

**SANDFIRE RESOURCES, INC.
BLACK BUTTE COPPER
PROJECT AMBIENT AIR
MONITORING PROGRAM
Quarterly Data Report
First Quarter 2021**

Prepared for:

Sandfire Resources, Inc.
PO Box 431
White Sulphur Springs, MT 59645

Prepared by:

Bison Engineering, Inc.
2751 Enterprise Ave., Ste. 2
Billings, MT 59102
(406) 896-1716
<http://www.bison-eng.com>

June 1, 2021

CERTIFICATION OF DATA INTEGRITY

Bison Engineering, Inc., certifies the data in this report is an accurate summary of the air quality conditions measured at the Black Butte Copper Project air monitoring site. Every 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*, the *State of Montana Ambient Air Monitoring Program Quality Assurance Project Plan (April 2013)*, and the Environmental Protection Agency's *Quality Assurance Handbook for Air Pollution Measurement Systems: Volume I, A Field Guide to Environmental Quality Assurance (April 1994)*, *Volume II, Ambient Air Quality Program (May 2013)*, and *Volume IV, Meteorological Measurements (March 2008)*.

Preparer: Don Milmine.

Signature: 

Title: Project Engineer

Date: May 26, 2021

Reviewer: Steve Heck

Signature: 

Title: Meteorologist

Date: June 1, 2021

TABLE OF CONTENTS

CERTIFICATION OF DATA INTEGRITY	ii
1.0 INTRODUCTION	1
2.0 MONITORING SYSTEM OPERATIONS	3
3.0 PERFORMANCE AUDIT DATA	4
4.0 CALIBRATION DATA	5
5.0 DATA COMPLETENESS	6
6.0 MONITORING DATA	10

LIST OF TABLES

Table 1. Monthly Data Completeness	6
Table 2. Quarterly Data Completeness	9
Table 3. Missing Data Codes	11
Table 4. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower	12
Table 5. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower	14
Table 6. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower	15
Table 7. Quarterly Wind Rose Summary, Black Butte Copper Project Met Tower	16

LIST OF FIGURES

Figure 1. Monitoring Site Location	2
Figure 2. Monthly Wind Rose, Black Butte Copper Project Met Tower	16
Figure 3. Monthly Wind Rose, Black Butte Copper Project Met Tower	17
Figure 4. Monthly Wind Rose, Black Butte Copper Project Met Tower	18
Figure 5. Quarterly Wind Rose, Black Butte Copper Project Met Tower	19

APPENDICES

Appendix A: Meteorological Data

Appendix B: Performance Audit Reports

1.0 INTRODUCTION

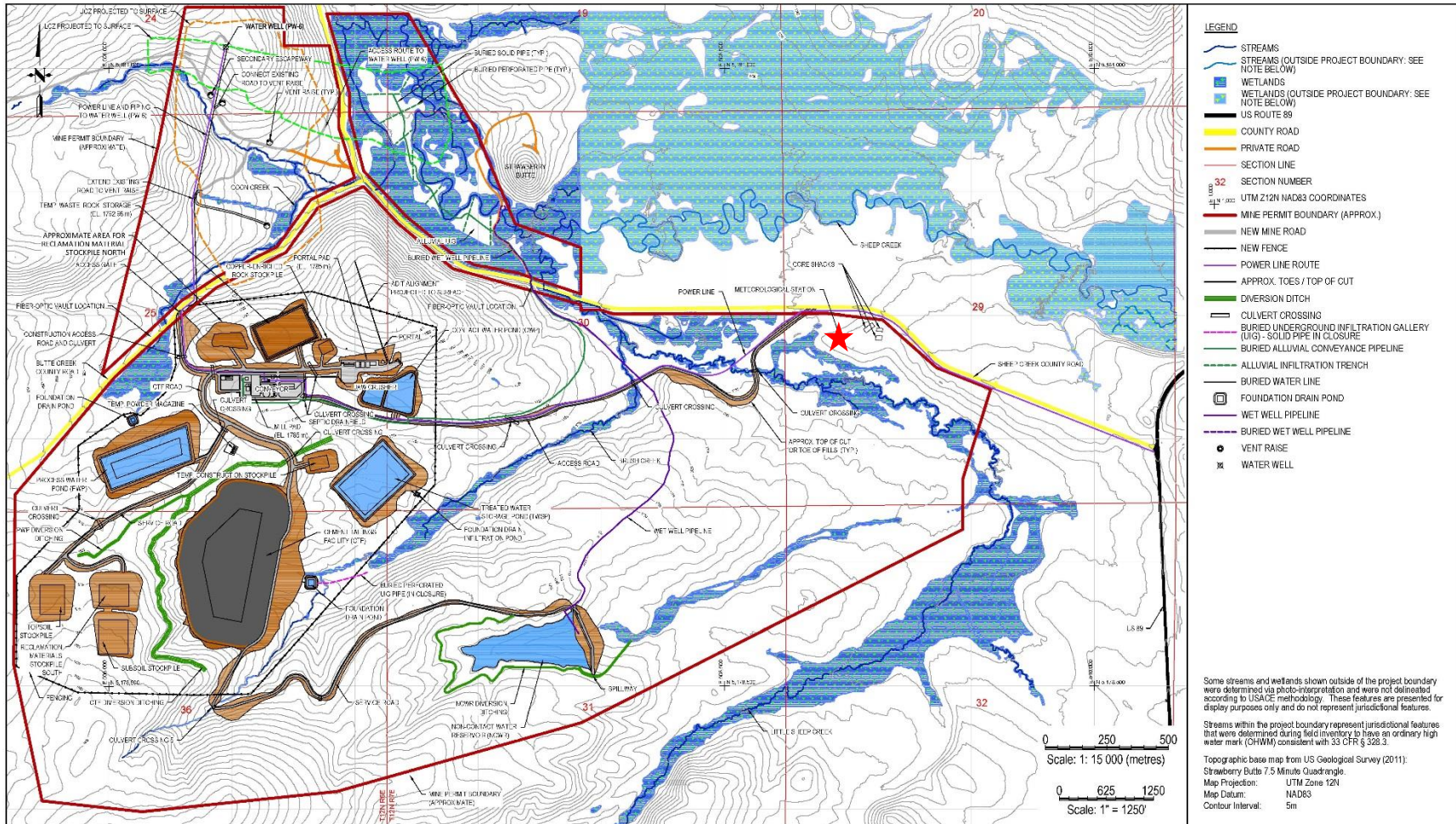
Sandfire Resources, Inc. established an ambient air monitoring site to measure wind speed, wind direction, standard deviation of wind direction, temperature at 9 meters and 2 meters, delta temperature, solar radiation, barometric pressure, and precipitation. The station was established to accurately characterize the local meteorology and collect baseline data in support of an operating permit application and various environmental studies.

The meteorological monitoring system was installed in April 2012. The site is operated by Bison Engineering, Inc., of Helena and Billings. Figure 1 shows the current location of the monitoring site, depicted by a red star. It is located to the west-southwest of the core shed buildings. On February 6, 2018, the tower was shut down and moved to a new location approximately 300 feet southwest of the original location, where monitoring resumed on March 7, 2018. Relocation activities were documented in the monitoring report for the first quarter of 2018.

This report presents the data collected during the first quarter (January through March) of 2021. 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 the data completeness achieved, and the periods of missing data also are presented. Appendix A presents hourly meteorological data collected.

On June 23, 2015, an evaporation pan and manual precipitation gauge were installed adjacent to the existing meteorological system. The evaporation data were used for hydrological / water balance studies. The manual rain gauge was installed to provide a backup data source for the existing automatic rain gauge, which had experienced occasional mechanical problems. Neither the evaporation pan nor the manual rain gauge was operated during the first quarter of 2021. The automatic precipitation gauge operated correctly throughout the first quarter of 2021.

Figure 1. Monitoring Site Location



Prepared by Tetra Tech Inc. (Revised October 2018 to include alluvial UG as included in the December 2018 Integrated Discharge Permit Application Narrative Report by Hydrometrics that was revised in February 2018, Completeness Determination by MT DEQ on May 25, 2018.)



FIGURE 1.3
Facilities Site Plan
Black Butte Copper Project
Mine Operating Permit Application
Meagher County, Montana

2.0 MONITORING SYSTEM OPERATIONS

Monitoring activities continued in the normal manner during the first quarter of 2021. Until mid-February, data were downloaded and reviewed by Bison at least once a week and examined for suspect behavior. At that time, the remote communications to the datalogger failed and subsequent performance checks were limited to occasional inspections by the on-site Senior Technician. All data from the first quarter were downloaded on April 13, 2021, and subsequent review determined that all instruments operated properly throughout the first quarter.

Steve Heck of Bison conducted performance audits of the meteorological system on April 13, 2021. All results were well within performance limits and no calibration adjustments were made to any of the instrumentation.

3.0 PERFORMANCE AUDIT DATA

Steve Heck of Bison conducted performance audits of the meteorological system on April 13, 2021. All audit results were satisfactory, and no calibration adjustments were necessary.

The Bison report of the audits is presented in Appendix B.

4.0 CALIBRATION DATA

Steve Heck of Bison conducted performance audits of the meteorological system on April 13, 2021, as discussed in Section 3.0. All as-found audit results were satisfactory, and no calibration adjustments were needed.

5.0 DATA COMPLETENESS

The meteorological percentages of data recovery achieved during the first quarter of 2021 are given in Tables 1 and 2. In these tables, the number of possible data values during each month of the quarter is given, together with the number of valid readings and the number of hours spent on quality assurance activities (such as calibrations, performance audits, and maintenance on the sensors). The quality assurance hours are added to the number of hours of valid data to compute the net percentage data recovery.

A total of 77 hours of data were lost from January 28 to January 31 because a circuit breaker tripped and disabled the data logger battery charger. When the power fell below approximately 11 volts data collection stopped, until the breaker was reset on January 31. Otherwise, minimal data losses occurred due to occasional icing of the sensors. Overall net data recovery for the quarter was over 95 percent for each parameter.

Table 1. Monthly Data Completeness

January 2021					
Parameter	Readings Possible	Valid Readings	Percentage Recovery	Quality Assurance Hours	Net Percentage Recovery
Black Butte Copper Project Met Tower					
Wind Speed	744	660	88.7	0	88.7
Wind Direction	744	667	89.7	0	89.7
Standard Deviation	744	667	89.7	0	89.7
9-Meter Temperature	744	667	89.7	0	89.7
2-Meter Temperature	744	667	89.7	0	89.7
9-2 M Delta Temperature	744	667	89.7	0	89.7
Solar Radiation	744	667	89.7	0	89.7
Barometric Pressure	744	667	89.7	0	89.7
Relative Humidity	744	667	89.7	0	89.7
Precipitation	744	667	89.7	0	89.7
Total	7,440	6,663	89.6	0	89.6

Table 1. Monthly Data Completeness (Continued)

February 2021					
Parameter	Readings Possible	Valid Readings	Percentage Recovery	Quality Assurance Hours	Net Percentage Recovery
Black Butte Copper Project Met Tower					
Wind Speed	672	659	98.1	0	98.1
Wind Direction	672	666	99.1	0	99.1
Standard Deviation	672	666	99.1	0	99.1
9-Meter Temperature	672	672	100.0	0	100.0
2-Meter Temperature	672	672	100.0	0	100.0
9-2 M Delta Temperature	672	672	100.0	0	100.0
Solar Radiation	672	672	100.0	0	100.0
Barometric Pressure	672	672	100.0	0	100.0
Relative Humidity	672	672	100.0	0	100.0
Precipitation	672	672	100.0	0	100.0
Total	6,720	6,695	99.6	0	99.6

Table 1. Monthly Data Completeness (Continued)

March 2021					
Parameter	Readings Possible	Valid Readings	Percentage Recovery	Quality Assurance Hours	Net Percentage Recovery
Black Butte Copper Project Met Tower					
Wind Speed	744	744	100.0	0	100.0
Wind Direction	744	744	100.0	0	100.0
Standard Deviation	744	744	100.0	0	100.0
9-Meter Temperature	744	744	100.0	0	100.0
2-Meter Temperature	744	744	100.0	0	100.0
9-2 M Delta Temperature	744	744	100.0	0	100.0
Solar Radiation	744	744	100.0	0	100.0
Barometric Pressure	744	744	100.0	0	100.0
Relative Humidity	744	744	100.0	0	100.0
Precipitation	744	744	100.0	0	100.0
Total	7,440	7,440	100.0	0	100.0

Table 2. Quarterly Data Completeness

First Quarter 2021					
Parameter	Readings Possible	Valid Readings	Percentage Recovery	Quality Assurance Hours	Net Percentage Recovery
Black Butte Copper Project Met Tower					
Wind Speed	2,160	2,063	95.5	0	95.5
Wind Direction	2,160	2,077	96.2	0	96.2
Standard Deviation	2,160	2,077	96.2	0	96.2
9-Meter Temperature	2,160	2,083	96.4	0	96.4
2-Meter Temperature	2,160	2,083	96.4	0	96.4
9-2 M Delta Temperature	2,160	2,083	96.4	0	96.4
Solar Radiation	2,160	2,083	96.4	0	96.4
Barometric Pressure	2,160	2,083	96.4	0	96.4
Relative Humidity	2,160	2,083	96.4	0	96.4
Precipitation	2,160	2,083	96.4	0	96.4
Total	21,600	20,798	96.3	0	96.3

6.0 MONITORING DATA

The hourly data values collected at the monitoring site are given in the data tables in Appendix A. Each of these tables presents one month's data for one parameter in the monitoring system. In addition, the average, maximum, and minimum values for each parameter for each day are listed (for wind direction, the prevailing wind direction for the day is given). For those hours with missing data, a code is given that explains the reason the data were missing. These codes are given in Table 3.

Monthly and quarterly wind rose distributions from the monitoring site are presented in Tables 4 through 7. These tables give the percentage frequency of occurrence of winds from 16 cardinal directions and from 22 wind speed ranges. These same data are presented graphically in Figures 2 through 5. In the wind rose figures, the length of each "petal" of the rose is proportional to the percentage of time the wind blew from that direction. On the bottom of each figure is a histogram showing the average wind speed from each of the cardinal wind directions.

Table 3. Missing Data Codes

Mnemonic Code	Description	Equivalent EPA Null Value Reason Code
Sc	Scheduled but not collected	9972
Ti	Sample time out of limits	9973
Fi	Filter damage	9976
Op	Voided by operator	9978
Mi	Miscellaneous void	9979
ND	Machine malfunction	9980
Wx	Bad weather	9981
Co	Collection error	9983
Lb	Lab error	9984
QA	Poor quality assurance results	9985
ZS	Manual zero/span check	9986
Wa	Monitoring waived	9987
Pw	Power failure	9988
Wi	Wildlife damage	9989
AZ	Automatic zero/span check	9991
Au	Performance audit	9992
Ma	Routine maintenance/repairs	9993
Ca	Multipoint calibration	9995
PZ	Precision/zero/span	9998

Table 4. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower

January 2021																		
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	1.1	1.8	2.0	1.7	2.4	3.0	3.8	3.0	0.5	0.5	0.3	0.3	0.5	0.5	0.8	1.8	23.8
	1.1 - 2.0	0.5	0.6	1.5	1.7	3.6	4.1	6.1	2.7	0.8	0.3	0.3	0.8	0.9	1.7	1.4	0.6	27.4
	2.1 - 3.0	0.0	0.0	0.3	1.2	0.9	1.8	1.8	1.5	0.3	0.0	0.3	0.6	0.6	0.9	1.2	0.3	11.8
	3.1 - 4.0	0.0	0.0	0.2	0.5	0.8	1.1	1.1	0.9	1.1	0.5	0.3	0.5	0.8	1.8	1.1	0.0	10.3
	4.1 - 5.0	0.0	0.0	0.0	0.2	0.6	0.2	0.3	1.8	1.2	0.5	0.0	0.2	1.2	2.6	0.0	0.0	8.6
	5.1 - 6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.6	0.2	0.6	0.2	1.7	1.8	0.2	0.0	6.8
	6.1 - 7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.2	0.0	0.0	0.0	2.1	1.2	0.0	0.0	4.4
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.2	0.3	0.0	0.6	0.3	0.2	0.0	2.1
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.3	0.2	0.5	0.3	0.3	0.0	1.8
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.5	0.0	0.2	0.0	1.1
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.3	0.0	0.0	0.6
	11.1 - 12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.3
	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	0.2	0.0	0.0	0.2
	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	0.2	0.0	0.0	0.0	0.2
	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	0.2	0.0	0.0	0.2
	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	0.2	0.0	0.0	0.0	0.2
	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	0.2	0.2	0.0	0.0	0.3
Calm																		0.0
Total		1.5	2.4	3.9	5.2	8.3	10.2	13.0	13.0	5.0	2.1	3.0	2.6	10.0	11.8	5.2	2.7	100.0
Average Speed		1.1	0.9	1.2	1.8	1.8	1.7	1.6	3.0	3.9	3.7	5.6	2.8	5.8	4.8	3.0	1.1	2.9

Table 5. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower

February 2021																		
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	0.6	0.9	0.8	1.1	1.7	2.9	4.4	3.7	1.4	1.1	1.1	0.8	0.3	0.6	1.1	2.0	24.3
	1.1 - 2.0	0.5	0.3	0.2	0.9	0.9	1.8	2.8	1.4	0.5	0.5	0.6	0.9	2.0	1.2	1.1	1.2	16.7
	2.1 - 3.0	0.0	0.0	0.3	0.2	0.2	1.1	1.5	0.5	0.0	0.0	0.3	1.2	2.3	1.7	2.0	0.2	11.3
	3.1 - 4.0	0.0	0.0	0.0	0.0	0.2	1.2	0.9	0.8	0.6	0.0	0.0	1.2	3.8	2.0	1.7	0.0	12.4
	4.1 - 5.0	0.0	0.0	0.0	0.2	0.8	0.3	0.5	0.0	0.9	0.2	0.9	1.5	4.0	2.6	0.5	0.0	12.3
	5.1 - 6.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.3	0.2	0.5	0.8	3.4	1.7	0.2	0.0	7.4
	6.1 - 7.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.5	0.2	2.6	0.2	0.0	0.3	4.1
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.6	2.3	0.3	0.0	0.0	3.5
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.3	1.7	0.8	0.0	0.0	3.2
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	1.8	0.5	0.0	0.0	2.6
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.0	0.3	0.9	0.0	0.0	1.8
	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	0.3	0.0	0.0	0.0	0.3
	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		1.1	1.2	1.2	2.3	4.0	7.4	10.1	6.6	4.0	2.8	4.4	7.7	24.8	12.4	6.4	3.7	100.0
Average Speed		0.9	0.9	1.2	1.3	2.2	1.7	1.6	1.5	2.8	3.9	4.1	3.9	5.4	4.7	2.5	1.5	3.4

Table 6. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower

March 2021																		
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	0.9	1.6	0.7	1.5	1.5	3.4	5.1	2.0	0.5	0.3	0.3	0.8	0.5	0.7	0.1	0.7	20.6
	1.1 - 2.0	0.9	0.8	1.1	2.3	3.0	5.6	6.5	1.6	1.1	0.5	0.5	1.3	0.8	1.2	0.8	0.1	28.2
	2.1 - 3.0	0.0	0.0	0.3	0.5	1.1	1.6	2.0	1.1	0.0	0.0	0.3	0.9	2.3	0.9	2.0	0.9	14.0
	3.1 - 4.0	0.1	0.0	0.0	0.4	0.1	0.3	0.3	1.5	0.7	0.1	0.4	1.3	3.2	1.5	0.5	0.4	10.9
	4.1 - 5.0	0.3	0.1	0.0	0.0	0.0	0.0	0.3	0.9	0.3	0.1	0.7	0.7	1.6	1.2	0.7	0.1	7.0
	5.1 - 6.0	0.5	0.1	0.0	0.0	0.0	0.0	0.1	0.5	0.1	0.4	0.1	0.5	2.6	0.5	0.1	0.1	5.9
	6.1 - 7.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.5	2.2	1.2	0.4	0.0	5.9
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.3	0.4	0.5	0.4	0.4	0.1	2.7
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.4	0.5	0.3	0.1	0.0	1.7
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.1	0.7	0.0	0.0	0.0	1.2
	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	0.3	0.0	0.1	0.1	0.0	0.5
	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	0.4	0.3	0.1	0.0	0.0	0.8
	12.1 - 13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5
	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		3.4	3.0	2.0	4.7	5.6	10.9	14.5	8.3	2.8	2.2	3.2	7.8	15.2	8.5	5.4	2.6	100.0
Average Speed		3.1	1.8	1.4	1.5	1.6	1.5	1.7	3.1	2.7	4.3	4.2	4.5	4.8	4.5	3.8	2.7	3.0

Table 7. Quarterly Wind Rose Summary, Black Butte Copper Project Met Tower

First Quarter 2021																		
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	0.9	1.5	1.1	1.4	1.8	3.1	4.5	2.9	1.1	0.6	0.5	0.6	0.4	0.6	0.6	1.5	23.0
	1.1 - 2.0	0.6	0.6	0.9	1.6	2.5	3.9	5.1	1.9	0.8	0.4	0.5	1.0	1.2	1.4	1.1	0.6	24.2
	2.1 - 3.0	0.0	0.0	0.3	0.6	0.7	1.5	1.8	1.0	0.1	0.0	0.3	0.9	1.7	1.2	1.7	0.5	12.4
	3.1 - 4.0	0.0	0.0	0.0	0.3	0.3	0.8	0.7	1.1	0.8	0.2	0.2	1.0	2.6	1.7	1.1	0.1	11.1
	4.1 - 5.0	0.1	0.0	0.0	0.1	0.4	0.1	0.3	0.9	0.8	0.2	0.5	0.8	2.2	2.1	0.4	0.0	9.2
	5.1 - 6.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.3	0.2	0.4	0.5	2.5	1.3	0.1	0.0	6.6
	6.1 - 7.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.3	0.2	2.3	0.9	0.1	0.1	4.8
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.3	1.1	0.3	0.2	0.0	2.8
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.3	0.9	0.4	0.1	0.0	2.2
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	1.0	0.1	0.0	0.0	1.6
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.4	0.0	0.0	1.0
	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	0.1	0.2	0.0	0.0	0.0	0.5
	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	0.1	0.0	0.0	0.2
	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	0.1
Calm																		0.0
Total		2.0	2.2	2.4	4.1	6.0	9.5	12.6	9.3	4.2	2.3	3.5	6.1	16.5	10.8	5.6	3.0	100.0
Average Speed		2.2	1.3	1.2	1.6	1.8	1.6	1.6	2.7	3.0	4.0	4.6	4.0	5.3	4.7	3.1	1.8	3.1

