.4	15.4	18.2	21.0	21.3	22.6	24.7	26.2	25.0	25.0	23.1	21.7	21.2	19.7	17.8	16.7	16.5	26.2	6.2
30	16.8	14.6	13.3	12.2	10.9	10.9	13.1	15.5	17.6	18.6	20.5	21.2	20.6	19.1	15.2	15.8	18.7	19.8	19.5	17.2	15.2	14.8	13.6	11.9	16.1	21.2	10.9
Avg	10.2	9.1	8.3	7.5	6.8	6.9	9.5	11.8	14.1	16.3	18.0	19.6	20.5	20.8	21.0	21.1	21.0	20.4	19.2	18.0	16.3	14.9	13.2	11.6	14.8	22.3	6.1
Max	16.9	15.7	14.6	12.2	13.1	12.5	14.2	17.3	20.5	25.1	28.5	29.0	29.6	30.8	30.5	29.5	29.2	29.4	29.9	26.8	23.1	21.0	18.6	18.0	21.4	30.8	10.9
Min	3.3	2.4	1.4	0.4	-0.2	0.3	0.9	1.5	2.9	4.9	6.6	6.0	6.0	4.6	4.3	3.0	3.3	3.7	3.6	3.5	3.7	3.5	3.3	3.3	3.6	7.2	-0.2

Montana Resources LLP
Greeley School Air Monitoring Summary
Wind Speed - MDEQ monitor (meters per second)
April 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.6	1.5	1.0	1.2	1.2	0.9	1.5	1.1	0.9	1.0	2.3	3.2	3.0	3.0	2.9	2.8	2.2	2.0	1.7	1.6	2.2	1.8	1.6	0.8	1.8	3.2	0.6
2	0.7	0.7	0.8	0.6	0.7	0.7	0.8	0.7	0.6	1.4	1.3	1.3	1.6	2.1	2.2	2.6	2.3	1.8	1.2	0.4	0.6	0.8	0.7	0.5	1.1	2.6	0.4
3	0.6	0.7	1.0	0.8	0.9	0.9	1.3	0.8	0.9	1.4	2.5	3.6	2.9	2.3	3.4	3.8	3.4	0.9	1.6	1.4	1.8	1.0	1.0	0.9	1.7	3.8	0.6
4	1.3	1.0	0.8	0.9	1.2	2.1	1.2	0.9	0.9	1.0	0.6	0.9	1.6	1.6	1.3	3.8	3.7	3.8	2.4	1.9	1.8	1.9	1.6	1.3	1.6	3.8	0.6
5	1.1	1.1	1.1	1.3	1.0	1.3	1.5	2.6	4.1	4.1	4.4	3.6	2.9	3.1	2.5	1.7	2.8	1.9	1.8	1.6	1.3	1.3	0.8	0.9	2.1	4.4	0.8
6	0.8	0.7	0.9	0.9	0.8	0.9	1.0	1.1	0.8	2.2	2.8	3.4	3.3	3.2	2.9	3.4	3.0	3.0	2.0	1.9	1.6	1.0	2.3	2.3	1.9	3.4	0.7
7	2.6	2.0	1.5	2.6	2.4	1.7	1.4	1.4	1.3	2.7	2.9	2.6	2.7	3.1	3.4	3.6	3.1	3.4	2.6	2.5	2.9	2.8	2.2	1.5	2.5	3.6	1.3
8	1.7	1.9	1.3	1.6	2.1	1.8	1.2	1.2	2.0	1.9	2.4	3.4	3.6	2.9	2.3	3.5	3.6	3.7	3.0	2.0	0.8	0.8	0.4	0.5	2.1	3.7	0.4
9	0.6	0.7	0.8	0.6	0.6	0.9	0.6	0.8	1.0	1.1	1.4	1.6	2.0	1.5	2.6	3.1	2.2	2.8	2.7	1.5	1.5	1.4	0.8	1.6	1.4	3.1	0.6
10	2.3	1.9	1.5	1.0	0.8	0.6	0.7	0.9	0.8	1.3	1.6	1.5	1.9	2.0	1.8	1.6	1.5	1.3	1.8	0.8	1.0	1.1	0.6	0.4	1.3	2.3	0.4
11	0.5	0.6	0.6	0.5	0.6	0.6	0.6	0.5	0.6	1.5	1.5	2.0	1.6	2.4	2.9	2.8	2.4	1.5	0.8	0.7	0.8	0.4	0.4	0.7	1.1	2.9	0.4
12	0.6	0.7	0.8	0.7	0.6	0.7	0.9	0.9	1.0	1.1	2.0	2.5	3.9	3.9	2.7	2.5	2.3	2.1	2.6	1.2	0.7	0.7	0.8	1.2	1.5	3.9	0.6
13	1.3	0.8	0.9	1.2	0.7	0.8	0.6	0.7	1.5	1.7	1.5	1.9	2.1	2.2	2.3	2.0	1.8	2.9	3.6	1.5	0.8	1.5	0.9	0.8	1.5	3.6	0.6
14	0.6	0.5	0.4	0.4	0.5	0.5	0.6	0.7	0.8	1.1	1.6	1.9	1.1	1.8	2.2	4.3	2.6	3.5	2.3	1.8	0.9	0.7	0.9	0.8	1.4	4.3	0.4
15	0.6	0.6	0.4	0.6	0.4	0.4	0.4	0.5	1.2	1.8	3.2	2.9	2.6	2.6	2.7	2.7	3.4	2.9	3.4	3.2	2.3	2.0	2.6	2.1	1.9	3.4	0.4
16	2.7	2.5	0.7	1.3	0.8	2.2	0.6	0.5	1.4	1.6	1.8	2.5	2.7	2.5	2.5	3.6	3.2	2.7	3.3	4.1	3.6	2.8	3.5	4.0	2.4	4.1	0.5
17	3.2	2.8	1.4	1.8	2.2	2.6	3.8	4.3	4.8	4.1	3.2	2.8	2.1	2.6	4.0	4.0	4.1	3.9	3.9	3.9	3.4	2.9	2.8	2.7	3.2	4.8	1.4
18	2.8	3.4	2.9	2.5	2.6	1.8	1.2	1.5	1.9	1.5	1.6	1.8	1.8	2.0	1.7	2.4	2.5	1.7	2.8	3.6	3.6	3.5	4.3	4.2	2.5	4.3	1.2
19	3.9	3.0	2.6	2.7	1.0	1.2	3.0	2.9	2.1	1.7	1.4	1.7	1.6	1.5	1.3	1.5	2.6	3.1	3.0	2.9	3.0	2.4	2.4	2.0	2.3	3.9	1.0
20	1.5	1.2	1.1	0.8	0.7	0.6	1.0	1.5	1.3	1.3	1.7	1.3	1.5	1.6	1.7	1.3	1.7	2.5	2.5	1.3	1.0	0.8	0.6	0.5	1.3	2.5	0.5
21	0.5	0.6	0.7	0.6	0.7	0.8	1.0	0.8	0.9	1.5	1.9	1.8	2.6	2.9	3.6	4.8	4.6	5.0	4.7	4.8	3.6	2.6	3.0	2.7	2.4	5.0	0.5
22	3.0	2.3	1.5	1.1	0.7	1.2	1.0	1.3	1.9	2.1	1.9	1.4	2.1	3.0	3.3	3.1	3.5	3.6	2.9	2.9	2.6	1.7	1.6	0.9	2.1	3.6	0.7
23	0.8	1.1	0.7	1.0	1.2	1.0	1.1	0.7	1.1	1.3	2.8	2.5	1.6	AQ	1.9	2.6	1.3	1.2	1.9	1.5	1.1	0.5	0.4	0.6	1.3	2.8	0.4
24	0.8	0.6	0.5	0.7	0.6	0.7	0.6	0.6	1.0	1.2	1.5	1.9	1.8	2.3	2.0	3.1	3.9	3.4	2.2	2.2	1.8	0.9	0.6	0.6	1.5	3.9	0.5
25	0.7	0.5	0.8	0.8	1.2	0.6	0.9	0.9	1.0	1.2	1.4	1.7	2.0	2.0	1.9	2.1	2.9	2.7	2.6	2.5	1.9	2.2	1.2	0.9	1.5	2.9	0.5
26	0.7	0.7	0.6	1.0	0.6	0.6	0.8	1.1	1.1	1.4	0.9	0.9	1.8	2.2	2.2	2.1	2.7	3.5	3.4	3.8	3.9	2.7	2.6	1.9	1.8	3.9	0.6
27	2.0	2.4	2.1	2.2	1.8	0.9	1.5	0.9	0.7	0.8	0.6	1.0	0.8	0.9	0.9	1.5	1.0	0.9	0.9	1.0	0.6	0.7	0.7	0.6	1.1	2.4	0.6
28	0.8	0.5	0.4	0.7	0.6	1.3	1.1	1.2	2.1	2.0	1.7	1.9	1.8	2.0	1.9	2.0	2.3	1.9	2.5	2.8	2.9	3.0	2.1	1.4	1.7	3.0	0.4
29	0.6	0.6	0.5	0.6	0.5	0.6	0.9	0.7	0.8	1.5	1.6	2.5	1.8	1.9	1.4	2.0	2.8	2.7	2.1	2.5	2.4	2.5	1.9	1.4	1.5	2.8	0.5
30	1.6	1.0	0.8	0.8	0.8	0.9	2.1	1.1	2.0	2.3	2.3	1.8	1.6	2.0	1.8	2.8	2.8	3.0	2.2	1.7	2.4	1.4	1.0	0.7	1.7	3.0	0.7
Avg	1.4	1.3	1.0	1.1	1.0	1.1	1.2	1.2	1.4	1.7	1.9	2.1	2.1	2.3	2.3	2.8	2.7	2.6	2.5	2.2	2.0	1.7	1.5	1.4	1.8	3.5	0.6
Max	3.9	3.4	2.9	2.7	2.6	2.6	3.8	4.3	4.8	4.1	4.4	3.6	3.9	3.9	4.0	4.8	4.6	5.0	4.7	4.8	3.9	3.5	4.3	4.2	3.2	5.0	1.4
Min	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.8	0.6	0.9	0.8	0.9	0.9	1.3	1.0	0.9	0.8	0.4	0.6	0.4	0.4	0.4	1.1	2.3	0.4

Montana Resources LLP
Greeley School Air Monitoring Summary
Wind Speed - MDEQ monitor (meters per second)
May 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.7	1.0	1.5	1.4	1.2	1.0	1.3	1.3	2.0	1.9	2.3	2.5	3.0	2.8	3.0	4.6	2.6	3.9	1.9	1.7	2.1	1.9	1.9	1.3	2.0	4.6	0.7
2	0.5	0.6	0.7	0.7	0.9	0.7	0.7	1.0	1.8	1.6	2.1	2.5	2.0	1.8	2.0	2.2	2.4	2.8	3.1	2.2	1.9	1.5	1.3	1.9	1.6	3.1	0.5
3	3.0	3.0	2.8	1.0	1.0	0.8	0.7	0.8	1.1	1.4	1.2	1.3	1.4	2.1	2.2	2.2	1.5	1.3	2.4	2.4	2.6	1.8	1.3	0.9	1.7	3.0	0.7
4	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.7	1.3	1.9	3.0	3.0	3.3	3.2	3.5	3.5	2.8	3.0	2.3	2.3	3.3	2.4	1.9	3.7	2.0	3.7	0.5
5	2.5	2.1	2.1	2.7	1.9	1.3	0.9	1.0	0.8	2.0	2.9	2.1	3.0	3.1	3.0	3.4	2.2	3.2	1.9	2.5	1.8	1.3	1.5	1.2	2.1	3.4	0.8
6	1.5	1.4	1.4	1.1	2.1	2.1	2.0	1.6	2.0	2.7	4.8	3.8	3.1	3.3	3.9	3.4	3.3	3.8	2.8	3.7	2.7	2.1	2.3	2.1	2.6	4.8	1.1
7	2.1	1.9	2.1	2.0	1.9	2.1	2.1	2.8	3.2	3.0	2.9	3.0	3.3	3.3	3.0	3.9	4.5	3.4	3.3	3.3	2.7	2.8	2.9	2.7	2.8	4.5	1.9
8	2.5	2.4	1.8	1.1	1.2	1.6	1.6	3.4	4.1	4.1	4.8	4.5	4.6	3.9	3.6	2.2	2.8	2.0	1.9	1.4	1.5	1.0	0.7	1.0	2.5	4.8	0.7
9	0.7	0.7	0.5	0.8	0.8	0.8	1.2	1.1	1.5	1.5	1.6	2.9	2.7	2.8	2.3	2.0	1.6	1.5	1.4	1.3	1.4	1.1	0.6	0.6	1.4	2.9	0.5
10	0.7	0.5	0.7	0.6	0.5	0.7	0.5	0.8	1.2	1.5	1.9	2.2	2.2	1.8	1.5	1.6	1.7	1.6	1.4	1.5	1.0	0.6	0.6	0.9	1.2	2.2	0.5
11	0.6	0.5	0.5	0.4	0.5	0.4	0.4	0.8	1.3	1.2	1.5	1.9	2.0	2.0	2.1	2.4	2.7	3.0	2.4	2.9	2.2	1.4	1.1	0.9	1.5	3.0	0.4
12	0.7	0.6	0.5	0.6	0.6	0.4	0.5	0.6	0.9	1.7	1.8	1.7	2.0	2.1	2.1	2.3	2.2	2.0	2.6	2.2	1.2	1.1	0.7	0.7	1.3	2.6	0.4
13	0.6	0.9	0.8	0.6	0.5	0.6	0.6	0.8	0.6	1.2	1.5	2.1	2.3	2.3	2.6	2.9	3.3	3.7	4.0	3.6	2.7	2.3	1.2	0.7	1.8	4.0	0.5
14	0.5	0.8	0.7	1.8	0.7	0.7	1.2	0.9	1.1	1.1	1.8	2.5	2.0	2.8	2.2	2.1	2.5	2.4	3.2	3.0	2.0	2.6	1.0	0.8	1.7	3.2	0.5
15	2.1	1.1	1.1	0.8	0.4	0.5	0.9	0.7	1.1	1.6	1.9	2.6	2.8	2.9	3.1	3.7	3.7	2.9	2.8	1.9	0.9	1.0	0.7	0.6	1.7	3.7	0.4
16	0.8	0.6	0.6	0.8	0.7	0.7	0.8	1.1	1.8	2.7	3.0	3.4	3.9	3.5	3.3	3.3	4.0	3.0	3.4	2.5	1.0	0.6	0.6	0.4	1.9	4.0	0.4
17	0.7	1.0	0.5	0.4	0.7	0.9	1.6	2.7	3.5	3.9	3.9	3.5	4.2	4.2	3.7	6.1	4.7	4.6	4.3	4.3	3.1	1.0	1.1	1.2	2.7	6.1	0.4
18	0.8	1.2	0.8	0.7	0.6	0.6	0.6	1.3	1.3	1.9	2.5	3.4	2.7	2.8	2.8	3.2	2.2	2.9	2.7	2.8	2.8	2.8	2.0	1.8	2.0	3.4	0.6
19	1.3	1.0	1.1	2.6	3.5	1.9	1.3	1.4	1.2	1.7	1.2	2.5	1.9	2.1	2.5	3.6	4.1	2.0	2.4	2.3	1.8	0.8	1.1	0.9	1.9	4.1	0.8
20	0.9	0.6	0.6	0.9	0.8	0.9	0.9	0.6	1.2	3.1	2.7	3.3	2.7	2.9	2.4	2.9	3.6	3.0	2.6	2.5	2.5	1.7	1.2	1.3	1.9	3.6	0.6
21	1.0	0.7	0.7	0.7	0.7	0.7	0.5	0.8	1.2	0.9	1.3	1.6	2.2	3.1	2.2	2.0	1.8	2.0	2.1	1.9	0.5	0.5	0.6	0.5	1.3	3.1	0.5
22	1.2	1.6	1.1	0.7	1.1	1.2	1.3	0.9	1.0	1.7	1.9	2.4	2.2	1.4	1.6	1.0	1.7	1.2	0.8	0.8	1.4	1.0	0.8	1.0	1.3	2.4	0.7
23	0.7	1.2	1.4	1.4	1.2	1.1	0.8	1.4	2.4	2.4	2.6	3.4	3.0	3.3	1.9	2.0	2.3	2.2	1.5	1.3	1.0	0.9	0.6	0.6	1.7	3.4	0.6
24	0.7	0.6	0.7	0.8	0.7	0.8	0.6	0.7	1.4	1.7	2.1	2.0	2.2	2.4	2.2	2.9	2.6	3.2	3.1	2.3	0.9	1.0	0.9	0.5	1.5	3.2	0.5
25	0.5	0.6	0.4	0.5	0.5	0.5	0.5	1.0	1.3	1.1	1.3	2.0	1.7	1.8	2.7	1.6	2.2	2.1	1.7	0.9	0.6	1.3	1.4	2.5	1.3	2.7	0.4
26	3.2	2.8	1.2	1.4	0.9	0.7	0.7	1.1	1.4	2.1	2.4	2.4	2.8	3.4	2.9	3.9	4.0	3.9	4.3	3.2	3.0	1.8	1.3	1.7	2.4	4.3	0.7
27	1.0	0.5	0.6	0.7	0.6	0.5	0.5	0.5	1.2	1.6	2.0	1.4	1.6	1.9	1.7	1.6	1.8	1.2	1.6	1.7	0.7	1.1	0.8	0.8	1.2	2.0	0.5
28	0.5	0.4	0.6	0.5	0.5	0.4	0.8	0.8	1.0	1.7	2.1	2.4	2.6	3.1	1.8	4.2	4.1	2.5	1.3	1.8	1.3	1.0	0.9	0.6	1.5	4.2	0.4
29	1.3	1.9	1.3	1.0	1.1	1.3	0.9	1.5	2.1	1.5	2.0	2.4	2.8	2.8	4.4	4.5	3.6	4.2	4.0	3.8	2.9	2.2	2.0	3.9	2.5	4.5	0.9
30	2.1	2.0	2.0	1.2	0.7	1.1	1.2	2.1	2.0	2.7	3.0	3.7	3.4	3.4	3.0	2.7	2.2	2.8	2.7	2.7	1.6	1.9	1.0	1.0	2.2	3.7	0.7
31	0.6	0.5	0.7	0.5	0.5	0.6	0.4	0.7	1.3	1.6	1.6	1.8	1.9	1.8	2.5	2.6	2.1	2.5	1.9	1.8	0.8	0.8	0.5	0.5	1.3	2.6	0.4
Avg	1.2	1.1	1.0	1.0	1.0	0.9	0.9	1.2	1.6	2.0	2.3	2.6	2.6	2.7	2.6	2.9	2.8	2.7	2.5	2.3	1.8	1.5	1.2	1.3	1.8	3.6	0.6
Max	3.2	3.0	2.8	2.7	3.5	2.1	2.1	3.4	4.1	4.1	4.8	4.5	4.6	4.2	4.4	6.1	4.7	4.6	4.3	4.3	3.3	2.8	2.9	3.9	2.8	6.1	1.9
Min	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.9	1.2	1.3	1.4	1.4	1.5	1.0	1.5	1.2	0.8	0.8	0.5	0.5	0.5	0.4	1.2	2.0	0.4

Montana Resources LLP
Greeley School Air Monitoring Summary
Wind Speed - MDEQ monitor (meters per second)
June 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0.9	0.6	0.6	0.7	0.5	0.5	0.5	0.8	1.1	1.6	2.2	2.0	1.9	2.6	2.3	2.9	3.8	1.9	3.0	2.1	1.6	0.7	0.4	1.0	1.5	3.8	0.4
2	1.2	0.8	0.8	0.8	0.6	0.7	0.8	0.6	0.6	1.6	1.4	1.3	1.7	1.3	1.5	1.3	1.3	1.5	1.5	1.3	0.7	1.0	0.8	1.0	1.1	1.7	0.6
3	0.5	0.9	1.3	0.6	0.6	0.7	1.0	1.1	1.6	3.2	2.6	2.8	3.5	3.9	3.4	2.0	2.4	3.3	4.8	2.2	1.9	2.9	2.5	2.4	2.2	4.8	0.5
4	2.4	1.5	1.2	1.4	0.5	0.9	0.8	1.5	1.2	1.4	1.9	2.3	2.5	2.6	3.3	2.9	2.4	2.0	1.5	0.9	0.7	0.7	1.9	1.0	1.6	3.3	0.5
5	0.6	1.2	1.1	1.3	0.9	2.0	2.2	2.6	2.7	2.4	2.7	2.6	2.6	2.6	2.5	2.6	2.9	2.5	3.9	3.1	2.8	1.6	0.9	1.1	2.1	3.9	0.6
6	0.6	0.5	0.4	0.6	0.5	0.4	0.5	0.9	1.1	1.7	1.8	1.7	1.6	2.1	2.2	2.3	3.0	3.7	3.1	2.9	2.7	1.6	0.7	0.9	1.6	3.7	0.4
7	1.1	0.6	0.5	0.5	0.5	0.7	0.7	0.9	1.1	2.3	2.2	2.1	1.9	2.1	2.4	2.3	3.4	3.6	3.5	2.6	2.1	1.1	1.1	0.8	1.7	3.6	0.5
8	0.7	0.6	0.6	0.5	0.5	0.6	0.5	0.6	1.2	1.4	1.3	1.7	2.0	2.3	1.9	2.1	2.3	2.3	2.3	1.9	2.9	2.4	2.1	1.2	1.5	2.9	0.5
9	1.0	0.8	0.8	1.5	1.0	0.6	0.8	0.7	1.2	1.1	1.5	1.5	1.6	2.1	2.1	3.7	2.9	1.9	1.4	1.2	2.4	2.1	1.6	1.5	1.5	3.7	0.6
10	0.9	1.2	0.9	1.6	1.0	0.7	1.0	1.0	1.6	2.1	2.2	2.3	2.4	2.5	2.5	2.2	2.3	3.0	3.2	3.2	2.8	1.2	0.6	0.8	1.8	3.2	0.6
11	0.5	1.2	0.4	0.5	0.5	0.5	0.7	0.7	1.2	1.9	1.5	2.5	2.8	2.5	3.0	2.7	2.4	2.4	2.0	2.0	2.4	3.9	4.2	3.7	1.9	4.2	0.4
12	2.5	2.4	2.0	1.2	0.5	0.7	0.9	1.5	1.6	2.1	2.2	2.1	2.4	2.7	2.4	2.9	3.3	3.6	3.5	3.1	2.7	1.3	0.7	0.5	2.0	3.6	0.5
13	0.9	1.0	0.5	0.4	0.6	0.5	0.5	0.6	1.0	AQ	AQ	1.9	2.7	2.2	2.1	1.7	1.7	2.2	1.8	1.1	1.4	0.6	0.5	0.9	1.2	2.7	0.4
14	0.6	0.6	0.6	1.0	1.1	1.8	1.1	0.7	1.2	1.3	1.8	2.2	2.5	2.3	3.3	2.5	2.7	2.9	3.3	3.9	3.7	3.4	3.1	2.0	2.1	3.9	0.6
15	1.2	1.1	1.2	1.9	1.3	1.0	1.0	0.8	1.0	1.4	1.2	1.8	3.6	4.1	3.6	5.3	5.8	7.1	6.0	4.9	6.1	4.6	3.9	1.7	3.0	7.1	0.8
16	0.8	1.3	1.0	0.9	0.5	0.8	1.2	1.0	1.8	1.7	1.9	1.7	2.1	2.2	2.2	2.6	2.7	3.2	4.3	4.0	3.0	3.1	3.7	1.8	2.1	4.3	0.5
17	2.0	1.9	1.5	1.6	1.2	1.3	1.1	0.9	1.0	1.5	1.3	1.3	1.7	2.2	1.6	1.3	1.4	1.2	1.6	2.0	1.4	0.9	0.9	1.1	1.4	2.2	0.9
18	1.1	0.8	0.5	0.4	0.8	1.1	1.1	0.9	0.9	1.3	2.0	3.4	2.1	1.8	1.8	1.8	2.2	1.3	1.3	0.9	2.2	2.0	1.9	1.2	1.5	3.4	0.4
19	0.9	0.5	0.6	0.3	0.4	0.7	0.9	0.8	1.1	1.7	1.5	1.7	1.6	1.9	2.2	2.4	2.6	2.6	2.1	2.7	1.5	1.4	1.4	0.6	1.4	2.7	0.3
20	0.7	0.5	0.6	1.0	0.8	0.6	0.5	0.5	1.1	1.2	1.7	1.6	2.0	1.5	1.8	2.0	1.6	1.6	2.5	1.8	2.1	2.1	1.7	0.8	1.3	2.5	0.5
21	1.0	0.8	1.2	0.6	0.6	0.6	0.6	0.8	1.0	1.2	1.5	1.8	2.1	1.5	1.7	2.1	2.0	2.5	2.0	2.2	2.0	1.6	1.1	0.7	1.4	2.5	0.6
22	1.0	0.6	0.5	0.5	0.4	0.5	0.8	0.6	0.9	1.3	1.7	2.9	2.3	2.4	2.0	2.2	1.7	1.6	2.0	1.1	1.2	0.4	0.6	0.7	1.2	2.9	0.4
23	0.5	0.5	0.5	0.4	0.5	0.5	0.7	0.6	0.8	1.4	2.7	4.4	4.3	3.5	3.1	2.6	2.7	2.5	3.1	2.5	1.5	0.8	1.0	0.6	1.7	4.4	0.4
24	0.7	0.8	0.7	0.4	0.4	0.5	0.5	0.8	1.0	1.3	2.0	2.5	2.9	2.9	2.6	2.7	2.9	3.6	4.4	3.6	2.6	2.1	0.8	0.9	1.8	4.4	0.4
25	0.8	0.6	0.6	0.5	0.6	0.5	1.0	0.8	0.8	1.0	1.2	1.6	1.9	2.5	2.5	2.5	2.4	2.1	2.2	2.0	3.4	3.2	1.9	0.8	1.6	3.4	0.5
26	0.8	0.6	0.6	0.6	0.5	0.4	0.7	1.0	1.1	0.9	1.3	2.1	4.2	4.8	3.9	4.1	4.3	2.5	2.1	1.5	0.9	1.5	1.5	2.1	1.8	4.8	0.4
27	3.2	2.9	0.8	0.7	1.6	1.3	1.6	1.2	1.1	1.6	2.5	3.0	2.8	2.9	2.8	2.7	2.6	3.8	5.1	5.4	2.8	2.5	3.2	2.8	2.5	5.4	0.7
28	0.7	0.7	0.7	0.6	0.7	0.7	1.1	1.8	2.0	2.1	2.6	2.1	3.5	2.9	2.9	3.3	3.8	2.9	2.5	2.5	1.8	1.8	1.0	1.5	1.9	3.8	0.6
29	0.7	0.7	0.5	0.5	0.7	0.4	0.8	0.9	1.5	1.7	1.4	1.3	2.3	2.2	1.7	1.4	2.2	2.6	2.6	2.8	1.2	1.4	0.7	1.3	1.4	2.8	0.4
30	1.4	0.7	0.9	0.9	0.7	1.0	2.1	1.0	1.3	1.3	2.6	2.7	2.3	2.4	1.3	1.5	1.1	1.2	1.4	2.0	1.5	1.7	0.9	0.9	1.5	2.7	0.7
Avg	1.1	1.0	0.8	0.8	0.7	0.8	0.9	1.0	1.2	1.6	1.9	2.2	2.5	2.5	2.4	2.5	2.6	2.6	2.8	2.4	2.2	1.9	1.6	1.3	1.7	3.6	0.5
Max	3.2	2.9	2.0	1.9	1.6	2.0	2.2	2.6	2.7	3.2	2.7	4.4	4.3	4.8	3.9	5.3	5.8	7.1	6.0	5.4	6.1	4.6	4.2	3.7	3.0	7.1	0.9
Min	0.5	0.5	0.4	0.3	0.4	0.4	0.5	0.5	0.6	0.9	1.2	1.3	1.6	1.3	1.3	1.3	1.1	1.2	1.3	0.9	0.7	0.4	0.4	0.5	1.1	1.7	0.3

Montana Resources LLP
Greeley School Air Monitoring Summary
Wind Direction - MDEQ monitor (degrees)
April 2024

	<< Hour >>																								
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Prev
1	350	231	347	343	54	337	279	43	317	295	327	342	333	329	317	328	320	317	333	335	334	339	341	242	328
2	349	328	73	20	350	359	357	329	47	33	36	359	21	304	285	303	291	295	309	8	103	61	93	274	355
3	347	64	11	7	259	331	17	154	59	349	216	219	207	239	195	163	217	278	246	204	211	204	275	200	240
4	61	144	304	24	243	336	58	1	36	257	29	57	334	310	277	157	134	137	150	156	102	164	218	280	62
5	330	290	328	322	314	285	273	159	157	152	154	147	148	222	344	19	194	278	320	308	223	350	287	287	277
6	260	286	266	266	354	300	303	309	255	316	314	315	318	319	316	317	327	319	321	327	334	330	319	318	309
7	318	337	1	333	340	350	360	357	338	329	320	332	322	337	345	342	339	345	347	335	331	337	340	318	338
8	351	336	311	323	319	311	287	285	305	315	296	331	327	316	307	327	327	322	320	317	299	277	7	25	319
9	4	335	34	57	311	60	89	304	263	356	321	60	187	181	260	321	279	312	316	313	335	314	301	325	327
10	325	330	340	290	330	222	236	262	176	8	354	11	18	259	254	267	265	282	321	299	276	170	189	67	293
11	275	188	5	339	48	131	340	51	24	18	20	3	289	220	243	245	238	255	324	12	146	33	10	23	344
12	38	6	336	28	83	24	7	92	23	9	161	238	247	248	269	274	252	267	197	215	102	141	133	91	360
13	67	332	291	80	55	150	23	41	6	10	353	314	294	311	300	302	336	316	168	113	71	149	186	185	2
14	222	287	321	13	324	349	344	71	356	354	332	331	46	35	90	162	217	213	339	48	210	136	185	229	339
15	150	12	34	132	84	28	346	115	213	311	337	333	321	311	324	326	321	322	330	327	328	334	327	328	340
16	328	329	316	314	260	304	177	220	278	274	266	252	269	292	294	334	337	353	357	357	2	352	356	355	311
17	338	311	298	311	307	334	340	29	52	44	29	22	352	32	30	30	25	24	42	49	47	42	38	31	14
18	43	54	59	74	49	79	185	155	8	341	40	20	49	195	165	354	61	72	54	37	39	58	63	62	56
19	69	69	120	193	307	336	30	25	25	26	19	359	327	55	107	128	81	95	96	65	34	249	222	237	49
20	167	148	122	41	34	26	55	23	341	283	357	309	286	45	343	65	145	170	108	133	293	329	351	345	24
21	336	359	328	75	259	8	39	214	352	300	297	307	299	301	319	325	322	323	321	317	328	320	310	307	322
22	313	311	298	223	71	50	63	35	295	251	321	296	273	323	323	332	322	329	336	343	2	43	178	124	330
23	203	213	306	321	279	347	17	336	13	309	93	96	137	AQ	332	164	75	224	128	150	208	45	62	337	12
24	183	311	323	305	273	288	353	10	359	348	342	348	18	320	308	319	333	348	355	340	343	213	335	272	327
25	162	192	202	175	149	121	137	158	108	9	291	304	304	289	289	299	326	318	322	353	2	21	134	184	270
26	187	186	205	183	215	127	233	183	176	73	130	117	30	68	2	23	43	33	44	60	62	61	49	44	93
27	357	10	45	71	95	135	159	129	147	129	144	113	4	341	284	304	356	126	174	184	235	160	186	228	130
28	188	92	298	264	227	315	265	308	315	307	302	283	268	263	258	278	264	287	315	325	321	322	320	320	291
29	264	92	221	84	278	235	46	215	337	288	339	309	306	255	330	336	314	306	332	310	318	328	332	323	310
30	308	197	350	189	249	304	313	272	279	257	264	296	307	20	356	30	329	327	315	351	345	286	290	213	302
Prev	328	330	333	357	323	349	355	15	349	334	339	336	319	306	307	324	317	312	337	350	343	355	328	309	331

Montana Resources LLP
Greeley School Air Monitoring Summary
Wind Direction - MDEQ monitor (degrees)
May 2024

	<< Hour >>																								
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Prev
1	154	256	308	249	272	359	200	296	275	289	299	309	302	304	271	333	320	335	316	319	324	311	306	309	299
2	139	39	6	357	22	3	1	44	72	328	299	320	320	307	305	328	342	340	351	20	10	27	183	41	358
3	34	18	356	279	198	130	132	287	143	104	50	79	1	334	343	353	9	47	110	106	101	125	186	319	54
4	345	357	22	39	5	16	356	17	354	134	122	122	102	124	130	117	123	102	95	83	80	59	64	88	70
5	142	65	150	109	151	159	233	218	277	112	136	166	146	114	104	122	167	163	238	243	226	247	231	238	172
6	304	263	317	315	349	324	313	304	308	304	315	299	296	295	305	291	299	312	304	319	314	308	304	270	306
7	265	282	307	298	302	300	300	301	299	302	299	298	303	303	299	308	315	310	314	312	310	308	307	303	302
8	304	306	309	294	311	301	309	324	330	327	328	321	325	320	324	349	16	337	336	325	347	53	75	53	332
9	42	164	128	248	194	205	208	163	186	185	330	20	19	24	52	167	39	327	121	167	112	164	204	45	141
10	274	259	282	327	290	317	276	325	1	2	340	336	336	343	319	328	324	312	293	213	198	133	175	158	305
11	226	235	293	324	329	287	167	359	1	357	78	335	304	326	326	327	326	330	323	342	354	326	180	207	319
12	142	183	263	178	194	228	168	67	27	3	354	331	325	309	321	312	308	318	324	326	325	195	214	200	289
13	214	167	187	173	231	257	153	167	134	43	240	274	277	288	301	311	318	325	320	325	332	328	171	218	257
14	31	184	194	211	163	39	198	144	350	308	278	31	345	339	330	334	318	326	338	339	6	12	238	170	325
15	41	203	166	168	343	195	145	79	8	44	309	305	307	299	312	317	320	315	313	312	262	269	171	160	298
16	204	172	281	128	140	160	163	18	256	232	273	271	266	260	255	262	267	275	262	272	321	36	35	75	252
17	185	237	12	38	286	260	239	252	258	254	245	269	265	279	292	319	307	308	323	324	320	196	12	319	285
18	215	179	256	342	36	324	25	353	244	220	198	200	226	252	255	236	284	333	334	346	353	14	39	54	296
19	47	217	151	331	336	337	283	227	258	314	96	329	59	337	326	328	40	348	344	341	340	228	205	188	322
20	192	245	289	202	246	288	167	67	31	329	328	339	332	331	341	331	329	317	319	319	321	317	310	332	314
21	284	290	200	226	291	232	298	355	294	101	276	254	251	322	329	258	260	282	290	320	217	165	252	190	268
22	129	53	98	66	173	70	192	174	160	162	171	206	262	341	80	95	262	43	212	310	318	228	298	291	171
23	272	318	315	301	267	267	307	322	315	312	310	314	323	344	309	316	325	329	307	242	223	169	277	316	301
24	300	345	292	326	257	319	258	305	348	4	277	280	280	300	287	291	304	331	332	341	20	209	137	124	306
25	220	296	221	307	357	276	137	296	8	52	326	278	283	263	312	11	299	335	315	255	251	295	313	328	301
26	324	327	325	320	272	267	244	291	296	272	313	305	306	312	305	316	317	321	324	322	320	308	72	335	309
27	180	152	256	185	265	256	157	42	341	4	339	291	307	303	238	290	240	277	313	330	345	169	173	148	269
28	200	197	220	184	141	251	162	23	340	335	332	146	132	206	74	166	157	334	262	225	131	353	303	295	212
29	194	312	335	178	197	186	183	311	326	349	333	313	319	326	326	320	316	321	318	323	321	324	313	335	310
30	306	310	298	303	279	305	292	282	282	309	312	319	315	319	314	312	297	324	336	337	331	348	268	167	307
31	145	229	227	220	223	198	35	89	339	278	261	247	277	271	300	299	298	325	328	322	328	308	269	188	276
Prev	223	254	278	273	268	277	220	332	321	330	307	301	306	310	314	314	312	326	316	316	326	301	247	259	302

Montana Resources LLP
Greeley School Air Monitoring Summary
Wind Direction - MDEQ monitor (degrees)
June 2024

	<< Hour >>																								
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Prev
1	162	162	210	220	62	171	118	6	354	339	337	343	282	282	285	317	325	141	283	55	127	92	191	152	271
2	197	186	157	182	354	141	57	35	6	23	33	34	277	277	3	12	3	8	352	2	66	180	205	185	24
3	69	198	32	182	150	204	173	153	220	235	240	214	265	325	332	216	305	324	324	294	299	339	346	311	266
4	313	311	301	274	317	317	184	126	56	59	338	316	296	269	241	245	264	280	299	320	3	5	245	219	297
5	259	323	262	314	289	319	319	316	311	303	310	302	296	299	290	298	309	315	323	317	322	296	251	167	300
6	204	180	305	345	263	271	19	8	2	337	16	86	79	304	287	297	324	327	338	327	327	279	227	211	316
7	210	224	299	214	157	160	98	4	1	314	327	299	276	291	306	315	319	323	330	345	351	221	201	192	290
8	194	114	159	170	216	148	69	24	337	358	261	26	336	318	326	318	331	322	329	335	51	63	111	216	352
9	200	210	162	190	221	226	166	43	360	14	351	346	313	327	181	136	192	325	287	151	159	203	168	187	206
10	188	213	269	314	258	234	334	287	259	277	280	288	297	299	303	296	317	322	322	324	324	215	129	173	281
11	203	196	163	197	151	149	67	15	18	344	30	270	256	280	249	240	264	271	284	319	324	324	323	324	282
12	324	312	311	180	128	149	13	279	270	276	292	299	280	288	296	307	327	330	340	350	352	326	306	75	311
13	173	189	306	215	274	147	103	35	19	AQ	AQ	326	314	321	321	356	199	284	302	169	212	325	191	169	265
14	194	218	186	117	158	136	281	325	333	265	232	237	233	266	302	283	294	307	316	319	338	327	348	158	271
15	208	168	216	319	352	52	140	350	10	330	239	276	301	303	306	295	298	300	304	303	303	303	300	292	300
16	241	162	143	156	107	189	157	13	199	224	211	314	53	39	283	303	315	310	311	360	352	328	303	357	297
17	196	100	212	197	210	185	152	153	110	148	229	309	260	243	249	228	247	273	290	314	296	208	265	290	229
18	284	192	180	240	226	146	151	143	69	340	24	145	131	150	358	15	94	167	230	249	347	93	147	184	158
19	136	153	152	241	191	137	85	6	316	316	323	211	204	119	259	307	328	135	285	339	30	159	125	203	201
20	216	194	227	176	196	206	117	122	312	342	322	2	107	137	134	134	170	310	40	39	41	44	127	164	136
21	156	190	157	240	173	53	189	8	320	326	66	313	310	180	90	223	266	290	299	312	324	354	177	177	260
22	122	203	178	174	282	189	142	145	312	311	19	235	270	289	263	277	279	306	308	253	199	324	157	181	243
23	184	169	76	150	164	114	151	54	349	19	214	220	222	232	229	203	206	205	214	281	341	138	118	141	181
24	138	117	126	226	227	186	136	171	145	10	325	254	255	278	280	231	281	292	298	301	326	330	248	166	245
25	208	172	188	199	186	207	129	312	276	301	334	331	211	256	275	290	302	301	298	324	36	42	347	171	270
26	127	199	154	359	58	120	14	351	16	163	188	173	146	146	167	158	164	205	118	98	10	122	303	274	137
27	345	93	320	223	23	323	182	177	222	266	307	315	276	255	264	257	273	295	301	300	317	300	299	287	286
28	192	158	195	171	295	211	270	260	238	279	286	281	296	306	313	329	12	31	82	80	26	6	164	171	273
29	240	202	71	97	95	38	2	358	311	309	320	190	314	321	192	211	119	99	44	93	79	114	186	89	77
30	168	284	154	158	125	167	177	178	336	293	286	308	269	276	11	105	126	313	315	282	331	321	223	157	250
Prev	196	187	192	204	197	170	124	18	333	317	309	293	276	282	284	277	290	303	312	326	349	334	217	189	273

Montana Resources LLP
Greeley School Air Monitoring Summary
Standard Deviation of Wind Direction - MDEQ monitor (degrees)
April 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	60	72	66	63	75	64	65	55	46	39	25	17	20	14	24	17	24	23	10	11	10	10	40	63	38	75	10
2	57	68	69	79	55	47	65	60	64	29	36	58	45	27	33	20	27	30	30	46	36	63	89	75	50	89	20
3	66	88	86	76	61	74	65	75	29	24	37	21	25	31	20	14	30	39	17	30	51	56	47	43	46	88	14
4	49	55	54	75	55	30	40	62	50	57	72	48	21	29	57	35	21	21	20	20	21	47	49	63	44	75	20
5	58	61	47	24	39	52	59	38	15	18	20	25	29	41	19	30	38	36	36	23	35	39	46	51	37	61	15
6	39	48	36	30	52	39	31	24	49	25	14	14	15	15	15	15	15	15	15	14	23	42	16	18	26	52	14
7	16	18	38	17	18	20	20	23	47	17	16	21	19	15	16	15	15	16	17	15	15	14	16	17	19	47	14
8	17	16	26	20	18	20	30	35	28	33	32	16	15	22	35	15	14	14	16	19	42	69	65	47	28	69	14
9	48	62	64	51	45	27	45	72	37	43	30	51	47	51	38	28	34	27	17	25	16	29	41	21	40	72	16
10	21	15	31	31	49	72	50	34	63	54	31	54	45	61	50	64	65	67	14	27	44	25	46	64	45	72	14
11	61	83	66	73	44	57	71	71	44	21	38	35	70	36	32	26	23	27	26	32	43	79	67	30	48	83	21
12	26	50	78	49	45	70	79	77	46	62	48	30	21	21	33	27	26	27	20	32	32	58	60	50	44	79	20
13	58	46	48	44	52	48	48	30	20	32	38	44	40	35	40	29	32	28	15	54	36	29	48	41	39	58	15
14	47	60	60	50	71	56	64	44	41	25	16	15	81	44	43	19	47	36	37	45	59	57	46	76	47	81	15
15	46	41	76	50	62	61	73	42	51	34	16	21	19	22	17	15	16	16	11	11	13	16	18	20	32	76	11
16	16	19	82	46	67	31	61	70	40	38	42	33	28	27	34	13	12	18	16	17	21	18	17	18	33	82	12
17	18	24	31	31	32	18	16	19	19	19	26	34	32	31	23	21	20	25	21	21	22	26	18	19	24	34	16
18	28	22	32	36	24	33	57	72	64	46	63	53	60	50	77	39	19	38	22	19	18	21	15	16	39	77	15
19	16	24	47	59	60	44	21	22	33	47	63	44	65	44	50	48	37	18	18	25	25	54	65	65	41	65	16
20	63	57	77	80	72	72	78	36	50	70	44	46	61	62	45	63	43	26	15	38	26	29	41	61	52	80	15
21	51	58	51	63	77	72	68	61	47	47	31	30	28	26	15	10	11	11	11	11	14	20	17	18	35	77	10
22	15	20	26	58	58	65	45	41	38	38	54	64	58	21	19	20	16	12	14	14	17	39	48	63	36	65	12
23	70	37	60	78	72	74	74	59	33	72	37	35	70	AQ	49	34	73	46	25	23	55	66	64	52	55	78	23
24	44	61	42	46	59	54	67	67	29	21	30	27	64	33	27	19	15	15	19	21	32	33	58	48	39	67	15
25	38	39	23	41	17	37	19	26	44	64	48	40	41	31	33	33	19	17	12	21	17	24	44	22	31	64	12
26	55	40	41	32	49	68	31	23	61	45	65	80	57	47	16	20	18	17	17	18	13	35	38	38	39	80	13
27	24	17	20	12	16	31	17	34	37	46	59	38	52	67	52	31	46	33	40	34	54	32	39	38	36	67	12
28	33	49	63	48	62	56	26	29	23	28	33	44	40	44	44	36	31	25	19	13	13	13	24	25	34	63	13
29	54	54	48	65	64	41	32	65	70	41	49	27	40	29	64	27	18	25	21	20	19	15	21	39	40	70	15
30	23	46	83	72	60	31	17	52	44	33	37	49	60	41	46	30	18	18	21	53	21	29	45	54	41	83	17
Avg	41	45	52	50	51	49	48	47	42	39	38	37	42	35	36	27	27	26	20	25	28	36	42	42	39	71	15
Max	70	88	86	80	77	74	79	77	70	72	72	80	81	67	77	64	73	67	40	54	59	79	89	76	55	89	23
Min	15	15	20	12	16	18	16	19	15	17	14	14	15	14	15	10	11	11	10	11	10	10	15	16	19	34	10