Figure 2. Monthly Wind Rose, Black Butte Copper Project Met Tower

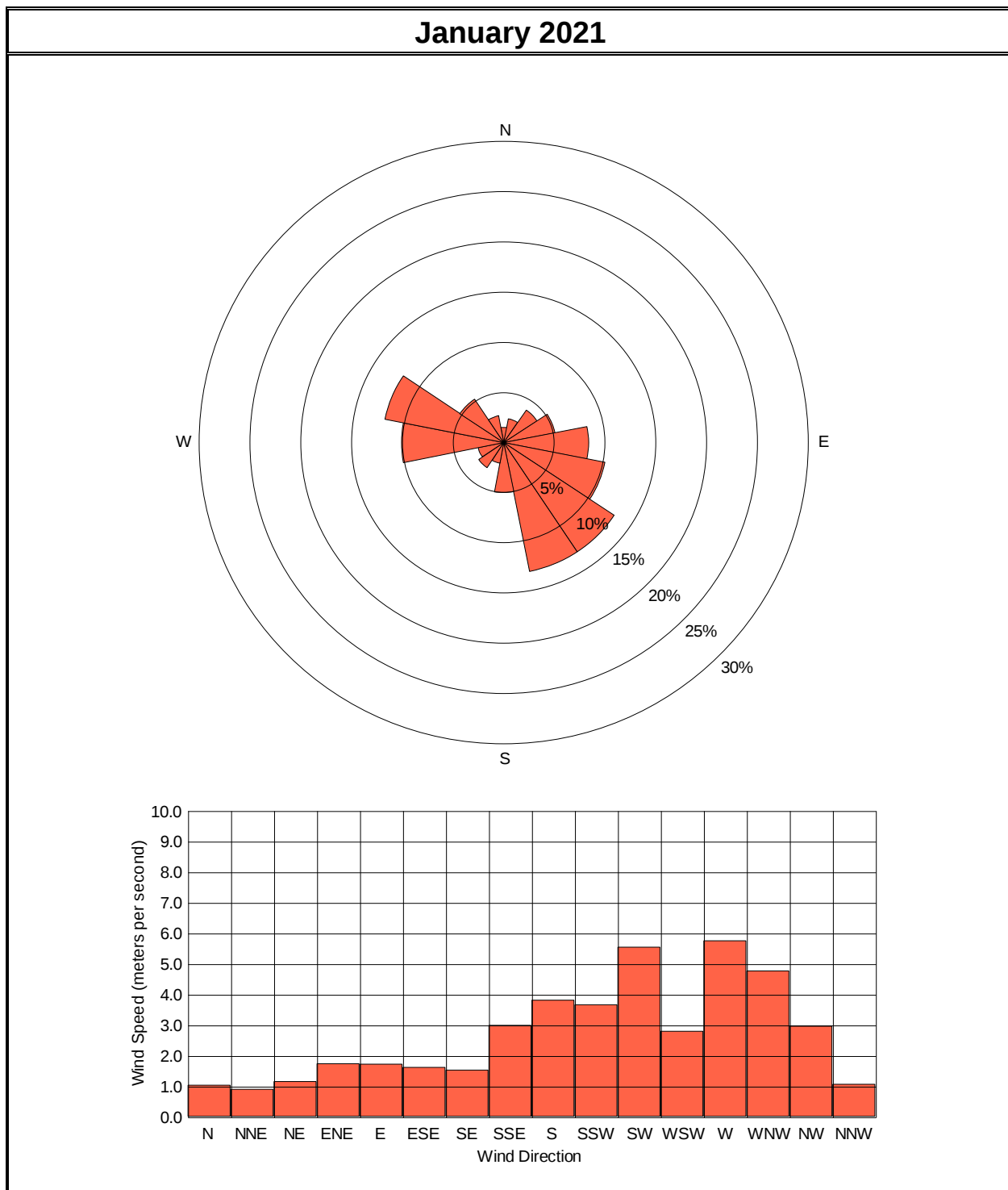


Figure 3. Monthly Wind Rose, Black Butte Copper Project Met Tower

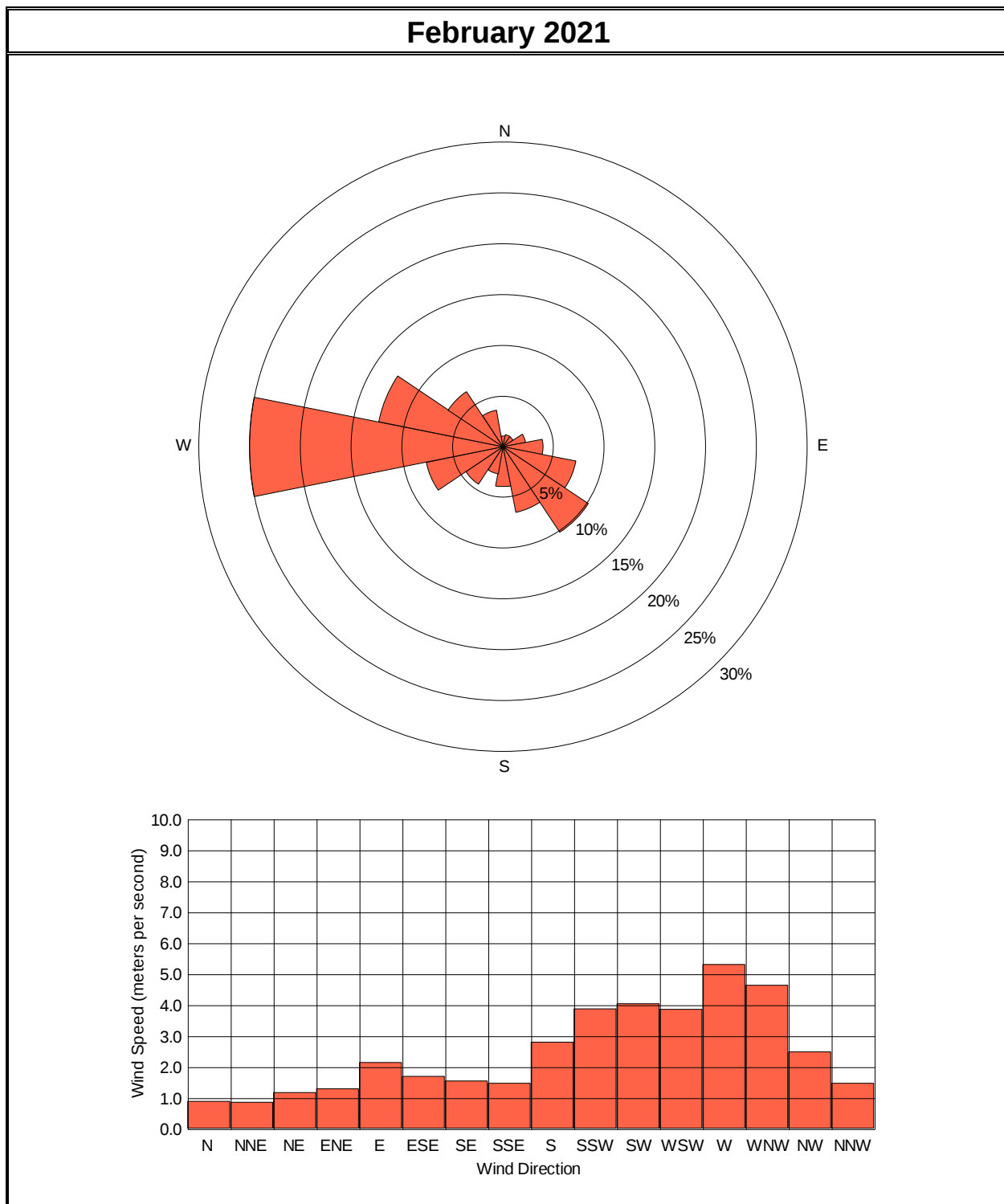


Figure 4. Monthly Wind Rose, Black Butte Copper Project Met Tower

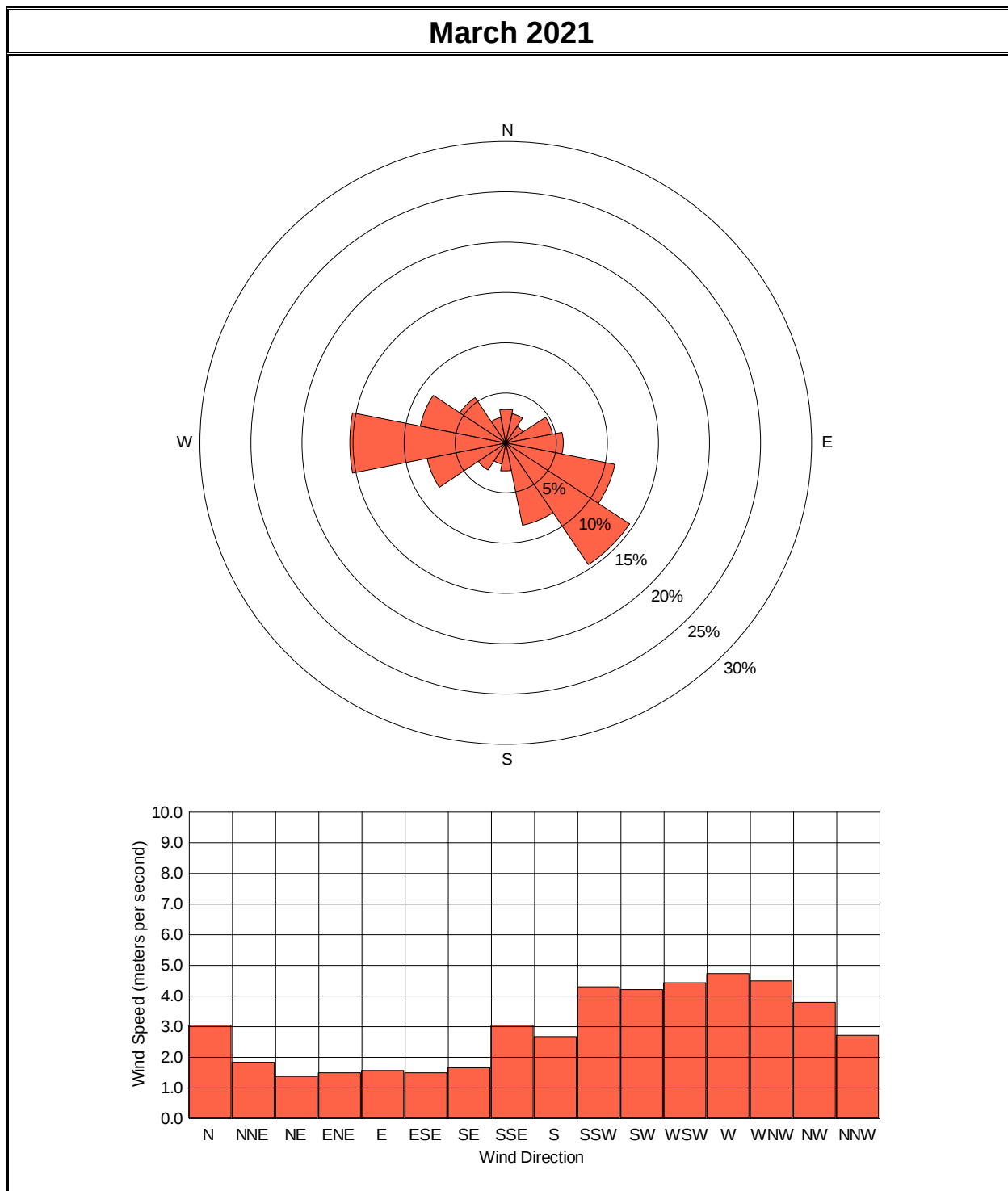
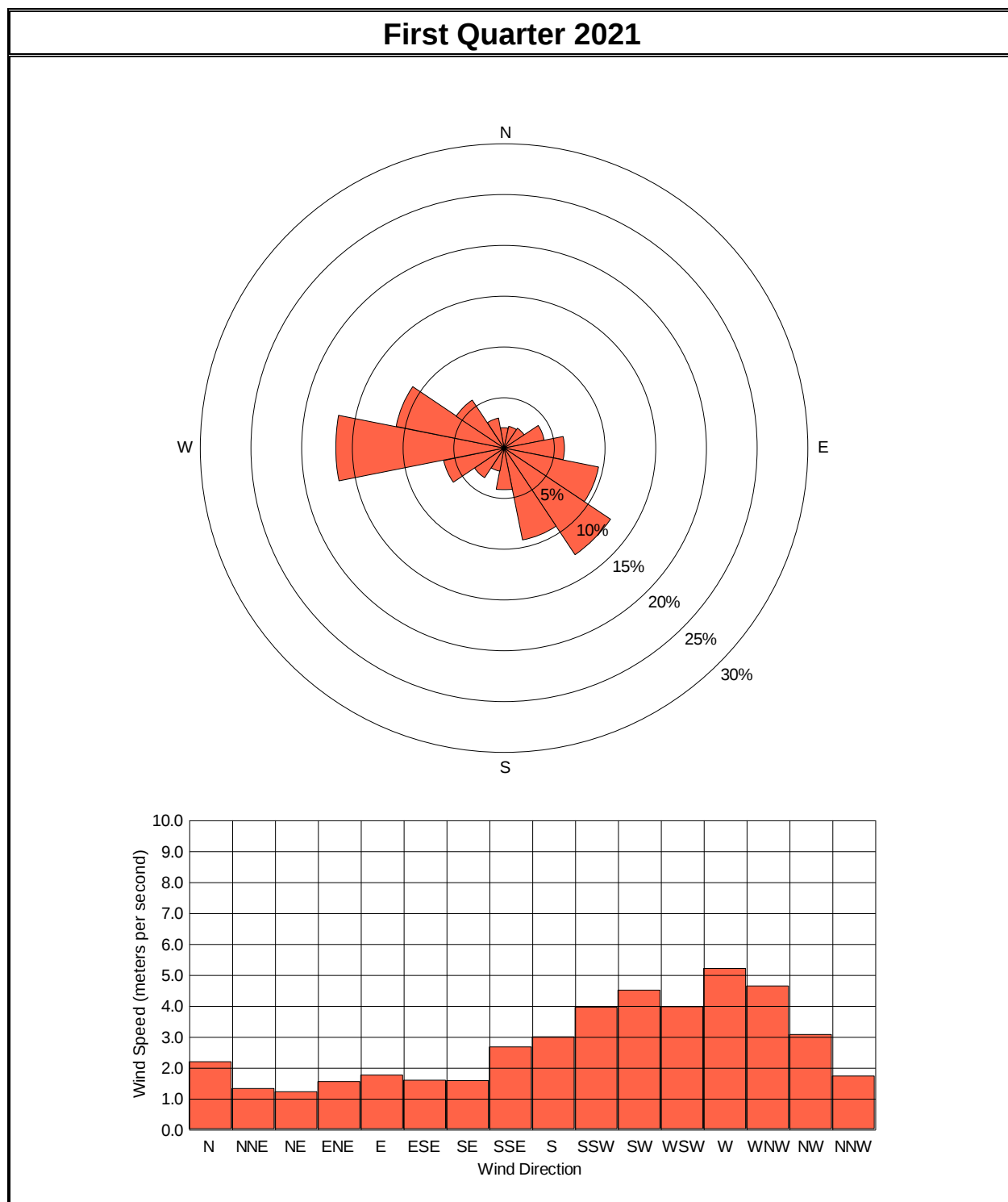


Figure 5. Quarterly Wind Rose, Black Butte Copper Project Met Tower



APPENDIX A: HOURLY AIR QUALITY AND METEOROLOGICAL DATA, FIRST QUARTER 2021

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Speed (meters per second)
January 2021

A-1

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	1.1	0.9	1.3	2.3	1.2	2.0	1.2	1.4	1.6	1.7	0.9	1.0	3.1	3.5	3.9	3.2	2.0	2.1	1.8	2.9	4.0	3.1	4.2	3.2	2.2	4.2	0.9
2	4.0	3.6	4.3	3.7	2.7	2.4	1.4	3.6	2.6	1.9	4.1	6.3	5.4	4.7	6.2	7.1	4.8	3.2	2.5	5.8	8.0	4.9	5.8	4.6	4.3	8.0	1.4
3	3.5	3.1	3.6	3.1	3.8	10.2	11.2	9.9	9.8	5.1	7.7	8.1	8.0	8.6	10.1	8.5	6.8	5.4	5.8	3.9	2.5	6.1	5.0	2.5	6.3	11.2	2.5
4	2.6	2.2	1.8	2.3	2.3	4.2	3.6	2.1	2.4	1.4	1.2	1.7	4.6	5.5	5.8	5.6	7.4	3.5	4.8	4.7	5.5	4.0	1.4	3.5	3.5	7.4	1.2
5	3.5	1.9	2.6	5.3	8.0	6.0	6.9	6.3	4.8	4.7	7.0	6.8	6.1	5.9	6.9	6.0	3.6	2.0	1.2	1.5	1.2	1.7	1.3	1.1	4.3	8.0	1.1
6	1.4	1.3	1.2	1.6	2.5	1.8	1.3	1.7	2.1	2.6	3.1	3.3	2.3	2.9	3.7	1.6	1.2	1.5	2.0	2.5	1.4	1.3	1.2	1.2	1.9	3.7	1.2
7	1.4	1.8	1.1	1.1	1.1	1.6	2.2	1.5	0.7	0.7	0.7	1.1	1.8	1.6	1.7	1.9	1.8	2.1	1.4	1.3	1.6	0.9	0.6	0.6	1.3	2.2	0.6
8	0.9	0.7	1.2	1.3	1.3	1.4	0.6	1.5	2.7	1.4	2.2	3.1	3.2	3.2	2.6	1.3	0.6	1.5	1.2	0.7	0.4	0.6	1.6	1.4	1.5	3.2	0.4
9	0.9	0.9	0.8	1.0	1.1	0.3	0.3	0.3	Wx	Wx	Wx	Wx	Wx	1.0	1.5	0.9	1.1	1.3	2.3	1.8	1.8	1.2	1.1	0.9	1.1	2.3	0.3
10	0.7	0.8	1.1	1.2	1.1	0.7	0.9	0.7	0.5	0.3	0.4	0.5	0.6	2.5	3.0	1.6	1.4	2.4	1.9	1.6	1.3	1.2	1.1	0.7	1.2	3.0	0.3
11	1.2	0.9	0.7	0.7	0.6	0.8	0.5	0.6	0.6	0.5	0.4	0.6	1.0	1.3	1.0	0.8	1.8	1.6	1.4	1.0	1.2	1.6	1.0	1.0	1.0	1.8	0.4
12	1.0	1.0	1.1	1.4	1.5	1.6	2.7	2.3	1.8	2.1	2.5	4.6	3.7	4.1	2.9	5.2	5.9	5.5	4.8	3.5	3.6	2.1	1.8	2.2	2.9	5.9	1.0
13	1.8	2.0	4.2	4.4	4.6	5.1	4.7	3.7	8.8	8.6	11.5	13.5	17.8	20.1	21.2	15.2	12.6	10.8	10.3	7.5	6.5	5.9	5.3	3.6	8.7	21.2	1.8
14	4.1	5.5	6.7	5.1	4.6	5.3	5.0	4.4	2.0	3.1	5.5	6.5	8.7	9.3	8.8	8.0	4.8	4.4	1.9	1.2	2.0	1.6	1.6	0.8	4.6	9.3	0.8
15	0.8	1.0	1.0	1.0	1.1	1.4	1.2	1.2	1.1	0.7	1.1	1.0	2.1	2.0	2.3	4.7	1.8	1.5	1.0	3.7	3.6	5.2	3.7	2.5	1.9	5.2	0.7
16	3.8	1.9	1.8	2.9	8.2	3.2	2.6	4.2	4.0	2.6	1.8	4.4	6.6	6.7	6.4	5.3	4.1	3.4	2.0	1.2	1.3	1.2	0.9	1.2	3.4	8.2	0.9
17	1.0	1.2	1.3	1.8	1.7	1.6	3.3	2.0	5.0	3.6	3.9	3.7	6.6	7.8	8.1	8.5	9.5	7.0	6.8	5.2	4.1	4.6	2.6	3.5	4.3	9.5	1.0
18	3.1	3.1	4.8	5.0	4.3	3.7	4.5	4.9	5.4	5.1	5.5	5.1	4.0	5.2	4.1	3.4	3.2	3.6	2.1	2.6	1.7	2.1	2.3	2.3	3.8	5.5	1.7
19	1.6	1.2	1.0	0.9	0.5	0.5	0.4	0.5	0.4	Wx	Wx	0.3	1.1	1.5	0.9	0.8	0.7	1.3	1.7	1.8	2.5	2.2	4.6	5.8	1.5	5.8	0.3
20	5.2	4.2	3.5	5.5	7.3	7.8	5.7	2.7	2.9	2.8	6.3	9.5	9.9	8.8	6.5	3.8	1.7	1.8	1.2	4.3	6.2	2.7	2.2	2.6	4.8	9.9	1.2
21	2.3	1.3	1.1	0.9	0.9	0.8	0.8	0.7	1.0	0.7	1.4	0.7	1.4	2.0	2.7	1.9	1.4	1.7	1.4	0.8	0.5	0.6	0.5	0.9	1.2	2.7	0.5
22	0.8	1.1	0.5	0.5	0.6	0.6	1.4	1.2	1.1	0.5	0.6	0.7	0.9	1.2	0.6	1.9	1.8	1.1	0.9	0.4	0.3	0.6	0.3	0.4	0.8	1.9	0.3
23	0.6	0.4	0.4	0.3	0.3	0.6	0.5	0.7	0.5	0.4	0.3	0.3	0.4	0.8	1.1	1.0	2.3	1.0	1.6	1.4	1.3	0.7	1.0	1.0	0.8	2.3	0.3
24	0.7	0.7	0.7	0.7	0.9	0.6	0.5	0.6	0.9	0.6	0.6	0.6	0.9	3.1	2.6	0.8	0.9	1.5	2.3	3.0	2.9	2.4	1.3	0.7	1.3	3.1	0.5
25	0.8	0.8	0.6	1.1	0.6	0.5	0.7	0.8	0.5	0.4	0.5	0.8	2.3	5.7	5.5	5.5	5.8	5.6	5.2	6.9	8.1	6.8	6.7	6.1	3.3	8.1	0.4
26	6.1	6.8	5.4	5.1	5.6	7.3	7.2	3.9	2.3	2.0	3.1	5.0	4.9	3.0	2.3	2.7	2.7	3.5	2.1	1.3	1.7	1.1	1.4	1.0	3.6	7.3	1.0
27	1.1	1.1	0.9	1.0	1.3	1.2	0.8	1.1	1.2	1.1	0.7	1.5	4.2	4.5	4.7	4.4	6.2	7.3	9.4	5.0	3.0	3.9	3.9	4.6	3.1	9.4	0.7
28	4.7	4.0	2.7	1.7	1.6	1.5	1.5	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	2.5	4.7	1.5
29	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
30	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
31	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	4.2	4.6	4.3	4.4	4.1	3.4	2.3	2.1	3.2	3.2	2.9	3.4	3.5	4.6	2.1
Avg	2.2	2.0	2.0	2.2	2.5	2.7	2.6	2.4	2.6	2.2	2.9	3.5	4.3	4.7	4.7	4.1	3.6	3.3	3.0	2.8	2.9	2.6	2.4	2.3	2.9	6.2	0.9
Max	6.1	6.8	6.7	5.5	8.2	10.2	11.2	9.9	9.8	8.6	11.5	13.5	17.8	20.1	21.2	15.2	12.6	10.8	10.3	7.5	8.1	6.8	6.7	6.1	8.7	21.2	2.5
Min	0.6	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.8	0.6	0.8	0.6	1.0	0.9	0.4	0.3	0.6	0.3	0.4	0.8	1.8	0.3

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Speed (meters per second)
February 2021