Montana Resources LLP
Greeley School Air Monitoring Summary
Standard Deviation of Wind Direction - MDEQ monitor (degrees)
May 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	51	38	36	45	64	54	86	52	35	35	35	29	30	31	33	16	28	15	24	24	19	25	28	32	36	86	15
2	70	45	80	44	62	53	60	42	45	37	37	27	42	47	39	24	20	18	16	17	21	23	29	51	40	80	16
3	22	30	27	63	43	49	75	75	60	51	66	56	55	27	49	48	42	37	16	14	14	50	37	59	44	75	14
4	48	44	51	31	66	63	40	71	51	36	26	26	21	25	27	21	24	23	23	26	20	58	69	19	38	71	19
5	28	64	60	37	26	31	40	48	51	49	37	33	29	23	22	23	30	26	26	18	19	28	19	36	33	64	18
6	27	35	30	30	16	22	21	28	25	22	14	23	27	25	22	27	26	16	21	12	17	22	24	28	23	35	12
7	25	27	23	30	33	29	30	26	26	22	25	26	25	23	27	21	16	19	16	17	21	18	16	21	23	33	16
8	21	20	19	30	29	26	30	16	13	13	12	11	11	12	12	28	21	27	23	46	51	40	45	28	24	51	11
9	51	44	75	64	57	61	56	63	19	32	37	18	22	23	37	35	54	51	38	20	24	39	65	71	44	75	18
10	40	37	53	35	75	30	49	22	30	24	25	22	19	41	51	48	37	38	26	40	31	61	58	31	38	75	19
11	36	53	47	33	46	69	62	51	33	48	74	53	51	51	51	31	19	13	14	12	15	18	34	24	39	74	12
12	73	57	74	68	52	44	34	56	59	65	38	46	41	55	45	34	47	21	13	9	18	21	29	53	44	74	9
13	55	57	49	59	79	71	30	26	47	29	75	43	29	36	29	22	17	13	13	11	11	14	49	52	38	79	11
14	57	49	40	51	49	24	20	29	51	42	39	21	26	16	24	34	33	31	14	18	21	17	41	53	33	57	14
15	25	46	20	34	48	57	24	49	41	55	46	29	23	24	20	13	12	12	12	14	43	32	46	53	32	57	12
16	59	51	57	63	43	68	56	31	51	33	28	25	24	24	20	22	24	28	22	30	31	55	73	62	41	73	20
17	64	46	45	30	55	68	28	24	23	24	22	26	25	29	28	13	19	16	14	13	16	34	57	59	32	68	13
18	74	55	54	56	76	68	65	31	77	62	54	31	38	39	38	29	39	23	11	14	17	18	17	29	42	77	11
19	55	47	51	35	17	36	49	22	46	70	62	28	53	35	33	18	18	37	19	17	43	47	48	47	39	70	17
20	52	79	51	47	49	36	70	58	42	14	14	18	19	19	26	16	15	15	14	12	13	18	18	24	31	79	12
21	65	55	60	62	51	74	68	50	34	62	70	54	40	22	23	30	31	27	23	16	36	49	49	68	47	74	16
22	52	60	62	63	58	34	52	65	41	29	23	28	46	36	32	69	50	30	34	62	39	47	59	52	47	69	23
23	55	58	33	40	38	39	41	26	12	14	16	13	14	17	32	19	19	14	30	25	27	63	52	88	33	88	12
24	67	66	75	55	80	69	68	40	24	44	51	36	35	31	30	25	20	11	12	15	36	49	31	36	42	80	11
25	46	41	73	47	45	68	41	51	34	38	56	30	50	32	29	54	27	20	17	29	32	30	27	23	39	73	17
26	14	14	30	21	30	35	46	27	28	28	25	34	26	20	24	15	15	12	11	14	13	35	36	48	25	48	11
27	56	60	55	50	59	62	63	60	43	49	43	63	49	53	55	58	40	41	21	10	26	22	29	32	46	63	10
28	53	57	59	67	48	56	38	49	40	19	25	60	52	50	65	28	22	24	52	40	46	44	32	43	45	67	19
29	55	33	43	43	59	41	29	34	16	29	27	22	16	15	12	12	15	12	13	13	14	14	19	14	25	59	12
30	22	60	30	27	28	25	31	34	30	27	25	17	18	24	24	30	36	30	16	17	20	18	44	25	27	60	16
31	42	56	54	74	64	65	80	68	59	62	52	69	50	50	33	30	35	17	16	14	18	39	56	62	49	80	14
Avg	47	48	49	46	50	49	48	43	38	38	38	33	32	31	32	29	27	23	20	21	25	34	40	43	37	68	15
Max	74	79	80	74	80	74	86	75	77	70	75	69	55	55	65	69	54	51	52	62	51	63	73	88	49	88	23
Min	14	14	19	21	16	22	20	16	12	13	12	11	11	12	12	12	12	11	11	9	11	14	16	14	23	33	9

Montana Resources LLP
Greeley School Air Monitoring Summary
Standard Deviation of Wind Direction - MDEQ monitor (degrees)
June 2024

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	34	46	47	49	43	53	63	39	32	22	18	34	52	43	35	21	17	49	21	22	26	33	48	38	37	63	17
2	30	45	57	39	35	20	27	44	45	27	39	51	44	43	54	24	25	19	17	13	56	17	40	43	36	57	13
3	53	50	34	28	63	62	57	67	45	19	22	24	22	13	14	33	24	13	10	25	23	13	20	28	32	67	10
4	14	25	36	32	65	21	50	45	44	47	40	32	30	32	24	22	24	26	26	27	34	48	25	23	33	65	14
5	32	24	55	37	41	18	17	15	18	26	24	30	35	37	34	32	23	19	10	12	13	42	62	30	29	62	10
6	54	72	75	79	61	52	45	29	27	22	31	48	69	38	33	33	20	11	15	12	15	35	50	31	40	79	11
7	41	56	79	76	77	38	31	25	67	31	31	38	50	36	28	33	14	13	14	17	19	50	37	39	39	79	13
8	60	38	40	34	53	48	57	62	42	36	72	51	47	42	40	30	34	23	14	14	24	24	46	27	40	72	14
9	29	22	41	24	20	40	26	58	33	41	49	42	42	31	47	17	30	46	46	56	11	15	17	11	33	58	11
10	40	18	25	19	29	28	19	33	36	29	33	27	29	36	28	33	26	17	14	12	10	52	43	49	29	52	10
11	59	31	50	67	70	50	41	51	34	29	60	35	32	35	26	29	34	28	35	18	13	10	12	11	36	70	10
12	12	25	26	28	50	26	41	34	36	41	34	39	38	35	41	30	17	15	16	18	17	45	64	62	33	64	12
13	28	31	43	61	49	40	55	50	54	AQ	AQ	50	29	35	43	59	46	35	27	42	40	45	33	43	43	61	27
14	65	46	79	45	63	45	47	39	40	55	46	51	41	39	28	35	27	25	21	18	19	20	25	59	41	79	18
15	48	50	34	36	39	71	47	57	53	34	56	34	26	18	24	20	19	15	16	16	14	15	16	19	32	71	14
16	39	25	24	45	56	23	24	72	49	56	61	70	62	64	39	22	24	20	17	25	24	19	17	44	38	72	17
17	33	23	29	26	26	21	21	29	49	33	62	53	36	36	42	37	41	43	29	22	27	33	37	28	34	62	21
18	31	32	20	56	26	21	25	45	68	66	43	20	40	43	43	26	25	32	41	41	29	26	19	25	35	68	19
19	29	48	40	54	35	29	37	57	40	25	54	60	59	60	34	52	25	61	45	23	54	26	47	38	43	61	23
20	34	40	64	56	67	67	56	55	37	49	30	66	61	61	34	64	65	38	27	25	20	26	41	54	47	67	20
21	28	43	29	70	74	78	43	51	55	56	51	50	41	64	52	49	42	27	23	21	19	39	24	28	44	78	19
22	48	35	64	39	46	39	43	57	56	35	52	42	40	38	50	39	54	25	19	33	30	60	34	48	43	64	19
23	75	74	52	53	68	63	45	51	51	50	48	29	30	35	35	27	27	29	29	31	58	61	40	80	48	80	27
24	45	31	42	63	74	57	57	49	58	63	32	43	40	34	39	40	31	24	16	18	25	35	41	34	41	74	16
25	26	55	43	56	23	38	32	47	63	37	62	74	61	44	40	37	31	30	22	43	24	24	40	26	41	74	22
26	31	51	67	60	62	51	51	52	56	83	49	29	18	18	22	22	17	30	31	48	24	50	40	49	42	83	17
27	30	20	65	51	54	64	33	50	39	40	45	35	37	41	42	43	38	26	17	18	26	22	19	25	37	65	17
28	24	31	38	46	50	41	41	35	40	34	34	36	24	28	25	24	24	28	23	26	52	35	52	28	34	52	23
29	86	74	69	57	52	73	32	44	29	29	73	68	40	34	57	51	48	21	29	25	50	58	53	42	50	86	21
30	40	58	35	45	55	53	59	58	48	52	32	25	38	33	48	35	45	51	28	30	45	39	27	40	42	59	25
Avg	40	41	47	48	51	44	41	47	45	40	44	43	40	38	37	34	31	28	23	25	28	34	36	37	38	68	17
Max	86	74	79	79	77	78	63	72	68	83	73	74	69	64	57	64	65	61	46	56	58	61	64	80	50	86	27
Min	12	18	20	19	20	18	17	15	18	19	18	20	18	13	14	17	14	11	10	12	10	10	12	11	29	52	10

APPENDIX B: GRAVIMETRIC ANALYSIS DATA

Quarter 2, 2024 Filter Analysis Results - Blanks - Greeley

FILTER	TYPE	DATE*	PRE WEIGHT (MG)	PRE-WEIGHT DATE	POST WEIGHT (MG)	POST-WEIGHT DATE	PART MASS (MG)
C1733486	Lab	8-May	118.703	6-Mar	118.707	1-May	0.004
T4195481	Lab	27-Jun	146.496	26-Mar	146.497	14-Jun	0.001
T4195500	Field	10-May	144.268	26-Mar	144.264	14-Jun	-0.004
C1759093	Lab	27-Jun	119.431	29-Apr	119.428	14-Jun	-0.003
C1759100	Field	30-May	117.280	29-Apr	117.281	14-Jun	0.001
C1759079	Field	24-Jun	119.435	22-May	119.455	8-Aug	0.020
C1759080	Lab	26-Aug	117.688	22-May	117.691	8-Aug	0.003
C1759055	Lab	26-Aug	118.526	14-Jun	118.531	14-Aug	0.005
C1759060	Field	22-Jul	120.698	14-Jun	120.714	14-Aug	0.016

*Denotes collection date for Field Blank, analysis date for Laboratory Blanks

Quarter 2, 2024 Filter Analysis Results - TSP Greeley

FILTER	START	END	HOURS	FLOW LPM	SAMPLE VOLUME (M3)	PRE WEIGHT (MG)	POST WEIGHT (MG)	PART MASS (MG)	CONC (UG/M3)	E-S CONC (UG/M3)	TRUE E-S MULT	MDEQ PM10
C1733484	03/26 @ 15	04/02 @ 13	167	2.0	19.10	118.351	118.620	0.269	14.1	21.6	3.26	12.3
C1733488	04/02 @ 14	04/10 @ 08	187	2.0	21.39	120.360	120.675	0.315	14.7	12.8	5.75	10.2
C1733490	04/10 @ 09	04/15 @ 14	126	2.0	14.41	118.882	119.302	0.420	29.1	23.4	6.23	20.8
T4195482	04/15 @ 15	04/23 @ 14	192	2.0	21.96	144.414	144.700	0.286	13.0	18.1	3.60	14.9
T4195484	04/23 @ 15	04/29 @ 14	144	2.0	16.47	144.482	144.794	0.312	18.9	17.8	5.32	6.9
T4195487	04/29 @ 15	05/01 @ 14	48	2.0	5.49	143.810	143.853	0.043	7.8	7.7	5.08	<0
T4195499	05/01 @ 15	05/10 @ 10	212	2.0	24.25	146.496	146.834	0.338	13.9	10.2	6.83	13.5
C1759092	05/10 @ 11	05/14 @ 14	100	2.0	11.44	119.427	119.596	0.169	14.8	13.4	5.51	12.7
C1759095	05/14 @ 15	05/21 @ 14	168	2.0	19.22	121.495	121.791	0.296	15.4	11.9	6.47	15.1
C1759097	05/21 @ 15	05/29 @ 13	191	2.0	21.85	121.095	121.263	0.168	7.7	8.8	4.37	8.1
C1759099	05/29 @ 14	06/03 @ 14	121	2.0	13.84	119.508	119.721	0.213	15.4	8.9	8.64	11.5
C1759072	06/03 @ 15	06/07 @ 14	96	2.0	10.98	119.080	119.316	0.236	21.5	11.6	9.26	14.6
C1759074	06/07 @ 15	06/12 @ 14	120	2.0	13.73	115.492	115.799	0.307	22.4	17.9	6.25	22.5
C1759077	06/12 @ 15	06/20 @ 14	192	2.0	21.96	118.629	118.867	0.238	10.8	10.6	5.11	14.1
C1759075	06/20 @ 15	06/24 @ 14	96	2.0	10.98	117.415	117.660	0.245	22.3	17.7	6.30	18.7
C1759052	06/24 @ 15	07/02 @ 11	189	2.0	21.62	118.473	118.759	0.286	13.2	10.0	6.61	

Quarter 2, 2024 Filter Analysis Results - PM10 - Greeley

FILTER	DATE	AVG FLOW LPM	HOURS	SAMPLE VOLUME (M3)	PRE WEIGHT (MG)	POST WEIGHT (MG)	PART MASS (MG)	CONC (UG/M3)	DEQ (UG/M3)
C1733487	04/06	16.70	24:00	24.03	118.929	119.066	0.137	5.7	4.3
C1733489	04/12	16.70	24:00	24.03	120.283	120.743	0.460	19.1	29.5
T4195480	04/18	16.70	24:00	24.03	144.598	144.894	0.296	12.3	10.7
T4195483	04/24	16.70	24:00	24.03	142.955	143.439	0.484	20.1	26.0
T4195486	04/30	16.70	24:00	24.03	146.193	146.308	0.115	4.8	-3.5
T4195488	05/06	16.71	23:59	24.03	143.730	143.917	0.187	7.8	16.8
C1759091	05/12	16.70	24:00	24.03	120.306	120.585	0.279	11.6	11.6
C1759094	05/18	16.70	24:00	24.03	118.343	118.530	0.187	7.8	11.5
C1759096	05/24	16.70	23:59	24.03	117.321	117.514	0.193	8.0	8.6
C1759098	05/30	16.70	24:00	24.02	119.775	119.925	0.150	6.2	11.8
C1759071	06/05	16.70	24:00	24.03	119.044	119.331	0.287	11.9	14.4
C1759073	06/11	16.70	24:00	24.03	118.711	118.986	0.275	11.4	14.3
C1759076	06/17	16.71	24:00	24.03	114.864	114.932	0.068	2.8	4.3
C1759078	06/23	16.70	24:00	24.03	119.103	119.540	0.437	18.2	22.8
C1759051	06/29	16.70	24:00	24.02	119.901	120.114	0.213	8.9	10.9

APPENDIX C: WIND ROSE TABLES

Table C-1. Quarterly Wind Rose Summary, Greeley School (All Data)

Second Quarter 2024 (All Data)																	
	Direction>>>	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
Wind Speed (meters per second)	0.1 - 1.0	2.6	1.5	1.7	1.4	0.8	0.9	2.3	2.9	3.7	2.7	2.6	1.4	2.1	2.0	2.0	1.7	32.0
	1.1 - 2.0	3.0	1.7	1.3	0.8	0.7	0.6	1.0	1.7	1.5	1.7	1.1	1.3	2.7	3.0	6.1	3.8	31.9
	2.1 - 3.0	0.8	0.9	0.9	0.5	0.6	0.6	0.3	0.4	0.2	0.6	0.6	1.2	2.2	3.5	7.3	3.9	24.5
	3.1 - 4.0	0.3	0.3	0.4	0.2	0.1	0.2	0.3	0.3	0.0	0.2	0.4	0.3	0.4	0.8	2.7	2.1	8.9
	4.1 - 5.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.4	0.0	0.0	0.1	0.0	0.1	0.2	0.9	0.2	2.3
	5.1 - 6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
	6.1 - 7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	11.1 - 12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	12.1 - 13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	13.1 - 14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	14.1 - 15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.1 - 16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	16.1 - 17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	17.1 - 18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	18.1 - 19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	19.1 - 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	> 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Calm																	0.0
	Total	6.8	4.4	4.4	2.9	2.3	2.3	4.0	5.6	5.3	5.1	4.6	4.2	7.4	9.8	19.1	11.6	100.0
	Average Speed	1.4	1.6	1.7	1.5	1.6	1.6	1.4	1.4	0.9	1.3	1.3	1.8	1.7	2.1	2.3	2.2	1.8

Table C-2. Wind Rose Summary, Greeley School TSP > 25

Second Quarter 2024 (TSP >25 µg/m^3)																	
	Direction>>>	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
Wind Speed (meters per second)	0.1 - 1.0	10.2	7.2	4.3	4.9	2.0	3.0	3.0	4.3	3.9	1.0	3.6	0.3	3.6	2.6	4.6	5.9	64.5
	1.1 - 2.0	4.3	3.6	0.3	0.0	0.0	0.0	0.0	1.0	1.3	0.3	0.3	0.7	1.0	0.3	2.0	4.6	19.7
	2.1 - 3.0	0.3	0.0	0.3	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.7	1.0	1.0	4.3
	3.1 - 4.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.7	0.3	1.0	3.0	1.0	6.9
	4.1 - 5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.0	0.0	0.7	0.0	0.7	0.0	1.3	0.3	4.3
	5.1 - 6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6.1 - 7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	11.1 - 12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	12.1 - 13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	13.1 - 14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	14.1 - 15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.1 - 16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	16.1 - 17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	17.1 - 18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	18.1 - 19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	19.1 - 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	> 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Calm																	0.0
	Total	14.8	10.9	5.3	5.3	2.3	3.0	3.3	6.6	5.3	1.6	4.9	1.6	5.6	4.6	12.2	12.8	100.0
	Average Speed	0.9	0.9	1.0	0.8	1.1	0.6	1.1	1.4	0.8	1.5	1.3	2.3	1.4	1.7	2.2	1.5	1.3

Table C-3. Wind Rose Summary, Greeley School TSP < 8

Second Quarter 2024 (TSP <8 µg/ m^3)																	
	Direction>>>	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
Wind Speed (meters per second)	0.1 - 1.0	0.5	0.3	0.6	0.8	0.3	0.2	2.0	2.0	2.5	1.4	0.8	1.7	1.2	1.4	0.2	0.3	16.1
	1.1 - 2.0	2.9	1.2	1.5	0.8	0.8	0.6	1.2	1.5	1.4	2.8	1.2	2.0	3.4	4.5	10.4	4.5	40.9
	2.1 - 3.0	1.2	1.4	1.4	0.5	0.9	1.2	0.5	0.2	0.2	0.0	0.2	0.8	2.6	2.8	10.2	6.3	30.3
	3.1 - 4.0	0.3	0.8	0.6	0.2	0.2	0.3	0.5	0.3	0.0	0.0	0.2	0.2	0.0	0.6	2.3	3.4	9.8
	4.1 - 5.0	0.0	0.3	0.5	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.5	2.5
	5.1 - 6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.3
	6.1 - 7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	11.1 - 12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	12.1 - 13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	13.1 - 14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	14.1 - 15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.1 - 16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	16.1 - 17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	17.1 - 18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	18.1 - 19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	19.1 - 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	> 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Calm																	0.0
	Total	5.0	4.0	4.6	2.2	2.2	2.3	4.2	4.2	4.0	4.2	2.3	4.6	7.3	9.9	24.0	15.0	100.0
	Average Speed	1.8	2.6	2.3	1.6	2.0	2.4	1.5	1.4	1.1	1.3	1.5	1.5	1.7	2.1	2.3	2.5	2.0

APPENDIX D: LABORATORY ANALYSIS REPORTS

ANALYTICAL SUMMARY REPORT

May 14, 2024

Bison Engineering
3143 E Lyndale Ave
Helena, MT 59601-6401

Work Order: B24050153 Quote ID: B4795

Project Name: Montana Resources/Greely School DH

Energy Laboratories Inc Billings MT received the following 10 samples for Bison Engineering on 5/1/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24050153-001	Particulate filter C1733481 PM10	03/19/24 0:00	05/01/24	Air	Metals on air filter by ICP/ICPMS Nitric acid-extraction by 40CFR50G
B24050153-002	Particulate filter C1733827 TSP 3/18-3/26	03/26/24 0:00	05/01/24	Air	Same As Above
B24050153-003	Particulate filter C1733483 PM10	03/25/24 0:00	05/01/24	Air	Same As Above
B24050153-004	Particulate filter C1733484 TSP 3/26-4/2	04/02/24 0:00	05/01/24	Air	Same As Above
B24050153-005	Particulate filter C1733485 PM10	03/31/24 0:00	05/01/24	Air	Same As Above
B24050153-006	Particulate filter T1168480 Lab Blank	03/07/24 14:00	05/01/24	Air	Same As Above
B24050153-007	Particulate filter C1733487 PM10	04/06/24 0:00	05/01/24	Air	Same As Above
B24050153-008	Particulate filter C1733488 TSP 4/2-4/10	04/10/24 0:00	05/01/24	Air	Same As Above
B24050153-009	Particulate filter C1733489 PM10	04/12/24 0:00	05/01/24	Air	Same As Above
B24050153-010	Particulate filter C1733490 TSP 4/10-4/15	04/15/24 0:00	05/01/24	Air	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter C1733481 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-001
Collection Date: 03/19/24
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 05:09 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	438	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 05:09 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	438	189242
Copper	1.7	ug/filter		1.0	0.16	E200.8	05/08/24 05:09 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	438	189242
Lead	0.13	ug/filter	J	1.0	0.042	E200.8	05/10/24 04:46 / ae	05/03/24 08:55	40CFR50	ICPMS208-B_240508A	422	189242
Manganese	0.20	ug/filter	J	1.0	0.18	E200.8	05/08/24 05:09 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	438	189242
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	05/08/24 05:09 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	438	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 05:09 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	438	189242

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter C1733827 TSP 3/18-3/26
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-002
Collection Date: 03/26/24
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 05:26 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	441	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 05:26 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	441	189242
Copper	0.86	ug/filter	J	1.0	0.16	E200.8	05/08/24 05:26 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	441	189242
Lead	0.070	ug/filter	J	1.0	0.042	E200.8	05/10/24 05:04 / ae	05/03/24 08:55	40CFR50	ICPMS208-B_240508A	425	189242
Manganese	ND	ug/filter		1.0	0.18	E200.8	05/08/24 05:26 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	441	189242
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	05/08/24 05:26 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	441	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 05:26 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	441	189242

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter C1733483 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-003
Collection Date: 03/25/24
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 05:32 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	442	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 05:32 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	442	189242
Copper	0.46	ug/filter	J	1.0	0.16	E200.8	05/10/24 05:11 / ae	05/03/24 08:55	40CFR50	ICPMS208-B_240508A	426	189242
Lead	ND	ug/filter		1.0	0.042	E200.8	05/08/24 05:32 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	442	189242
Manganese	ND	ug/filter		1.0	0.18	E200.8	05/08/24 05:32 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	442	189242
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	05/08/24 05:32 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	442	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 05:32 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	442	189242

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter C1733484 TSP 3/26-4/2
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-004
Collection Date: 04/02/24
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 05:38 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	443	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 05:38 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	443	189242
Copper	0.48	ug/filter	J	1.0	0.16	E200.8	05/10/24 05:17 / ae	05/03/24 08:55	40CFR50	ICPMS208-B_240508A	427	189242
Lead	ND	ug/filter		1.0	0.042	E200.8	05/08/24 05:38 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	443	189242
Manganese	ND	ug/filter		1.0	0.18	E200.8	05/08/24 05:38 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	443	189242
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	05/08/24 05:38 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	443	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 05:38 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	443	189242

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter C1733485 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-005
Collection Date: 03/31/24
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 05:44 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	444	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 05:44 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	444	189242
Copper	0.50	ug/filter	J	1.0	0.16	E200.8	05/10/24 05:23 / ae	05/03/24 08:55	40CFR50	ICPMS208-B_240508A	428	189242
Lead	ND	ug/filter		1.0	0.042	E200.8	05/08/24 05:44 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	444	189242
Manganese	ND	ug/filter		1.0	0.18	E200.8	05/08/24 05:44 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	444	189242
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	05/08/24 05:44 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	444	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 05:44 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	444	189242

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T1168480 Lab Blank
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-006
Collection Date: 03/07/24 14:00
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 05:50 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	445	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 05:50 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	445	189242
Copper	ND	ug/filter		1.0	0.16	E200.8	05/08/24 05:50 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	445	189242
Lead	ND	ug/filter		1.0	0.042	E200.8	05/08/24 05:50 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	445	189242
Manganese	ND	ug/filter		1.0	0.18	E200.8	05/08/24 05:50 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	445	189242
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	05/08/24 05:50 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	445	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 05:50 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	445	189242

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter C1733487 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-007
Collection Date: 04/06/24
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 05:56 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	446	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 05:56 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	446	189242
Copper	0.44	ug/filter	J	1.0	0.16	E200.8	05/10/24 05:29 / ae	05/03/24 08:55	40CFR50	ICPMS208-B_240508A	429	189242
Lead	ND	ug/filter		1.0	0.042	E200.8	05/08/24 05:56 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	446	189242
Manganese	ND	ug/filter		1.0	0.18	E200.8	05/08/24 05:56 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	446	189242
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	05/08/24 05:56 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	446	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 05:56 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	446	189242

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter C1733488 TSP 4/2-4/10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-008
Collection Date: 04/10/24
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 06:02 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	447	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 06:02 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	447	189242
Copper	0.66	ug/filter	J	1.0	0.16	E200.8	05/10/24 05:35 / ae	05/03/24 08:55	40CFR50	ICPMS208-B_240508A	430	189242
Lead	ND	ug/filter		1.0	0.042	E200.8	05/08/24 06:02 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	447	189242
Manganese	ND	ug/filter		1.0	0.18	E200.8	05/08/24 06:02 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	447	189242
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	05/08/24 06:02 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	447	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 06:02 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	447	189242

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter C1733489 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-009
Collection Date: 04/12/24
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 06:07 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	448	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 06:07 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	448	189242
Copper	0.69	ug/filter	J	1.0	0.16	E200.8	05/10/24 05:41 / ae	05/03/24 08:55	40CFR50	ICPMS208-B_240508A	431	189242
Lead	0.043	ug/filter	J	1.0	0.042	E200.8	05/08/24 06:07 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	448	189242
Manganese	ND	ug/filter		1.0	0.18	E200.8	05/08/24 06:07 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	448	189242
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	05/08/24 06:07 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	448	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 06:07 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	448	189242

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter C1733490 TSP 4/10-4/15
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24050153-010
Collection Date: 04/15/24
DateReceived: 05/01/24
Report Date: 05/14/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	05/08/24 06:13 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	449	189242
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	05/08/24 06:13 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	449	189242
Copper	0.85	ug/filter	J	1.0	0.16	E200.8	05/10/24 05:47 / ae	05/03/24 08:55	40CFR50	ICPMS208-B_240508A	432	189242
Lead	0.063	ug/filter	J	1.0	0.042	E200.8	05/08/24 06:13 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	449	189242
Manganese	ND	ug/filter		1.0	0.18	E200.8	05/08/24 06:13 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	449	189242
Molybdenum	0.052	ug/filter	J	1.0	0.0050	E200.8	05/08/24 06:13 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	449	189242
Zinc	ND	ug/filter		1.0	0.30	E200.8	05/08/24 06:13 / ae	05/03/24 08:55	40CFR50	ICPMS207-B_240506A	449	189242

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Bison Engineering **Work Order:** B24050153 **Report Date:** 05/14/24

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **E200.8**									Analytical Run: ICPMS207-B_240506A
Lab ID: **QCS**	Initial Calibration Verification Standard								05/08/24 00:39
Arsenic	0.0486	mg/L	0.0050	97	90	110			
Cadmium	0.0232	mg/L	0.0010	93	90	110			
Copper	0.0512	mg/L	0.010	102	90	110			
Lead	0.0490	mg/L	0.0010	98	90	110			
Manganese	0.264	mg/L	0.0050	106	90	110			
Molybdenum	0.0487	mg/L	0.0050	97	90	110			
Zinc	0.0494	mg/L	0.0050	99	90	110			
Lab ID: **CCV**	Continuing Calibration Verification Standard								05/08/24 03:53
Arsenic	0.0478	mg/L	0.0050	96	90	110			
Cadmium	0.0485	mg/L	0.0010	97	90	110			
Copper	0.0490	mg/L	0.010	98	90	110			
Lead	0.0503	mg/L	0.0010	101	90	110			
Manganese	0.0489	mg/L	0.0050	98	90	110			
Molybdenum	0.0487	mg/L	0.0050	97	90	110			
Zinc	0.0482	mg/L	0.0050	96	90	110			
Lab ID: **CCV**	Continuing Calibration Verification Standard								05/08/24 05:15
Arsenic	0.0470	mg/L	0.0050	94	90	110			
Cadmium	0.0482	mg/L	0.0010	96	90	110			
Copper	0.0486	mg/L	0.010	97	90	110			
Lead	0.0492	mg/L	0.0010	98	90	110			
Manganese	0.0478	mg/L	0.0050	96	90	110			
Molybdenum	0.0484	mg/L	0.0050	97	90	110			
Zinc	0.0478	mg/L	0.0050	96	90	110			
Method: **E200.8**									Batch: 189242
Lab ID: **MB-189242**	Method Blank				Run: ICPMS207-B_240506A				05/08/24 04:45
Arsenic	ND	ug/filter	0.06						
Cadmium	ND	ug/filter	0.006						
Copper	ND	ug/filter	0.2						
Lead	ND	ug/filter	0.04						
Manganese	ND	ug/filter	0.2						
Molybdenum	ND	ug/filter	0.005						
Zinc	ND	ug/filter	0.3						
Lab ID: **LCS-189242**	Laboratory Control Sample				Run: ICPMS207-B_240506A				05/08/24 04:51
Arsenic	98.7	ug/filter	1.0	99	85	115			
Cadmium	48.8	ug/filter	1.0	98	85	115			
Copper	98.8	ug/filter	5.0	99	85	115			
Lead	98.6	ug/filter	1.0	99	85	115			
Manganese	507	ug/filter	5.0	101	85	115			
Molybdenum	100	ug/filter	1.0	100	85	115			
Zinc	104	ug/filter	5.0	104	85	115			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Bison Engineering **Work Order:** B24050153 **Report Date:** 05/14/24

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **E200.8**									Batch: 189242
Lab ID: **LCSD-189242**	Laboratory Control Sample Duplicate				Run: ICPMS207-B_240506A				05/08/24 04:57
Arsenic	99.6	ug/filter	1.0	100	85	115			
Cadmium	49.1	ug/filter	1.0	98	85	115			
Copper	99.3	ug/filter	5.0	99	85	115			
Lead	95.8	ug/filter	1.0	96	85	115			
Manganese	504	ug/filter	5.0	101	85	115			
Molybdenum	99.6	ug/filter	1.0	100	85	115			
Zinc	110	ug/filter	5.0	110	85	115			
Method: **E200.8**									Analytical Run: ICPMS208-B_240508A
Lab ID: **QCS**	Initial Calibration Verification Standard								05/09/24 22:00
Copper	0.0513	mg/L	0.010	103	90	110			
Lead	0.0499	mg/L	0.0010	100	90	110			
Lab ID: **CCV**	Continuing Calibration Verification Standard								05/10/24 03:34
Copper	0.0497	mg/L	0.010	99	90	110			
Lead	0.0500	mg/L	0.0010	100	90	110			
Lab ID: **CCV**	Continuing Calibration Verification Standard								05/10/24 04:52
Copper	0.0500	mg/L	0.010	100	90	110			
Lead	0.0490	mg/L	0.0010	98	90	110			
Method: **E200.8**									Batch: 189242
Lab ID: **MB-189242**	Method Blank				Run: ICPMS208-B_240508A				05/10/24 04:40
Copper	ND	ug/filter	0.2						
Lead	ND	ug/filter	0.04						

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

Work Order Receipt Checklist

Bison Engineering

B24050153

Login completed by:	Chrystal N. Sheaff	Date Received:	5/1/2024
Reviewed by:	cindy	Received by:	AAG
Reviewed Date:	5/5/2024	Carrier name:	Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	3.2°C Blue Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 1

Account Information (Billing information)

Company/Name	Bison Engineering, Inc.
Contact	Shelley Argott-Brown
Phone	(406) 442-5768
Mailing Address	3143 E Lyndale Avenue
City, State, Zip	Helena MT, 59601
Email	sbrown-argott@bison-eng.com
Receive Invoice	☐ Hard Copy ■ Email
Receive Report	☐ Hard Copy ☐ Email
Purchase Order	MTR223018
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	Bison Engineering, Inc.
Contact	Don Milmine
Phone	(406) 208-4833
Mailing Address	2751 Enterprise Avenue Suite 2
City, State, Zip	Billings, MT 59102
Email	dmilmine@bison-eng.com
Receive Report	☐ Hard Copy ■ Email
Special Report/Formats	☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other______

Comments

Analyze per history

Project Information

Project Name, PWSID, Permit, etc.	Momtana Resources/Greely School DH
Sampler Name	
Sampler Phone	
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

URANIUM MINING CLIENTS MUST indicate sample type.
- ☐ NOT Source or Byproduct Material
- ☐ Source/Processed Ore (Ground or Refined) **CALL BEFORE SENDING
- ☐ 11e.(2) Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes
- A - Air (circled)
- W - Water
- S - Soils/Solids
- V - Vegetation
- B - Bioassay
- O - Other
- DW - Drinking Water

All turnaround times are standard unless marked as RUSH.

Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Analysis Requested

#	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Arsenic	Cadmium	Copper	Lead	Manganese	Molybdenum	Zinc			See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	Particulate filter C1733481 PM10	3/19/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					B24050153
2	Particulate filter C1733827 TSP 3/18 - 3/26	3/18-3/26	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
3	Particulate filter C1733483 PM10	3/25/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
4	Particulate filter C1733484 TSP 3/26 - 4/2	3/26-4/2	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
5	Particulate filter C1733485 PM10	3/31/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
6	Particulate filter T1168480 Lab Blank	3/7/24	1400	1	on Teflon filter	x	x	x	x	x	x	x					
7	Particulate filter C1733487 PM10	4/6/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
8	Particulate filter C1733488 TSP 4/2 - 4/10	4/2-4/10	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
9	Particulate filter C1733489 PM10	4/12/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
10	Particulate filter C1733490 TSP 4/10 - 4/15	4/10-4/15	continuous	1	on Teflon filter	x	x	x	x	x	x	x					

Custody Record MUST be signed

Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
Don Milmine	5/1/24 1525	Don V. Milmine			
Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print): D. Best	Date/Time: 1May24 1525	Signature: [signature]

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
		Y N C B	Y N	°C	Y N	Y N	CC Cash Check______	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ELI-COC-10/18 v.3

ANALYTICAL SUMMARY REPORT

July 02, 2024

Bison Engineering
3143 E Lyndale Ave
Helena, MT 59601-6401

Work Order: B24061641 Quote ID: B4795

Project Name: Montana Resources/Greely School DH

Energy Laboratories Inc Billings MT received the following 20 samples for Bison Engineering on 6/18/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24061641-001	Particulate filter T4195480 PM10	04/18/24 00:00	06/18/24	Air	Metals on air filter by ICP/ICPMS Nitric acid-extraction by 40CFR50G
B24061641-002	Particulate filter T4195481 Lab Blank	03/27/24 14:15	06/18/24	Air	Same As Above
B24061641-003	Particulate filter T4195482 TSP 4/15-4/23	04/23/24 00:00	06/18/24	Air	Same As Above
B24061641-004	Particulate filter T4195483 PM10	04/24/24 00:00	06/18/24	Air	Same As Above
B24061641-005	Particulate filter T4195484 TSP 4/23-4/29	04/29/24 00:00	06/18/24	Air	Same As Above
B24061641-006	Particulate filter T1195486 PM10	04/30/24 00:00	06/18/24	Air	Same As Above
B24061641-007	Particulate filter T4195487 TSP 4/29-5/1	05/01/24 00:00	06/18/24	Air	Same As Above
B24061641-008	Particulate filter T4195488 PM10	05/06/24 00:00	06/18/24	Air	Same As Above
B24061641-009	Particulate filter T4195499 TSP 5/1-5/10	05/10/24 00:00	06/18/24	Air	Same As Above
B24061641-010	Particulate filter T4195500 PM10 field blank	05/10/24 09:02	06/18/24	Air	Same As Above
B24061641-011	Particulate Filter C1759091 PM10	05/12/24 00:00	06/18/24	Air	Same As Above
B24061641-012	Particulate Filter C1759092 TSP 5/10-5/14	05/14/24 00:00	06/18/24	Air	Same As Above
B24061641-013	Particulate Filter C1759093 Lab Blank	04/29/24 17:00	06/18/24	Air	Same As Above
B24061641-014	Particulate Filter C1759094 PM10	05/18/24 00:00	06/18/24	Air	Same As Above
B24061641-015	Particulate Filter C1759095 TSP 5/14-5/21	05/21/24 00:00	06/18/24	Air	Same As Above
B24061641-016	Particulate Filter C1759096 PM10	05/24/24 00:00	06/18/24	Air	Same As Above

ANALYTICAL SUMMARY REPORT

B24061641-017	Particulate Filter C1759097 TSP 5/21-5/29	05/29/24 00:00	06/18/24	Air	Same As Above
B24061641-018	Particulate Filter C1759098 PM10	05/30/24 00:00	06/18/24	Air	Same As Above
B24061641-019	Particulate Filter C1759099 TSP 5/29-6/30	05/30/24 00:00	06/18/24	Air	Same As Above
B24061641-020	Particulate Filter C1759100 PM10 field blank	05/30/24 14:19	06/18/24	Air	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 So. 27th Street, Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

Energy Laboratories, Inc. verifies the reported results for the analysis has been technically reviewed and approved for release.

If you have any questions regarding these test results, please contact your Project Manager.

CLIENT: Bison Engineering
Project: Montana Resources/Greely School DH
Work Order: B24061641

Report Date: 07/02/24

CASE NARRATIVE

Per client request, results are based on the final concentration using 25 mL of extraction solution per filter.

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the lowest method detection limit (MDL)/Limit of Detection (LOD). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL/LOD may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T4195480 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-001
Collection Date: 04/18/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 20:01 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 333		190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 20:01 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 333		190673
Copper	0.48	ug/filter	J	1.0	0.16	E200.8	06/28/24 17:27 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 58		190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 20:01 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 333		190673
Manganese	0.23	ug/filter	J	1.0	0.18	E200.8	06/28/24 17:27 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 58		190673
Molybdenum	0.028	ug/filter	J	1.0	0.0059	E200.8	06/28/24 17:27 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 58		190673
Zinc	0.33	ug/filter	J	1.0	0.30	E200.8	06/28/24 17:27 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 58		190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T4195481 Lab Blank
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-002
Collection Date: 03/27/24 14:15
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 20:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	334	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 20:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	334	190673
Copper	ND	ug/filter		1.0	0.16	E200.8	06/27/24 20:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	334	190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 20:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	334	190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 20:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	334	190673
Molybdenum	ND	ug/filter		1.0	0.0059	E200.8	06/27/24 20:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	334	190673
Zinc	ND	ug/filter		1.0	0.30	E200.8	06/27/24 20:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	334	190673

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T4195482 TSP 4/15-4/23
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-003
Collection Date: 04/23/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 20:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	335	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 20:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	335	190673
Copper	1.3	ug/filter		1.0	0.16	E200.8	06/27/24 20:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	335	190673
Lead	0.089	ug/filter	J	1.0	0.042	E200.8	06/28/24 17:33 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	59	190673
Manganese	0.40	ug/filter	J	1.0	0.18	E200.8	06/28/24 17:33 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	59	190673
Molybdenum	0.11	ug/filter	J	1.0	0.0059	E200.8	06/28/24 17:33 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	59	190673
Zinc	0.66	ug/filter	J	1.0	0.30	E200.8	06/28/24 17:33 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	59	190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T4195483 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-004
Collection Date: 04/24/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 20:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	336	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 20:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	336	190673
Copper	1.9	ug/filter		1.0	0.16	E200.8	06/27/24 20:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	336	190673
Lead	0.10	ug/filter	J	1.0	0.042	E200.8	06/28/24 17:39 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	60	190673
Manganese	0.30	ug/filter	J	1.0	0.18	E200.8	06/27/24 20:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	336	190673
Molybdenum	0.040	ug/filter	J	1.0	0.0059	E200.8	06/28/24 17:39 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	60	190673
Zinc	1.3	ug/filter		1.0	0.30	E200.8	06/27/24 20:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	336	190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T4195484 TSP 4/23-4/29
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-005
Collection Date: 04/29/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 20:25 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 337		190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 20:25 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 337		190673
Copper	1.0	ug/filter		1.0	0.16	E200.8	06/28/24 17:45 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 61		190673
Lead	0.054	ug/filter	J	1.0	0.042	E200.8	06/28/24 17:45 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 61		190673
Manganese	0.26	ug/filter	J	1.0	0.18	E200.8	06/28/24 17:45 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 61		190673
Molybdenum	0.079	ug/filter	J	1.0	0.0059	E200.8	06/28/24 17:45 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 61		190673
Zinc	0.48	ug/filter	J	1.0	0.30	E200.8	06/28/24 17:45 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 61		190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T1195486 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-006
Collection Date: 04/30/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 20:43 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	340	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 20:43 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	340	190673
Copper	0.44	ug/filter	J	1.0	0.16	E200.8	06/28/24 17:51 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	62	190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 20:43 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	340	190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 20:43 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	340	190673
Molybdenum	0.053	ug/filter	J	1.0	0.0059	E200.8	06/28/24 17:51 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	62	190673
Zinc	0.38	ug/filter	J	1.0	0.30	E200.8	06/28/24 17:51 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	62	190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T4195487 TSP 4/29-5/1
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-007
Collection Date: 05/01/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 20:49 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	341	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 20:49 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	341	190673
Copper	ND	ug/filter		1.0	0.16	E200.8	06/27/24 20:49 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	341	190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 20:49 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	341	190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 20:49 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	341	190673
Molybdenum	0.0097	ug/filter	J	1.0	0.0059	E200.8	06/29/24 12:08 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	249	190673
Zinc	ND	ug/filter		1.0	0.30	E200.8	06/27/24 20:49 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	341	190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T4195488 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-008
Collection Date: 05/06/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 20:55 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 342		190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 20:55 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 342		190673
Copper	0.40	ug/filter	J	1.0	0.16	E200.8	06/28/24 18:03 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 64		190673
Lead	0.067	ug/filter	J	1.0	0.042	E200.8	06/28/24 18:03 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 64		190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 20:55 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 342		190673
Molybdenum	0.020	ug/filter	J	1.0	0.0059	E200.8	06/28/24 18:03 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 64		190673
Zinc	0.44	ug/filter	J	1.0	0.30	E200.8	06/28/24 18:03 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 64		190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T4195499 TSP 5/1-5/10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-009
Collection Date: 05/10/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 21:01 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 343		190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 21:01 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 343		190673
Copper	0.79	ug/filter	J	1.0	0.16	E200.8	06/28/24 18:09 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 65		190673
Lead	0.073	ug/filter	J	1.0	0.042	E200.8	06/28/24 18:09 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 65		190673
Manganese	0.24	ug/filter	J	1.0	0.18	E200.8	06/28/24 18:09 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 65		190673
Molybdenum	0.049	ug/filter	J	1.0	0.0059	E200.8	06/28/24 18:09 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 65		190673
Zinc	0.54	ug/filter	J	1.0	0.30	E200.8	06/28/24 18:09 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 65		190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate filter T4195500 PM10 field blank
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-010
Collection Date: 05/10/24 09:02
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 21:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	344	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 21:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	344	190673
Copper	ND	ug/filter		1.0	0.16	E200.8	06/27/24 21:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	344	190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 21:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	344	190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 21:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	344	190673
Molybdenum	ND	ug/filter		1.0	0.0059	E200.8	06/27/24 21:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	344	190673
Zinc	ND	ug/filter		1.0	0.30	E200.8	06/27/24 21:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	344	190673