A-2

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	3.5	3.2	4.2	3.1	2.4	2.3	2.4	1.7	2.1	1.6	1.3	4.4	3.7	3.0	5.4	3.3	3.3	2.8	2.3	1.2	3.8	4.7	4.3	6.3	3.2	6.3	1.2
2	5.2	4.0	4.6	4.6	4.3	3.5	3.1	1.8	1.7	1.1	4.2	6.4	10.3	8.8	10.4	10.0	6.2	5.0	4.9	5.6	5.1	4.5	5.3	5.7	5.3	10.4	1.1
3	5.6	4.1	1.6	4.2	5.5	3.7	1.5	1.3	1.2	2.6	5.7	5.2	5.0	5.0	4.5	4.2	3.7	4.1	3.9	2.5	1.8	2.0	0.9	0.8	3.4	5.7	0.8
4	0.6	0.7	0.5	0.6	0.7	1.5	3.6	3.9	3.2	5.9	7.8	8.5	8.1	8.8	9.2	8.9	9.6	6.0	6.5	5.4	3.1	4.6	5.1	3.8	4.9	9.6	0.5
5	3.0	4.9	4.7	2.8	1.4	1.0	0.9	1.1	0.5	0.4	0.3	1.1	4.1	4.6	3.7	2.4	3.2	4.6	5.3	8.1	6.7	6.2	5.5	5.9	3.4	8.1	0.3
6	3.7	1.3	0.8	0.7	0.9	0.7	0.6	0.5	0.9	0.6	0.7	0.7	0.5	0.5	0.5	0.5	0.5	3.4	3.9	2.1	3.8	3.8	3.6	3.6	1.6	3.9	0.5
7	4.3	3.8	3.9	3.5	4.0	3.9	2.9	2.4	1.8	1.3	0.8	1.1	0.7	0.7	0.9	0.7	0.8	1.5	1.3	0.8	0.8	1.1	0.8	0.7	1.9	4.3	0.7
8	0.9	0.6	0.9	0.9	0.7	1.1	1.5	3.5	2.5	2.6	3.5	2.9	3.3	3.7	4.4	3.6	3.7	2.0	1.9	2.1	2.1	1.0	0.8	1.3	2.1	4.4	0.6
9	1.5	0.5	0.5	0.5	0.5	1.7	1.7	1.1	1.6	2.9	2.6	4.5	3.5	3.4	3.5	2.4	1.2	2.4	1.0	0.6	0.5	0.7	0.7	0.7	1.7	4.5	0.5
10	0.7	0.5	0.6	0.4	0.5	0.6	0.6	2.0	2.8	3.1	3.2	0.7	2.8	3.5	5.2	3.9	3.9	2.9	2.6	2.4	0.8	2.5	2.7	2.2	2.1	5.2	0.4
11	2.0	1.9	1.9	2.6	2.0	1.0	1.0	0.7	0.7	0.8	1.1	3.4	5.4	5.2	3.7	4.6	4.1	2.5	0.9	0.6	0.3	0.3	0.6	Wx	2.1	5.4	0.3
12	Wx	Wx	Wx	Wx	Wx	Wx	Wx	Wx	Wx	Wx	Wx	Wx	0.8	1.8	3.4	3.6	2.7	2.9	0.9	1.7	1.6	0.8	0.9	0.8	1.8	3.6	0.8
13	0.9	1.0	0.7	0.6	0.5	0.7	0.7	1.1	0.7	0.7	0.6	1.1	2.0	1.3	2.6	3.8	3.0	3.6	2.0	1.6	3.7	4.3	2.1	1.9	1.7	4.3	0.5
14	1.0	2.0	1.7	1.1	1.2	1.8	1.5	1.0	0.9	2.8	3.8	6.0	4.7	5.2	4.3	2.3	1.0	1.8	2.5	0.8	0.5	0.6	0.4	0.5	2.1	6.0	0.4
15	0.4	0.5	0.5	0.5	0.6	0.4	0.7	0.7	0.6	0.7	1.8	3.4	4.2	3.8	3.1	3.2	2.2	1.8	1.3	1.0	0.6	0.5	0.5	0.6	1.4	4.2	0.4
16	0.5	0.5	0.4	0.3	1.3	1.3	2.3	3.6	3.5	4.3	4.2	4.6	4.8	5.2	4.6	4.8	4.3	4.9	6.1	4.9	1.9	1.1	0.5	0.6	2.9	6.1	0.3
17	0.6	0.6	0.6	1.0	0.9	1.1	1.3	1.2	1.0	0.9	0.7	1.5	2.8	4.6	5.4	6.6	4.5	4.4	2.8	2.5	1.0	1.4	0.6	0.6	2.0	6.6	0.6
18	0.8	0.6	0.9	0.8	0.4	0.4	0.5	0.6	0.8	0.5	1.7	4.1	4.5	4.2	2.1	0.7	1.1	1.0	3.4	4.2	3.5	3.4	3.0	2.8	1.9	4.5	0.4
19	2.0	3.3	3.3	2.3	2.1	2.3	2.2	1.6	1.3	1.5	3.1	5.8	9.7	5.7	5.0	5.6	2.7	4.2	3.2	3.4	4.2	4.4	2.2	2.3	3.5	9.7	1.3
20	1.9	2.1	2.2	1.6	1.1	1.0	2.0	1.4	0.9	0.8	0.9	4.8	6.4	7.5	6.0	5.4	6.3	8.0	4.6	3.2	4.7	4.4	6.3	6.8	3.8	8.0	0.8
21	7.0	6.4	7.2	6.5	5.5	5.3	5.3	6.4	7.0	7.6	8.8	7.9	9.2	8.8	8.8	9.5	10.3	9.2	9.8	9.9	9.3	10.5	10.0	10.3	8.2	10.5	5.3
22	5.7	4.6	5.4	7.3	10.1	6.5	4.8	4.5	8.3	8.2	11.9	11.6	8.7	9.2	7.5	8.8	6.5	4.9	8.2	3.9	4.3	4.4	5.5	10.3	7.1	11.9	3.9
23	9.7	11.0	9.7	10.4	10.2	10.4	7.3	5.9	6.6	5.5	7.9	8.7	9.8	9.3	8.2	8.4	7.3	7.2	6.1	5.6	3.1	2.2	4.3	2.1	7.4	11.0	2.1
24	1.4	1.0	0.5	0.5	0.4	0.7	0.8	0.5	0.7	0.5	1.4	5.1	6.5	5.5	3.8	3.9	2.4	3.3	2.2	1.2	1.1	1.6	1.3	1.3	2.0	6.5	0.4
25	2.1	2.1	1.7	1.4	1.2	1.3	2.7	2.6	3.9	1.3	3.9	4.2	7.2	5.4	10.1	4.5	8.1	7.4	4.1	3.9	4.1	7.2	6.3	6.3	4.3	10.1	1.2
26	4.3	4.9	8.8	6.5	5.5	4.4	5.2	4.5	5.0	6.2	7.2	7.7	8.1	7.2	7.7	5.7	4.8	3.9	2.9	1.8	1.9	1.3	0.9	0.8	4.9	8.8	0.8
27	0.7	1.3	1.2	0.9	0.6	0.7	0.6	0.4	0.6	0.7	1.8	4.8	5.2	6.0	4.8	3.6	2.5	2.8	1.3	1.1	1.2	1.3	1.0	1.2	1.9	6.0	0.4
28	1.3	2.3	2.3	3.6	4.4	4.8	2.5	1.4	1.1	4.9	5.9	7.7	8.3	7.3	7.8	9.1	7.5	6.8	5.2	4.3	3.2	1.2	2.1	1.1	4.4	9.1	1.1
Avg	2.6	2.6	2.6	2.6	2.6	2.4	2.2	2.1	2.3	2.6	3.6	4.7	5.4	5.2	5.2	4.8	4.2	4.1	3.6	3.1	2.8	2.9	2.8	3.0	3.3	7.0	1.0
Max	9.7	11.0	9.7	10.4	10.2	10.4	7.3	6.4	8.3	8.2	11.9	11.6	10.3	9.3	10.4	10.0	10.3	9.2	9.8	9.9	9.3	10.5	10.0	10.3	8.2	11.9	5.3
Min	0.4	0.5	0.4	0.3	0.4	0.4	0.5	0.4	0.5	0.4	0.3	0.7	0.5	0.5	0.5	0.5	0.5	1.0	0.9	0.6	0.3	0.3	0.4	0.5	1.4	3.6	0.3

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Speed (meters per second)
March 2021

A-3

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	1.5	1.0	1.2	1.0	0.7	0.7	1.5	2.8	2.7	1.5	2.1	3.9	4.6	4.3	4.0	4.7	5.9	5.0	3.6	1.6	1.9	1.2	1.5	1.5	2.5	5.9	0.7
2	2.1	2.0	1.9	2.1	1.7	2.1	1.4	1.5	1.5	1.9	6.1	6.4	5.6	5.0	4.0	6.2	5.3	5.1	2.9	3.2	2.5	1.9	1.1	1.2	3.1	6.4	1.1
3	1.0	1.1	1.3	1.6	1.1	1.3	1.1	1.0	1.1	0.9	0.8	2.6	3.9	3.4	2.7	2.3	3.9	3.1	2.1	3.9	2.2	2.2	1.9	1.8	2.0	3.9	0.8
4	2.0	1.8	1.9	1.8	1.4	1.4	1.0	1.0	0.9	0.6	0.6	1.0	0.8	0.8	0.8	0.8	1.0	0.9	2.3	3.4	3.6	1.7	2.0	1.6	1.5	3.6	0.6
5	1.6	1.4	1.5	1.5	1.2	1.5	1.4	1.0	0.7	1.0	0.7	1.4	4.1	4.5	4.1	4.8	3.2	3.6	2.6	3.6	3.7	2.7	2.5	2.9	2.4	4.8	0.7
6	2.6	2.6	2.0	2.2	2.1	2.1	1.8	1.5	2.3	1.0	1.7	2.5	5.1	4.5	7.1	6.1	7.4	6.8	3.9	2.2	4.0	3.5	4.9	2.0	3.4	7.4	1.0
7	3.1	4.5	1.4	1.7	2.9	1.5	1.4	0.9	1.0	0.8	1.1	3.6	5.4	4.6	4.9	6.3	3.1	1.9	1.4	2.7	2.2	2.7	2.2	0.9	2.6	6.3	0.8
8	0.7	1.3	1.2	1.0	0.9	0.9	0.8	1.1	0.9	1.1	1.0	1.2	3.0	2.4	2.9	3.9	6.3	2.7	3.1	2.7	2.9	4.2	2.0	2.9	2.1	6.3	0.7
9	1.6	1.7	2.9	2.1	1.3	1.0	1.3	2.4	2.7	3.2	3.4	3.0	3.0	3.2	3.4	3.7	3.3	2.0	1.3	1.7	1.2	1.1	1.1	0.6	2.2	3.7	0.6
10	0.9	0.6	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.5	1.5	3.5	3.3	3.6	3.3	3.2	1.5	1.0	1.0	1.2	0.9	1.0	1.3	1.3	3.6	0.3
11	0.9	0.6	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.5	0.8	2.4	3.4	4.5	4.1	4.3	3.8	1.4	0.7	1.0	1.1	1.1	1.3	1.5	4.5	0.3
12	1.1	0.9	1.1	0.9	0.7	0.8	0.8	0.6	0.5	0.9	0.6	1.0	2.6	2.9	2.1	2.2	2.6	1.3	1.4	1.5	1.7	0.9	1.4	1.4	1.3	2.9	0.5
13	1.1	0.9	1.2	0.6	0.8	0.6	0.8	0.6	0.7	0.5	0.5	1.1	2.2	4.0	1.9	1.9	6.0	4.8	1.8	1.0	2.1	1.4	1.7	2.0	1.7	6.0	0.5
14	1.7	2.3	2.0	1.9	2.8	2.7	2.0	1.7	3.8	4.7	8.4	9.2	12.3	12.9	9.8	7.5	5.5	2.9	1.7	2.7	3.8	5.2	5.9	3.5	4.9	12.9	1.7
15	1.5	0.7	1.0	0.7	0.7	1.0	0.5	0.8	0.6	0.9	1.6	4.1	5.4	7.6	5.8	6.1	6.9	6.4	5.9	4.5	3.1	5.5	4.7	3.0	3.3	7.6	0.5
16	3.5	2.3	2.6	3.1	4.6	3.3	2.2	1.3	0.7	0.6	0.6	2.2	1.6	3.0	2.3	2.0	1.6	1.4	1.2	2.0	1.5	2.0	1.4	1.5	2.0	4.6	0.6
17	1.5	1.6	1.7	1.3	1.2	0.7	0.6	0.9	0.4	0.6	0.8	0.8	1.3	1.3	2.6	3.0	3.1	3.5	2.2	1.2	1.5	1.8	2.3	1.9	1.6	3.5	0.4
18	2.3	1.9	1.4	2.0	1.3	1.6	1.7	1.6	0.7	1.2	3.9	5.4	6.5	5.0	5.1	3.8	4.2	4.4	1.7	1.6	1.8	0.7	0.9	1.1	2.6	6.5	0.7
19	1.0	0.9	1.8	2.0	1.7	1.6	1.7	1.6	1.1	3.8	7.3	6.9	4.1	5.7	6.1	8.9	2.8	1.8	1.5	3.7	1.6	1.0	1.3	3.0	3.0	8.9	0.9
20	2.2	0.9	1.1	1.6	1.0	0.9	0.6	0.7	0.5	0.7	0.7	2.3	3.9	5.3	4.0	3.8	2.7	1.6	3.4	3.1	1.2	1.3	1.1	3.1	2.0	5.3	0.5
21	4.7	2.6	2.6	1.9	2.0	1.5	1.7	0.8	0.8	1.5	4.0	5.4	6.3	6.9	6.5	5.7	6.0	5.3	5.0	4.7	2.9	3.7	3.2	5.2	3.8	6.9	0.8
22	4.7	3.8	4.4	3.6	2.7	3.4	2.5	4.9	5.0	5.4	6.1	6.8	6.3	5.4	5.4	5.1	3.8	4.2	1.6	1.0	1.5	1.7	1.6	1.6	3.9	6.8	1.0
23	1.4	2.5	2.2	0.9	1.0	0.8	0.6	0.9	2.2	2.8	6.4	4.5	4.0	4.6	6.8	6.2	5.4	4.3	1.7	1.2	1.6	2.1	2.0	1.3	2.8	6.8	0.6
24	0.9	0.8	0.7	3.1	4.4	3.3	2.4	1.9	5.2	7.8	9.0	6.6	8.1	9.6	8.1	4.4	1.6	4.8	4.2	3.1	1.6	1.6	0.7	2.0	4.0	9.6	0.7
25	1.9	0.9	2.3	2.6	2.3	1.5	1.2	1.6	1.2	2.5	4.9	4.5	4.5	5.3	5.7	6.8	6.3	5.1	3.8	0.6	0.8	0.9	0.9	2.8	3.0	6.8	0.6
26	1.4	0.8	1.0	1.3	0.9	0.7	1.0	0.8	0.6	3.2	6.4	8.6	9.2	9.0	7.9	6.9	6.5	6.4	7.1	5.8	5.1	4.6	4.0	3.2	4.3	9.2	0.6
27	1.6	1.0	1.5	1.4	2.7	2.4	0.9	1.2	2.8	4.0	5.3	6.8	6.7	6.2	5.6	6.3	7.8	7.0	4.4	1.8	1.3	1.6	1.7	2.8	3.5	7.8	0.9
28	2.7	2.3	3.6	1.5	1.3	3.6	2.9	1.6	3.6	7.6	7.8	8.1	9.6	10.3	11.1	10.5	11.9	12.0	8.2	7.6	9.1	7.5	8.0	8.7	6.7	12.0	1.3
29	9.5	11.0	9.5	13.0	13.0	11.2	9.4	11.1	11.6	9.0	8.0	9.0	10.3	6.9	6.5	6.5	7.7	8.1	7.0	4.9	3.4	3.8	5.0	1.7	8.2	13.0	1.7
30	1.8	2.6	2.8	2.0	1.5	2.2	1.8	1.9	0.8	2.2	5.3	6.8	7.8	7.9	7.2	6.1	6.1	6.6	6.4	5.9	4.6	4.4	3.7	2.1	4.2	7.9	0.8
31	1.4	1.3	0.8	1.0	0.7	0.8	0.8	1.3	1.2	5.4	7.1	6.7	5.9	5.9	5.9	5.9	5.1	3.7	1.1	1.7	3.2	2.1	1.8	1.5	3.0	7.1	0.7
Avg	2.1	2.0	2.0	2.0	2.0	1.9	1.6	1.7	1.9	2.5	3.7	4.3	5.2	5.3	5.1	5.0	4.9	4.3	3.1	2.8	2.6	2.5	2.4	2.3	3.0	6.7	0.8
Max	9.5	11.0	9.5	13.0	13.0	11.2	9.4	11.1	11.6	9.0	9.0	9.2	12.3	12.9	11.1	10.5	11.9	12.0	8.2	7.6	9.1	7.5	8.0	8.7	8.2	13.0	1.7
Min	0.7	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.5	0.8	0.8	0.8	0.8	0.8	1.0	0.9	1.0	0.6	0.8	0.7	0.7	0.6	1.3	2.9	0.3

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Direction (degrees)
January 2021

A-4

Day	<< Hour >>																								Prev
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	258	17	274	270	246	244	153	144	125	88	352	16	263	208	203	140	139	105	99	103	94	116	90	108	138
2	90	132	139	141	147	141	232	249	216	253	276	267	273	277	268	273	268	233	216	219	205	181	204	201	219
3	173	122	187	177	181	223	226	224	220	187	229	229	230	257	260	295	276	267	255	295	290	271	255	282	237
4	266	255	18	244	111	85	66	88	109	115	93	112	160	160	169	156	182	149	174	178	181	167	87	215	146
5	255	199	265	288	284	281	282	276	290	287	283	283	282	262	265	269	261	221	297	71	120	121	130	118	264
6	136	151	159	136	119	143	131	121	133	112	87	120	129	158	190	169	137	135	123	133	47	131	86	70	128
7	137	149	145	167	126	146	158	165	5	359	305	318	300	312	307	297	301	302	301	257	316	309	208	256	273
8	124	94	75	96	83	162	221	122	139	141	152	139	145	158	152	144	94	110	119	57	90	45	57	38	114
9	38	61	39	34	80	43	17	89	33	95	239	265	152	318	308	335	65	106	76	83	86	126	135	154	66
10	133	150	142	139	143	151	146	153	127	96	281	34	30	322	316	321	48	108	93	79	109	102	152	162	114
11	146	99	110	110	1	102	11	345	348	75	158	32	332	12	139	329	270	79	127	43	127	127	134	102	77
12	93	77	129	36	138	158	124	124	137	161	151	154	163	170	176	221	229	225	174	207	164	172	111	142	153
13	149	134	117	140	191	170	159	190	214	206	264	268	271	276	283	282	285	283	298	299	298	290	293	275	245
14	265	272	277	289	287	288	291	295	282	299	286	300	305	306	308	304	295	292	1	76	59	34	102	241	301
15	97	122	85	118	84	71	129	122	125	98	110	117	41	325	303	289	113	53	33	296	293	281	303	325	70
16	303	301	341	327	291	55	56	69	74	76	39	299	279	286	289	287	260	244	106	120	98	120	75	122	6
17	61	61	95	75	84	26	306	350	294	323	296	288	269	268	271	269	273	274	272	275	287	295	303	304	306
18	305	297	291	300	296	289	275	283	296	296	299	296	305	312	301	298	307	314	325	325	329	322	313	304	303
19	311	193	112	129	159	125	207	128	123	125	110	166	334	272	340	44	160	179	173	130	116	110	273	277	149
20	263	205	295	259	274	267	302	297	61	84	265	264	263	265	266	267	9	266	168	275	280	335	57	62	281
21	66	98	56	112	30	359	103	353	315	302	156	171	151	264	252	293	303	306	285	271	233	145	282	134	292
22	30	140	301	342	151	87	98	51	90	189	343	344	346	19	37	298	273	159	144	52	28	59	68	341	40
23	100	130	73	109	347	118	35	135	50	100	49	85	124	121	333	275	257	156	118	105	105	124	130	143	103
24	122	152	33	137	121	151	165	154	107	97	141	121	20	281	267	68	79	121	96	73	68	98	126	133	112
25	68	150	118	140	135	153	123	124	134	134	162	16	104	162	165	164	159	160	153	156	156	158	158	154	142
26	154	158	161	163	150	149	152	127	94	81	136	167	163	159	139	153	167	172	114	92	110	126	134	153	141
27	172	168	192	149	155	151	179	144	140	169	307	151	156	148	174	178	180	185	191	192	134	84	86	82	158
28	82	77	96	52	81	82	70	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	77
29	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	
30	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	
31	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	148	155	154	153	153	157	135	141	113	114	121	123	139
Prev	120	136	108	130	131	133	146	132	110	116	236	245	241	256	255	266	234	187	143	116	107	118	118	147	149

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Direction (degrees)
February 2021

A-5

Day	<< Hour >>																								Prev
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	117	122	117	126	137	131	134	144	147	138	112	139	170	215	200	175	146	89	156	131	120	85	90	81	133
2	95	117	108	88	97	103	108	158	137	137	143	178	214	195	201	199	189	186	180	174	170	234	245	275	162
3	292	293	282	292	289	268	261	115	191	312	281	287	295	284	283	302	281	262	265	294	260	278	270	239	277
4	114	342	316	175	21	337	306	300	312	291	270	274	272	273	278	283	282	281	284	295	313	280	275	292	293
5	289	296	279	289	9	98	67	57	360	166	168	213	283	282	275	253	292	293	289	301	339	330	295	291	297
6	272	255	32	211	154	218	332	118	34	162	65	334	115	Wx	Wx	Wx	Wx	253	272	285	259	267	287	262	263
7	266	296	302	305	266	261	256	274	278	327	282	8	32	16	347	339	138	160	312	317	218	150	135	148	291
8	168	98	144	154	116	342	285	304	270	280	299	287	304	277	252	255	253	279	276	309	306	321	315	331	284
9	310	77	155	266	1	326	301	331	325	322	320	310	299	272	287	262	342	318	328	316	303	150	164	222	305
10	104	159	151	162	149	203	60	306	314	283	274	253	318	320	324	306	307	279	266	274	284	315	295	290	282
11	279	267	251	271	260	207	214	143	141	138	249	276	268	255	266	252	249	262	252	207	172	86	68	31	238
12	52	129	288	117	310	127	226	153	142	143	184	125	257	232	247	251	256	253	153	108	85	117	107	69	161
13	104	121	118	90	243	141	113	158	124	164	229	357	276	330	257	259	309	325	274	168	160	178	117	129	168
14	125	103	95	70	18	67	98	352	327	153	154	167	170	168	307	325	331	326	308	342	132	170	116	147	95
15	145	126	156	25	326	152	147	169	135	138	125	129	141	144	144	147	144	139	100	107	126	330	140	118	133
16	163	202	Wx	Wx	282	342	302	289	295	293	282	274	286	286	286	289	273	268	262	281	294	198	195	172	270
17	160	139	90	25	348	290	316	225	48	218	133	242	278	259	263	269	300	310	282	274	198	150	136	297	258
18	161	82	80	141	191	57	322	120	152	115	214	272	274	270	289	329	120	142	101	99	123	124	130	129	133
19	142	175	157	102	123	129	38	208	73	265	266	274	255	252	234	218	224	235	247	279	272	284	244	313	231
20	62	102	78	74	46	35	114	13	101	170	100	266	261	264	263	261	263	255	264	267	274	275	277	279	280
21	279	275	273	276	276	262	269	268	273	262	269	269	266	266	273	267	274	276	279	282	280	279	275	283	273
22	268	250	233	240	220	234	247	274	271	282	273	276	273	280	260	262	279	272	252	278	274	277	278	288	264
23	281	285	271	290	294	303	288	288	277	277	277	276	273	284	285	273	269	276	278	271	295	119	74	45	285
24	91	144	185	127	42	82	146	144	333	110	190	268	275	296	305	278	279	262	239	235	138	140	110	137	180
25	111	112	108	121	117	114	130	128	103	108	158	172	198	224	227	220	229	204	204	191	177	255	242	232	170
26	232	232	211	226	242	248	248	244	260	266	261	258	255	266	265	263	268	264	338	264	149	143	48	170	246
27	112	146	153	126	214	11	131	138	132	119	241	262	268	262	248	273	272	297	298	282	129	152	92	129	189
28	169	258	261	251	251	258	261	255	95	261	271	291	290	263	277	276	266	269	279	275	247	135	140	132	254
Prev	155	163	170	161	280	214	248	207	115	207	233	263	265	265	267	265	265	264	267	269	224	201	172	220	247

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Direction (degrees)
March 2021

A-6

Day	<< Hour >>																								Prev
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	139	171	202	106	152	148	133	125	119	114	129	154	143	149	144	149	152	147	135	117	71	82	133	120	135
2	51	90	128	136	48	127	157	43	54	195	234	233	242	250	279	264	274	268	248	276	278	103	141	133	198
3	44	106	72	74	82	103	75	108	129	268	99	260	249	244	236	149	147	150	129	102	107	107	122	113	119
4	108	109	96	115	103	125	100	147	135	123	126	296	247	342	13	247	243	234	111	74	78	78	118	112	114
5	120	127	134	153	136	131	131	149	132	129	30	116	150	146	149	156	165	148	98	98	118	124	125	100	129
6	93	114	122	143	136	117	133	144	76	105	359	118	206	235	236	243	263	284	318	114	293	287	277	286	174
7	266	288	29	97	85	93	72	51	120	333	141	173	234	255	235	228	259	248	261	102	84	67	128	141	143
8	142	23	138	1	113	51	145	122	356	165	341	295	325	316	151	173	148	138	168	166	225	321	336	286	133
9	244	287	281	274	270	299	302	293	267	252	259	255	255	308	294	285	299	252	139	118	84	89	86	57	277
10	116	159	117	107	108	125	103	132	141	61	117	281	255	254	255	253	258	237	127	141	93	31	301	144	145
11	123	110	18	111	7	16	16	146	72	29	132	123	330	276	269	258	254	260	193	130	154	109	61	70	90
12	72	76	113	136	75	111	93	82	290	139	126	72	338	327	322	307	307	219	177	94	108	31	67	43	76
13	74	68	127	76	85	50	148	148	148	130	85	224	257	191	308	170	155	159	159	240	86	129	138	140	135
14	171	145	139	116	141	138	112	115	195	171	152	148	146	148	152	140	131	118	144	153	155	156	158	153	146
15	137	99	153	126	274	126	108	159	16	133	22	298	325	348	352	354	8	2	6	17	345	330	338	325	15
16	325	315	312	254	293	285	256	247	204	246	269	153	211	270	261	292	305	187	115	167	108	116	134	104	242
17	69	114	87	113	117	113	134	147	149	132	13	360	26	354	167	160	171	164	150	246	309	79	118	136	118
18	133	125	131	140	154	143	143	143	137	10	183	191	184	191	212	223	222	199	171	129	127	115	93	143	155
19	169	185	95	99	102	96	74	145	351	149	199	275	232	194	209	249	54	107	158	161	179	85	296	266	157
20	295	337	43	123	133	142	10	128	112	247	46	251	275	265	286	275	325	77	298	271	180	150	302	330	290
21	275	304	276	92	115	102	116	123	338	17	261	248	265	249	239	246	266	270	273	254	278	268	259	265	263
22	264	232	232	257	262	267	286	281	276	261	267	264	271	277	262	270	281	287	238	129	92	74	68	55	266
23	64	67	76	75	113	125	231	142	305	301	16	356	318	311	265	267	264	302	259	159	135	115	131	149	96
24	140	145	77	271	261	265	268	233	264	249	253	250	259	261	258	305	360	301	285	270	286	279	126	256	263
25	241	199	299	261	246	114	137	90	92	333	296	289	324	354	24	14	359	1	7	141	267	32	89	90	356
26	99	148	291	146	176	4	127	310	81	331	265	270	263	265	273	279	290	299	294	289	271	274	281	281	277
27	304	25	50	41	337	342	359	1	319	298	287	270	261	262	284	272	260	260	276	258	128	125	263	276	300
28	264	262	291	175	139	222	259	163	260	246	245	259	247	256	257	248	248	251	236	218	224	202	193	207	235
29	266	297	278	288	283	285	275	280	276	282	313	326	316	310	317	291	295	289	288	306	295	279	11	287	295
30	308	320	333	351	311	312	33	125	57	288	274	295	292	307	307	288	305	303	292	285	274	269	281	320	306
31	80	116	112	145	109	134	151	124	150	254	264	261	261	265	260	262	262	264	230	123	78	81	120	138	169
Prev	123	117	98	120	121	113	118	135	113	229	260	254	263	269	261	252	265	241	208	160	135	92	116	133	187

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Standard Deviation of Wind Direction (degrees)
January 2021

A-7

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	83	93	36	15	39	24	43	42	30	55	70	61	30	40	18	18	17	15	28	19	13	17	19	22	35	93	13
2	15	24	12	8	12	20	72	31	26	71	35	14	16	16	14	13	20	32	36	15	12	11	11	16	23	72	8
3	40	25	16	25	20	10	8	9	10	23	17	15	13	14	14	16	12	13	15	20	27	15	11	43	18	43	8
4	23	49	62	72	57	25	82	49	35	68	84	34	17	10	14	15	17	17	46	13	10	11	66	45	38	84	10
5	28	64	23	17	10	11	10	10	21	13	10	10	12	15	12	11	12	23	85	49	57	55	51	59	28	85	10
6	62	79	23	37	22	29	44	35	34	22	14	30	30	30	28	26	46	30	25	12	59	37	58	57	36	79	12
7	23	50	40	42	41	11	14	40	89	79	24	19	9	14	20	13	8	11	16	33	18	44	61	83	33	89	8
8	50	51	31	30	38	45	97	24	10	17	13	9	14	7	6	24	69	23	30	74	81	47	40	23	36	97	6
9	33	32	19	23	34	59	56	45	45	87	89	72	43	43	40	27	45	34	15	26	24	18	14	54	41	89	14
10	79	38	31	31	21	25	26	52	57	93	65	45	32	19	9	16	69	25	45	55	81	67	61	61	46	93	9
11	49	73	78	85	64	71	74	66	86	90	90	92	49	36	85	86	88	59	48	95	49	60	61	58	71	95	36
12	54	78	68	74	85	40	28	20	17	41	18	13	19	27	58	15	13	15	26	23	13	13	80	32	36	85	13
13	24	23	19	27	28	30	29	37	14	25	15	11	13	12	10	11	11	11	10	11	10	13	9	15	17	37	9
14	9	10	9	10	10	7	9	8	49	47	8	16	12	7	8	11	9	4	42	37	35	41	49	93	23	93	4
15	88	86	94	93	78	98	78	61	67	80	81	92	68	35	52	26	93	39	81	22	35	15	20	81	65	98	15
16	14	44	46	21	12	45	43	16	27	43	32	21	11	10	10	12	22	7	92	80	43	42	68	89	35	92	7
17	88	73	68	38	43	52	32	64	15	18	35	22	10	10	10	12	9	9	8	9	11	10	9	8	28	88	8
18	9	9	7	9	9	7	9	8	8	10	9	12	10	11	11	16	9	8	13	11	14	19	15	31	11	31	7
19	33	74	37	43	78	70	92	55	61	64	80	71	77	34	43	51	67	57	44	51	50	43	32	14	55	92	14
20	50	82	30	9	13	12	29	21	23	28	18	10	10	11	11	15	83	43	53	64	13	49	37	34	31	83	9
21	32	66	50	68	54	77	63	98	30	79	33	52	44	28	8	24	14	18	35	23	49	7	89	26	44	98	7
22	73	22	69	79	87	83	39	53	57	80	72	36	36	44	79	26	11	64	85	61	70	67	91	91	61	91	11
23	69	39	74	61	73	53	91	82	82	84	77	69	84	34	87	66	12	56	20	44	34	67	47	54	61	91	12
24	78	73	96	84	44	88	92	62	72	78	57	66	54	30	31	74	83	24	25	21	16	23	40	49	57	96	16
25	53	49	63	30	59	79	62	28	29	39	57	83	98	6	7	6	6	5	6	5	5	5	6	7	33	98	5
26	8	9	7	8	16	11	10	23	17	31	32	8	6	12	9	11	10	10	26	33	27	26	22	45	17	45	6
27	48	71	57	30	26	28	59	51	78	60	76	29	18	21	21	21	14	19	8	15	51	14	15	10	35	78	8
28	7	34	38	72	71	67	62	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	50	72	7
29	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
30	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
31	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	3	5	8	7	6	8	28	11	21	16	18	17	12	28	3
Avg	44	51	43	41	41	42	48	40	40	53	45	37	30	21	26	24	31	24	35	33	33	30	39	43	37	80	10
Max	88	93	96	93	87	98	97	98	89	93	90	92	98	44	87	86	93	64	92	95	81	67	91	93	71	98	36
Min	7	9	7	8	9	7	8	8	8	10	8	8	3	5	6	6	6	4	6	5	5	5	6	7	11	28	3

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Standard Deviation of Wind Direction (degrees)
February 2021

A-8

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	22	21	16	16	15	16	12	23	15	26	47	20	43	73	11	13	31	25	16	71	13	11	32	5	25	73	5
2	23	28	34	16	12	15	22	57	73	74	9	44	15	10	12	8	8	8	9	9	8	32	15	22	23	74	8
3	13	19	60	20	11	12	68	57	92	50	10	9	11	13	22	12	11	10	9	19	17	26	68	89	30	92	9
4	86	74	88	38	84	39	25	13	23	12	10	11	11	11	10	9	8	8	9	15	19	8	9	15	26	88	8
5	22	13	10	12	72	22	24	7	31	80	24	81	9	10	18	11	16	10	10	17	23	37	22	23	25	81	7
6	17	24	52	69	59	71	82	95	75	42	72	96	95	Wx	Wx	Wx	Wx	59	20	22	9	13	15	21	50	96	9
7	30	18	15	15	14	12	13	25	20	32	88	51	36	51	34	51	27	12	40	63	88	63	81	30	38	88	12
8	85	91	43	44	72	60	98	20	12	25	19	31	14	18	5	15	8	20	11	10	12	33	31	15	33	98	5
9	22	51	56	67	67	17	18	30	15	6	14	25	22	23	32	49	51	7	43	75	95	62	31	88	40	95	6
10	72	50	56	85	56	68	87	16	14	27	25	83	25	5	4	14	17	22	9	24	35	9	17	18	35	87	4
11	27	22	19	28	45	68	58	70	61	103	47	27	7	7	14	19	8	15	54	59	79	47	49	56	41	103	7
12	54	49	88	34	97	45	73	57	35	18	77	63	81	33	8	8	14	13	82	26	43	69	91	47	50	97	8
13	86	58	51	89	86	70	56	67	46	27	79	88	74	29	10	3	18	4	57	12	8	10	23	17	45	89	3
14	33	28	33	71	49	67	40	63	55	60	15	9	11	9	36	8	16	13	15	52	41	72	58	41	37	72	8
15	24	56	58	81	94	69	27	72	64	32	20	12	6	4	5	4	4	4	21	26	96	43	35	53	38	96	4
16	85	31	Wx	Wx	66	20	14	9	9	9	10	12	8	7	8	8	13	11	8	8	48	42	52	65	25	85	7
17	76	83	85	35	34	60	29	97	77	63	62	55	21	8	9	12	12	8	24	22	58	15	85	67	46	97	8
18	61	28	72	60	70	69	94	51	31	74	76	14	16	12	29	69	87	39	22	20	14	18	14	20	44	94	12
19	36	18	11	48	44	48	29	88	90	60	16	21	9	13	18	10	40	14	18	19	13	14	21	41	31	90	9
20	86	35	42	55	57	80	84	94	65	93	71	36	9	9	12	17	9	9	14	13	8	11	9	9	39	94	8
21	9	10	11	10	13	13	14	13	14	12	12	13	11	14	14	11	10	11	12	11	12	8	9	14	12	14	8
22	21	21	29	18	9	18	17	27	10	11	9	10	10	12	10	16	12	15	11	14	10	12	11	10	14	29	9
23	11	8	10	12	12	10	11	10	9	11	10	11	10	10	13	14	9	9	8	9	38	42	19	27	14	42	8
24	56	21	89	98	79	86	68	47	94	53	87	14	14	24	27	16	20	10	38	42	41	38	52	51	49	98	10
25	35	47	59	55	74	68	30	19	20	60	29	13	11	19	10	29	13	14	35	41	33	10	11	11	31	74	10
26	11	10	9	21	10	10	10	11	11	10	9	11	12	11	9	11	12	13	56	55	19	31	88	61	21	88	9
27	87	34	62	79	68	89	24	59	70	30	56	10	16	8	6	19	17	19	46	51	56	28	73	22	43	89	6
28	79	16	19	13	12	8	22	52	58	18	15	11	10	11	13	12	11	11	14	18	14	73	16	60	24	79	8
Avg	45	34	44	44	49	44	41	45	42	40	36	31	22	17	15	17	19	15	25	29	34	31	37	36	33	82	8
Max	87	91	89	98	97	89	98	97	94	103	88	96	95	73	36	69	87	59	82	75	96	73	91	89	50	103	12
Min	9	8	9	10	9	8	10	7	9	6	9	9	6	4	4	3	4	4	8	8	8	8	9	5	12	14	3

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Standard Deviation of Wind Direction (degrees)
March 2021

A-9

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	40	56	85	62	77	37	18	17	17	63	24	10	4	11	7	8	3	5	40	38	59	75	52	71	37	85	3
2	74	32	29	60	81	32	92	89	86	92	17	17	12	14	18	10	11	10	11	17	18	72	64	40	42	92	10
3	80	47	71	45	40	69	70	82	55	95	95	63	19	30	31	27	6	9	18	17	21	18	17	32	44	95	6
4	27	29	24	28	44	23	35	23	26	39	40	89	78	49	48	71	55	59	13	17	10	32	22	16	37	89	10
5	40	46	21	27	51	37	48	55	69	37	82	70	13	6	12	6	18	19	28	36	14	16	21	46	34	82	6
6	30	30	28	14	17	35	48	37	95	83	73	24	30	22	12	11	15	9	68	33	44	20	10	75	36	95	9
7	36	10	61	32	31	39	37	70	45	19	61	19	27	21	18	14	18	10	55	29	34	13	30	48	32	70	10
8	45	81	31	51	69	79	40	55	49	75	54	83	9	38	60	74	9	76	82	11	53	49	80	32	54	83	9
9	73	87	25	25	64	58	29	15	11	8	12	16	13	17	14	9	13	81	30	42	40	32	63	63	35	87	8
10	40	52	88	85	46	65	77	42	18	51	58	64	9	9	6	7	7	49	87	70	94	60	96	49	51	96	6
11	36	59	75	56	40	57	49	48	88	87	76	38	29	15	9	12	10	7	43	40	23	36	46	36	42	88	7
12	37	32	34	44	71	56	49	59	91	33	56	51	15	10	27	19	15	91	52	45	17	61	54	40	44	91	10
13	54	74	26	65	64	94	90	57	78	40	78	89	67	27	32	40	5	6	58	86	62	55	29	35	55	94	5
14	68	20	70	44	14	15	46	67	21	14	8	7	6	6	8	8	15	43	42	22	12	7	7	10	24	70	6
15	22	38	96	83	85	45	79	52	50	80	73	23	35	14	20	18	17	18	15	19	23	6	13	6	39	96	6
16	8	11	18	10	20	13	33	81	70	88	61	20	69	19	25	36	50	71	65	21	33	22	30	35	38	88	8
17	35	22	22	20	18	53	45	20	35	56	12	19	19	54	37	25	16	15	14	78	53	54	23	23	32	78	12
18	19	18	35	11	25	24	20	22	62	65	38	17	18	20	29	28	20	14	47	18	19	62	66	27	30	66	11
19	40	83	52	23	45	60	62	60	73	66	31	16	56	25	26	20	54	23	70	21	79	58	101	56	50	101	16
20	11	64	72	65	83	59	59	69	89	77	48	22	13	10	19	18	58	55	36	18	78	59	84	81	52	89	10
21	38	62	14	53	29	59	18	59	43	45	20	13	15	18	14	19	12	12	12	10	12	18	14	14	26	62	10
22	13	12	13	16	15	17	22	11	13	15	16	14	17	14	13	16	15	14	80	74	49	37	35	35	24	80	11
23	37	27	39	80	48	46	100	65	36	58	10	19	16	23	12	13	20	19	28	24	70	17	13	12	35	100	10
24	14	34	65	39	13	15	16	24	15	11	13	16	12	9	10	25	31	34	13	12	26	56	57	27	24	65	9
25	18	69	29	8	10	77	94	53	38	65	18	13	12	23	11	10	14	11	18	76	62	88	49	14	37	94	8
26	32	49	63	22	55	56	46	85	74	77	12	15	10	10	11	14	12	12	11	19	9	13	10	11	30	85	9
27	60	54	29	70	11	10	86	16	21	14	12	13	12	14	15	16	10	11	14	38	34	55	49	28	29	86	10
28	31	66	70	74	51	25	20	73	92	16	13	11	13	10	12	14	10	10	10	9	12	14	9	16	28	92	9
29	35	11	10	11	10	12	13	10	11	16	19	8	11	11	12	11	11	11	10	14	11	11	38	54	15	54	8
30	39	9	10	29	33	37	72	18	89	70	23	11	13	16	18	12	17	11	8	9	11	12	12	82	28	89	8
31	27	17	60	73	77	32	43	48	79	15	14	14	14	14	20	18	15	19	91	58	24	41	33	33	37	91	14
Avg	37	42	44	43	43	43	50	48	53	51	38	29	22	19	20	20	19	27	38	33	36	38	40	37	36	85	9
Max	80	87	96	85	85	94	100	89	95	95	95	89	78	54	60	74	58	91	91	86	94	88	101	82	55	101	16
Min	8	9	10	8	10	10	13	10	11	8	8	7	4	6	6	6	3	5	8	9	9	6	7	6	15	54	3

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-Meter Temperature (Degrees Celsius)
January 2021

A-10

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-1.6	-1.8	-1.5	-1.9	-2.4	-2.8	-4.5	-6.6	-8.5	-8.4	-7.4	-4.0	0.0	0.4	0.3	-0.8	-1.7	-2.8	-4.3	-5.4	-5.4	-6.2	-4.8	-4.5	-3.6	0.4	-8.5
2	-3.7	-3.6	-2.5	-2.9	-3.2	-3.9	-4.7	-3.1	-2.5	-2.1	-0.8	0.0	0.7	1.4	1.8	1.5	0.4	0.0	0.0	0.1	-0.2	-1.7	-1.9	-2.1	-1.4	1.8	-4.7
3	-2.5	-2.8	-2.1	-1.9	-0.7	1.3	1.4	1.4	1.4	1.4	1.9	2.7	2.7	1.9	0.8	1.0	-0.3	-1.3	-1.7	-2.1	-3.2	-2.7	-2.2	-2.1	-0.3	2.7	-3.2
4	-2.1	-2.0	-2.5	-3.3	-5.7	-7.3	-6.1	-9.3	-11.0	-8.4	-5.4	-1.0	1.8	1.3	1.6	1.7	1.3	0.2	1.0	1.0	1.2	1.3	1.3	1.3	-2.0	1.8	-11.0
5	0.6	-0.1	0.1	0.2	-0.1	-0.5	-0.8	-1.3	-2.0	-1.7	-0.9	-0.4	-0.1	0.1	0.1	-0.2	-1.3	-3.5	-3.0	-3.6	-6.7	-8.4	-9.3	-11.0	-2.2	0.6	-11.0
6	-11.9	-11.1	-10.7	-8.8	-7.2	-8.6	-8.5	-7.9	-8.2	-6.1	-2.6	0.6	2.5	3.8	3.8	3.7	1.4	-1.4	-2.1	-3.7	-3.4	-3.5	-3.5	-3.6	-4.0	3.8	-11.9
7	-3.6	-2.5	-2.2	-2.2	-2.4	-2.2	-2.3	-2.4	-2.4	-2.3	-2.1	-1.8	-1.5	-1.3	-1.0	-1.0	-1.2	-1.6	-2.4	-2.4	-2.9	-3.3	-3.5	-3.5	-2.1	-1.0	-3.6
8	-3.6	-3.8	-3.9	-3.9	-4.1	-4.9	-5.0	-3.6	-2.6	-2.2	-1.7	-1.2	-0.7	-0.5	-0.5	-0.3	-2.1	-5.4	-8.2	-9.6	-10.1	-10.5	-10.5	-11.5	-4.6	-0.3	-11.5
9	-12.3	-13.3	-13.8	-14.2	-14.2	-15.8	-16.7	-16.7	-16.9	-15.3	-13.0	-9.7	-6.2	-4.7	-3.5	-3.4	-4.7	-10.0	-11.2	-13.3	-14.9	-16.4	-16.9	-17.6	-12.3	-3.4	-17.6
10	-17.6	-17.1	-16.7	-17.6	-16.9	-17.2	-17.4	-17.6	-18.7	-18.3	-15.0	-11.3	-7.6	-3.9	-2.3	-2.4	-4.2	-8.4	-10.4	-11.4	-11.7	-12.6	-13.5	-14.4	-12.7	-2.3	-18.7
11	-15.7	-16.0	-16.5	-17.0	-16.2	-16.1	-16.5	-16.3	-15.8	-14.1	-12.0	-7.9	-5.3	-1.2	0.5	0.1	-1.2	-4.1	-5.6	-6.8	-7.3	-7.3	-7.3	-7.4	-9.7	0.5	-17.0
12	-8.5	-9.2	-10.2	-8.9	-7.1	-6.0	-4.0	-3.8	-4.0	-1.0	2.1	3.6	4.3	4.7	5.2	5.6	5.3	4.4	3.8	3.5	3.1	2.7	2.4	1.2	-0.4	5.6	-10.2
13	0.6	1.0	2.7	2.8	3.6	4.3	3.9	5.1	5.9	5.5	1.3	1.4	2.1	1.7	0.4	-0.9	-1.6	-2.0	-2.2	-2.4	-2.7	-3.8	-4.7	-4.1	0.7	5.9	-4.7
14	-4.1	-4.2	-4.4	-5.0	-5.4	-5.4	-5.6	-6.1	-7.9	-7.0	-5.2	-4.2	-3.4	-3.0	-3.1	-3.3	-3.9	-4.7	-5.7	-8.5	-12.2	-13.5	-15.4	-16.6	-6.6	-3.0	-16.6
15	-16.6	-18.0	-18.1	-17.9	-17.3	-16.1	-15.8	-16.2	-15.5	-14.0	-11.3	-8.5	-3.4	0.9	1.4	1.8	0.0	-0.7	-1.0	0.3	0.2	-0.2	-0.9	-1.3	-7.8	1.8	-18.1
16	-1.7	-3.9	-4.6	-5.6	-2.4	-5.9	-6.7	-7.5	-9.2	-9.0	-5.1	-1.0	-0.1	-0.2	-0.2	-0.2	-1.2	-2.3	-3.9	-6.4	-8.2	-8.7	-8.5	-7.9	-4.6	-0.1	-9.2
17	-7.9	-8.0	-8.8	-10.0	-9.0	-4.0	-1.5	-1.8	-0.7	-1.2	-0.3	0.6	0.3	0.5	0.9	1.0	0.9	0.1	-0.4	-1.0	-1.8	-2.6	-3.2	-3.3	-2.6	1.0	-10.0
18	-3.3	-3.8	-3.9	-3.9	-4.2	-4.3	-4.2	-4.1	-3.9	-3.6	-3.7	-3.4	-3.4	-3.1	-3.2	-3.7	-3.7	-3.9	-4.2	-4.3	-4.8	-5.9	-5.3	-5.7	-4.1	-3.1	-5.9
19	-6.4	-7.7	-10.6	-14.9	-16.8	-18.6	-20.1	-21.1	-22.1	-21.7	-19.3	-15.9	-11.3	-7.1	-5.1	-3.9	-3.3	-5.0	-5.4	-4.0	-3.7	-4.1	-2.4	-1.6	-10.5	-1.6	-22.1
20	-2.0	-2.3	-1.4	-2.6	-2.0	-2.1	-2.5	-3.3	-5.6	-5.5	-1.8	-1.0	-0.7	-0.6	-0.9	-1.2	-1.9	-2.4	-3.8	-3.1	-1.3	-3.5	-6.3	-10.7	-2.9	-0.6	-10.7
21	-13.0	-14.6	-15.9	-16.9	-17.4	-15.4	-14.6	-12.5	-12.0	-10.3	-8.5	-7.7	-6.5	-6.1	-6.5	-6.8	-7.2	-7.7	-7.9	-8.2	-8.5	-8.4	-8.9	-10.1	-10.5	-6.1	-17.4
22	-11.6	-11.9	-12.1	-12.0	-12.9	-14.3	-16.0	-14.8	-13.7	-12.9	-11.5	-9.8	-7.4	-6.4	-5.4	-5.3	-6.1	-8.7	-12.9	-14.6	-16.7	-19.2	-20.1	-21.5	-12.4	-5.3	-21.5
23	-21.9	-22.7	-23.8	-23.9	-25.3	-25.1	-25.2	-22.8	-20.4	-18.1	-15.9	-13.5	-11.0	-9.3	-8.6	-7.5	-7.2	-10.0	-14.0	-16.3	-18.2	-19.2	-20.3	-21.2	-17.6	-7.2	-25.3
24	-22.3	-22.7	-22.0	-20.5	-19.8	-18.8	-18.9	-19.6	-20.1	-18.9	-16.2	-13.3	-9.9	-6.4	-4.9	-5.3	-5.6	-8.5	-12.0	-12.3	-13.3	-15.6	-16.8	-17.1	-15.0	-4.9	-22.7
25	-18.4	-18.6	-19.5	-19.8	-20.4	-20.1	-19.2	-17.4	-16.5	-15.7	-14.1	-11.5	-6.6	-4.6	-4.7	-5.4	-6.6	-8.3	-9.0	-9.4	-10.4	-10.6	-10.9	-10.7	-12.8	-4.6	-20.4
26	-10.7	-11.4	-12.1	-12.6	-13.2	-13.3	-13.1	-14.2	-14.6	-13.6	-12.1	-10.8	-10.0	-9.3	-8.6	-8.3	-9.0	-11.5	-13.3	-15.8	-17.9	-19.0	-20.2	-20.4	-13.1	-8.3	-20.4
27	-21.2	-21.5	-21.8	-22.6	-22.0	-21.3	-21.5	-21.2	-20.9	-17.9	-15.1	-8.8	-3.6	-2.4	-1.8	-1.9	-2.0	-2.2	-2.3	-2.8	-3.3	-4.0	-3.6	-4.2	-11.2	-1.8	-22.6
28	-5.3	-6.3	-8.3	-9.0	-8.5	-7.3	-8.4	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	-7.6	-5.3	-9.0
29	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
30	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
31	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	1.5	0.3	0.9	1.3	0.2	-3.1	-4.0	-4.5	-4.9	-7.6	-9.1	-10.5	-3.3	1.5	-10.5
Avg	-8.9	-9.3	-9.5	-9.9	-9.8	-9.7	-9.8	-9.8	-9.9	-9.0	-7.2	-5.1	-3.0	-1.9	-1.5	-1.6	-2.4	-4.1	-5.2	-6.0	-6.7	-7.6	-8.1	-8.6	-6.8	-1.1	-13.7
Max	0.6	1.0	2.7	2.8	3.6	4.3	3.9	5.1	5.9	5.5	2.1	3.6	4.3	4.7	5.2	5.6	5.3	4.4	3.8	3.5	3.1	2.7	2.4	1.3	0.7	5.9	-3.2
Min	-22.3	-22.7	-23.8	-23.9	-25.3	-25.1	-25.2	-22.8	-22.1	-21.7	-19.3	-15.9	-11.3	-9.3	-8.6	-8.3	-9.0	-11.5	-14.0	-16.3	-18.2	-19.2	-20.3	-21.5	-17.6	-8.3	-25.3