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759091 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-011
Collection Date: 05/12/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 21:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	345	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 21:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	345	190673
Copper	1.0	ug/filter		1.0	0.16	E200.8	06/27/24 21:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	345	190673
Lead	0.065	ug/filter	J	1.0	0.042	E200.8	06/27/24 21:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	345	190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 21:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	345	190673
Molybdenum	0.49	ug/filter	J	1.0	0.0059	E200.8	06/27/24 21:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	345	190673
Zinc	0.52	ug/filter	J	1.0	0.30	E200.8	06/27/24 21:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	345	190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759092 TSP 5/10-5/14
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-012
Collection Date: 05/14/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 21:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	346	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 21:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	346	190673
Copper	0.51	ug/filter	J	1.0	0.16	E200.8	06/28/24 18:15 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	66	190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 21:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	346	190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 21:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	346	190673
Molybdenum	0.059	ug/filter	J	1.0	0.0059	E200.8	06/28/24 18:15 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	66	190673
Zinc	ND	ug/filter		1.0	0.30	E200.8	06/27/24 21:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	346	190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759093 Lab Blank
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-013
Collection Date: 04/29/24 17:00
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 21:25 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	347	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 21:25 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	347	190673
Copper	ND	ug/filter		1.0	0.16	E200.8	06/27/24 21:25 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	347	190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 21:25 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	347	190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 21:25 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	347	190673
Molybdenum	0.0073	ug/filter	J	1.0	0.0059	E200.8	06/27/24 21:25 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	347	190673
Zinc	ND	ug/filter		1.0	0.30	E200.8	06/27/24 21:25 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	347	190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759094 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-014
Collection Date: 05/18/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 21:31 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 348		190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 21:31 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 348		190673
Copper	0.46	ug/filter	J	1.0	0.16	E200.8	06/28/24 18:39 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 70		190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 21:31 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 348		190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 21:31 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 348		190673
Molybdenum	0.053	ug/filter	J	1.0	0.0059	E200.8	06/28/24 18:39 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 70		190673
Zinc	0.42	ug/filter	J	1.0	0.30	E200.8	06/28/24 18:39 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 70		190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759095 TSP 5/14-5/21
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-015
Collection Date: 05/21/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 21:37 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 349		190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 21:37 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 349		190673
Copper	0.74	ug/filter	J	1.0	0.16	E200.8	06/28/24 18:44 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 71		190673
Lead	0.045	ug/filter	J	1.0	0.042	E200.8	06/28/24 18:44 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 71		190673
Manganese	0.19	ug/filter	J	1.0	0.18	E200.8	06/28/24 18:44 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 71		190673
Molybdenum	0.029	ug/filter	J	1.0	0.0059	E200.8	06/28/24 18:44 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 71		190673
Zinc	0.41	ug/filter	J	1.0	0.30	E200.8	06/29/24 12:14 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 250		190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759096 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-016
Collection Date: 05/24/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 21:55 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 352		190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 21:55 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 352		190673
Copper	0.55	ug/filter	J	1.0	0.16	E200.8	06/28/24 18:50 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 72		190673
Lead	0.050	ug/filter	J	1.0	0.042	E200.8	06/28/24 18:50 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 72		190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 21:55 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 352		190673
Molybdenum	0.14	ug/filter	J	1.0	0.0059	E200.8	06/28/24 18:50 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 72		190673
Zinc	0.89	ug/filter	J	1.0	0.30	E200.8	06/28/24 18:50 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 72		190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759097 TSP 5/21-5/29
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-017
Collection Date: 05/29/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 22:01 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 353		190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 22:01 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 353		190673
Copper	0.40	ug/filter	J	1.0	0.16	E200.8	06/28/24 18:56 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 73		190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 22:01 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 353		190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 22:01 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 353		190673
Molybdenum	0.044	ug/filter	J	1.0	0.0059	E200.8	06/28/24 18:56 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 73		190673
Zinc	0.68	ug/filter	J	1.0	0.30	E200.8	06/28/24 18:56 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 73		190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759098 PM10
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-018
Collection Date: 05/30/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 22:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 354		190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 22:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 354		190673
Copper	0.49	ug/filter	J	1.0	0.16	E200.8	06/28/24 19:02 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 74		190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 22:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 354		190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 22:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 354		190673
Molybdenum	0.040	ug/filter	J	1.0	0.0059	E200.8	06/28/24 19:02 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A : 74		190673
Zinc	ND	ug/filter		1.0	0.30	E200.8	06/27/24 22:07 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A : 354		190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759099 TSP 5/29-6/30
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-019
Collection Date: 05/30/24
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 22:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	355	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 22:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	355	190673
Copper	0.40	ug/filter	J	1.0	0.16	E200.8	06/28/24 19:09 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	75	190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 22:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	355	190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 22:13 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	355	190673
Molybdenum	0.22	ug/filter	J	1.0	0.0059	E200.8	06/28/24 19:09 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	75	190673
Zinc	0.31	ug/filter	J	1.0	0.30	E200.8	06/29/24 12:20 / ae	06/21/24 11:23	40CFR50	ICPMS208-B_240628A	251	190673

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759100 PM10 field blank
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24061641-020
Collection Date: 05/30/24 14:19
DateReceived: 06/18/24
Report Date: 07/02/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	06/27/24 22:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	356	190673
Cadmium	ND	ug/filter		1.0	0.0044	E200.8	06/27/24 22:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	356	190673
Copper	ND	ug/filter		1.0	0.16	E200.8	06/27/24 22:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	356	190673
Lead	ND	ug/filter		1.0	0.042	E200.8	06/27/24 22:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	356	190673
Manganese	ND	ug/filter		1.0	0.18	E200.8	06/27/24 22:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	356	190673
Molybdenum	ND	ug/filter		1.0	0.0059	E200.8	06/27/24 22:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	356	190673
Zinc	ND	ug/filter		1.0	0.30	E200.8	06/27/24 22:19 / jks	06/21/24 11:23	40CFR50	ICPMS208-B_240626A	356	190673

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Bison Engineering **Work Order:** B24061641 **Report Date:** 07/02/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS208-B_240626A	
Lab ID: QCS	7	Initial Calibration Verification Standard								06/27/24 18:43
Arsenic		0.0507	mg/L	0.0050	101	90	110			
Cadmium		0.0259	mg/L	0.0010	104	90	110			
Copper		0.0516	mg/L	0.010	103	90	110			
Lead		0.0501	mg/L	0.0010	100	90	110			
Manganese		0.254	mg/L	0.0050	102	90	110			
Molybdenum		0.0505	mg/L	0.0050	101	90	110			
Zinc		0.0518	mg/L	0.0050	104	90	110			
Lab ID: CCV	7	Continuing Calibration Verification Standard								06/27/24 19:13
Arsenic		0.0487	mg/L	0.0050	97	90	110			
Cadmium		0.0492	mg/L	0.0010	98	90	110			
Copper		0.0497	mg/L	0.010	99	90	110			
Lead		0.0487	mg/L	0.0010	97	90	110			
Manganese		0.0486	mg/L	0.0050	97	90	110			
Molybdenum		0.0492	mg/L	0.0050	98	90	110			
Zinc		0.0490	mg/L	0.0050	98	90	110			
Lab ID: CCV	7	Continuing Calibration Verification Standard								06/27/24 20:31
Arsenic		0.0491	mg/L	0.0050	98	90	110			
Cadmium		0.0496	mg/L	0.0010	99	90	110			
Copper		0.0499	mg/L	0.010	100	90	110			
Lead		0.0486	mg/L	0.0010	97	90	110			
Manganese		0.0489	mg/L	0.0050	98	90	110			
Molybdenum		0.0487	mg/L	0.0050	97	90	110			
Zinc		0.0512	mg/L	0.0050	102	90	110			
Lab ID: CCV	7	Continuing Calibration Verification Standard								06/27/24 21:43
Arsenic		0.0506	mg/L	0.0050	101	90	110			
Cadmium		0.0499	mg/L	0.0010	100	90	110			
Copper		0.0517	mg/L	0.010	103	90	110			
Lead		0.0490	mg/L	0.0010	98	90	110			
Manganese		0.0494	mg/L	0.0050	99	90	110			
Molybdenum		0.0490	mg/L	0.0050	98	90	110			
Zinc		0.0519	mg/L	0.0050	104	90	110			
Method: E200.8										Batch: 190673
Lab ID: MB-190673	7	Method Blank				Run: ICPMS208-B_240626A				06/27/24 19:37
Arsenic		ND	ug/filter	0.06						
Cadmium		ND	ug/filter	0.004						
Copper		0.6	ug/filter	0.2						
Lead		ND	ug/filter	0.04						
Manganese		ND	ug/filter	0.2						
Molybdenum		ND	ug/filter	0.006						
Zinc		ND	ug/filter	0.3						

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Bison Engineering **Work Order:** B24061641 **Report Date:** 07/02/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 190673
Lab ID: LCS-190673	7	Laboratory Control Sample				Run: ICPMS208-B_240626A				06/27/24 19:43
Arsenic		101	ug/filter	1.0	101	85	115			
Cadmium		52.4	ug/filter	1.0	105	85	115			
Copper		104	ug/filter	5.0	104	85	115			
Lead		102	ug/filter	1.0	102	85	115			
Manganese		500	ug/filter	5.0	100	85	115			
Molybdenum		102	ug/filter	1.0	102	85	115			
Zinc		105	ug/filter	5.0	105	85	115			
Lab ID: LCSD-190673	7	Laboratory Control Sample Duplicate				Run: ICPMS208-B_240626A				06/27/24 19:49
Arsenic		103	ug/filter	1.0	103	85	115			
Cadmium		50.8	ug/filter	1.0	102	85	115			
Copper		104	ug/filter	5.0	104	85	115			
Lead		100	ug/filter	1.0	100	85	115			
Manganese		507	ug/filter	5.0	101	85	115			
Molybdenum		99.2	ug/filter	1.0	99	85	115			
Zinc		106	ug/filter	5.0	106	85	115			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Bison Engineering **Work Order:** B24061641 **Report Date:** 07/02/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS208-B_240628A	
Lab ID: QCS	5	Initial Calibration Verification Standard								06/28/24 14:10
Copper		0.0509	mg/L	0.010	102	90	110			
Lead		0.0492	mg/L	0.0010	98	90	110			
Manganese		0.249	mg/L	0.0050	100	90	110			
Molybdenum		0.0495	mg/L	0.0050	99	90	110			
Zinc		0.0502	mg/L	0.0050	100	90	110			
Lab ID: CCV	5	Continuing Calibration Verification Standard								06/28/24 17:03
Copper		0.0530	mg/L	0.010	106	90	110			
Lead		0.0510	mg/L	0.0010	102	90	110			
Manganese		0.0509	mg/L	0.0050	102	90	110			
Molybdenum		0.0508	mg/L	0.0050	102	90	110			
Zinc		0.0524	mg/L	0.0050	105	90	110			
Lab ID: CCV	5	Continuing Calibration Verification Standard								06/28/24 18:21
Copper		0.0540	mg/L	0.010	108	90	110			
Lead		0.0485	mg/L	0.0010	97	90	110			
Manganese		0.0510	mg/L	0.0050	102	90	110			
Molybdenum		0.0504	mg/L	0.0050	101	90	110			
Zinc		0.0519	mg/L	0.0050	104	90	110			
Lab ID: QCS	5	Initial Calibration Verification Standard								06/29/24 06:04
Copper		0.0507	mg/L	0.010	101	90	110			
Lead		0.0490	mg/L	0.0010	98	90	110			
Manganese		0.251	mg/L	0.0050	100	90	110			
Molybdenum		0.0487	mg/L	0.0050	97	90	110			
Zinc		0.0512	mg/L	0.0050	102	90	110			
Lab ID: CCV	5	Continuing Calibration Verification Standard								06/29/24 11:44
Copper		0.0507	mg/L	0.010	101	90	110			
Lead		0.0477	mg/L	0.0010	95	90	110			
Manganese		0.0493	mg/L	0.0050	99	90	110			
Molybdenum		0.0470	mg/L	0.0050	94	90	110			
Zinc		0.0494	mg/L	0.0050	99	90	110			
Method: E200.8										Batch: 190673
Lab ID: MB-190673	5	Method Blank				Run: ICPMS208-B_240628A				06/28/24 17:21
Copper		0.6	ug/filter	0.2						
Lead		ND	ug/filter	0.04						
Manganese		ND	ug/filter	0.2						
Molybdenum		ND	ug/filter	0.006						
Zinc		ND	ug/filter	0.3						

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

Work Order Receipt Checklist

Bison Engineering

B24061641

Login completed by: Danielle N. Harris
Date Received: 6/18/2024

Reviewed by: cindy
Received by: DNH

Reviewed Date: 6/21/2024
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	4.6°C Blue Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

The samples Particulate filter C1759099 TSP 5/29-6/30 and Particulate filter C1759100 PM10 field blank have collection dates of 6/30/24 which is a date in the future. Proceed with 5/30/24 per email with Don Milmine on 6/9/24. DH

Work Order Receipt Checklist - Continued

Bison Engineering B24061641

6/19/24

Chain of Custody & Analytical Request Record

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Account Information *(Billing information)*

Company/Name	Bison Engineering, Inc.
Contact	Shelley Argott-Brown
Phone	(406) 442-5768
Mailing Address	3143 E Lyndale Avenue
City, State, Zip	Helena MT, 59601
Email	sbrown-argott@bison-eng.com
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ☐Email
Purchase Order	MTR223018
Quote	
Bottle Order	

Report Information *(if different than Account Information)*

Company/Name	Bison Engineering, Inc.
Contact	Don Milmine
Phone	(406) 208-4833
Mailing Address	2751 Enterprise Avenue Suite 2
City, State, Zip	Billings, MT 59102
Email	dmilmine@bison-eng.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

Analyze per history

Project Information

Project Name, PWSID, Permit, etc.	Momtana Resources/Greely School DH
Sampler Name	Sampler Phone
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

URANIUM MINING CLIENTS MUST indicate sample type.
☐ NOT Source or Byproduct Material
☐ Source/Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11e.(2) Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Arsenic	Cadmium	Copper	Lead	Manganese	Molybdenum	Zinc			See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	Particulate filter T4195480 PM10	4/18/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					B24061641
2	Particulate filter T4195481 Lab Blank	3/27/24	1415	1	on Teflon filter	x	x	x	x	x	x	x					
3	Particulate filter T4195482 TSP 4/15 - 4/23	4/15-4/23	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
4	Particulate filter T4195483 PM10	4/24/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
5	Particulate filter T4195484 TSP 4/23-4/29	4/23-4/29	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
6	Particulate filter T1195486 PM10	4/30/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
7	Particulate filter T4195487 TSP 4/29-5/1	4/29-5/1	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
8	Particulate filter T4195488 PM10	5/6/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
9	Particulate filter T4195499 TSP 5/1-5/10	5/1-5/10	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
10	Particulate filter T4195500 PM10 field blank	5/10/24	0902	1	on Teflon filter	x	x	x	x	x	x	x					

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Don Milmine	6/18/24 1637	Don Milmine			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Daniel Harris	6/18/24 1637	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check_____	Amount $	Receipt Number *(cash/check only)*

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ELI-COC-10/18 v.3

Chain of Custody & Analytical Request Record

ENERGY LABORATORIES — Trust our People. Trust our Data.

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Account Information *(Billing information)*

Company/Name	Bison Engineering, Inc.
Contact	Shelley Argott-Brown
Phone	(406) 442-5768
Mailing Address	3143 E Lyndale Avenue
City, State, Zip	Helena MT, 59601
Email	sbrown-argott@bison-eng.com
Receive Invoice	☐Hard Copy ☑Email
Receive Report	☐Hard Copy ☐Email
Purchase Order	MTR223018
Quote	
Bottle Order	

Report Information *(if different than Account Information)*

Company/Name	Bison Engineering, Inc.
Contact	Don Milmine
Phone	(406) 208-4833
Mailing Address	2751 Enterprise Avenue Suite 2
City, State, Zip	Billings, MT 59102
Email	dmilmine@bison-eng.com
Receive Report	☐Hard Copy ☑Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

Analyze per history

Project Information

Project Name, PWSID, Permit, etc.	Momtana Resources/Greely School DH
Sampler Name	Sampler Phone
Sample Origin State	Montana
EPA/State Compliance	☑ Yes ☐ No

URANIUM MINING CLIENTS MUST indicate sample type.
☐ NOT Source or Byproduct Material
☐ Source/Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11e.(2) Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes: A - Air; W- Water; S - Soils/ Solids; V - Vegetation; B - Bioassay; O - Other; DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Arsenic	Cadmium	Copper	Lead	Manganese	Molybdenum	Zinc			See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	Particulate filter C1759091 PM10	5/12/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					B24061641
2	Particulate filter C1759092 TSP 5/10-5/14	5/10-5/14	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
3	Particulate filter C1759093 Lab Blank	4/29/24	1700	1	on Teflon filter	x	x	x	x	x	x	x					
4	Particulate filter C1759094 PM10	5/18/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
5	Particulate filter C1759095 TSP 5/14-5/21	5/14-5/21	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
6	Particulate filter C1759096 PM10	5/24/24	24 hr, composite	1	on Teflon filter	x	x	x	x	x	x	x					
7	Particulate filter C1759097 TSP 5/21-5/29	5/21-5/29	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
8	Particulate filter C1759098 PM10	5/30/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
9	Particulate filter C1759099 TSP 5/29-6/30	5/29-6/30	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
10	Particulate filter C1759100 PM10 field blank	6/30/24	1419	1	on Teflon filter	x	x	x	x	x	x	x					

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Don Milmine	6/18/24 1637	Don V. Milmine			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Daniel Harris	6/18/24 1637	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check_____	Amount $	Receipt Number *(cash/check only)*

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ELI-COC-10/18 v.3

ANALYTICAL SUMMARY REPORT

September 03, 2024

Bison Engineering
3143 E Lyndale Ave
Helena, MT 59601-6401

Work Order: B24081659 Quote ID: B4795

Project Name: Montana Resources/Greely School DH

Energy Laboratories Inc Billings MT received the following 10 samples for Bison Engineering on 8/15/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24081659-001	Particulate Filter C1759071 PM10 Composite	06/05/24 00:00	08/15/24	Air	Metals on air filter by ICP/ICPMS Nitric acid-extraction by 40CFR50G
B24081659-002	Particulate Filter C1759072 TSP 6/3-6/7	06/03/24 00:00	08/15/24	Air	Same As Above
B24081659-003	Particulate Filter C1759073 PM10 Composite	06/11/24 00:00	08/15/24	Air	Same As Above
B24081659-004	Particulate Filter C1759074 TSP 6/7-6/12	06/07/24 00:00	08/15/24	Air	Same As Above
B24081659-005	Particulate Filter C1759075 TSP 6/20-6/24	06/20/24 00:00	08/15/24	Air	Same As Above
B24081659-006	Particulate Filter C1759076 PM10 Composite	06/17/24 00:00	08/15/24	Air	Same As Above
B24081659-007	Particulate Filter C1759077 TSP 6/12-6/20	06/12/24 00:00	08/15/24	Air	Same As Above
B24081659-008	Particulate Filter C1759078 PM10 Composite	06/23/24 00:00	08/15/24	Air	Same As Above
B24081659-009	Particulate Filter C1759079 Field Blank	06/24/24 14:13	08/15/24	Air	Same As Above
B24081659-010	Particulate Filter C1759080 PM10 Lab Blank	05/22/24 17:15	08/15/24	Air	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 So. 27th Street, Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

Energy Laboratories, Inc. verifies the reported results for the analysis has been technically reviewed and approved for release.

If you have any questions regarding these test results, please contact your Project Manager.

CLIENT: Bison Engineering
Project: Montana Resources/Greely School DH
Work Order: B24081659

Report Date: 09/03/24

CASE NARRATIVE

Per client request, results are based on the final concentration using 25 mL of extraction solution per filter.

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the lowest method detection limit (MDL)/Limit of Detection (LOD). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL/LOD may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759071 PM10 Composite
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-001
Collection Date: 06/05/24
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 21:42 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 105		192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 19:26 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 89		192528
Copper	0.55	ug/filter	J	1.0	0.16	E200.8	08/26/24 19:26 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 89		192528
Lead	0.043	ug/filter	J	1.0	0.042	E200.8	08/26/24 19:26 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 89		192528
Manganese	0.20	ug/filter	J	1.0	0.18	E200.8	08/26/24 19:26 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 89		192528
Molybdenum	0.033	ug/filter	J	1.0	0.0050	E200.8	08/26/24 19:26 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 89		192528
Zinc	0.44	ug/filter	J	1.0	0.30	E200.8	08/26/24 19:26 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 89		192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759072 TSP 6/3-6/7
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-002
Collection Date: 06/03/24
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 21:48 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 106		192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 19:32 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 90		192528
Copper	0.40	ug/filter	J	1.0	0.16	E200.8	08/26/24 19:32 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 90		192528
Lead	0.056	ug/filter	J	1.0	0.042	E200.8	08/26/24 19:32 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 90		192528
Manganese	ND	ug/filter		1.0	0.18	E200.8	08/26/24 19:32 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 90		192528
Molybdenum	0.10	ug/filter	J	1.0	0.0050	E200.8	08/26/24 19:32 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 90		192528
Zinc	1.9	ug/filter		1.0	0.30	E200.8	08/26/24 19:32 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 90		192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759073 PM10 Composite
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-003
Collection Date: 06/11/24
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 21:54 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 107		192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 19:38 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 91		192528
Copper	0.88	ug/filter	J	1.0	0.16	E200.8	08/26/24 19:38 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 91		192528
Lead	0.052	ug/filter	J	1.0	0.042	E200.8	08/26/24 19:38 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 91		192528
Manganese	0.25	ug/filter	J	1.0	0.18	E200.8	08/26/24 19:38 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 91		192528
Molybdenum	0.16	ug/filter	J	1.0	0.0050	E200.8	08/26/24 19:38 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 91		192528
Zinc	0.32	ug/filter	J	1.0	0.30	E200.8	08/26/24 19:38 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 91		192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759074 TSP 6/7-6/12
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-004
Collection Date: 06/07/24
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 22:00 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 108		192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 19:44 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 92		192528
Copper	0.76	ug/filter	J	1.0	0.16	E200.8	08/26/24 19:44 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 92		192528
Lead	0.070	ug/filter	J	1.0	0.042	E200.8	08/26/24 19:44 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 92		192528
Manganese	0.25	ug/filter	J	1.0	0.18	E200.8	08/26/24 19:44 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 92		192528
Molybdenum	0.057	ug/filter	J	1.0	0.0050	E200.8	08/26/24 19:44 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 92		192528
Zinc	0.46	ug/filter	J	1.0	0.30	E200.8	08/26/24 19:44 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 92		192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759075 TSP 6/20-6/24
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-005
Collection Date: 06/20/24
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 22:06 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 109		192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 19:50 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 93		192528
Copper	0.63	ug/filter	J	1.0	0.16	E200.8	08/26/24 19:50 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 93		192528
Lead	0.056	ug/filter	J	1.0	0.042	E200.8	08/26/24 19:50 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 93		192528
Manganese	0.26	ug/filter	J	1.0	0.18	E200.8	08/26/24 19:50 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 93		192528
Molybdenum	0.45	ug/filter	J	1.0	0.0050	E200.8	08/26/24 19:50 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 93		192528
Zinc	0.31	ug/filter	J	1.0	0.30	E200.8	08/26/24 19:50 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 93		192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759076 PM10 Composite
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-006
Collection Date: 06/17/24
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 22:12 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 110		192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 19:56 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 94		192528
Copper	ND	ug/filter		1.0	0.16	E200.8	08/26/24 19:56 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 94		192528
Lead	ND	ug/filter		1.0	0.042	E200.8	08/26/24 19:56 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 94		192528
Manganese	ND	ug/filter		1.0	0.18	E200.8	08/26/24 19:56 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 94		192528
Molybdenum	0.015	ug/filter	J	1.0	0.0050	E200.8	08/26/24 19:56 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 94		192528
Zinc	ND	ug/filter		1.0	0.30	E200.8	08/26/24 19:56 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 94		192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759077 TSP 6/12-6/20
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-007
Collection Date: 06/12/24
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 22:30 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 113		192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 20:02 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 95		192528
Copper	0.59	ug/filter	J	1.0	0.16	E200.8	08/26/24 20:02 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 95		192528
Lead	ND	ug/filter		1.0	0.042	E200.8	08/26/24 20:02 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 95		192528
Manganese	0.19	ug/filter	J	1.0	0.18	E200.8	08/26/24 20:02 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 95		192528
Molybdenum	0.078	ug/filter	J	1.0	0.0050	E200.8	08/26/24 20:02 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 95		192528
Zinc	0.35	ug/filter	J	1.0	0.30	E200.8	08/26/24 20:02 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 95		192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759078 PM10 Composite
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-008
Collection Date: 06/23/24
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 22:36 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 114		192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 20:19 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 98		192528
Copper	0.63	ug/filter	J	1.0	0.16	E200.8	08/26/24 20:19 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 98		192528
Lead	0.073	ug/filter	J	1.0	0.042	E200.8	08/26/24 20:19 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 98		192528
Manganese	0.33	ug/filter	J	1.0	0.18	E200.8	08/26/24 20:19 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 98		192528
Molybdenum	0.078	ug/filter	J	1.0	0.0050	E200.8	08/26/24 20:19 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 98		192528
Zinc	0.52	ug/filter	J	1.0	0.30	E200.8	08/26/24 20:19 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 98		192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759079 Field Blank
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-009
Collection Date: 06/24/24 14:13
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 22:42 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 115		192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 20:25 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 99		192528
Copper	ND	ug/filter		1.0	0.16	E200.8	08/26/24 20:25 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 99		192528
Lead	ND	ug/filter		1.0	0.042	E200.8	08/26/24 20:25 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 99		192528
Manganese	ND	ug/filter		1.0	0.18	E200.8	08/26/24 20:25 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 99		192528
Molybdenum	ND	ug/filter		1.0	0.0059	E200.8	08/28/24 22:42 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A : 115		192528
Zinc	ND	ug/filter		1.0	0.30	E200.8	08/26/24 20:25 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A : 99		192528