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-Meter Temperature (Degrees Celsius)
February 2021

A-11

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-10.4	-11.2	-10.7	-11.4	-11.1	-11.3	-12.2	-10.9	-11.8	-8.6	-3.8	1.9	3.8	5.3	6.1	5.7	5.4	4.8	3.0	0.4	2.7	1.2	-1.1	-1.9	-3.2	6.1	-12.2
2	-2.9	-4.6	-4.0	-1.6	-1.0	-0.1	-1.4	-3.2	-3.8	-0.6	4.1	6.4	7.5	7.2	7.8	7.3	6.5	5.7	4.9	4.3	3.8	3.5	2.0	-0.7	2.0	7.8	-4.6
3	-1.7	-2.1	-2.7	-3.1	-3.9	-4.6	-6.1	-7.5	-9.3	-6.9	-4.3	-3.8	-3.4	-3.1	-3.2	-2.9	-3.0	-3.4	-4.0	-4.7	-5.4	-5.8	-6.4	-7.3	-4.5	-1.7	-9.3
4	-7.8	-8.0	-7.8	-7.8	-7.4	-6.9	-6.6	-6.6	-6.9	-5.7	-4.8	-4.0	-3.7	-3.9	-3.8	-4.2	-5.0	-4.9	-4.4	-4.9	-5.2	-4.4	-4.4	-4.5	-5.6	-3.7	-8.0
5	-4.8	-5.2	-5.4	-5.6	-5.8	-6.0	-6.0	-6.1	-6.1	-6.0	-5.6	-4.9	-3.8	-4.0	-4.5	-4.4	-4.3	-4.3	-4.5	-6.2	-10.6	-14.4	-17.6	-18.8	-6.9	-3.8	-18.8
6	-20.5	-20.6	-20.2	-20.0	-19.6	-19.0	-18.8	-18.3	-17.6	-16.1	-15.4	-13.8	-12.7	-11.2	-10.0	-9.1	-8.3	-10.8	-16.8	-18.0	-19.5	-20.8	-21.6	-22.1	-16.7	-8.3	-22.1
7	-22.3	-22.0	-22.3	-22.5	-24.1	-24.9	-25.3	-25.4	-25.3	-24.8	-24.1	-23.1	-21.7	-20.5	-19.7	-18.8	-18.3	-18.4	-19.2	-20.9	-21.5	-22.0	-22.7	-23.3	-22.2	-18.3	-25.4
8	-22.8	-22.4	-22.2	-21.7	-21.7	-21.7	-20.8	-20.7	-21.7	-22.9	-23.6	-24.2	-23.3	-23.0	-23.7	-23.8	-24.3	-24.2	-24.5	-24.5	-24.8	-24.7	-24.6	-24.7	-23.2	-20.7	-24.8
9	-24.6	-24.2	-23.8	-23.5	-23.3	-23.2	-23.1	-22.9	-22.8	-22.7	-22.2	-22.8	-22.6	-23.4	-22.5	-22.9	-22.3	-22.9	-22.7	-22.5	-22.5	-22.7	-22.7	-22.3	-23.0	-22.2	-24.6
10	-22.2	-21.7	-21.4	-21.2	-20.8	-20.7	-20.6	-20.8	-20.6	-21.5	-22.4	-21.4	-20.6	-20.7	-22.1	-22.8	-24.1	-25.2	-27.0	-27.8	-27.7	-28.0	-28.5	-29.1	-23.3	-20.6	-29.1
11	-29.4	-29.4	-29.4	-30.1	-30.8	-31.9	-33.2	-33.5	-33.2	-32.2	-30.7	-29.4	-28.6	-28.0	-27.3	-27.7	-28.2	-29.3	-30.1	-30.7	-32.4	-34.0	-35.1	-35.7	-30.8	-27.3	-35.7
12	-36.7	-37.2	-37.8	-38.1	-38.6	-38.5	-38.9	-38.7	-38.1	-36.7	-34.4	-29.6	-26.8	-25.7	-24.9	-24.4	-24.5	-25.6	-27.3	-29.7	-30.2	-30.7	-31.5	-32.5	-32.4	-24.4	-38.9
13	-33.8	-34.8	-35.4	-36.0	-36.5	-36.4	-37.1	-36.9	-36.5	-34.3	-31.1	-26.7	-22.6	-21.6	-21.2	-21.2	-21.7	-22.8	-24.1	-25.6	-26.2	-26.3	-27.3	-29.0	-29.4	-21.2	-37.1
14	-30.7	-31.5	-33.0	-33.2	-33.2	-32.8	-32.6	-31.8	-30.2	-25.8	-22.3	-20.2	-18.8	-17.7	-19.2	-19.8	-19.4	-19.3	-19.9	-19.9	-20.1	-20.1	-19.5	-19.0	-24.6	-17.7	-33.2
15	-18.8	-18.3	-18.1	-17.5	-16.5	-16.1	-17.1	-16.6	-15.5	-13.0	-8.9	-7.3	-6.7	-6.3	-6.0	-5.9	-5.8	-5.8	-5.8	-5.8	-6.0	-6.3	-6.5	-6.8	-10.7	-5.8	-18.8
16	-7.5	-7.5	-7.4	-7.3	-6.1	-5.6	-5.5	-5.5	-5.5	-5.3	-5.1	-4.8	-4.3	-4.2	-4.2	-4.5	-4.6	-5.0	-5.6	-5.9	-6.3	-7.5	-8.0	-9.4	-5.9	-4.2	-9.4
17	-9.4	-9.5	-9.7	-8.6	-8.3	-8.9	-9.4	-10.4	-11.9	-11.6	-10.0	-8.8	-8.4	-8.6	-9.5	-10.2	-10.1	-11.2	-12.1	-12.5	-13.1	-13.8	-14.0	-14.3	-10.6	-8.3	-14.3
18	-14.6	-14.3	-14.7	-14.8	-14.9	-14.9	-14.9	-15.1	-15.9	-15.8	-12.8	-9.7	-9.1	-8.6	-8.3	-7.8	-9.1	-11.4	-12.8	-13.2	-14.4	-15.8	-14.7	-13.6	-13.0	-7.8	-15.9
19	-12.1	-6.9	-7.3	-7.2	-7.1	-6.4	-6.0	-5.7	-5.9	-5.6	-3.3	-2.3	-2.0	-1.7	-1.0	-1.7	-2.7	-2.4	-1.9	-1.7	-2.2	-2.5	-3.4	-5.1	-4.3	-1.0	-12.1
20	-6.4	-8.7	-11.6	-13.6	-15.2	-16.4	-16.8	-16.2	-15.5	-14.9	-11.1	-5.9	-4.5	-4.0	-3.5	-3.2	-2.8	-3.7	-5.1	-6.0	-6.0	-5.5	-5.6	-5.9	-8.7	-2.8	-16.8
21	-6.2	-6.1	-6.3	-6.3	-6.0	-5.8	-5.6	-5.5	-5.0	-4.3	-3.5	-2.9	-2.1	-1.3	-0.6	-0.5	-0.9	-0.9	-0.7	-0.3	-0.1	0.0	-0.1	-0.1	-3.0	0.0	-6.3
22	0.0	0.0	0.5	0.9	1.0	1.4	0.9	1.6	2.5	3.3	3.6	4.1	4.2	4.2	4.2	4.3	4.1	3.4	2.9	2.3	2.2	1.5	1.0	0.2	2.3	4.3	0.0
23	-0.1	0.0	-1.1	-2.2	-2.5	-3.4	-3.9	-4.3	-4.1	-4.2	-4.0	-4.1	-3.8	-4.0	-3.9	-4.3	-4.9	-4.9	-5.3	-5.9	-7.1	-9.4	-12.5	-14.0	-4.7	0.0	-14.0
24	-15.3	-16.6	-16.7	-17.6	-18.5	-19.1	-18.6	-17.6	-17.0	-15.7	-13.3	-7.5	-6.7	-6.1	-6.1	-5.7	-5.5	-5.7	-7.0	-8.9	-8.8	-11.9	-14.6	-16.8	-12.4	-5.5	-19.1
25	-16.8	-17.8	-18.7	-19.6	-20.9	-21.1	-20.5	-18.1	-16.0	-12.4	-7.2	-5.4	-4.9	-3.6	-3.5	-3.1	-3.2	-3.9	-4.2	-4.6	-4.7	-4.4	-4.4	-4.8	-10.2	-3.1	-21.1
26	-5.4	-5.5	-5.4	-6.1	-5.9	-5.8	-5.5	-5.5	-5.2	-5.0	-4.7	-4.1	-3.4	-3.3	-3.0	-3.1	-3.5	-4.2	-5.2	-6.5	-9.5	-10.0	-10.1	-10.2	-5.7	-3.0	-10.2
27	-11.0	-12.0	-12.5	-12.4	-12.0	-12.1	-12.0	-12.3	-13.1	-11.7	-8.3	-6.6	-5.8	-7.0	-6.8	-5.9	-5.9	-7.4	-8.5	-9.0	-11.7	-13.7	-13.0	-13.9	-10.2	-5.8	-13.9
28	-12.2	-9.7	-9.5	-9.7	-10.0	-10.0	-10.6	-11.2	-10.5	-7.7	-6.1	-5.5	-4.9	-3.9	-2.9	-2.5	-3.0	-3.2	-3.4	-3.7	-4.0	-5.1	-8.1	-8.9	-6.9	-2.5	-12.2
Avg	-14.5	-14.6	-14.8	-14.9	-15.0	-15.1	-15.3	-15.2	-15.1	-13.9	-12.0	-10.2	-9.3	-8.9	-8.7	-8.7	-8.9	-9.5	-10.4	-11.2	-11.8	-12.6	-13.4	-14.1	-12.4	-7.9	-18.1
Max	0.0	0.0	0.5	0.9	1.0	1.4	0.9	1.6	2.5	3.3	4.1	6.4	7.5	7.2	7.8	7.3	6.5	5.7	4.9	4.3	3.8	3.5	2.0	0.2	2.3	7.8	0.0
Min	-36.7	-37.2	-37.8	-38.1	-38.6	-38.5	-38.9	-38.7	-38.1	-36.7	-34.4	-29.6	-28.6	-28.0	-27.3	-27.7	-28.2	-29.3	-30.1	-30.7	-32.4	-34.0	-35.1	-35.7	-32.4	-27.3	-38.9

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-Meter Temperature (Degrees Celsius)
March 2021

A-12

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-9.8	-11.0	-12.2	-13.3	-14.2	-14.6	-14.1	-11.6	-9.8	-7.1	-4.2	-0.1	1.5	2.5	2.9	3.1	4.1	3.6	2.1	-1.4	-2.8	-4.6	-6.3	-7.9	-5.2	4.1	-14.6
2	-5.9	-5.6	-7.0	-6.5	-5.4	-7.9	-9.0	-8.5	-7.4	-4.5	2.1	2.8	3.3	3.6	3.7	3.8	3.7	3.3	2.9	1.9	1.0	-0.3	-2.1	-2.4	-1.7	3.8	-9.0
3	-4.9	-6.6	-8.7	-9.3	-10.2	-11.1	-11.7	-12.1	-10.8	-8.5	-4.0	2.5	5.1	5.6	6.0	5.8	5.8	4.9	2.4	-0.7	-3.8	-4.9	-6.2	-6.9	-3.4	6.0	-12.1
4	-7.7	-8.5	-9.3	-11.0	-10.5	-11.3	-11.2	-11.7	-10.4	-8.1	-5.0	-1.3	3.1	6.8	7.4	7.5	7.4	5.9	2.6	-0.2	-2.0	-4.7	-6.7	-7.0	-3.6	7.5	-11.7
5	-8.4	-9.4	-9.6	-10.1	-11.3	-11.7	-11.2	-11.8	-10.3	-8.4	-5.0	0.5	5.3	6.8	7.5	7.5	8.1	7.3	4.7	1.8	-0.5	-2.2	-3.3	-3.3	-2.8	8.1	-11.8
6	-4.1	-5.1	-5.6	-6.7	-6.4	-6.7	-6.5	-6.4	-4.9	-1.8	2.0	7.0	8.5	9.1	9.6	9.0	7.4	5.3	2.2	0.9	2.2	1.6	0.9	-0.5	0.5	9.6	-6.7
7	-1.2	-0.9	-1.8	-3.0	-4.7	-5.5	-6.0	-5.9	-4.7	-3.7	-1.1	0.9	2.0	2.6	3.5	4.3	4.6	4.9	2.5	0.4	-0.2	-0.9	-2.3	-3.9	-0.8	4.9	-6.0
8	-5.1	-6.1	-7.2	-7.9	-8.3	-9.4	-9.0	-8.3	-7.0	-5.3	-3.9	-2.0	-0.3	0.6	2.2	2.1	3.0	2.1	0.7	-0.5	-1.6	-2.8	-2.9	-3.7	-3.4	3.0	-9.4
9	-4.3	-5.3	-5.5	-5.4	-5.2	-5.2	-5.2	-5.0	-4.8	-4.7	-4.1	-3.3	-3.1	-2.9	-2.4	-2.0	-2.1	-3.0	-5.8	-8.2	-10.9	-13.0	-14.3	-15.3	-5.9	-2.0	-15.3
10	-16.6	-17.0	-17.4	-17.9	-18.0	-18.6	-18.7	-17.9	-16.8	-14.5	-11.1	-5.9	-3.5	-2.0	-1.5	-1.0	-1.2	-2.5	-4.8	-7.5	-8.7	-9.5	-11.5	-12.6	-10.7	-1.0	-18.7
11	-14.3	-15.5	-16.8	-17.4	-18.3	-19.6	-20.2	-20.0	-19.1	-15.3	-11.0	-7.3	-4.9	-1.8	-0.8	-0.2	0.0	-0.6	-3.0	-5.9	-8.7	-10.8	-12.6	-13.3	-10.7	0.0	-20.2
12	-14.2	-15.0	-15.4	-16.6	-17.3	-17.7	-17.5	-17.3	-15.3	-12.0	-8.5	-1.6	-0.1	0.7	1.4	1.9	2.1	1.3	-2.0	-4.9	-7.2	-8.6	-9.2	-10.7	-8.5	2.1	-17.7
13	-11.4	-12.1	-12.7	-13.6	-14.0	-14.3	-15.1	-15.1	-13.0	-10.2	-6.1	-0.4	4.5	5.7	5.9	6.4	5.8	5.2	2.9	2.0	-0.9	-4.3	-5.7	-6.5	-4.9	6.4	-15.1
14	-5.2	-0.2	-2.2	-3.0	-0.6	0.9	1.8	1.7	2.0	3.7	4.7	5.3	5.1	4.8	4.0	3.9	4.9	5.6	5.3	4.8	3.6	2.3	0.7	-0.7	2.2	5.6	-5.2
15	-2.1	-3.5	-5.1	-6.0	-7.3	-8.5	-9.1	-9.1	-8.1	-4.3	0.6	5.7	7.0	7.5	6.9	6.4	5.9	4.6	2.6	1.3	0.5	-0.3	-0.6	-1.0	-0.7	7.5	-9.1
16	-1.3	-1.8	-2.2	-3.5	-3.9	-4.1	-4.7	-5.0	-4.6	-3.0	-0.6	1.1	3.1	3.9	4.6	4.9	5.0	4.8	4.0	1.4	0.5	-1.1	-2.2	-3.1	-0.3	5.0	-5.0
17	-4.6	-6.2	-6.3	-7.6	-8.0	-8.3	-9.2	-9.1	-7.2	-3.9	0.6	3.9	5.0	5.6	6.3	6.5	6.9	6.5	3.8	2.6	3.0	3.0	2.2	1.1	-0.6	6.9	-9.2
18	0.0	-3.1	-4.3	-6.0	-6.3	-6.9	-7.2	-7.0	-4.5	0.0	5.6	6.8	7.4	8.1	9.1	9.6	9.9	9.7	6.6	3.2	2.0	-0.1	-1.2	-1.2	1.3	9.9	-7.2
19	-2.2	-3.2	-3.4	-3.7	-4.0	-4.2	-4.3	-3.3	-0.6	7.5	9.3	6.6	7.1	8.4	8.5	5.8	3.7	3.8	3.1	2.6	1.7	1.7	1.3	1.5	1.8	9.3	-4.3
20	0.8	-0.6	-1.9	-2.5	-2.7	-2.8	-3.3	-3.3	-3.2	-2.4	-1.0	0.7	1.3	1.6	2.3	2.6	2.1	1.9	1.8	0.3	-1.9	-3.0	-5.0	-3.3	-0.9	2.6	-5.0
21	-3.0	-3.5	-3.8	-6.2	-8.5	-9.7	-11.1	-10.5	-8.4	-3.6	-1.1	-0.3	0.2	0.7	0.8	1.2	1.3	1.2	0.8	-0.3	-0.5	-0.5	-0.7	-0.9	-2.8	1.3	-11.1
22	-1.7	-2.0	-2.1	-2.1	-2.1	-1.9	-2.0	-1.9	-1.9	-2.2	-1.7	-0.9	-0.5	0.1	0.5	0.9	0.9	0.9	-0.5	-2.5	-3.8	-4.6	-4.9	-5.3	-1.7	0.9	-5.3
23	-6.0	-7.2	-8.5	-9.1	-9.1	-9.3	-9.0	-7.0	-4.8	-4.1	-3.9	-3.8	-3.3	-2.6	-2.7	-2.5	-2.2	-2.2	-2.9	-4.7	-6.8	-8.3	-10.6	-10.6	-5.9	-2.2	-10.6
24	-11.2	-11.7	-11.0	-5.4	-3.6	-3.9	-4.4	-4.3	-3.0	-2.8	-2.4	-1.5	-0.2	0.5	0.3	0.4	0.5	0.8	-0.4	-1.5	-1.7	-1.8	-1.9	-1.5	-3.0	0.8	-11.7
25	-1.5	-1.7	-1.5	-1.6	-2.0	-2.4	-3.2	-3.4	-2.7	-1.7	-1.1	-0.7	-0.4	-0.4	-1.0	-1.3	-1.9	-2.5	-3.2	-4.0	-4.9	-5.7	-6.3	-6.4	-2.6	-0.4	-6.4
26	-6.0	-6.7	-7.6	-8.6	-8.9	-9.2	-8.9	-7.8	-6.3	-3.0	-1.0	-0.4	0.0	0.5	0.5	0.6	0.8	0.7	0.1	-0.1	-0.3	-0.7	-0.8	-0.9	-3.1	0.8	-9.2
27	-1.6	-1.6	-1.5	-1.7	-1.6	-1.8	-1.7	-1.6	-0.3	1.1	2.1	3.0	3.6	4.3	5.3	5.7	6.0	5.8	5.0	3.9	2.0	1.1	3.2	4.2	1.8	6.0	-1.8
28	4.3	4.3	4.4	3.2	1.3	3.0	3.2	3.0	5.4	7.3	7.9	8.5	10.2	10.9	11.6	12.2	12.4	12.8	11.9	10.6	10.9	10.1	9.5	9.5	7.9	12.8	1.3
29	8.4	1.6	-0.9	-2.7	-3.1	-4.4	-5.5	-5.8	-6.2	-6.6	-7.4	-7.6	-7.2	-6.9	-6.4	-5.6	-4.9	-4.5	-4.8	-5.8	-6.5	-7.1	-9.2	-10.3	-5.0	8.4	-10.3
30	-10.2	-10.2	-10.6	-10.9	-11.3	-12.0	-14.0	-14.5	-12.3	-10.0	-8.8	-7.1	-6.0	-5.3	-4.9	-4.8	-4.2	-4.0	-4.2	-4.8	-5.1	-5.5	-5.9	-6.7	-8.1	-4.0	-14.5
31	-8.0	-11.0	-12.4	-13.1	-13.3	-13.8	-14.0	-12.7	-7.2	-2.7	-1.7	-0.6	0.6	2.1	3.3	4.1	4.6	4.9	4.1	0.8	-1.8	-3.5	-4.6	-5.9	-4.2	4.9	-14.0
Avg	-5.1	-6.0	-6.8	-7.4	-7.7	-8.2	-8.5	-8.2	-6.7	-4.3	-1.9	0.3	1.8	2.6	3.0	3.2	3.2	2.9	1.3	-0.5	-1.7	-2.9	-3.8	-4.4	-2.7	4.1	-9.9
Max	8.4	4.3	4.4	3.2	1.3	3.0	3.2	3.0	5.4	7.5	9.3	8.5	10.2	10.9	11.6	12.2	12.4	12.8	11.9	10.6	10.9	10.1	9.5	9.5	7.9	12.8	1.3
Min	-16.6	-17.0	-17.4	-17.9	-18.3	-19.6	-20.2	-20.0	-19.1	-15.3	-11.1	-7.6	-7.2	-6.9	-6.4	-5.6	-4.9	-4.5	-5.8	-8.2	-10.9	-13.0	-14.3	-15.3	-10.7	-4.0	-20.2

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
2-Meter Temperature (Degrees Celsius)
January 2021

A-13

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-2.1	-2.3	-1.9	-2.6	-3.2	-3.8	-6.7	-9.1	-10.5	-9.2	-8.0	-4.1	0.3	0.6	0.3	-1.4	-2.6	-4.0	-5.6	-6.6	-5.9	-7.4	-4.9	-4.8	-4.4	0.6	-10.5
2	-3.9	-3.8	-2.6	-3.0	-3.5	-4.6	-5.7	-3.6	-2.7	-2.1	-0.8	0.1	0.8	1.6	1.9	1.4	-0.1	-0.7	-0.8	-0.2	-0.5	-2.3	-3.0	-2.8	-1.7	1.9	-5.7
3	-3.4	-3.7	-2.8	-2.9	-1.2	1.1	1.2	1.2	1.2	1.3	1.8	2.9	2.7	1.9	0.8	0.9	-0.6	-1.8	-2.2	-2.7	-4.1	-3.2	-2.6	-2.5	-0.7	2.9	-4.1
4	-2.3	-2.2	-3.1	-4.7	-6.5	-7.8	-7.3	-10.4	-12.0	-8.8	-5.5	-1.0	1.7	1.2	1.5	1.5	1.2	0.1	0.8	0.8	1.1	1.1	0.9	1.0	-2.4	1.7	-12.0
5	0.5	-0.8	-0.2	0.0	-0.2	-0.7	-0.9	-1.4	-2.5	-2.3	-0.9	-0.3	0.0	0.4	0.3	-0.2	-2.1	-4.9	-4.2	-4.8	-8.2	-9.2	-11.0	-12.7	-2.8	0.5	-12.7
6	-12.7	-12.1	-11.8	-10.5	-8.9	-10.0	-10.2	-9.3	-9.5	-6.6	-2.9	0.8	2.7	4.1	4.1	3.8	0.6	-2.7	-3.4	-5.3	-4.2	-4.3	-4.2	-4.3	-4.9	4.1	-12.7
7	-4.2	-3.0	-2.6	-2.6	-2.5	-2.4	-2.3	-2.4	-2.4	-2.1	-1.8	-1.5	-1.2	-1.0	-0.8	-0.8	-1.0	-1.2	-1.7	-2.6	-2.4	-2.9	-3.3	-3.5	-2.2	-0.8	-4.2
8	-3.6	-3.8	-3.9	-4.0	-4.2	-5.8	-5.7	-3.9	-2.7	-2.3	-1.7	-1.1	-0.6	-0.4	-0.5	-0.3	-2.7	-7.2	-10.6	-11.7	-11.3	-10.7	-11.0	-12.6	-5.1	-0.3	-12.6
9	-13.8	-14.7	-15.3	-15.4	-15.0	-16.2	-17.7	-18.1	-18.5	-16.0	-13.1	-9.1	-6.5	-4.1	-3.1	-3.2	-5.5	-10.7	-13.1	-15.4	-17.9	-18.8	-19.3	-20.0	-13.4	-3.1	-20.0
10	-19.8	-19.9	-19.9	-19.7	-20.0	-20.3	-20.2	-20.5	-21.0	-18.7	-15.0	-11.1	-7.7	-3.8	-2.2	-2.4	-5.0	-9.4	-12.0	-12.7	-13.0	-13.5	-14.8	-16.2	-14.1	-2.2	-21.0
11	-17.8	-17.9	-18.7	-18.8	-18.8	-18.3	-18.7	-18.6	-18.2	-15.6	-13.1	-8.1	-5.5	-2.0	0.3	-0.4	-2.5	-5.2	-7.6	-8.4	-9.1	-9.0	-9.0	-9.1	-11.3	0.3	-18.8
12	-9.6	-10.6	-11.5	-9.8	-8.0	-7.3	-5.2	-4.9	-5.2	-2.3	1.9	3.5	4.2	4.6	5.0	5.3	5.0	4.2	3.5	3.2	2.6	2.4	2.0	0.6	-1.1	5.3	-11.5
13	0.0	0.0	2.2	2.4	3.4	4.0	3.6	4.7	5.6	5.3	1.2	1.3	1.9	1.5	0.2	-1.1	-1.8	-2.3	-2.4	-2.6	-2.9	-3.8	-4.7	-4.3	0.5	5.6	-4.7
14	-4.3	-4.4	-4.6	-5.5	-5.9	-5.7	-5.9	-6.7	-8.8	-7.1	-5.2	-4.0	-3.3	-3.0	-3.1	-3.5	-4.5	-6.0	-6.7	-10.3	-13.7	-14.7	-16.7	-17.6	-7.1	-3.0	-17.6
15	-18.4	-19.4	-19.4	-19.2	-18.7	-17.7	-17.4	-17.6	-16.5	-14.3	-11.3	-8.4	-3.9	0.4	1.0	1.6	-0.1	-0.8	-1.2	0.2	0.0	-0.4	-1.7	-2.0	-8.6	1.6	-19.4
16	-2.7	-5.2	-5.6	-6.7	-2.8	-7.3	-7.8	-9.3	-10.1	-9.9	-5.2	-0.9	0.0	-0.1	-0.1	-0.2	-2.0	-4.6	-5.2	-8.3	-9.1	-9.6	-9.1	-8.5	-5.4	0.0	-10.1
17	-8.8	-9.1	-9.8	-11.2	-10.6	-5.7	-1.8	-2.3	-0.8	-1.4	-0.5	0.5	0.3	0.5	0.8	1.0	0.7	0.0	-0.5	-1.1	-1.9	-2.6	-3.2	-3.3	-2.9	1.0	-11.2
18	-3.4	-3.8	-3.9	-4.0	-4.2	-4.3	-4.1	-4.1	-3.9	-3.6	-3.7	-3.3	-3.2	-3.1	-3.1	-3.7	-3.8	-4.0	-4.4	-4.7	-5.2	-6.7	-5.7	-6.0	-4.2	-3.1	-6.7
19	-6.9	-8.5	-13.0	-16.7	-18.7	-20.5	-21.6	-23.0	-24.2	-23.6	-20.7	-16.6	-13.2	-8.0	-5.4	-4.5	-3.9	-6.4	-7.2	-5.1	-5.0	-5.2	-3.4	-2.4	-11.8	-2.4	-24.2
20	-3.1	-2.8	-2.0	-3.7	-2.6	-2.6	-3.2	-4.6	-8.6	-8.5	-2.1	-1.3	-1.0	-0.9	-1.3	-1.9	-2.5	-3.4	-5.6	-4.5	-1.9	-4.8	-9.5	-12.4	-3.9	-0.9	-12.4
21	-13.7	-16.2	-17.3	-18.7	-19.6	-17.2	-15.3	-13.2	-12.9	-10.9	-8.8	-7.6	-6.4	-5.9	-6.4	-6.7	-7.3	-7.7	-8.0	-8.2	-8.5	-8.5	-9.1	-10.9	-11.0	-5.9	-19.6
22	-12.0	-12.7	-12.6	-12.6	-13.8	-15.5	-17.2	-14.8	-13.6	-12.8	-11.2	-9.5	-6.8	-6.5	-4.8	-5.1	-7.0	-11.0	-14.2	-16.4	-19.2	-21.4	-22.1	-23.3	-13.2	-4.8	-23.3
23	-24.4	-25.5	-26.1	-26.3	-27.7	-27.5	-27.5	-23.8	-21.0	-18.0	-15.7	-13.2	-11.0	-9.2	-8.4	-7.0	-7.5	-12.4	-15.6	-18.1	-20.5	-21.3	-22.5	-23.4	-18.9	-7.0	-27.7
24	-24.0	-24.4	-23.7	-21.7	-20.8	-19.8	-20.1	-21.5	-21.8	-19.8	-16.8	-13.9	-10.5	-6.5	-5.2	-5.6	-6.2	-10.5	-13.2	-13.3	-13.8	-17.6	-18.0	-18.9	-16.2	-5.2	-24.4
25	-19.7	-20.7	-21.0	-21.5	-22.3	-21.6	-20.2	-18.7	-17.5	-16.4	-14.4	-11.7	-6.9	-4.7	-4.8	-5.6	-6.9	-8.7	-9.2	-9.5	-10.5	-10.8	-11.1	-11.1	-13.6	-4.7	-22.3
26	-11.2	-11.7	-12.5	-12.9	-13.4	-13.5	-13.3	-15.3	-16.9	-15.4	-12.3	-10.8	-9.9	-9.2	-8.4	-8.3	-9.7	-12.8	-13.9	-17.3	-20.3	-21.7	-22.5	-22.5	-14.0	-8.3	-22.5
27	-23.2	-23.3	-23.9	-24.7	-24.6	-24.1	-24.1	-23.5	-22.8	-19.6	-16.1	-10.6	-4.6	-2.6	-1.9	-2.0	-2.2	-2.5	-2.5	-3.2	-4.0	-4.9	-4.5	-5.2	-12.5	-1.9	-24.7
28	-6.8	-7.8	-9.6	-9.9	-9.4	-8.0	-9.3	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	-8.7	-6.8	-9.9
29	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
30	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
31	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	1.4	0.2	0.7	0.8	-1.1	-4.7	-5.4	-6.5	-6.9	-9.9	-11.6	-13.0	-4.7	1.4	-13.0
Avg	-9.8	-10.4	-10.6	-11.0	-10.8	-10.8	-10.9	-10.9	-11.0	-9.7	-7.5	-5.1	-3.1	-1.9	-1.5	-1.7	-2.9	-5.0	-6.1	-7.0	-7.7	-8.6	-9.1	-9.7	-7.6	-1.2	-15.2
Max	0.5	0.0	2.2	2.4	3.4	4.0	3.6	4.7	5.6	5.3	1.9	3.5	4.2	4.6	5.0	5.3	5.0	4.2	3.5	3.2	2.6	2.4	2.0	1.0	0.5	5.6	-4.1
Min	-24.4	-25.5	-26.1	-26.3	-27.7	-27.5	-27.5	-23.8	-24.2	-23.6	-20.7	-16.6	-13.2	-9.2	-8.4	-8.3	-9.7	-12.8	-15.6	-18.1	-20.5	-21.7	-22.5	-23.4	-18.9	-8.3	-27.7

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
2-Meter Temperature (Degrees Celsius)
February 2021

A-14

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-12.2	-13.2	-12.4	-13.5	-13.2	-13.4	-14.0	-13.5	-13.8	-9.9	-4.7	1.5	3.6	5.2	5.8	5.2	5.1	4.0	2.0	-1.1	1.3	-0.2	-2.3	-2.6	-4.4	5.8	-14.0
2	-3.9	-5.6	-4.9	-4.2	-4.5	-2.0	-2.8	-5.6	-6.0	-2.8	3.9	6.2	7.2	6.9	7.4	6.9	6.1	5.1	4.4	3.9	3.3	3.1	1.8	-0.7	1.0	7.4	-6.0
3	-1.7	-2.2	-3.0	-3.5	-4.1	-5.1	-6.7	-8.6	-10.5	-7.2	-4.5	-3.9	-3.6	-3.1	-3.2	-3.4	-3.7	-3.8	-4.3	-5.3	-5.9	-6.2	-6.8	-8.0	-4.9	-1.7	-10.5
4	-8.7	-8.5	-8.1	-8.5	-7.7	-7.1	-6.8	-6.9	-7.2	-5.8	-4.9	-4.1	-3.8	-3.9	-3.9	-4.3	-5.1	-5.0	-4.5	-5.0	-5.3	-4.5	-4.5	-4.7	-5.8	-3.8	-8.7
5	-5.1	-5.2	-5.3	-5.6	-5.8	-6.0	-6.0	-6.0	-6.0	-5.8	-5.4	-4.6	-3.7	-3.9	-4.4	-4.4	-4.3	-4.4	-4.7	-6.3	-10.6	-14.5	-17.7	-18.7	-6.8	-3.7	-18.7
6	-20.4	-20.4	-20.2	-19.9	-19.5	-18.9	-18.7	-18.2	-17.4	-16.1	-15.1	-13.5	-12.5	-10.8	-9.7	-9.0	-8.3	-10.8	-16.7	-17.8	-19.3	-20.7	-21.3	-21.9	-16.5	-8.3	-21.9
7	-22.2	-21.9	-22.2	-22.4	-23.9	-24.9	-25.2	-25.2	-25.2	-24.4	-23.6	-22.4	-20.8	-19.6	-18.6	-18.1	-18.2	-18.3	-19.2	-21.6	-22.1	-22.6	-23.7	-24.3	-22.1	-18.1	-25.2
8	-23.0	-22.8	-22.8	-22.0	-22.1	-22.2	-20.7	-20.6	-22.0	-22.8	-23.2	-23.8	-22.8	-22.7	-23.4	-23.7	-24.2	-24.1	-24.3	-24.4	-24.7	-24.6	-24.4	-24.7	-23.2	-20.6	-24.7
9	-24.5	-24.1	-23.7	-23.3	-23.1	-23.1	-23.0	-22.8	-22.6	-22.5	-21.7	-22.4	-22.1	-23.2	-22.2	-22.7	-22.0	-22.7	-22.6	-22.5	-22.7	-22.9	-22.9	-22.5	-22.8	-21.7	-24.5
10	-22.3	-21.7	-21.4	-21.1	-20.8	-20.7	-20.6	-20.8	-20.5	-21.3	-22.2	-20.7	-19.8	-20.1	-21.7	-22.5	-23.9	-25.2	-27.4	-27.9	-27.6	-27.8	-28.3	-28.9	-23.1	-19.8	-28.9
11	-29.3	-29.3	-29.3	-30.1	-31.1	-32.5	-33.9	-34.1	-33.5	-32.1	-30.3	-29.0	-28.4	-27.9	-27.2	-27.6	-28.3	-29.8	-30.3	-31.1	-33.6	-35.2	-36.4	-36.9	-31.1	-27.2	-36.9
12	-37.7	-38.2	-38.8	-39.2	-39.6	-39.5	-39.9	-39.7	-39.0	-37.3	-34.4	-30.2	-26.5	-25.4	-24.9	-24.5	-24.7	-26.2	-28.7	-30.9	-31.0	-31.7	-32.9	-34.1	-33.1	-24.5	-39.9
13	-35.5	-36.3	-36.7	-37.3	-37.6	-37.8	-38.2	-37.8	-37.4	-34.8	-30.6	-26.7	-22.3	-20.3	-21.2	-21.3	-21.6	-23.0	-24.6	-26.3	-26.7	-26.6	-27.9	-30.0	-29.9	-20.3	-38.2
14	-31.7	-32.4	-33.7	-33.9	-34.2	-33.6	-33.0	-31.9	-29.9	-25.9	-22.2	-20.0	-18.7	-17.6	-19.0	-19.5	-19.1	-19.1	-19.8	-20.1	-20.2	-20.1	-19.4	-18.9	-24.7	-17.6	-34.2
15	-18.7	-18.2	-18.1	-17.4	-16.4	-16.6	-18.5	-17.3	-15.7	-13.4	-9.6	-7.2	-6.7	-6.3	-6.0	-5.8	-5.8	-5.8	-5.8	-5.9	-6.1	-6.4	-7.0	-7.2	-10.9	-5.8	-18.7
16	-8.0	-7.7	-7.7	-7.5	-6.3	-5.7	-5.6	-5.6	-5.5	-5.3	-5.0	-4.7	-4.2	-4.2	-4.1	-4.5	-4.7	-5.1	-5.8	-5.9	-6.5	-8.0	-8.6	-10.1	-6.1	-4.1	-10.1
17	-10.1	-10.1	-10.3	-8.8	-8.6	-9.5	-9.8	-11.3	-13.2	-12.7	-9.9	-8.8	-8.3	-8.8	-9.6	-10.2	-10.1	-11.2	-12.2	-12.7	-13.6	-14.2	-14.3	-14.6	-11.0	-8.3	-14.6
18	-14.9	-14.6	-15.1	-15.1	-15.2	-15.2	-15.3	-15.7	-17.9	-16.8	-13.8	-10.0	-9.0	-8.8	-7.9	-7.6	-10.6	-13.7	-14.3	-14.3	-15.8	-17.6	-15.8	-14.5	-13.7	-7.6	-17.9
19	-12.8	-7.2	-7.3	-7.2	-7.2	-6.7	-6.4	-6.0	-6.4	-6.6	-3.4	-2.3	-2.0	-1.8	-1.0	-1.7	-3.0	-3.5	-2.6	-2.2	-2.7	-2.9	-4.9	-6.2	-4.8	-1.0	-12.8
20	-7.8	-9.9	-12.7	-15.0	-16.8	-18.1	-18.3	-17.0	-16.2	-15.5	-12.7	-6.4	-4.5	-4.0	-3.5	-3.3	-3.1	-4.0	-5.6	-6.7	-6.3	-5.8	-5.9	-6.3	-9.4	-3.1	-18.3
21	-6.6	-6.4	-6.6	-6.6	-6.1	-5.8	-5.7	-5.7	-5.1	-4.4	-3.6	-2.9	-2.2	-1.3	-0.7	-0.6	-1.2	-1.2	-1.0	-0.6	-0.4	-0.4	-0.4	-0.4	-3.2	-0.4	-6.6
22	-0.1	0.0	0.4	0.9	0.8	1.4	1.0	1.4	2.3	3.0	3.1	3.6	3.8	3.8	4.1	4.3	3.8	3.2	3.2	2.1	2.1	1.5	1.0	0.3	2.1	4.3	-0.1
23	-0.1	-0.4	-1.4	-2.4	-2.9	-3.7	-4.4	-4.9	-4.3	-4.2	-4.0	-4.2	-3.9	-4.2	-4.1	-4.3	-4.9	-5.0	-5.5	-6.2	-7.7	-10.7	-12.7	-14.3	-5.0	-0.1	-14.3
24	-16.6	-17.4	-18.0	-18.8	-20.1	-20.8	-19.8	-17.9	-17.5	-16.0	-13.9	-7.2	-6.5	-5.9	-5.9	-5.5	-5.6	-5.9	-8.1	-10.0	-10.3	-14.6	-17.0	-18.5	-13.2	-5.5	-20.8
25	-18.5	-19.6	-20.0	-21.0	-22.6	-23.7	-22.3	-19.5	-17.2	-14.2	-8.1	-5.9	-5.2	-3.7	-3.5	-3.0	-3.0	-3.9	-4.2	-4.6	-4.9	-4.0	-4.0	-4.7	-10.9	-3.0	-23.7
26	-5.2	-5.2	-5.5	-6.0	-5.3	-5.2	-4.9	-5.0	-4.8	-4.9	-4.4	-3.9	-3.1	-3.3	-3.0	-2.9	-3.5	-4.3	-5.5	-7.2	-10.4	-10.7	-10.4	-10.6	-5.6	-2.9	-10.7
27	-11.7	-13.0	-13.6	-13.0	-12.6	-12.7	-12.5	-13.3	-14.3	-14.2	-9.0	-6.0	-5.2	-6.4	-5.5	-5.6	-5.9	-8.2	-8.8	-9.5	-13.1	-15.1	-14.6	-15.4	-10.8	-5.2	-15.4
28	-13.9	-10.5	-10.1	-9.8	-9.8	-10.3	-11.4	-12.0	-11.7	-7.8	-6.1	-5.6	-5.0	-3.6	-2.9	-2.5	-3.0	-3.1	-3.5	-3.8	-4.5	-6.2	-9.5	-10.2	-7.4	-2.5	-13.9
Avg	-15.1	-15.1	-15.3	-15.4	-15.6	-15.7	-15.8	-15.8	-15.7	-14.3	-12.1	-10.2	-9.1	-8.7	-8.6	-8.6	-9.0	-9.8	-10.7	-11.6	-12.3	-13.2	-14.0	-14.6	-12.8	-7.8	-18.9
Max	-0.1	0.0	0.4	0.9	0.8	1.4	1.0	1.4	2.3	3.0	3.9	6.2	7.2	6.9	7.4	6.9	6.1	5.1	4.4	3.9	3.3	3.1	1.8	0.3	2.1	7.4	-0.1
Min	-37.7	-38.2	-38.8	-39.2	-39.6	-39.5	-39.9	-39.7	-39.0	-37.3	-34.4	-30.2	-28.4	-27.9	-27.2	-27.6	-28.3	-29.8	-30.3	-31.1	-33.6	-35.2	-36.4	-36.9	-33.1	-27.2	-39.9

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
2-Meter Temperature (Degrees Celsius)
March 2021