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759080 PM10 Lab Blank
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081659-010
Collection Date: 05/22/24 17:15
DateReceived: 08/15/24
Report Date: 09/03/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 22:48 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	116	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 20:31 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	100	192528
Copper	ND	ug/filter		1.0	0.16	E200.8	08/26/24 20:31 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	100	192528
Lead	ND	ug/filter		1.0	0.042	E200.8	08/26/24 20:31 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	100	192528
Manganese	ND	ug/filter		1.0	0.18	E200.8	08/26/24 20:31 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	100	192528
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	08/26/24 20:31 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	100	192528
Zinc	ND	ug/filter		1.0	0.30	E200.8	08/26/24 20:31 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	100	192528

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Bison Engineering **Work Order:** B24081659 **Report Date:** 09/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Analytical Run: ICPMS207-B_240826A
Lab ID: QCS	6	Initial Calibration Verification Standard								08/26/24 17:23
Cadmium		0.0258	mg/L	0.0010	103	90	110			
Copper		0.0523	mg/L	0.010	105	90	110			
Lead		0.0516	mg/L	0.0010	103	90	110			
Manganese		0.259	mg/L	0.0050	103	90	110			
Molybdenum		0.0494	mg/L	0.0050	99	90	110			
Zinc		0.0520	mg/L	0.0050	104	90	110			
Lab ID: CCV	6	Continuing Calibration Verification Standard								08/26/24 18:45
Cadmium		0.0508	mg/L	0.0010	102	90	110			
Copper		0.0512	mg/L	0.010	102	90	110			
Lead		0.0507	mg/L	0.0010	101	90	110			
Manganese		0.0509	mg/L	0.0050	102	90	110			
Molybdenum		0.0501	mg/L	0.0050	100	90	110			
Zinc		0.0503	mg/L	0.0050	101	90	110			
Lab ID: CCV	6	Continuing Calibration Verification Standard								08/26/24 20:07
Cadmium		0.0509	mg/L	0.0010	102	90	110			
Copper		0.0519	mg/L	0.010	104	90	110			
Lead		0.0500	mg/L	0.0010	100	90	110			
Manganese		0.0518	mg/L	0.0050	103	90	110			
Molybdenum		0.0500	mg/L	0.0050	100	90	110			
Zinc		0.0517	mg/L	0.0050	103	90	110			
Method: E200.8										Batch: 192528
Lab ID: MB-192528	7	Method Blank				Run: ICPMS207-B_240826A				08/26/24 19:03
Arsenic		0.1	ug/filter	0.06						
Cadmium		ND	ug/filter	0.006						
Copper		0.5	ug/filter	0.2						
Lead		0.05	ug/filter	0.04						
Manganese		ND	ug/filter	0.2						
Molybdenum		ND	ug/filter	0.005						
Zinc		0.4	ug/filter	0.3						
Lab ID: LCS-192528	7	Laboratory Control Sample				Run: ICPMS207-B_240826A				08/26/24 19:09
Arsenic		100	ug/filter	1.0	100	85	115			
Cadmium		50.6	ug/filter	1.0	101	85	115			
Copper		102	ug/filter	5.0	102	85	115			
Lead		98.6	ug/filter	1.0	99	85	115			
Manganese		508	ug/filter	5.0	102	85	115			
Molybdenum		101	ug/filter	1.0	101	85	115			
Zinc		102	ug/filter	5.0	103	85	115			
Lab ID: LCSD-192528	7	Laboratory Control Sample Duplicate				Run: ICPMS207-B_240826A				08/26/24 19:15
Arsenic		103	ug/filter	1.0	103	85	115			
Cadmium		52.5	ug/filter	1.0	105	85	115			
Copper		105	ug/filter	5.0	105	85	115			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Bison Engineering **Work Order:** B24081659 **Report Date:** 09/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 192528
Lab ID: LCSD-192528	7	Laboratory Control Sample Duplicate				Run: ICPMS207-B_240826A				08/26/24 19:15
Lead		102	ug/filter	1.0	102	85	115			
Manganese		520	ug/filter	5.0	104	85	115			
Molybdenum		103	ug/filter	1.0	103	85	115			
Zinc		105	ug/filter	5.0	105	85	115			
Method: E200.8										Analytical Run: ICPMS208-B_240828A
Lab ID: QCS	2	Initial Calibration Verification Standard								08/28/24 20:54
Arsenic		0.0506	mg/L	0.0050	101	90	110			
Molybdenum		0.0499	mg/L	0.0050	100	90	110			
Lab ID: CCV	2	Continuing Calibration Verification Standard								08/28/24 21:00
Arsenic		0.0499	mg/L	0.0050	100	90	110			
Molybdenum		0.0496	mg/L	0.0050	99	90	110			
Lab ID: CCV	2	Continuing Calibration Verification Standard								08/28/24 22:18
Arsenic		0.0506	mg/L	0.0050	101	90	110			
Molybdenum		0.0490	mg/L	0.0050	98	90	110			
Method: E200.8										Batch: 192528
Lab ID: MB-192528	2	Method Blank				Run: ICPMS208-B_240828A				08/28/24 21:30
Arsenic		ND	ug/filter	0.06						
Molybdenum		ND	ug/filter	0.006						

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

Work Order Receipt Checklist

Bison Engineering

B24081659

Login completed by: Gina McCartney
Date Received: 8/15/2024
Reviewed by: cindy
Received by: KLP
Reviewed Date: 8/22/2024
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	2.9°C Blue Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

None

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

(1)

Account Information *(Billing information)*

Company/Name	Bison Engineering, Inc.
Contact	Shelley Argott-Brown
Phone	(406) 442-5768
Mailing Address	3143 E Lyndale Avenue
City, State, Zip	Helena MT, 59601
Email	sbrown-argott@bison-eng.com
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ☐Email
Purchase Order	MTR224018
Quote	
Bottle Order	

Report Information *(if different than Account Information)*

Company/Name	Bison Engineering, Inc.
Contact	Don Milmine
Phone	(406) 208-4833
Mailing Address	2751 Enterprise Avenue Suite 2
City, State, Zip	Billings, MT 59102
Email	dmilmine@bison-eng.com
Receive Report	☐Hard Copy ■Email
Special Report/Formats:	☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

Analyze per history

Project Information

Project Name, PWSID, Permit, etc.	Momtana Resources/Greely School DH
Sampler Name	Sampler Phone
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

URANIUM MINING CLIENTS MUST indicate sample type.
☐ NOT Source or Byproduct Material
☐ Source/Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11e.(2) Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification *(Name, Location, Interval, etc.)*	Collection Date	Collection Time	Number of Containers	Matrix *(See Codes Above)*	Arsenic	Cadmium	Copper	Lead	Manganese	Molybdenum	Zinc			See Attached	RUSH TAT	ELI LAB ID *Laboratory Use Only*
1	Particulate filter C1759071 PM10	6/5/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					B24081659
2	Particulate filter C1759072 TSP 6/3-6/7	6/3-6/7	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
3	Particulate filter C1759073 PM10	6/11/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
4	Particulate filter C1759074 TSP 6/7-6/12	6/7-6/12	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
5	Particulate filter C1759075 TSP 6/20-6/24	6/20-6/24	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
6	Particulate filter C1759076 PM10	6/17/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
7	Particulate filter C1759077 TSP 6/12-6/20	6/12-6/20	continuous	1	on Teflon filter	x	x	x	x	x	x	x					
8	Particulate filter C1759078 PM10	6/23/24	24 hr composite	1	on Teflon filter	x	x	x	x	x	x	x					
9	Particulate filter C1759079 Field Blank	6/24/24	1413	1	on Teflon filter	x	x	x	x	x	x	x					
10	Particulate filter C1759080 PM10 Lab blank	5/22/24	1715	1	on Teflon filter	x	x	x	x	x	x	x					

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Don Milmine	8/15/24 1312	Don Milmine			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Kylie Alcock	8-15-24 1312	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check_____	Amount $	Receipt Number *(cash/check only)*

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ELI-COC-10/18 v.3

ANALYTICAL SUMMARY REPORT

September 04, 2024

Bison Engineering
3143 E Lyndale Ave
Helena, MT 59601-6401

Work Order: B24081674 Quote ID: B4795

Project Name: Montana Resources/Greely School DH

Energy Laboratories Inc Billings MT received the following 10 samples for Bison Engineering on 8/15/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24081674-001	Particulate Filter C1759051 PM10 Composite	06/29/24 00:00	08/15/24	Air	Metals on air filter by ICP/ICPMS Nitric acid-extraction by 40CFR50G
B24081674-002	Particulate Filter C1759052 TSP 6/24-7/2	06/24/24 00:00	08/15/24	Air	Same As Above
B24081674-003	Particulate Filter C1759053 PM10 Composite	07/05/24 00:00	08/15/24	Air	Same As Above
B24081674-004	Particulate Filter C1759054 TSP 7/4-7/9	07/04/24 00:00	08/15/24	Air	Same As Above
B24081674-005	Particulate Filter C1759055 Lab Blank	06/17/24 17:15	08/15/24	Air	Same As Above
B24081674-006	Particulate Filter C1759056 PM10 Composite	07/11/24 00:00	08/15/24	Air	Same As Above
B24081674-007	Particulate Filter C1759057 TSP 7/9-7/16	07/09/24 00:00	08/15/24	Air	Same As Above
B24081674-008	Particulate Filter C1759058 PM10 Composite	07/17/24 00:00	08/15/24	Air	Same As Above
B24081674-009	Particulate Filter C1759059 TSP 7/16-7/22	07/16/24 00:00	08/15/24	Air	Same As Above
B24081674-010	Particulate Filter C1759060 PM10 Field Blank	07/22/24 11:02	08/15/24	Air	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 So. 27th Street, Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

Energy Laboratories, Inc. verifies the reported results for the analysis has been technically reviewed and approved for release.

If you have any questions regarding these test results, please contact your Project Manager.

CLIENT: Bison Engineering
Project: Montana Resources/Greely School DH
Work Order: B24081674

Report Date: 09/04/24

CASE NARRATIVE

Per client request, results are based on the final concentration using 25 mL of extraction solution per filter.

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the lowest method detection limit (MDL)/Limit of Detection (LOD). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL/LOD may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759051 PM10 Composite
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-001
Collection Date: 06/29/24
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 22:54 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	117	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 20:37 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	101	192528
Copper	1.6	ug/filter		1.0	0.16	E200.8	08/26/24 20:37 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	101	192528
Lead	0.044	ug/filter	J	1.0	0.042	E200.8	08/26/24 20:37 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	101	192528
Manganese	0.20	ug/filter	J	1.0	0.18	E200.8	08/26/24 20:37 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	101	192528
Molybdenum	0.090	ug/filter	J	1.0	0.0050	E200.8	08/26/24 20:37 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	101	192528
Zinc	0.69	ug/filter	J	1.0	0.30	E200.8	08/26/24 20:37 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	101	192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759052 TSP 6/24-7/2
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-002
Collection Date: 06/24/24
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 23:00 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	118	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 20:43 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	102	192528
Copper	0.83	ug/filter	J	1.0	0.16	E200.8	08/26/24 20:43 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	102	192528
Lead	0.044	ug/filter	J	1.0	0.042	E200.8	08/26/24 20:43 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	102	192528
Manganese	0.20	ug/filter	J	1.0	0.18	E200.8	08/26/24 20:43 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	102	192528
Molybdenum	0.045	ug/filter	J	1.0	0.0050	E200.8	08/26/24 20:43 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	102	192528
Zinc	0.42	ug/filter	J	1.0	0.30	E200.8	08/26/24 20:43 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	102	192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759053 PM10 Composite
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-003
Collection Date: 07/05/24
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 23:06 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	119	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 20:48 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	103	192528
Copper	1.9	ug/filter		1.0	0.16	E200.8	08/26/24 20:48 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	103	192528
Lead	0.094	ug/filter	J	1.0	0.042	E200.8	08/26/24 20:48 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	103	192528
Manganese	0.29	ug/filter	J	1.0	0.18	E200.8	08/26/24 20:48 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	103	192528
Molybdenum	0.21	ug/filter	J	1.0	0.0050	E200.8	08/26/24 20:48 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	103	192528
Zinc	0.84	ug/filter	J	1.0	0.30	E200.8	08/26/24 20:48 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	103	192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759054 TSP 7/4-7/9
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-004
Collection Date: 07/04/24
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 23:12 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	120	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 20:54 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	104	192528
Copper	2.1	ug/filter		1.0	0.16	E200.8	08/26/24 20:54 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	104	192528
Lead	0.10	ug/filter	J	1.0	0.042	E200.8	08/26/24 20:54 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	104	192528
Manganese	0.31	ug/filter	J	1.0	0.18	E200.8	08/26/24 20:54 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	104	192528
Molybdenum	0.30	ug/filter	J	1.0	0.0050	E200.8	08/26/24 20:54 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	104	192528
Zinc	0.57	ug/filter	J	1.0	0.30	E200.8	08/26/24 20:54 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	104	192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759055 Lab Blank
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-005
Collection Date: 06/17/24 17:15
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 23:18 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	121	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 21:00 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	105	192528
Copper	0.73	ug/filter	J	1.0	0.16	E200.8	08/26/24 21:00 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	105	192528
Lead	0.12	ug/filter	J	1.0	0.042	E200.8	08/26/24 21:00 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	105	192528
Manganese	ND	ug/filter		1.0	0.18	E200.8	08/26/24 21:00 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	105	192528
Molybdenum	ND	ug/filter		1.0	0.0050	E200.8	08/26/24 21:00 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	105	192528
Zinc	2.3	ug/filter		1.0	0.30	E200.8	08/26/24 21:00 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	105	192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759056 PM10 Composite
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-006
Collection Date: 07/11/24
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	0.063	ug/filter	J	1.0	0.058	E200.8	08/28/24 23:24 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	122	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 21:06 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	106	192528
Copper	2.8	ug/filter		1.0	0.16	E200.8	08/26/24 21:06 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	106	192528
Lead	0.15	ug/filter	J	1.0	0.042	E200.8	08/26/24 21:06 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	106	192528
Manganese	0.50	ug/filter	J	1.0	0.18	E200.8	08/26/24 21:06 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	106	192528
Molybdenum	0.25	ug/filter	J	1.0	0.0050	E200.8	08/26/24 21:06 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	106	192528
Zinc	0.89	ug/filter	J	1.0	0.30	E200.8	08/26/24 21:06 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	106	192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759057 TSP 7/9-7/16
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-007
Collection Date: 07/09/24
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 23:41 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	125	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 21:12 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	107	192528
Copper	1.9	ug/filter		1.0	0.16	E200.8	08/26/24 21:12 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	107	192528
Lead	0.12	ug/filter	J	1.0	0.042	E200.8	08/26/24 21:12 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	107	192528
Manganese	0.41	ug/filter	J	1.0	0.18	E200.8	08/26/24 21:12 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	107	192528
Molybdenum	0.079	ug/filter	J	1.0	0.0050	E200.8	08/26/24 21:12 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	107	192528
Zinc	0.71	ug/filter	J	1.0	0.30	E200.8	08/26/24 21:12 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	107	192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759058 PM10 Composite
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-008
Collection Date: 07/17/24
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 23:47 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	126	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 21:29 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	110	192528
Copper	2.8	ug/filter		1.0	0.16	E200.8	08/26/24 21:29 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	110	192528
Lead	0.14	ug/filter	J	1.0	0.042	E200.8	08/26/24 21:29 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	110	192528
Manganese	0.52	ug/filter	J	1.0	0.18	E200.8	08/26/24 21:29 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	110	192528
Molybdenum	0.48	ug/filter	J	1.0	0.0050	E200.8	08/26/24 21:29 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	110	192528
Zinc	0.96	ug/filter	J	1.0	0.30	E200.8	08/26/24 21:29 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	110	192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759059 TSP 7/16-7/22
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-009
Collection Date: 07/16/24
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 23:53 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	127	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 21:36 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	111	192528
Copper	1.1	ug/filter		1.0	0.16	E200.8	08/26/24 21:36 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	111	192528
Lead	0.075	ug/filter	J	1.0	0.042	E200.8	08/26/24 21:36 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	111	192528
Manganese	0.30	ug/filter	J	1.0	0.18	E200.8	08/26/24 21:36 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	111	192528
Molybdenum	0.051	ug/filter	J	1.0	0.0050	E200.8	08/26/24 21:36 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	111	192528
Zinc	0.67	ug/filter	J	1.0	0.30	E200.8	08/26/24 21:36 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	111	192528

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Bison Engineering
Client Sample ID: Particulate Filter C1759060 PM10 Field Blank
Project: Montana Resources/Greely School DH
Matrix: Air

Lab ID: B24081674-010
Collection Date: 07/22/24 11:02
DateReceived: 08/15/24
Report Date: 09/04/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS IN AIR												
Arsenic	ND	ug/filter		1.0	0.058	E200.8	08/28/24 23:59 / ae	08/23/24 11:13	40CFR50	ICPMS208-B_240828A	128	192528
Cadmium	ND	ug/filter		1.0	0.0063	E200.8	08/26/24 21:42 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	112	192528
Copper	ND	ug/filter		1.0	0.16	E200.8	08/26/24 21:42 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	112	192528
Lead	ND	ug/filter		1.0	0.042	E200.8	08/26/24 21:42 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	112	192528
Manganese	ND	ug/filter		1.0	0.18	E200.8	08/26/24 21:42 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	112	192528
Molybdenum	ND	ug/filter		1.0	0.0059	E200.8	09/03/24 16:58 / jks	08/23/24 11:13	40CFR50	ICPMS208-B_240903A	42	192528
Zinc	ND	ug/filter		1.0	0.30	E200.8	08/26/24 21:42 / ae	08/23/24 11:13	40CFR50	ICPMS207-B_240826A	112	192528

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Bison Engineering **Work Order:** B24081674 **Report Date:** 09/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Analytical Run: ICPMS207-B_240826A
Lab ID: QCS	6	Initial Calibration Verification Standard								08/26/24 17:23
Cadmium		0.0258	mg/L	0.0010	103	90	110			
Copper		0.0523	mg/L	0.010	105	90	110			
Lead		0.0516	mg/L	0.0010	103	90	110			
Manganese		0.259	mg/L	0.0050	103	90	110			
Molybdenum		0.0494	mg/L	0.0050	99	90	110			
Zinc		0.0520	mg/L	0.0050	104	90	110			
Lab ID: CCV	6	Continuing Calibration Verification Standard								08/26/24 20:07
Cadmium		0.0509	mg/L	0.0010	102	90	110			
Copper		0.0519	mg/L	0.010	104	90	110			
Lead		0.0500	mg/L	0.0010	100	90	110			
Manganese		0.0518	mg/L	0.0050	103	90	110			
Molybdenum		0.0500	mg/L	0.0050	100	90	110			
Zinc		0.0517	mg/L	0.0050	103	90	110			
Lab ID: CCV	6	Continuing Calibration Verification Standard								08/26/24 21:18
Cadmium		0.0513	mg/L	0.0010	103	90	110			
Copper		0.0515	mg/L	0.010	103	90	110			
Lead		0.0506	mg/L	0.0010	101	90	110			
Manganese		0.0513	mg/L	0.0050	103	90	110			
Molybdenum		0.0505	mg/L	0.0050	101	90	110			
Zinc		0.0523	mg/L	0.0050	105	90	110			
Method: E200.8										Batch: 192528
Lab ID: MB-192528	7	Method Blank				Run: ICPMS207-B_240826A				08/26/24 19:03
Arsenic		0.1	ug/filter	0.06						
Cadmium		ND	ug/filter	0.006						
Copper		0.5	ug/filter	0.2						
Lead		0.05	ug/filter	0.04						
Manganese		ND	ug/filter	0.2						
Molybdenum		ND	ug/filter	0.005						
Zinc		0.4	ug/filter	0.3						
Lab ID: LCS-192528	7	Laboratory Control Sample				Run: ICPMS207-B_240826A				08/26/24 19:09
Arsenic		100	ug/filter	1.0	100	85	115			
Cadmium		50.6	ug/filter	1.0	101	85	115			
Copper		102	ug/filter	5.0	102	85	115			
Lead		98.6	ug/filter	1.0	99	85	115			
Manganese		508	ug/filter	5.0	102	85	115			
Molybdenum		101	ug/filter	1.0	101	85	115			
Zinc		102	ug/filter	5.0	103	85	115			
Lab ID: LCSD-192528	7	Laboratory Control Sample Duplicate				Run: ICPMS207-B_240826A				08/26/24 19:15
Arsenic		103	ug/filter	1.0	103	85	115			
Cadmium		52.5	ug/filter	1.0	105	85	115			
Copper		105	ug/filter	5.0	105	85	115			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Bison Engineering **Work Order:** B24081674 **Report Date:** 09/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **E200.8**										Batch: 192528
Lab ID: **LCSD-192528**	7	Laboratory Control Sample Duplicate				Run: ICPMS207-B_240826A				08/26/24 19:15
Lead		102	ug/filter	1.0	102	85	115			
Manganese		520	ug/filter	5.0	104	85	115			
Molybdenum		103	ug/filter	1.0	103	85	115			
Zinc		105	ug/filter	5.0	105	85	115			
Method: **E200.8**										Analytical Run: ICPMS208-B_240828A
Lab ID: **QCS**		Initial Calibration Verification Standard								08/28/24 20:54
Arsenic		0.0506	mg/L	0.0050	101	90	110			
Lab ID: **CCV**		Continuing Calibration Verification Standard								08/28/24 22:18
Arsenic		0.0506	mg/L	0.0050	101	90	110			
Lab ID: **CCV**		Continuing Calibration Verification Standard								08/28/24 23:30
Arsenic		0.0507	mg/L	0.0050	101	90	110			
Method: **E200.8**										Batch: 192528
Lab ID: **MB-192528**		Method Blank				Run: ICPMS208-B_240828A				08/28/24 21:30
Arsenic		ND	ug/filter	0.06						
Method: **E200.8**										Analytical Run: ICPMS208-B_240903A
Lab ID: **QCS**		Initial Calibration Verification Standard								09/03/24 14:17
Molybdenum		0.0484	mg/L	0.0050	97	90	110			
Lab ID: **CCV**		Continuing Calibration Verification Standard								09/03/24 15:46
Molybdenum		0.0485	mg/L	0.0050	97	90	110			
Method: **E200.8**										Batch: 192528
Lab ID: **MB-192528**		Method Blank				Run: ICPMS208-B_240903A				09/03/24 16:10
Molybdenum		ND	ug/filter	0.006						

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

Work Order Receipt Checklist

Bison Engineering

B24081674

Login completed by: Gina McCartney
Date Received: 8/15/2024
Reviewed by: cindy
Received by: KLP
Reviewed Date: 8/22/2024
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	2.9°C Blue Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

None

(2)

Chain of Custody & Analytical Request Record

ENERGY LABORATORIES — Trust our People. Trust our Data.

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Account Information (Billing information)

Company/Name	Bison Engineering, Inc.
Contact	Shelley Argott-Brown
Phone	(406) 442-5768
Mailing Address	3143 E Lyndale Avenue
City, State, Zip	Helena MT, 59601
Email	sbrown-argott@bison-eng.com
Receive Invoice	☐ Hard Copy ☒ Email
Receive Report	☐ Hard Copy ☐ Email
Purchase Order	MTR228018
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	Bison Engineering, Inc.
Contact	Don Milmine
Phone	(406) 208-4833
Mailing Address	2751 Enterprise Avenue Suite 2
City, State, Zip	Billings, MT 59102
Email	dmilmine@bison-eng.com
Receive Report	☐ Hard Copy ☒ Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Analyze per history

Project Information

Project Name, PWSID, Permit, etc.	Momtana Resources/Greely School DH
Sampler Name	Sampler Phone
Sample Origin State	Montana
EPA/State Compliance	☒ Yes ☐ No

URANIUM MINING CLIENTS MUST indicate sample type.
☐ NOT Source or Byproduct Material
☐ Source/Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11e.(2) Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes
(A - Air) W- Water S - Soils/ Solids V - Vegetation B - Bioassay O - Other DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Arsenic	Cadmium	Copper	Lead	Manganese	Molybdenum	Zinc			See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	Particulate filter C1759051 PM10	6/29/24	24 hr composite	1	on nylon filter	×	×	×	×	×	×	×					B24081674
2	Particulate filter C1759052 TSP 6/24-7/2	6/24-7/2	continuous	1	on nylon filter	×	×	×	×	×	×	×					
3	Particulate filter C1759053 PM10	7/5/24	24 hr composite	1	on nylon filter	×	×	×	×	×	×	×					
4	Particulate filter C1759054 TSP 7/4-7/9	7/4-7/9	continuous	1	on nylon filter	×	×	×	×	×	×	×					
5	Particulate filter C1759055 Lab Blank	6/17/24	1715	1	on nylon filter	×	×	×	×	×	×	×					
6	Particulate filter C1759056 PM10	7/11/24	24 hr composite	1	on nylon filter	×	×	×	×	×	×	×					
7	Particulate filter C1759057 TSP 7/9-7/16	7/9-7/16	continuous	1	on nylon filter	×	×	×	×	×	×	×					
8	Particulate filter C1759058 PM10	7/17/24	24 hr composite	1	on nylon filter	×	×	×	×	×	×	×					
9	Particulate filter C1759059 TSP 7/16-7/22	7/16-7/22	continuous	1	on nylon filter	×	×	×	×	×	×	×					
10	Particulate filter C1759060 PM10 field blank	7/22/24	1102	1	on nylon filter	×	×	×	×	×	×	×					

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Don Milmine	8/15/24 1312	Don V. Milmine			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Kylie Black	8-15-24 1312	Kylie Black

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check_____	Amount $	Receipt Number (cash/check only)

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ELI-COC-10/18 v.3

APPENDIX E: COMMON GUIDELINES FOR AIRBORNE CONTAMINANTS

Dose and Risk Assessment References

Pollutant	Organization	Standard Type	Description	Value	Units	Time Period	Reference
Arsenic							
	WHO	Air Quality Guideline		0.0015	Unit Risk	Life-time	https://www.atsdr.cdc.gov/toxprofiles/tp2-c8.pdf
	NIOSH	REL		2	µg/m^3	15 min	https://www.atsdr.cdc.gov/toxprofiles/tp2-c8.pdf
	ACGIH	TLV (TWA)		10	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	OSHA	PEL (TWA)	General - organic As	200	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	OSHA	PEL (TWA)	General - inorganic As	10	µg/m^3	8-hour	https://www.atsdr.cdc.gov/toxprofiles/tp2-c8.pdf
	OSHA	PEL (TWA)	Construction - organic	500	µg/m^3	8-hour	https://www.atsdr.cdc.gov/toxprofiles/tp2-c8.pdf
	OSHA	PEL (TWA)	Shipyard - organic	500	µg/m^3	8-hour	https://www.atsdr.cdc.gov/toxprofiles/tp2-c8.pdf
	EPA	EPA- Ca	Noncancer	0.015	µg/m^3		https://www.epa.gov/sites/production/files/2014-05/documents/table1.pdf
	EPA	IRIS	Risk = 10^{-6} (lifetime)	0.043	µg/m^3	Life-time	https://www.epa.gov/sites/production/files/2014-05/documents/table1.pdf
	EPA	REL		0.20	µg/m^3	1-Hour	https://www.epa.gov/sites/production/files/2014-05/documents/table2.pdf
	EPA	RfC	Inorganic As	0.015	µg/m^3	Life-time	https://semspub.epa.gov/work/HQ/401635.pdf - (November, 2021)
	EPA	RSL	Cancer Risk @ 10^{-6}	0.65	ng/m^3	Life-time	https://semspub.epa.gov/work/HQ/401635.pdf - (November, 2021)
	EPA	RSL	HI = 1	0.016	µg/m^3		https://semspub.epa.gov/work/HQ/401635.pdf - (November, 2021)
Cadmium							
	ACGIH	TLV (TWA)	(total)	10	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	ACGIH	TLV (TWA)	(respirable)	2	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	OSHA	PEL (TWA)		5	µg/m^3		https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	EPA	ATSDR	Noncancer - Cd Compounds	0.01	µg/m^3	Chronic	https://www.epa.gov/sites/production/files/2014-05/documents/table1.pdf
	EPA	IRIS	Cancer - Cd Compounds	2	µg/m^3	Chronic	https://www.epa.gov/sites/production/files/2014-05/documents/table1.pdf
	EPA	MRL	Cd Compounds	0.03	µg/m^3	Acute	
	EPA	AEGL-1 (1-hr)	Cd Compounds	100	µg/m^3	1-Hour	https://www.epa.gov/sites/production/files/2014-05/documents/table2.pdf
	EPA	AEGL-1 (8-hr)	Cd Compounds	41	µg/m^3	8-Hour	https://www.epa.gov/sites/production/files/2014-05/documents/table2.pdf
	EPA	RfC	Cd (water)	0.01	µg/m^3	Life-time	https://semspub.epa.gov/work/HQ/401635.pdf - (November, 2021)
	EPA	RSL: TR @ 10^{-6}	Cd (water) (Cancer Risk)	1.60	ng/m^3	Life-time	https://semspub.epa.gov/work/HQ/401635.pdf - (November, 2021)
	EPA	RSL: HI = 1	Cd (water) (Noncancer Risk)	10	ng/m^3	HI=1	https://semspub.epa.gov/work/HQ/401635.pdf - (November, 2021)
Copper							
	ACGIH	TLV (TWA)	(dust & mist)	1,000	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	NIOSH	REL (TWA)		1,000	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	OSHA	PEL (TWA)		1,000	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
Lead (Pb)							
	ACGIH	TLV (TWA)	(inorganic)	50	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	NIOSH	REL (TWA)	(inorganic+ organic salts)	50	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	OSHA	PEL (TWA)	(inorganic)	50	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	EPA	NAAQS		0.150	µg/m^3	3-month mean	40 CFR 50.12 (and Appendix R)
	NIOSH	IGHL/10	Lead compounds	10	mg/m^3		https://www.epa.gov/sites/production/files/2014-05/documents/table2.pdf
	EPA	RSL: HI = 1	Pb (Noncancer Risk)	0.15	µg/m^3	HI=1	https://semspub.epa.gov/work/HQ/401635.pdf - (November, 2021)
Manganese							
	ACGIH	TLV (TWA)	(compounds + fumes)	20	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	NIOSH	REL (TWA)	(compounds + fumes)	1,000	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	OSHA	PEL (TWA)	(compounds + fumes)	5,000	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	ATSDR	Screen for Risk Assessment	Noncancer - Mn Compounds	0.30	µg/m^3	Chronic	https://www.epa.gov/sites/production/files/2014-05/documents/table2.pdf
	NIOSH	IGHL/10	Manganese compounds	50	mg/m^3		https://www.epa.gov/sites/production/files/2014-05/documents/table2.pdf
	USDOE	TEEL-1	MnO, MO_2 & $MnSO_4$	4.7	mg/m^3	1-Hour	https://www.epa.gov/sites/production/files/2014-05/documents/table2.pdf
	EPA	RSL: HI = 1	Mn (non-diet) (Noncancer Risk)	0.052	µg/m^3	HI=1	https://semspub.epa.gov/work/HQ/401635.pdf - (November, 2021)
	EPA	RfC	Mn (non-diet)	0.05	µg/m^3	Life-time	https://semspub.epa.gov/work/HQ/401635.pdf - (November, 2021)
Molybdenum							
	ACGIH	TLV (TWA)	(soluble compounds)*	500	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	NIOSH	REL (TWA)	(soluble compounds)*	N/A	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	OSHA	PEL (TWA)	(soluble compounds)*	5,000	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
			* Higher limits for insoluble compounds				

Zinc (Zn)

ACGIH	TLV (TWA)	(zinc oxide - respirable)	2,000	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
	STEL	(zinc oxide - respirable)	10,000	µg/m^3	15 minutes	https://www.osha.gov/dsg/annotated-pels/tablez-1.html
OSHA	PEL (TWA)	(inorganic)	5,000	µg/m^3	8-hour	https://www.osha.gov/dsg/annotated-pels/tablez-1.html

Term	Definition
ACGIH	American Congress of Governmental Industrial Hygienists
AEGL-1	Acute exposure guideline levels for mild effects: 1-hour and 8-hour
ATSDR	Agency for Toxic Substances & Disease Registry
HI (EPA)	Hazardous Index: Aggregate exposures below a HI of 1.0 will likely not result in adverse noncancer health effects over a lifetime of exposure. A respiratory HI greater than 1.0 can be best described as indicating that a potential may exist for adverse irritation to the respiratory system. https://archive.epa.gov/airtoxics/nata/web/html/gloss.html
IDHL/10	One-tenth of levels determined by NIOSH to be imminently dangerous to life and death.
IRIS	Integrated Risk Information System
NAAQS	National Ambient Air Quality Standards: 40 CFR 50.12
NIOSH	National Institute of Occupational Safety and Health (part of CDC)
PEL	Permissible Exposure Limits (expressed as 8-hour time weighted average (TWA)) 29 CFR 1910.1000 Z-1 Table
REL (NIOSH)	Recommended exposure limit: Level at which NIOSH believes protects worker safety and health over a working lifetime.
REL (Ca EPA)	California EPA concentration level at which no adverse health effect are anticipated. Includes most sensitive individuals Levels exceeding REL does not automatically indicate an adverse health impact.
RfC	Reference Concentration (EPA) is an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetim https://www.epa.gov/sites/default/files/2015-08/documents/technical_appendix_a_toxicity_v2_3_3.pdf
RSL	Residential Regional Screening Level (EPA Region X) @ 10^{-6} Cancer Risk or (Noncancer) Hazardous Index (HI) = 1 (based on Hazard Quotient (HQ) of 1. https://semspub.epa.gov/work/HQ/401635.pdf Last (EPA) Table Update: November 2021
STEL	Short-Term Exposure Limit (15-minutes)
TEEL-1	Temporary emergency exposure limits for mild transient effects for 1-hour exposure
TLV	Threshold Limit Value
TWA	Time Weighted Average
WHO	World Health Organization

APPENDIX F: CALIBRATIONS

BGI PQ200 PM10 Sampler – Monthly Calibration Checks			
Date: 04/11/2024	Time: 1321 – 1338 MST	Sampler Serial Number: 1622	
Performed By: Steve Heck		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Swift 25.0 Meter S/N D16202		Certification Date: 1) 11-08-2023	
Barometric Pressure Sensor Verification			
Reading (mm Hg)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 10)
Ambient Pressure	618 mm Hg	622.0 mmHg	-4.0
Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	14.5 C	14.3 C	+0.2 C
Filter Temperature	16.1 C	16.4 C	-0.3 C
Leak Check			
Vacuum Readings (cm H_2O)	Start 130	End 129	Pass ~~Fail~~
Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ± 4%)
Operating flow rate check	16.70	16.70	0.0%
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–16.7)/16.7 (must be ≤ ± 5%)
Design flow rate calculation	16.70	16.70	-0.0%
Temporarily removed unexposed filter			

BGI PQ200 PM10 Sampler – Monthly Calibration Checks			
Date: 05/28/2024	Time: 1036 – 1105 MST	Sampler Serial Number: 1622	
Performed By: Steve Heck		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Swift 25.0 Meter S/N D16202		Certification Date: 1) 11-08-2023	
Barometric Pressure Sensor Verification			
Reading (mm Hg)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 10)
Ambient Pressure	621 mm Hg	625.0 mmHg	-4.0
Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	20.4 C	20.7 C	-0.3 C
Filter Temperature	21.0 C	21.4 C	-0.4 C
Leak Check			
Vacuum Readings (cm H_2O)	Start 128	End 127	Pass ~~Fail~~
Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ± 4%)
Operating flow rate check	16.70	17.12	-2.5%
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–16.7)/16.7 (must be ≤ ± 5%)
Design flow rate calculation	17.12	16.70	+2.5%
Temporarily removed exposed filter. Recorded run information.			

BGI PQ200 PM10 Sampler – Monthly Calibration Checks			
Date: 06/14/2024	Time: 1109 – 1145 MST	Sampler Serial Number: 1622	
Performed By: Steve Heck		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Swift 25.0 Meter S/N D16202		Certification Date: 1) 11-08-2023	
Barometric Pressure Sensor Verification			
Reading (mm Hg)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 10)
Ambient Pressure	618 mm Hg	622.1 mmHg	-4.1
Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	25.3 C	25.1 C	+0.2 C
Filter Temperature	26.7 C	26.4 C	+0.3 C
Leak Check			
Vacuum Readings (cm H_2O)	Start 96	End 95	Pass ~~Fail~~
Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ± 4%)
Operating flow rate check	16.70	16.52	+1.1%
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–16.7)/16.7 (must be ≤ ± 5%)
Design flow rate calculation	16.52	16.70	-1.1%

Performed multipoint calibration due to audit results

@15.0 LPM: 14.98
@18.0 LPM: 17.97
@16.7 LPM: 16.71

Operating flow: 16.68 LPM

BGI PQ200 PM10 Sampler – Monthly Calibration Checks			
Date: 06/24/2024	Time: 1107 – 1145 MST	Sampler Serial Number: 1622	
Performed By: Steve Heck		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Delta Cal S/N 1288		Certification Date: 1) 01-03-2024	
Barometric Pressure Sensor Verification			
Reading (mm Hg)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 10)
Ambient Pressure	618 mm Hg	621.9 mmHg	-3.9
Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	25.0 C	25.0 C	0.0 C
Filter Temperature	27.0 C	26.8 C	+0.2 C
Leak Check			
Vacuum Readings (cm H_2O)	Start 126	End 125	Pass ~~Fail~~
Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ± 4%)
Operating flow rate check	16.70	15.68	+6.5%
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–16.7)/16.7 (must be ≤ ± 5%)
Design flow rate calculation	15.68	16.70	-6.1%

Performed multipoint calibration. Sending in Swift meter that has been used previously for calibration checks due accuracy questions.

@15.0 LPM: 15.01
@18.4 LPM: 18.44
@16.7 LPM: 16.71

Operating flow: 16.60 LPM

BGI PQ200 PM10 Sampler – Monthly Calibration Checks			
Date: 07/18/2024	Time: 0929 – 0947 MST	Sampler Serial Number: 1622	
Performed By: Steve Heck		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Delta Cal S/N 1288		Certification Date: 1) 01-03-2024	
Barometric Pressure Sensor Verification			
Reading (mm Hg)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 10)
Ambient Pressure	624 mm Hg	626.9 mmHg	-2.9
Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	24.0 C	24.1 C	-0.1 C
Filter Temperature	23.6 C	24.2 C	-0.6 C
Leak Check			
Vacuum Readings (cm H_2O)	Start 131	End 129	Pass ~~Fail~~
Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ± 4%)
Operating flow rate check	16.70	16.50	+1.2%
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–16.7)/16.7 (must be ≤ ± 5%)
Design flow rate calculation	16.50	16.70	-1.2%

Met One E-Sampler – Monthly Calibration Check / ~~Quarterly Audit~~			
Date: 04/11/2024	Time: 1330 - 1343 MST	Sampler Serial Number: X24429	
Performed By: Steve Heck		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Swift 6.0 SN C13475 (Flow/BP) 2) Swift 25.0 SN D16202 (Temp)		Certification Date: 1) 07-28-2023 2) 11-08-2023	

Barometric Pressure Sensor Verification			
Reading (Pascals)	Sampler (a)	Reference Standard (b)	Difference (a - b) (limit ≤ ± 1333 Pa)
Ambient Pressure	82,864 Pa	621.0 mm Hg = 82,793 Pa	+71 Pa
Pascals = mmHg * 133.322		Limit of ±1333 Pascals = ±10 mmHg	

Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	17.1 C	16.3 C	+0.8 C

Leak Check			
Leak Check Flow Rate	0.0 LPM	(must be <0.4 LPM)	**Pass** ~~Fail~~

Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ± 5%)
Audit standard flow rate check	2.0	1.96	+2.0 %
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–2.0)/2.0 (must be ≤ ± 5%)
Design flow rate check	1.96	2.0	-2.0 %

Relative Humidity Verification			
Dry Bulb Temp. °C	15.1	Calculated RH (a)	16.5%
Wet Bulb Temp. °C	4.6	Sampler RH (b)	18%
BP Inches Hg	24.49	Difference = a – b (must be ≤7% RH)	+1.5%

Met One E-Sampler – Monthly Calibration Check / ~~Quarterly Audit~~			
Date: 05/28/2024	Time: 1110-1140 MST	Sampler Serial Number: X24429	
Performed By: Steve Heck		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Swift 6.0 SN C13475 (Flow/BP) 2) Swift 25.0 SN D16202 (Temp)		Certification Date: 1) 07-28-2023 2) 11-08-2023	

Barometric Pressure Sensor Verification			
Reading (Pascals)	Sampler (a)	Reference Standard (b)	Difference (a - b) (limit ≤ ± 1333 Pa)
Ambient Pressure	83,236 Pa	623.6 mm Hg = 83,140 Pa	+96 Pa
Pascals = mmHg * 133.322		Limit of ±1333 Pascals = ±10 mmHg	

Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	22.8 C	21.9 C	+0.9 C

Leak Check			
Leak Check Flow Rate	0.0 LPM	(must be <0.4 LPM)	**Pass** ~~Fail~~

Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ± 5%)
Audit standard flow rate check	2.0	1.92	+4.2 %
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–2.0)/2.0 (must be ≤ ± 5%)
Design flow rate check	1.92	2.0	-4.0 %

Relative Humidity Verification			
Dry Bulb Temp. °C	22.0	Calculated RH (a)	25.6%
Wet Bulb Temp. °C	10.7	Sampler RH (b)	25%
BP Inches Hg	24.55	Difference = a – b (must be ≤7% RH)	-0.6%

Adjusted flow to 1.98 LPM

Met One E-Sampler – Monthly Calibration Check / ~~Quarterly Audit~~			
Date: 06/14/2024	Time: 1140-1200 MST	Sampler Serial Number: X24429	
Performed By: Steve Heck		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Swift 6.0 SN C13475 (Flow/BP) 2) Swift 25.0 SN D16202 (Temp)		Certification Date: 1) 07-28-2023 2) 11-08-2023	

Barometric Pressure Sensor Verification			
Reading (Pascals)	Sampler (a)	Reference Standard (b)	Difference (a - b) (limit ≤ ± 1333 Pa)
Ambient Pressure	82,884 Pa	620.8 mm Hg = 82,767 Pa	+117 Pa
Pascals = mmHg * 133.322		Limit of ±1333 Pascals = ±10 mmHg	

Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	30.1 C	29.0 C	+1.1 C

Leak Check			
Leak Check Flow Rate	0.0 LPM	(must be <0.4 LPM)	**Pass** ~~Fail~~

Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ± 5%)
Audit standard flow rate check	2.0	1.92	+4.2 %
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–2.0)/2.0 (must be ≤ ± 5%)
Design flow rate check	1.92	2.0	-4.0 %

Relative Humidity Verification			
Dry Bulb Temp. °C	25.6	Calculated RH (a)	19.1%
Wet Bulb Temp. °C	11.7	Sampler RH (b)	17%
BP Inches Hg	24.44	Difference = a – b (must be ≤7% RH)	-2.1%

Adjusted flow to 1.97 LPM

Met One E-Sampler – Monthly Calibration Check / ~~Quarterly Audit~~			
Date: 07/18/2024	Time: 1001-1020 MST	Sampler Serial Number: X24429	
Performed By: Steve Heck		Location (field or lab): Greeley School	
Ref Standard & S/N: 1) Swift 6.0 SN C13475 (Flow/BP) 2) Delta Cal SN 1288 (Temp)		Certification Date: 1) 07-28-2023 2) 01-03-2024	