A-15

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-11.3	-12.8	-13.7	-14.6	-15.2	-16.2	-16.2	-13.7	-12.2	-8.1	-6.5	-1.1	0.9	2.0	2.3	2.1	2.4	1.3	0.5	-3.0	-4.0	-6.2	-8.3	-9.7	-6.7	2.4	-16.2
2	-7.3	-7.1	-9.1	-8.3	-7.8	-10.0	-11.1	-10.1	-8.7	-5.6	2.1	2.9	3.8	4.0	3.5	3.5	3.4	3.1	2.9	1.2	0.0	-1.5	-4.0	-4.7	-2.7	4.0	-11.1
3	-6.7	-8.6	-10.5	-11.3	-11.9	-12.6	-13.2	-13.9	-12.2	-9.6	-5.4	2.0	5.2	5.5	5.6	5.0	4.2	3.2	1.5	-1.5	-5.3	-6.8	-8.2	-9.0	-4.8	5.6	-13.9
4	-10.8	-11.3	-12.1	-12.9	-12.5	-13.2	-13.5	-13.7	-12.2	-8.8	-5.6	-1.4	2.2	7.3	7.4	7.4	6.9	5.5	1.2	-0.8	-3.0	-6.6	-9.3	-9.7	-5.0	7.4	-13.7
5	-10.9	-11.4	-12.0	-12.4	-13.2	-13.9	-13.5	-13.5	-11.9	-9.6	-5.8	-1.3	4.3	5.2	6.0	5.9	6.6	5.5	3.8	1.1	-1.9	-3.8	-5.0	-4.6	-4.4	6.6	-13.9
6	-5.4	-7.1	-7.8	-8.8	-9.3	-8.6	-8.0	-8.2	-6.6	-3.3	0.7	6.4	8.0	8.9	9.4	8.9	6.9	4.7	2.0	0.9	1.9	1.2	0.4	-1.3	-0.6	9.4	-9.3
7	-2.2	-1.3	-2.4	-3.9	-5.1	-5.7	-6.3	-6.2	-4.7	-3.2	-0.9	1.1	2.2	2.9	3.7	4.3	4.4	4.7	1.6	0.1	-0.3	-1.0	-3.1	-5.1	-1.1	4.7	-6.3
8	-6.5	-7.5	-8.7	-9.0	-9.8	-10.6	-10.3	-9.0	-7.9	-5.5	-3.6	-1.7	-0.1	0.6	2.1	2.1	2.6	1.9	0.5	-0.5	-1.5	-2.8	-2.9	-3.6	-3.8	2.6	-10.6
9	-4.5	-5.6	-5.6	-5.3	-5.3	-5.2	-5.2	-5.0	-4.6	-4.0	-3.5	-2.7	-2.3	-2.4	-2.1	-1.9	-2.1	-3.5	-8.0	-10.0	-12.6	-14.6	-16.6	-16.9	-6.2	-1.9	-16.9
10	-18.5	-18.8	-19.3	-19.9	-20.3	-20.8	-20.3	-20.1	-18.2	-15.3	-11.3	-6.0	-3.1	-1.3	-0.9	-0.6	-1.4	-3.0	-6.6	-9.1	-10.2	-11.1	-12.9	-14.7	-11.8	-0.6	-20.8
11	-16.1	-17.3	-18.8	-19.2	-20.3	-20.8	-22.0	-21.8	-20.0	-15.6	-11.2	-7.3	-4.5	-1.5	-0.6	0.1	0.3	-0.9	-4.8	-8.6	-11.3	-13.3	-14.4	-15.3	-11.9	0.3	-22.0
12	-16.1	-16.8	-17.3	-18.9	-19.5	-19.7	-19.8	-19.1	-16.2	-12.6	-8.5	-1.8	0.0	0.8	1.8	2.2	1.9	0.7	-3.4	-6.8	-9.5	-10.7	-11.6	-12.4	-9.7	2.2	-19.8
13	-13.5	-13.5	-14.5	-15.2	-16.0	-16.1	-17.1	-16.5	-14.2	-10.4	-6.3	-0.5	4.8	5.4	6.1	6.3	4.7	3.6	2.0	1.1	-2.3	-6.0	-8.0	-9.1	-6.0	6.3	-17.1
14	-8.2	-3.3	-4.7	-5.0	-2.8	-0.6	1.0	0.8	1.1	3.4	4.2	4.7	4.5	4.2	3.6	3.6	4.7	5.4	5.0	4.0	2.6	1.6	0.3	-1.3	1.2	5.4	-8.2
15	-2.8	-4.4	-5.9	-7.5	-8.5	-10.0	-10.3	-10.3	-8.7	-4.2	0.7	5.5	6.5	6.8	6.5	5.9	5.5	4.2	2.3	1.2	0.4	-0.3	-0.8	-1.3	-1.2	6.8	-10.3
16	-1.6	-2.1	-2.5	-3.6	-4.1	-4.3	-4.9	-5.1	-4.7	-2.4	0.3	1.5	3.7	4.1	5.0	5.0	4.8	4.5	3.4	0.8	-0.2	-1.5	-3.0	-3.9	-0.5	5.0	-5.1
17	-5.4	-7.5	-8.2	-9.1	-9.5	-10.2	-10.6	-10.4	-6.9	-3.5	1.0	4.2	5.3	5.9	6.4	6.4	6.5	5.4	2.5	1.8	1.7	2.3	1.5	-0.2	-1.3	6.5	-10.6
18	-1.7	-4.6	-5.9	-7.9	-8.6	-8.7	-9.0	-8.4	-4.3	0.0	5.2	6.7	7.0	7.9	8.7	9.3	9.4	8.2	4.9	2.0	0.5	-1.2	-2.5	-3.1	0.2	9.4	-9.0
19	-3.8	-4.6	-5.2	-5.4	-5.4	-5.4	-5.7	-4.3	-1.0	6.8	8.9	6.1	7.1	8.4	8.3	5.5	3.8	3.5	2.6	2.2	1.4	1.4	1.0	1.1	1.1	8.9	-5.7
20	0.4	-1.1	-2.3	-2.9	-3.1	-3.1	-3.5	-3.5	-3.1	-2.2	-0.7	1.0	1.4	1.6	2.6	2.8	2.2	1.7	1.4	-0.5	-2.8	-4.6	-6.1	-3.9	-1.2	2.8	-6.1
21	-3.5	-4.2	-4.7	-7.5	-9.1	-10.3	-12.2	-10.4	-7.5	-3.0	-0.5	0.0	0.5	0.9	0.9	1.3	1.3	1.0	0.5	-0.4	-0.7	-0.7	-0.9	-1.0	-2.9	1.3	-12.2
22	-1.7	-2.1	-2.2	-2.3	-2.4	-2.1	-2.3	-2.0	-1.7	-2.0	-1.4	-0.5	-0.2	0.4	0.8	1.2	1.1	0.7	-1.0	-3.4	-4.4	-5.4	-5.3	-5.7	-1.8	1.2	-5.7
23	-6.3	-7.4	-8.6	-9.4	-9.3	-9.7	-9.0	-7.0	-4.6	-3.8	-3.6	-3.5	-2.8	-2.0	-1.8	-1.7	-1.7	-2.0	-3.3	-5.7	-7.8	-9.4	-11.4	-11.8	-6.0	-1.7	-11.8
24	-12.4	-12.3	-10.9	-6.0	-3.8	-4.0	-4.9	-4.5	-2.9	-2.7	-2.1	-1.0	0.2	0.9	0.6	0.5	0.6	0.7	-0.5	-1.4	-1.7	-2.0	-2.0	-1.6	-3.0	0.9	-12.4
25	-1.5	-1.9	-1.7	-1.8	-2.1	-2.7	-3.7	-3.9	-2.6	-1.4	-0.9	-0.3	-0.1	-0.1	-0.8	-1.1	-1.7	-2.5	-3.5	-4.6	-5.6	-6.3	-6.6	-6.2	-2.6	-0.1	-6.6
26	-5.9	-7.0	-8.0	-9.5	-9.6	-9.7	-8.9	-7.6	-5.9	-2.5	-0.6	-0.2	0.3	0.8	0.6	0.7	0.7	0.5	0.0	-0.3	-0.5	-0.9	-0.9	-1.0	-3.1	0.8	-9.7
27	-2.0	-1.8	-1.7	-1.8	-1.7	-1.9	-1.9	-1.5	-0.1	1.3	2.1	3.1	3.7	4.5	5.4	5.6	5.9	5.6	4.4	3.0	0.4	-0.4	2.4	3.7	1.5	5.9	-2.0
28	3.8	3.7	3.6	1.9	-0.4	1.7	1.4	1.9	5.3	7.3	7.8	8.2	10.0	10.4	11.1	11.6	11.8	12.2	11.1	9.5	10.1	9.1	8.8	8.8	7.1	12.2	-0.4
29	7.7	1.5	-0.9	-2.7	-3.2	-4.5	-5.6	-5.7	-6.1	-6.4	-7.3	-7.4	-7.0	-6.5	-6.2	-5.2	-4.7	-4.4	-4.9	-6.2	-6.6	-7.0	-9.1	-10.2	-4.9	7.7	-10.2
30	-10.5	-10.8	-10.9	-11.1	-11.4	-13.0	-14.8	-15.0	-11.7	-9.3	-8.5	-6.7	-5.7	-4.9	-4.4	-4.4	-3.9	-4.0	-4.4	-5.1	-5.4	-6.0	-6.6	-7.8	-8.2	-3.9	-15.0
31	-9.3	-12.3	-13.6	-14.3	-14.4	-15.1	-15.1	-13.3	-7.6	-2.4	-1.2	0.0	1.3	2.8	3.9	4.6	4.9	5.0	3.6	-0.2	-2.4	-4.2	-6.1	-7.3	-4.7	5.0	-15.1
Avg	-6.3	-7.1	-7.9	-8.6	-8.9	-9.3	-9.6	-9.1	-7.2	-4.5	-2.0	0.3	1.8	2.7	3.1	3.1	3.0	2.3	0.6	-1.3	-2.6	-3.8	-4.9	-5.4	-3.4	4.0	-11.2
Max	7.7	3.7	3.6	1.9	-0.4	1.7	1.4	1.9	5.3	7.3	8.9	8.2	10.0	10.4	11.1	11.6	11.8	12.2	11.1	9.5	10.1	9.1	8.8	8.8	7.1	12.2	-0.4
Min	-18.5	-18.8	-19.3	-19.9	-20.3	-20.8	-22.0	-21.8	-20.0	-15.6	-11.3	-7.4	-7.0	-6.5	-6.2	-5.2	-4.7	-4.4	-8.0	-10.0	-12.6	-14.6	-16.6	-16.9	-11.9	-3.9	-22.0

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-2 M Delta Temperature (Degrees Celsius)
January 2021

A-16

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	0.46	0.51	0.41	0.63	0.73	0.95	2.12	2.46	1.91	0.81	0.56	0.07	-0.33	-0.20	0.00	0.59	0.83	1.22	1.31	1.29	0.57	1.19	0.09	0.24	0.77	2.46	-0.33
2	0.21	0.21	0.09	0.11	0.26	0.68	0.94	0.49	0.14	0.06	0.00	-0.03	-0.09	-0.23	-0.07	0.13	0.53	0.74	0.81	0.39	0.28	0.66	1.06	0.73	0.34	1.06	-0.23
3	0.90	0.89	0.64	0.92	0.44	0.18	0.19	0.21	0.14	0.11	0.05	-0.11	0.00	-0.03	-0.02	0.09	0.28	0.50	0.52	0.63	0.88	0.50	0.35	0.32	0.36	0.92	-0.11
4	0.22	0.22	0.59	1.41	0.78	0.52	1.17	1.09	0.98	0.37	0.09	0.05	0.04	0.06	0.09	0.17	0.09	0.11	0.16	0.11	0.13	0.19	0.46	0.29	0.39	1.41	0.04
5	0.10	0.73	0.25	0.18	0.14	0.16	0.16	0.18	0.47	0.55	-0.03	-0.12	-0.17	-0.31	-0.15	-0.01	0.80	1.49	1.22	1.23	1.48	0.86	1.70	1.73	0.53	1.73	-0.31
6	0.82	1.03	1.15	1.70	1.63	1.38	1.75	1.43	1.36	0.57	0.30	-0.18	-0.27	-0.29	-0.22	-0.08	0.77	1.38	1.31	1.63	0.84	0.80	0.73	0.69	0.84	1.75	-0.29
7	0.56	0.50	0.37	0.35	0.10	0.22	0.07	0.00	-0.03	-0.18	-0.29	-0.31	-0.34	-0.27	-0.23	-0.10	0.02	0.04	0.16	0.21	0.06	0.03	-0.01	0.01	0.04	0.56	-0.34
8	0.02	0.00	0.01	0.04	0.15	0.86	0.61	0.34	0.17	0.04	-0.08	-0.13	-0.14	-0.08	-0.04	-0.04	0.62	1.76	2.38	2.03	1.15	0.22	0.45	1.12	0.48	2.38	-0.14
9	1.55	1.41	1.50	1.23	0.76	0.44	1.05	1.39	1.60	0.67	0.03	-0.58	0.26	-0.65	-0.40	-0.27	0.73	0.80	1.90	2.03	3.08	2.36	2.38	2.44	1.07	3.08	-0.65
10	2.26	2.78	3.24	2.18	3.11	3.08	2.80	2.89	2.29	0.39	0.00	-0.16	0.16	-0.07	-0.03	-0.06	0.78	1.04	1.55	1.32	1.25	0.95	1.33	1.73	1.45	3.24	-0.16
11	2.09	1.97	2.30	1.91	2.69	2.21	2.20	2.30	2.40	1.51	1.01	0.19	0.20	0.76	0.20	0.57	1.24	1.06	1.98	1.67	1.87	1.72	1.55	1.78	1.56	2.69	0.19
12	1.11	1.49	1.36	0.90	0.92	1.33	1.19	1.15	1.24	1.27	0.20	0.12	0.10	0.16	0.17	0.24	0.28	0.21	0.29	0.27	0.47	0.29	0.37	0.66	0.66	1.49	0.10
13	0.65	0.96	0.52	0.46	0.26	0.30	0.31	0.35	0.25	0.20	0.09	0.18	0.19	0.24	0.26	0.23	0.22	0.25	0.20	0.17	0.16	0.08	0.03	0.15	0.28	0.96	0.03
14	0.14	0.14	0.22	0.50	0.56	0.31	0.35	0.64	0.86	0.12	-0.03	-0.15	-0.10	-0.05	0.03	0.22	0.62	1.30	0.94	1.85	1.57	1.34	1.35	0.98	0.57	1.85	-0.15
15	1.73	1.45	1.25	1.35	1.31	1.64	1.64	1.52	1.00	0.35	0.02	-0.09	0.53	0.52	0.39	0.19	0.15	0.16	0.15	0.13	0.14	0.23	0.83	0.77	0.72	1.73	-0.09
16	1.06	1.34	1.03	1.10	0.49	1.37	1.08	1.72	0.92	0.87	0.16	-0.10	-0.09	-0.04	-0.04	0.04	0.83	2.25	1.31	1.89	0.95	0.82	0.56	0.56	0.84	2.25	-0.10
17	0.88	1.08	1.00	1.29	1.65	1.74	0.35	0.46	0.13	0.26	0.15	0.08	0.03	0.04	0.06	0.05	0.13	0.15	0.12	0.10	0.07	0.04	0.04	0.06	0.42	1.74	0.03
18	0.12	0.02	0.01	0.02	0.01	0.00	-0.01	0.00	0.02	0.02	-0.03	-0.02	-0.13	-0.02	-0.05	0.01	0.12	0.17	0.20	0.34	0.42	0.82	0.39	0.30	0.11	0.82	-0.13
19	0.50	0.81	2.40	1.78	1.84	1.88	1.53	1.96	2.23	1.87	1.43	0.77	1.81	0.90	0.24	0.59	0.61	1.42	1.77	1.05	1.22	1.15	1.02	0.73	1.31	2.40	0.24
20	1.11	0.52	0.64	1.11	0.56	0.51	0.68	1.27	2.98	2.99	0.32	0.35	0.36	0.30	0.37	0.66	0.65	0.98	1.77	1.44	0.61	1.25	3.24	1.70	1.10	3.24	0.30
21	0.77	1.58	1.42	1.78	2.12	1.83	0.67	0.75	0.95	0.60	0.38	-0.09	-0.13	-0.18	-0.07	-0.15	0.01	0.00	0.06	0.12	0.06	0.07	0.25	0.80	0.57	2.12	-0.18
22	0.49	0.80	0.55	0.66	0.92	1.17	1.19	0.03	-0.05	-0.15	-0.33	-0.25	-0.60	0.07	-0.56	-0.10	0.87	2.26	1.25	1.79	2.46	2.24	1.97	1.72	0.77	2.46	-0.60
23	2.48	2.79	2.34	2.40	2.31	2.43	2.38	1.02	0.54	-0.07	-0.21	-0.29	0.00	-0.09	-0.25	-0.44	0.31	2.38	1.65	1.87	2.29	2.13	2.27	2.17	1.35	2.79	-0.44
24	1.76	1.71	1.73	1.23	0.93	1.02	1.16	1.87	1.70	0.82	0.59	0.58	0.51	0.14	0.30	0.27	0.55	1.99	1.31	0.95	0.48	2.01	1.21	1.81	1.11	2.01	0.14
25	1.28	2.12	1.53	1.66	1.91	1.50	1.00	1.24	1.03	0.65	0.27	0.20	0.31	0.13	0.12	0.23	0.33	0.34	0.25	0.06	0.10	0.28	0.27	0.40	0.72	2.12	0.06
26	0.50	0.35	0.41	0.37	0.32	0.20	0.13	1.09	2.32	1.81	0.20	0.00	-0.03	-0.10	-0.19	0.09	0.64	1.37	0.58	1.52	2.47	2.64	2.31	2.12	0.88	2.64	-0.19
27	1.95	1.80	2.09	2.12	2.62	2.77	2.62	2.35	1.89	1.68	1.01	1.75	1.06	0.20	0.18	0.12	0.28	0.35	0.27	0.38	0.73	0.91	0.89	0.99	1.29	2.77	0.12
28	1.50	1.56	1.31	0.90	0.97	0.60	0.86	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	1.10	1.56	0.60
29	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
30	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
31	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	0.13	0.09	0.19	0.43	1.35	1.60	1.35	1.93	2.02	2.30	2.51	2.59	1.37	2.59	0.09
Avg	0.97	1.10	1.08	1.08	1.09	1.12	1.08	1.12	1.09	0.67	0.22	0.06	0.12	0.04	0.01	0.13	0.52	0.98	0.96	1.01	0.99	1.00	1.06	1.06	0.77	2.03	-0.09
Max	2.48	2.79	3.24	2.40	3.11	3.08	2.80	2.89	2.98	2.99	1.43	1.75	1.81	0.90	0.39	0.66	1.35	2.38	2.38	2.03	3.08	2.64	3.24	2.59	1.56	3.24	0.60
Min	0.02	0.00	0.01	0.02	0.01	0.00	-0.01	0.00	-0.05	-0.18	-0.33	-0.58	-0.60	-0.65	-0.56	-0.44	0.01	0.00	0.06	0.06	0.06	0.03	-0.01	0.01	0.04	0.56	-0.65

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-2 M Delta Temperature (Degrees Celsius)
February 2021

A-17

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	1.73	2.14	1.64	2.04	2.10	2.09	1.73	2.56	2.01	1.26	0.83	0.41	0.16	0.12	0.26	0.49	0.34	0.78	0.96	1.57	1.34	1.46	1.20	0.73	1.25	2.56	0.12
2	0.93	0.96	0.93	2.59	3.51	1.91	1.44	2.44	2.24	2.13	0.23	0.20	0.28	0.29	0.36	0.41	0.45	0.59	0.46	0.43	0.43	0.42	0.18	-0.02	0.99	3.51	-0.02
3	0.01	0.07	0.36	0.40	0.25	0.52	0.67	1.11	1.17	0.27	0.21	0.11	0.19	0.04	0.05	0.45	0.64	0.40	0.32	0.54	0.45	0.42	0.39	0.73	0.41	1.17	0.01
4	0.92	0.49	0.30	0.65	0.30	0.24	0.25	0.30	0.31	0.18	0.09	0.09	0.07	0.06	0.09	0.09	0.06	0.03	0.10	0.07	0.16	0.09	0.07	0.16	0.22	0.92	0.03
5	0.26	0.05	-0.01	-0.01	-0.01	-0.02	-0.03	-0.03	-0.14	-0.21	-0.16	-0.27	-0.10	-0.08	-0.03	0.00	0.03	0.10	0.13	0.07	0.01	0.07	0.11	-0.03	-0.01	0.26	-0.27
6	-0.10	-0.14	-0.05	-0.10	-0.12	-0.11	-0.12	-0.13	-0.15	-0.14	-0.35	-0.29	-0.23	-0.33	-0.27	-0.16	0.03	0.00	-0.11	-0.16	-0.18	-0.17	-0.16	-0.12	-0.15	0.03	-0.35
7	-0.11	-0.10	-0.09	-0.07	-0.06	-0.03	-0.14	-0.18	-0.18	-0.37	-0.49	-0.64	-0.84	-0.86	-0.99	-0.79	-0.16	-0.08	-0.05	0.75	0.65	0.66	0.91	0.98	-0.09	0.98	-0.99
8	0.29	0.42	0.53	0.22	0.41	0.53	-0.11	-0.10	0.29	-0.11	-0.33	-0.40	-0.49	-0.31	-0.20	-0.18	-0.15	-0.10	-0.14	-0.14	-0.16	-0.13	-0.10	-0.05	-0.02	0.53	-0.49
9	-0.14	-0.13	-0.12	-0.14	-0.14	-0.14	-0.15	-0.13	-0.21	-0.27	-0.41	-0.41	-0.48	-0.25	-0.33	-0.20	-0.34	-0.12	-0.12	-0.06	0.22	0.28	0.11	0.12	-0.15	0.28	-0.48
10	0.08	0.00	0.02	-0.05	-0.01	0.04	-0.04	0.03	-0.10	-0.16	-0.18	-0.72	-0.83	-0.58	-0.38	-0.25	-0.19	0.03	0.45	0.07	-0.10	-0.13	-0.12	-0.12	-0.14	0.45	-0.83
11	-0.09	-0.10	-0.09	0.01	0.31	0.61	0.67	0.57	0.36	-0.15	-0.41	-0.39	-0.07	-0.12	-0.17	-0.11	0.03	0.49	0.26	0.38	1.14	1.13	1.24	1.14	0.28	1.24	-0.41
12	1.09	1.00	1.02	1.03	1.13	0.99	0.95	0.99	1.03	0.55	0.08	0.65	-0.38	-0.27	-0.01	0.09	0.25	0.69	1.39	1.26	0.76	0.94	1.36	1.56	0.76	1.56	-0.38
13	1.69	1.48	1.32	1.30	1.08	1.39	1.26	0.97	0.85	0.54	-0.48	0.02	-0.29	-1.25	-0.07	0.07	-0.01	0.21	0.61	0.85	0.48	0.28	0.56	1.03	0.58	1.69	-1.25
14	1.00	0.86	0.69	0.68	0.98	0.82	0.41	0.10	-0.17	0.13	-0.06	-0.07	-0.10	-0.10	-0.20	-0.28	-0.32	-0.15	-0.06	0.09	0.10	0.07	-0.12	-0.06	0.18	1.00	-0.32
15	-0.07	-0.07	-0.03	-0.13	-0.08	0.44	1.40	0.72	0.17	0.41	0.70	-0.06	-0.04	-0.05	-0.05	-0.05	-0.03	0.01	0.02	0.05	0.07	0.10	0.44	0.38	0.18	1.40	-0.13
16	0.46	0.24	0.28	0.18	0.20	0.06	0.07	0.05	-0.03	-0.06	-0.07	-0.03	-0.09	-0.02	-0.05	-0.01	0.06	0.10	0.15	0.08	0.20	0.55	0.60	0.66	0.15	0.66	-0.09
17	0.63	0.59	0.66	0.24	0.32	0.48	0.45	0.91	1.31	1.11	-0.05	-0.09	-0.07	0.11	0.08	-0.01	0.00	0.03	0.14	0.23	0.45	0.29	0.28	0.33	0.35	1.31	-0.09
18	0.31	0.34	0.36	0.37	0.38	0.33	0.45	0.64	2.01	0.99	0.97	0.24	-0.03	0.14	-0.38	-0.25	1.43	2.30	1.51	1.06	1.44	1.73	1.19	0.80	0.76	2.30	-0.38
19	0.70	0.29	0.07	0.07	0.06	0.26	0.39	0.26	0.57	0.99	0.10	0.00	0.04	0.09	0.04	0.06	0.35	1.13	0.65	0.43	0.45	0.43	1.45	1.07	0.41	1.45	0.00
20	1.36	1.23	1.14	1.38	1.65	1.63	1.57	0.83	0.70	0.66	1.58	0.54	0.05	0.04	0.08	0.09	0.26	0.28	0.47	0.69	0.38	0.29	0.25	0.37	0.73	1.65	0.04
21	0.36	0.26	0.30	0.24	0.09	0.04	0.07	0.18	0.09	0.07	0.01	0.02	0.08	0.00	0.14	0.12	0.25	0.25	0.26	0.26	0.28	0.40	0.31	0.29	0.18	0.40	0.00
22	0.10	0.09	0.12	0.03	0.16	-0.01	-0.08	0.17	0.21	0.27	0.48	0.54	0.37	0.42	0.07	0.04	0.31	0.14	-0.30	0.17	0.11	0.02	0.00	-0.02	0.14	0.54	-0.30
23	0.01	0.34	0.32	0.27	0.40	0.37	0.51	0.57	0.16	0.05	0.07	0.11	0.10	0.22	0.17	0.01	0.02	0.15	0.25	0.28	0.56	1.21	0.27	0.31	0.28	1.21	0.01
24	1.20	0.85	1.22	1.18	1.59	1.70	1.18	0.39	0.44	0.27	0.57	-0.30	-0.12	-0.19	-0.28	-0.17	0.04	0.24	1.09	1.15	1.40	2.74	2.36	1.61	0.84	2.74	-0.30
25	1.70	1.80	1.23	1.41	1.71	2.51	1.80	1.41	1.22	1.81	0.88	0.47	0.30	0.10	-0.01	-0.01	-0.19	0.00	-0.01	0.01	0.19	-0.34	-0.41	-0.10	0.73	2.51	-0.41
26	-0.15	-0.27	0.08	-0.08	-0.55	-0.58	-0.60	-0.56	-0.36	-0.10	-0.23	-0.23	-0.29	0.00	-0.01	-0.18	0.04	0.15	0.33	0.73	0.87	0.73	0.35	0.41	-0.02	0.87	-0.60
27	0.67	1.06	1.13	0.53	0.51	0.48	0.51	0.98	1.22	2.48	0.75	-0.58	-0.63	-0.56	-1.30	-0.30	0.04	0.78	0.23	0.52	1.39	1.39	1.55	1.49	0.60	2.48	-1.30
28	1.70	0.68	0.55	0.11	-0.05	0.21	0.74	0.72	1.22	0.05	-0.06	0.12	0.08	-0.32	0.00	0.01	-0.09	-0.06	0.07	0.10	0.44	1.06	1.44	1.34	0.42	1.70	-0.32
Avg	0.59	0.52	0.50	0.51	0.58	0.60	0.54	0.56	0.58	0.45	0.15	-0.03	-0.12	-0.13	-0.12	-0.04	0.11	0.30	0.32	0.41	0.48	0.57	0.56	0.54	0.35	1.34	-0.34
Max	1.73	2.14	1.64	2.59	3.51	2.51	1.80	2.56	2.24	2.48	1.58	0.65	0.37	0.42	0.36	0.49	1.43	2.30	1.51	1.57	1.44	2.74	2.36	1.61	1.25	3.51	0.12
Min	-0.15	-0.27	-0.12	-0.14	-0.55	-0.58	-0.60	-0.56	-0.36	-0.37	-0.49	-0.72	-0.84	-1.25	-1.30	-0.79	-0.34	-0.15	-0.30	-0.16	-0.18	-0.34	-0.41	-0.12	-0.15	0.03	-1.30