Barometric Pressure Sensor Verification			
Reading (Pascals)	Sampler (a)	Reference Standard (b)	Difference (a - b) (limit ≤ ± 1333 Pa)
Ambient Pressure	83,646 Pa	626.4 mm Hg = 83,513 Pa	+133 Pa
Pascals = mmHg * 133.322		Limit of ±1333 Pascals = ±10 mmHg	

Temperature Sensor Verification			
Reading (degrees Celsius)	Sampler (a)	Reference Standard (b)	Difference (a - b) (must be ≤ ± 2ºC)
Ambient Temperature	27.8 C	27.0 C	+0.8 C

Leak Check			
Leak Check Flow Rate	0.0 LPM	(must be <0.4 LPM)	**Pass** ~~Fail~~

Flow Rate Verification			
Reading (liters per minute)	Sampler (a)	Reference Standard (b)	% Difference 100*(a – b)/b (must be ≤ ± 5%)
Audit standard flow rate check	2.0	1.96	+2.0 %
Reading (liters per minute)	Reference Standard (b)	Design Flow Rate Standard (c)	% Difference 100*(b–2.0)/2.0 (must be ≤ ± 5%)
Design flow rate check	1.96	2.0	-2.0 %

Relative Humidity Verification			
Dry Bulb Temp. °C	25.0	Calculated RH (a)	28.3%
Wet Bulb Temp. °C	13.3	Sampler RH (b)	25%
BP Inches Hg	24.66	Difference = a – b (must be ≤7% RH)	-3.1%

APPENDIX G: CALIBRATION STANDARD CERTIFICATION SHEETS

Met One Instruments, Inc.
1600 NW Washington Blvd • Grants Pass, OR 97526 • (541) 471-7111 • www.metone.com

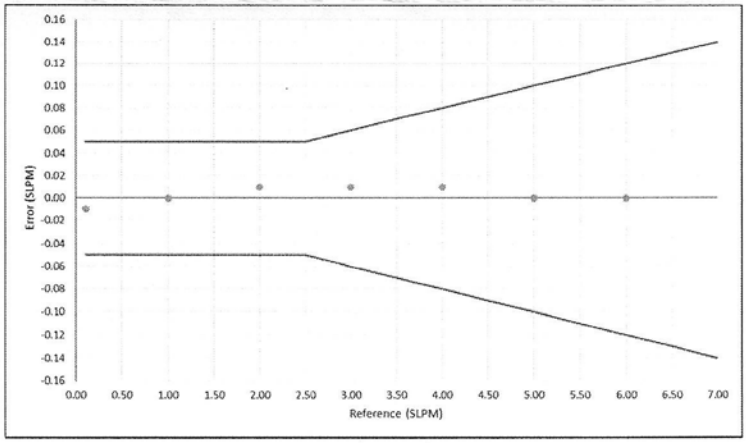
Certificate of Calibration

Model Swift 6.0

Serial Number: C14999
Firmware Version: 83373 Rev 1.0.0
Customer: BISON ENGINEERING INC
As Left [X] As Found [ ]

Calibrated By: *H.Duffy*
Calibration Date: *7/28/2023*
Next Calibration Date: *7/28/2024*

Flow Calibration			
Standard (SLPM)	**Swift 6.0 (SLPM)**	**Acceptable Range**	**In Tolerance**
1.000	1.01	0.95 - 1.05	Yes
2.000	2.01	1.95 - 2.05	Yes
3.000	3.01	2.94 - 3.06	Yes
4.000	4.01	3.92 - 4.08	Yes
5.000	5.00	4.90 - 5.10	Yes
6.000	6.00	5.88 - 6.12	Yes
Flow Accuracy: ±2% of reading or ±0.05 LPM, whichever is greater			



Temperature		
Standard (°C)	**Swift (°C)**	**In Tolerance**
22.6	22.1	Yes
Temperature Accuracy: ±1.0°C		

Pressure		
Standard (mbar)	**Swift (mbar)**	**In Tolerance**
986.1	985.2	Yes
Pressure Accuracy: ±16 mbar		

Calibration Procedure: Swift 6.0-6100
Recommended Calibration Interval: 12 months from the first day of use

Standards	Manufacturer	Model	SN	Cal Due Date
Air Flow Meter (Flow & Temp)	Alicat	M-50SLPM-D/5M	432090	01/27/24
Temp/Humidity/BP	Met One Instruments	597	Y13061	05/19/24

This instrument has been tested and calibrated to meet the manufacturer's published specifications at an ISO-9001 certified facility. The standards used for the calibration are on record and traceable to the National Institute of Standards and Technology (NIST) and have accuracies equal to or greater than the instrument being tested. The calibration system complies with MIL-STD-45662A. Complete test records for each unit are maintained by Met One Instruments, Inc. and are available upon request.

Met One Instruments, Inc.
1600 NW Washington Blvd • Grants Pass, OR 97526 • (541) 471-7111 • www.metone.com

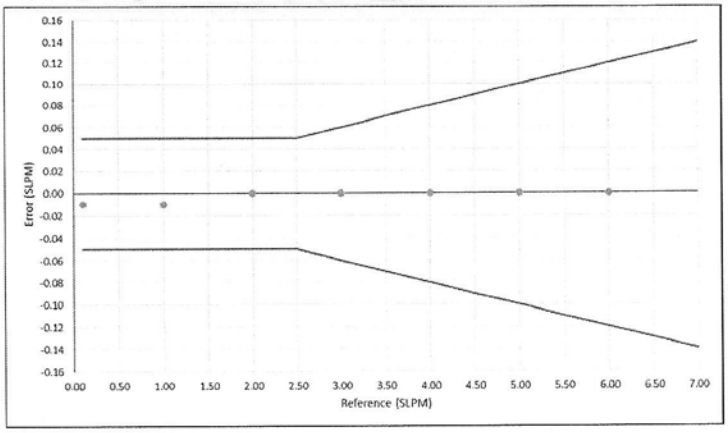
Certificate of Calibration

Model Swift 6.0

Serial Number: C13475
Firmware Version: 83373 Rev 1.0.0
Customer: BISON ENGINEERING INC
As Left [X] As Found [ ]

Calibrated By: *H.Duffy*
Calibration Date: *7/28/2023*
Next Calibration Date: *7/28/2024*

Flow Calibration			
Standard (SLPM)	**Swift 6.0 (SLPM)**	**Acceptable Range**	**In Tolerance**
1.000	0.99	0.95 - 1.05	Yes
2.000	2.00	1.95 - 2.05	Yes
3.000	3.00	2.94 - 3.06	Yes
4.000	4.00	3.92 - 4.08	Yes
5.000	5.00	4.90 - 5.10	Yes
6.000	6.00	5.88 - 6.12	Yes
Flow Accuracy: ±2% of reading or ±0.05 LPM, whichever is greater			



Temperature		
Standard (°C)	**Swift (°C)**	**In Tolerance**
22.6	22.1	Yes
Temperature Accuracy: ±1.0°C		

Pressure		
Standard (mbar)	**Swift (mbar)**	**In Tolerance**
986.1	985.5	Yes
Pressure Accuracy: ±16 mbar		

Calibration Procedure: Swift 6.0-6100
Recommended Calibration Interval: 12 months from the first day of use

Standards	Manufacturer	Model	SN	Cal Due Date
Air Flow Meter (Flow & Temp)	Alicat	M-50SLPM-D/5M	432090	01/27/24
Temp/Humidity/BP	Met One Instruments	597	Y13061	05/19/24

This instrument has been tested and calibrated to meet the manufacturer's published specifications at an ISO-9001 certified facility. The standards used for the calibration are on record and traceable to the National Institute of Standards and Technology (NIST) and have accuracies equal to or greater than the instrument being tested. The calibration system complies with MIL-STD-45662A. Complete test records for each unit are maintained by Met One Instruments, Inc. and are available upon request.

Mesa Labs 12100 W. 6th Ave
Lakewood, CO 80228
NIST Traceable Calibration Facility

CERTIFICATE OF CALIBRATION - NIST TRACEABILITY

Calibration Report #: 149645-04122023
TetraCal Serial Number: 149645
Calibration Technician: Melissa Sardoni
Date: 4-Dec-2023
Recommended Recal Date: 4-Dec-2024

Critical Venturi Flow Meter

Max Uncertainty = 0.346%

TE20004	6 - 30.00 LPM	Calibration Due:	25-Sep-2024
TE20006	1.40 - 6.0 LPM	Calibration Due:	25-Sep-2024
TE20008	0.40 - 1.20 LPM	Calibration Due:	26-Sep-2024

Room Temperature: +- 0.03°C from -5°C - 70°C **Room Temperature:** 24.40 °C
Brand: Eutechnics

TE Number: TE12312 **Serial Number:** 358921
Std Cal Date: 1-Sep-23 **Std Cal Due Date:** 1-Sep-24

Ambient Temperature (set): 24.8 °C
Aux (filter) Temperature (set): 24.4 °C

Barometric and Absolute Pressure

Vaisala Model PTB330 (50-1100) Digital Accuracy: 0.03371%

TE Number: TE20203 **Serial Number:** U1220936
Std Cal Date: 6-Jun-23 **Std Cal Due Date:** 6-Jun-24

TetraCal:

Barometric pressure (set): 617.20 mmHg

Results of Venturi Calibration

Flow Rate (Q) vs. Pressure Drop (ΔP). Where: Q=Lpm, ΔP= Cm of H2O

Venturi

TE20004	Q1 = 5.45324	ΔP ^	0.51821	Overall Uncertainty: 0.35%
TE20006	Q2 = 1.17346	ΔP ^	0.52812	Overall Uncertainty: 0.35%
TE20008	Q3 = 0.21591	ΔP ^	0.52812	Overall Uncertainty: 0.35%

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Mesa Labs 12100 W. 6th Ave Lakewood, CO 80228
NIST Traceable Calibration Facility

As Shipped Calibration Data for TetraCal

Unit Type: TetraCal TC12	Date	Technician	
Flow Range: 1.20 -30.00 LPM	04Dec2023	Melissa Sardoni	
Serial No. : 149645	Ambient Pressure:	617	mmHg
Firmware Version: 3.41P	Ambient Temperature:	24.4	°C

Range 1: 1.2 - 6.00 LPM		Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
Venturi	TE20004	1	122.34	617.7	5.968	5.975	0.117
Type	1A	2	363.64	617.7	18.103	17.991	-0.619
Flow range	6 - 30.00 LPM	3	594.51	617.7	29.713	29.903	0.639
		Maximum allowable error at any flow rate is 0.75%.				Average	0.046
						Result	PASS

Range 2: 6.00 - 30.0 LPM		Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
Venturi	TE20006	1	107.98	617.7	1.503	1.496	-0.466
Type	2A	2	232.85	617.7	3.309	3.295	-0.423
Flow range	1.40 - 6.0 LPM	3	416.30	617.7	5.961	5.987	0.436
		Maximum allowable error at any flow rate is 0.75%.				Average	-0.151
						Result	PASS

Range 3: NP		Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
Venturi	TE20008	1	218.27	617.2	0.499	0.496	-0.601
Type	3A	2	342.63	617.2	0.800	0.796	-0.500
Flow range	0.40 - 1.20 LPM	3	507.69	617.7	1.199	1.197	-0.167
		Maximum allowable error at any flow rate is 0.75%.				Average	-0.423
						Result	PASS

Performed By: Melissa Sardoni **Date:** 4-Dec-2023

Melissa Sardoni

Approved By: Leonard Rainert
Quality Specialist **Date:** 06Dec2023

Leonard Rainert

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Mesa Labs 12100 W. 6th Ave Lakewood, CO 80228
NIST Traceable Calibration Facility

As-Found data for TetraCal

Unit Type:	TetraCal TC12	Date	Technician
Flow Range:	1.20 -30.00 LPM	04Dec2023	Melissa Sardoni
Serial No. :	149645	Ambient Pressure:	617 mmHg
Firmware Version:	3.41P	Ambient Temperature:	24.4 °C

	As Received Temp. Press. Calibration				As Shipped Temp. Press. Calibration			
	DUT	**Standard**	**Diff**	**+/- 1 mmHg**	**DUT**	**Standard**	**Diff**	**+/-1 mmHg**
$Pres_{AMB}$ mmHg	616.5	616.7	-0.2	Pass	617.2	617.1	0.1	Pass
	DUT	**Standard**	**Diff**	**+/- 1 °C**	**DUT**	**Standard**	**Diff**	**+/- 1 °C**
$Temp_{AMB}$ °C	23.3	23.2	0.1	Pass	24.8	24.4	0.4	Pass
$Temp_{Filter}$ °C	24.4	24.4	0	Pass	24.4	24.4	0	Pass

	Offset	New Offset
PresAMB	-47	-46.8
TempAMB	0.25	0.15
Temp Filter	0.15	0.15

Range 1: 1.2 - 6.00 LPM

Venturi	TE20004
Type	1A
Flow range	6 - 30.00 LPM

Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
1	124.11	617.0	6.058	6.006	-0.858
2	365.22	617.5	18.17	18.008	-0.892
3	594.39	617.0	29.711	29.788	0.259
	Maximum allowable error at any flow rate is 0.75%.			Average	-0.497
				Result	FAIL

Range 2: 6.00 - 30.0 LPM

Venturi	TE20006
Type	2A
Flow range	1.40 - 6.0 LPM

Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
1	109.62	617.0	1.526	1.505	-1.376
2	235.68	617.0	3.349	3.310	-1.165
3	419.04	617.5	5.994	5.981	-0.217
	Maximum allowable error at any flow rate is 0.75%.			Average	-0.919
				Result	FAIL

Range 3: NP

Venturi	TE20008
Type	3A
Flow range	0.40 - 1.20 LPM

Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
1	217.24	617.5	0.495	0.496	0.202
2	346.69	617.5	0.808	0.803	-0.619
3	507.24	617.5	1.198	1.196	-0.167
	Maximum allowable error at any flow rate is 0.75%.			Average	-0.195
				Result	PASS

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Certificate of Calibration

Model Swift 25.0

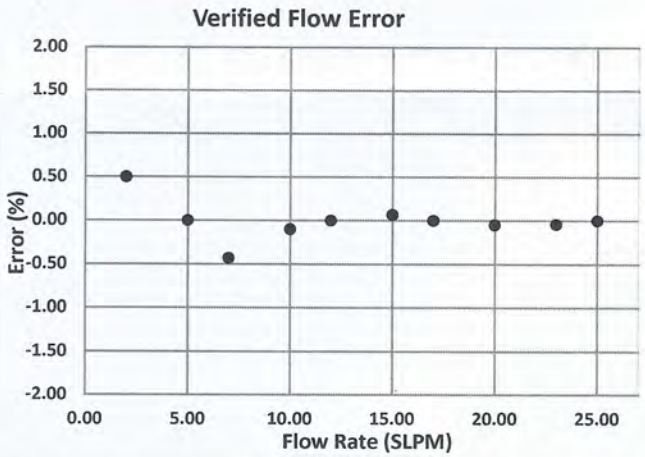
Serial Number : D16202

Firmware: R1.0.2

Calibrated Date: 11/8/2023

Calibrated By: J.Taylor

Verified Flow Data Points			
Standard (SLPM)	Swift 25.0 (SLPM)	Acceptable Range	In Tolerance
2	2.01	1.98 - 2.02	Pass
5	5.00	4.95 - 5.05	Pass
7	6.97	6.93 - 7.07	Pass
10	9.99	9.90 - 10.10	Pass
12	12.00	11.88 - 12.12	Pass
15	15.01	14.85 - 15.15	Pass
17	17.00	16.83 - 17.17	Pass
20	19.99	19.80 - 20.20	Pass
23	22.99	22.77 - 23.23	Pass
25	25.00	24.75 - 25.75	Pass



Internal Temperature		
Standard (SLPM)	Swift 25.0 (SLPM)	In Tolerance
19.51	19.51	Pass
Temp Accuracy: ± °C		

Pressure		
Standard (mbar)	Swift 25.0 (mbar)	In Tolerance
992.3	992.9	Pass
Pressure Accuracy: ± 0.6 mbar		

External Temperature Probe		
Standard (°C)	Swift 25.0 (°C)	In Tolerance
19.51	19.52	Pass
Temp Accuracy: ± 0.01 °C		

RH %		
Standard (RH%)	Swift 25.0 (RH%)	In Tolerance
46	43	Pass
Relative Humidity Accuracy: ± 3 %RH		

Calibration Procedure: Swift 25.0-6100
Recommended Calibration Interval: 12 months from the first day of use

Standards	Model	SN	Cal Due
Air Flow Meter	M-50SLPM-D	306982	8/31/2024
RH &TEMPERATURE	HC2-S & HP22-A	61174458	6/1/2024
BAROMETRIC PRESSURE	092	T17328	August 21,2024

This instrument has been tested and calibrated to meet the manufacturer's published specifications at an ISO-9001 certified facility. The standards used for the calibration are on record and traceable to the National Institute of Standards and Technology (NIST) and have accuracies equal to or greater than the instrument being tested. The calibration system complies with MIL-STD-45662A. Complete test records for each unit are maintained by Met One Instruments, Inc. and are available upon request.

Mesa Labs 12100 W. 6th Ave
Lakewood, CO 80228
NIST Traceable Calibration Facility

CERTIFICATE OF CALIBRATION - NIST TRACEABILITY

Calibration Report #: 1288-03012024
DeltaCal Serial Number: 1288
Calibration Technician: Elsy Lasky
Date: 3-Jan-2024
Recommended Recal Date: 3-Jan-2025

Critical Venturi Flow Meter

Max Uncertainty = 0.346%

TE20005	6 - 30.00 LPM	Calibration Due:	1-Aug-2024
TE20007	1.40 - 6.0 LPM	Calibration Due:	2-Aug-2024

Room Temperature: +- 0.03°C from -5°C - 70°C **Room Temperature:** 22.90 °C

Brand: Eutechnics
TE Number: TE12348 **Serial Number:** A11146
Std Cal Date: 29-Sep-23 **Std Cal Due Date:** 29-Sep-24

Ambient Temperature (set): 23.0 °C
Aux (filter) Temperature (set): 23.0 °C

Barometric and Absolute Pressure

Vaisala Model PTB330 (50-1100) Digital Accuracy: 0.03371%

TE Number: TE12311 **Serial Number:** H0850001
Std Cal Date: 6-Aug-23 **Std Cal Due Date:** 6-Aug-24

DeltaCal:
Barometric pressure (set): 616.00 mmHg

Results of Venturi Calibration

Flow Rate (Q) vs. Pressure Drop (ΔP). Where: Q=Lpm, ΔP= Cm of H2O

Venturi				
TE20005	Q= 4.02226	ΔP ^	0.51536	Overall Uncertainty: 0.35%
TE20007	Q= 3.95205	ΔP ^	0.52799	Overall Uncertainty: 0.35%

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Mesa Labs 12100 W. 6th Ave Lakewood, CO 80228
NIST Traceable Calibration Facility

As Shipped Calibration Data for DeltaCal

Unit Type:	DC 1
Flow Range:	1.5-19.5 LPM
Serial No. :	1288
Firmware Version:	4.00P

Date	Technician
03Jan2024	Elsy Lasky

Ambient Pressure:	616.2	mmHg
Ambient Temperature:	22.9	°C

Range 1

Venturi	TE20005
Type	1B
Flow range	6 - 30.00 LPM

Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
1	134.39	615.4	6.530	6.504	-0.398
2	205.14	615.4	10.048	10.005	-0.428
3	267.02	615.4	13.124	13.040	-0.640
4	326.09	615.4	16.061	15.978	-0.517
5	368.21	615.4	18.155	18.063	-0.507
6	403.83	615.4	19.926	19.806	-0.602
	Maximum allowable error at any flow rate is 0.75%.			Average	-0.515
				Result	PASS

Range 2

Venturi	TE20007
Type	2B
Flow range	1.40 - 6.0 LPM

Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
1	139.56	615.9	1.941	1.953	0.618
2	206.07	615.9	2.895	2.908	0.449
3	261.31	615.9	3.687	3.713	0.705
4	322.98	615.9	4.571	4.569	-0.044
5	371.60	615.9	5.268	5.248	-0.380
6	417.85	615.9	5.931	5.904	-0.455
	Maximum allowable error at any flow rate is 0.75%.			Average	0.149
				Result	PASS

Performed By: Elsy Lasky **Date:** 3-Jan-2024

Elsy Lasky

Approved By: TROY THACKER **Date:** 03JAN2024

Troy Thacker

MesaLabs

Mesa Labs 12100 W. 6th Ave Lakewood, CO 80228
NIST Traceable Calibration Facility

As-Found data for DeltaCal

Unit Type:	DC 1
Flow Range:	1.5-19.5 LPM
Serial No. :	1288
Firmware Version:	4.00P

Date	Technician
03Jan2024	Elsy Lasky

Ambient Pressure:	616.2	mmHg
Ambient Temperature:	22.9	°C

	As Received Temp. Press. Calibration				As Shipped Temp. Press. Calibration			
	DUT	**Standard**	**Diff**	**+/- 1 mmHg**	**DUT**	**Standard**	**Diff**	**+/-1 mmHg**
$Pres_{AMB}$ mmHg	618	617.9	0.1	Pass	615.9	616.2	-0.3	Pass
	DUT	**Standard**	**Diff**	**+/- 1 °C**	**DUT**	**Standard**	**Diff**	**+/- 1 °C**
$Temp_{AMB}$ °C	22.5	22.5	0	Pass	23	22.9	0.1	Pass
$Temp_{Filter}$ °C	22.5	22.5	0	Pass	23	22.9	0.1	Pass

	Offset	New Offset
PresAMB	3	2.9
TempAMB	0	0
Temp Filter	0	0

Range 1

Venturi	TE20005
Type	1B
Flow range	6 - 30.00 LPM

Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
1	134.61	616.0	6.533	6.499	-0.520
2	204.39	616.0	9.997	9.938	-0.590
3	264.52	616.0	12.983	12.893	-0.693
4	326.16	616.0	16.043	15.927	-0.723
5	369.74	616.0	18.208	18.082	-0.692
6	404.37	616.0	19.927	19.820	-0.537
	Maximum allowable error at any flow rate is 0.75%.			Average	-0.626
				Result	PASS

Range 2

Venturi	TE20007
Type	2B
Flow range	1.40 - 6.0 LPM

Test #	Static Pressure mmHg	Barometric Pressure mmHg	Venturi Qa LPM	DUT Qa LPM	% error %
1	139.22	616.0	1.935	1.952	0.879
2	200.99	616.5	2.818	2.814	-0.142
3	267.78	616.5	3.775	3.782	0.185
4	318.96	616.5	4.507	4.505	-0.044
5	370.03	616.5	5.239	5.244	0.095
6	422.60	616.5	5.992	5.995	0.050
	Maximum allowable error at any flow rate is 0.75%.			Average	0.171
				Result	FAIL