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-2 M Delta Temperature (Degrees Celsius)
March 2021

A-18

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	1.46	1.83	1.55	1.32	1.08	1.58	2.10	2.16	2.31	1.00	2.31	1.00	0.60	0.46	0.64	0.98	1.70	2.28	1.57	1.55	1.15	1.56	1.92	1.74	1.49	2.31	0.46
2	1.36	1.43	2.04	1.79	2.39	2.12	2.11	1.53	1.35	1.10	0.01	-0.18	-0.50	-0.33	0.18	0.22	0.33	0.26	0.03	0.73	0.98	1.19	1.94	2.28	1.02	2.39	-0.50
3	1.82	2.04	1.78	2.02	1.72	1.51	1.55	1.86	1.33	1.14	1.44	0.42	-0.06	0.10	0.40	0.78	1.65	1.71	0.90	0.77	1.47	1.86	2.04	2.12	1.35	2.12	-0.06
4	3.10	2.78	2.80	1.96	2.01	1.92	2.30	1.96	1.86	0.72	0.62	0.10	0.92	-0.52	0.03	0.07	0.50	0.39	1.36	0.64	1.00	1.90	2.65	2.71	1.41	3.10	-0.52
5	2.56	2.00	2.41	2.35	1.89	2.19	2.27	1.69	1.52	1.12	0.84	1.84	1.05	1.61	1.46	1.66	1.46	1.78	0.94	0.69	1.46	1.56	1.69	1.25	1.64	2.56	0.69
6	1.30	1.99	2.22	2.06	2.93	1.84	1.51	1.87	1.73	1.47	1.28	0.62	0.55	0.24	0.21	0.13	0.48	0.62	0.20	0.03	0.29	0.40	0.50	0.81	1.05	2.93	0.03
7	1.04	0.45	0.57	0.93	0.44	0.26	0.27	0.27	-0.03	-0.51	-0.21	-0.14	-0.18	-0.25	-0.19	0.00	0.15	0.22	0.87	0.28	0.17	0.16	0.84	1.17	0.27	1.17	-0.51
8	1.35	1.41	1.48	1.05	1.54	1.24	1.30	0.67	0.88	0.12	-0.25	-0.27	-0.15	-0.04	0.05	0.08	0.36	0.22	0.18	-0.03	-0.05	-0.01	0.00	-0.12	0.46	1.54	-0.27
9	0.23	0.34	0.12	-0.12	0.14	0.00	0.02	-0.03	-0.19	-0.68	-0.65	-0.57	-0.79	-0.41	-0.27	-0.09	0.05	0.53	2.25	1.78	1.74	1.63	2.28	1.64	0.37	2.28	-0.79
10	1.84	1.81	1.83	1.99	2.26	2.18	1.71	2.18	1.43	0.83	0.21	0.16	-0.42	-0.79	-0.66	-0.37	0.26	0.58	1.78	1.63	1.50	1.65	1.48	2.14	1.13	2.26	-0.79
11	1.79	1.79	2.03	1.80	1.96	1.24	1.83	1.77	0.87	0.29	0.18	-0.07	-0.33	-0.26	-0.11	-0.33	-0.33	0.27	1.78	2.63	2.59	2.53	1.85	1.99	1.16	2.63	-0.33
12	1.90	1.82	1.82	2.24	2.17	1.99	2.33	1.81	0.86	0.67	0.01	0.18	-0.21	-0.14	-0.43	-0.30	0.21	0.59	1.39	1.92	2.32	2.07	2.43	1.72	1.22	2.43	-0.43
13	2.09	1.47	1.77	1.58	2.01	1.74	1.95	1.41	1.24	0.15	0.13	0.14	-0.27	0.37	-0.20	0.15	1.11	1.59	0.91	0.86	1.36	1.72	2.31	2.51	1.17	2.51	-0.27
14	2.98	3.15	2.58	2.02	2.15	1.62	0.83	0.90	0.85	0.35	0.45	0.59	0.61	0.57	0.41	0.33	0.24	0.17	0.34	0.84	1.07	0.71	0.43	0.55	1.03	3.15	0.17
15	0.67	0.91	0.80	1.48	1.19	1.57	1.21	1.19	0.59	-0.06	-0.08	0.24	0.53	0.70	0.47	0.46	0.42	0.39	0.23	0.12	0.11	0.08	0.20	0.23	0.57	1.57	-0.08
16	0.23	0.30	0.33	0.10	0.17	0.20	0.19	0.15	0.12	-0.58	-0.98	-0.36	-0.50	-0.28	-0.36	-0.09	0.14	0.22	0.64	0.64	0.73	0.37	0.87	0.83	0.13	0.87	-0.98
17	0.84	1.27	1.91	1.52	1.48	1.93	1.33	1.23	-0.33	-0.38	-0.44	-0.31	-0.28	-0.31	-0.07	0.09	0.38	1.02	1.24	0.82	1.22	0.67	0.65	1.35	0.70	1.93	-0.44
18	1.76	1.48	1.61	1.81	2.25	1.82	1.73	1.41	-0.19	0.11	0.36	0.16	0.38	0.25	0.30	0.26	0.49	1.51	1.67	1.21	1.49	1.13	1.33	1.95	1.10	2.25	-0.19
19	1.68	1.41	1.76	1.69	1.35	1.14	1.34	0.95	0.43	0.61	0.37	0.48	-0.02	0.05	0.28	0.33	-0.05	0.29	0.49	0.44	0.28	0.25	0.37	0.41	0.68	1.76	-0.05
20	0.49	0.50	0.34	0.41	0.31	0.31	0.28	0.23	-0.09	-0.22	-0.27	-0.23	-0.06	0.01	-0.27	-0.12	-0.08	0.22	0.42	0.89	0.97	1.59	1.08	0.64	0.31	1.59	-0.27
21	0.54	0.70	0.97	1.30	0.62	0.61	1.06	-0.04	-0.88	-0.55	-0.45	-0.22	-0.24	-0.27	-0.10	-0.06	0.04	0.18	0.24	0.12	0.25	0.20	0.15	0.09	0.18	1.30	-0.88
22	0.03	0.05	0.06	0.20	0.27	0.19	0.25	0.06	-0.16	-0.23	-0.32	-0.37	-0.24	-0.26	-0.28	-0.33	-0.14	0.19	0.50	0.93	0.57	0.80	0.40	0.48	0.11	0.93	-0.37
23	0.25	0.20	0.17	0.25	0.27	0.29	0.01	-0.07	-0.12	-0.33	-0.30	-0.32	-0.49	-0.59	-0.87	-0.75	-0.53	-0.25	0.42	1.02	0.97	1.08	0.83	1.20	0.10	1.20	-0.87
24	1.14	0.57	-0.02	0.57	0.24	0.16	0.52	0.14	-0.09	-0.11	-0.30	-0.51	-0.40	-0.41	-0.28	-0.11	-0.06	0.12	0.08	-0.03	0.06	0.14	0.08	0.09	0.07	1.14	-0.51
25	0.07	0.17	0.21	0.21	0.16	0.26	0.52	0.49	-0.14	-0.33	-0.26	-0.39	-0.27	-0.27	-0.19	-0.20	-0.13	-0.04	0.21	0.67	0.72	0.54	0.29	-0.15	0.09	0.72	-0.39
26	-0.07	0.33	0.41	0.83	0.68	0.52	-0.01	-0.14	-0.43	-0.50	-0.37	-0.21	-0.30	-0.25	-0.10	-0.07	0.04	0.13	0.17	0.15	0.18	0.18	0.14	0.15	0.06	0.83	-0.50
27	0.37	0.15	0.14	0.08	0.12	0.16	0.14	-0.12	-0.13	-0.23	-0.05	-0.08	-0.10	-0.15	-0.15	0.08	0.14	0.21	0.65	0.91	1.63	1.57	0.87	0.50	0.28	1.63	-0.23
28	0.47	0.61	0.87	1.33	1.76	1.31	1.73	1.02	0.15	0.07	0.12	0.33	0.18	0.49	0.51	0.58	0.62	0.62	0.81	1.09	0.81	0.96	0.68	0.70	0.74	1.76	0.07
29	0.65	0.17	-0.01	0.08	0.11	0.09	0.11	-0.03	-0.15	-0.19	-0.18	-0.21	-0.19	-0.42	-0.28	-0.39	-0.15	-0.01	0.09	0.37	0.16	-0.03	-0.06	-0.09	-0.02	0.65	-0.42
30	0.30	0.60	0.31	0.21	0.10	0.95	0.78	0.51	-0.61	-0.67	-0.38	-0.48	-0.36	-0.46	-0.48	-0.43	-0.22	0.04	0.21	0.34	0.29	0.54	0.67	1.08	0.12	1.08	-0.67
31	1.23	1.27	1.27	1.18	1.14	1.31	1.07	0.56	0.44	-0.28	-0.52	-0.60	-0.71	-0.74	-0.62	-0.47	-0.27	-0.05	0.50	0.98	0.57	0.70	1.54	1.37	0.45	1.54	-0.74
Avg	1.14	1.13	1.17	1.17	1.19	1.10	1.11	0.89	0.47	0.13	0.07	0.02	-0.07	-0.07	-0.03	0.07	0.28	0.52	0.74	0.81	0.91	0.96	1.05	1.08	0.66	1.81	-0.34
Max	3.10	3.15	2.80	2.35	2.93	2.19	2.33	2.18	2.31	1.47	2.31	1.84	1.05	1.61	1.46	1.66	1.70	2.28	2.25	2.63	2.59	2.53	2.65	2.71	1.64	3.15	0.69
Min	-0.07	0.05	-0.02	-0.12	0.10	0.00	-0.01	-0.14	-0.88	-0.68	-0.98	-0.60	-0.79	-0.79	-0.87	-0.75	-0.53	-0.25	0.03	-0.03	-0.05	-0.03	-0.06	-0.15	-0.02	0.65	-0.98

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Solar Radiation (Watts per Square Meter)
January 2021

[illegible]

A-19

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Solar Radiation (Watts per Square Meter)
February 2021

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	0	0	0	0	0	0	0	2	58	271	324	427	444	465	322	151	140	8	0	0	0	0	0	0	109	465	0
2	0	0	0	0	0	0	0	2	82	204	422	473	512	474	343	121	53	9	0	0	0	0	0	0	112	512	0
3	0	0	0	0	0	0	0	2	72	214	276	480	280	256	133	128	43	4	0	0	0	0	0	0	79	480	0
4	0	0	0	0	0	0	0	2	48	139	204	281	228	228	181	87	31	3	0	0	0	0	0	0	60	281	0
5	0	0	0	0	0	0	0	0	12	38	57	95	124	142	109	72	27	4	0	0	0	0	0	0	28	142	0
6	0	0	0	0	0	0	0	1	17	39	55	66	62	69	46	37	14	1	0	0	0	0	0	0	17	69	0
7	0	0	0	0	0	0	0	0	10	37	61	78	91	133	96	61	34	3	0	0	0	0	0	0	25	133	0
8	0	0	0	0	0	0	0	1	21	54	85	144	150	143	108	76	45	8	0	0	0	0	0	0	35	150	0
9	0	0	0	0	0	0	0	1	19	55	104	164	203	265	326	123	67	7	0	0	0	0	0	0	56	326	0
10	0	0	0	0	0	0	0	1	26	79	128	142	273	393	281	165	97	15	0	0	0	0	0	0	67	393	0
11	0	0	0	0	0	0	0	4	43	129	165	190	366	521	517	313	147	20	0	0	0	0	0	0	101	521	0
12	0	0	0	0	0	0	0	7	57	152	244	436	434	412	406	420	241	68	0	0	0	0	0	0	120	436	0
13	0	0	0	0	0	0	0	8	196	238	309	405	463	484	460	296	129	24	0	0	0	0	0	0	126	484	0
14	0	0	0	0	0	0	0	8	77	206	347	336	366	319	174	118	62	13	0	0	0	0	0	0	84	366	0
15	0	0	0	0	0	0	0	4	34	62	93	105	159	262	185	159	57	9	0	0	0	0	0	0	47	262	0
16	0	0	0	0	0	0	0	3	40	127	218	282	399	336	342	180	78	17	0	0	0	0	0	0	84	399	0
17	0	0	0	0	0	0	0	4	118	160	245	260	350	386	289	219	143	22	0	0	0	0	0	0	92	386	0
18	0	0	0	0	0	0	0	7	116	144	328	522	682	603	532	362	164	28	0	0	0	0	0	0	145	682	0
19	0	0	0	0	0	0	0	12	44	285	279	545	443	319	322	131	118	19	0	0	0	0	0	0	105	545	0
20	0	0	0	0	0	0	0	8	79	233	364	410	472	549	374	195	157	59	0	0	0	0	0	0	121	549	0
21	0	0	0	0	0	0	0	12	68	335	450	444	557	458	382	365	115	25	0	0	0	0	0	0	134	557	0
22	0	0	0	0	0	0	0	17	113	195	380	530	346	365	189	129	78	31	0	0	0	0	0	0	99	530	0
23	0	0	0	1	0	0	0	33	73	192	215	249	515	268	207	180	86	19	0	0	0	0	0	0	85	515	0
24	0	0	0	0	0	0	0	8	107	155	280	414	699	750	576	447	238	94	1	0	0	0	0	0	157	750	0
25	0	0	0	0	0	0	0	27	150	158	188	149	140	167	201	90	149	76	0	0	0	0	0	0	62	201	0
26	0	0	0	0	0	0	0	14	71	145	228	335	488	263	355	247	169	50	0	0	0	0	0	0	99	488	0
27	0	0	0	0	0	0	0	23	39	254	311	456	818	683	578	440	285	29	1	0	0	0	0	0	163	818	0
28	0	0	0	0	0	0	0	30	125	386	499	522	646	651	547	591	213	55	2	0	0	0	0	0	178	651	0
Avg	0	0	0	0	0	0	0	9	68	167	245	319	383	370	306	211	114	26	0	0	0	0	0	0	92	432	0
Max	0	0	0	1	0	0	0	33	196	386	499	545	818	750	578	591	285	94	2	0	0	0	0	0	178	818	0
Min	0	0	0	0	0	0	0	0	10	37	55	66	62	69	46	37	14	1	0	0	0	0	0	0	17	69	0

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Solar Radiation (Watts per Square Meter)
March 2021

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	0	0	0	0	0	0	1	59	225	317	354	587	557	649	553	300	301	126	3	0	0	0	0	0	168	649	0
2	0	0	0	0	0	0	1	21	223	323	258	466	760	404	188	163	110	33	2	0	0	0	0	0	123	760	0
3	0	0	0	0	0	0	1	49	244	407	552	661	692	665	595	452	310	122	3	0	0	0	0	0	198	692	0
4	0	0	0	0	0	0	0	66	243	403	546	657	690	677	594	454	313	121	4	0	0	0	0	0	199	690	0
5	0	0	0	0	0	0	2	38	136	302	409	424	583	559	557	473	282	105	3	0	0	0	0	0	161	583	0
6	0	0	0	0	0	0	0	32	96	205	284	393	596	635	601	275	116	20	1	0	0	0	0	0	136	635	0
7	0	0	0	0	0	0	0	24	130	240	254	651	439	616	388	287	222	114	5	0	0	0	0	0	140	651	0
8	0	0	0	0	0	0	1	24	78	165	151	347	290	204	218	288	112	30	1	0	0	0	0	0	80	347	0
9	0	0	0	0	0	0	1	15	69	171	438	453	513	467	553	513	259	138	8	0	0	0	0	0	150	553	0
10	0	0	0	0	0	0	1	49	164	383	569	684	719	694	632	475	270	70	4	0	0	0	0	0	196	719	0
11	0	0	0	0	0	0	2	47	179	304	456	685	730	712	638	511	345	155	10	0	0	0	0	0	199	730	0
12	0	0	0	0	0	0	3	53	226	435	602	697	731	715	638	511	344	159	12	0	0	0	0	0	214	731	0
13	0	0	0	0	0	0	3	37	160	397	610	707	748	724	647	522	353	169	14	0	0	0	0	0	212	748	0
14	0	0	0	0	0	0	4	42	149	404	594	629	648	528	312	270	376	161	15	0	0	0	0	0	172	648	0
15	0	0	0	0	0	0	5	84	242	469	617	700	711	691	561	343	257	77	10	0	0	0	0	0	199	711	0
16	0	0	0	0	0	0	5	73	198	364	464	702	823	752	702	328	227	145	20	0	0	0	0	0	200	823	0
17	0	0	0	0	0	0	7	139	310	480	631	410	491	719	621	540	366	179	17	0	0	0	0	0	205	719	0
18	0	0	0	0	0	0	10	124	305	481	626	714	724	637	659	534	361	135	13	0	0	0	0	0	222	724	0
19	0	0	0	0	0	0	9	106	291	542	621	251	632	623	462	96	231	79	2	0	0	0	0	0	164	632	0
20	0	0	0	0	0	0	4	36	109	162	265	364	274	324	484	331	200	74	11	0	0	0	0	0	110	484	0
21	0	0	0	0	0	0	12	130	326	484	484	339	427	571	263	237	188	93	9	0	0	0	0	0	148	571	0
22	0	0	0	0	0	0	8	68	173	260	385	463	299	308	356	371	200	118	10	0	0	0	0	0	126	463	0
23	0	0	0	0	0	0	12	56	112	312	487	400	542	658	695	562	393	207	31	0	0	0	0	0	186	695	0
24	0	0	0	0	0	0	17	134	216	303	513	722	641	750	456	195	88	34	3	0	0	0	0	0	170	750	0
25	0	0	0	0	0	0	11	67	125	209	266	313	446	447	343	482	260	141	21	0	0	0	0	0	130	482	0
26	0	0	0	0	0	0	11	76	230	400	373	348	483	393	228	192	115	48	9	0	0	0	0	0	121	483	0
27	0	0	0	0	0	0	10	96	200	315	227	335	401	457	490	309	319	194	26	0	0	0	0	0	141	490	0
28	0	0	0	0	0	0	25	96	378	533	511	387	694	366	409	234	176	267	29	0	0	0	0	0	171	694	0
29	0	0	0	0	0	0	13	68	144	131	259	650	729	584	410	417	240	144	43	0	0	0	0	0	160	729	0
30	0	0	0	0	0	0	20	121	397	429	478	767	503	827	635	336	226	87	43	0	0	0	0	0	203	827	0
31	0	0	0	0	0	0	22	75	191	398	706	798	836	801	718	575	382	230	45	0	0	0	0	0	241	836	0
Avg	0	0	0	0	0	0	7	68	202	346	451	539	592	586	503	373	256	122	14	0	0	0	0	0	169	653	0
Max	0	0	0	0	0	0	25	139	397	542	706	798	836	827	718	575	393	267	45	0	0	0	0	0	241	836	0
Min	0	0	0	0	0	0	0	15	69	131	151	251	274	204	188	96	88	20	1	0	0	0	0	0	80	347	0

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Barometric Pressure (inches of mercury)
January 2021

	<< 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	24.38	24.39	24.40	24.41	24.41	24.41	24.43	24.44	24.44	24.43	24.42	24.40	24.37	24.35	24.34	24.33	24.32	24.32	24.31	24.30	24.28	24.27	24.25	24.23	24.36	24.44	24.23
2	24.22	24.21	24.23	24.24	24.23	24.22	24.22	24.22	24.22	24.24	24.26	24.25	24.24	24.23	24.23	24.24	24.24	24.23	24.23	24.22	24.21	24.19	24.18	24.17	24.22	24.26	24.17
3	24.16	24.14	24.13	24.11	24.09	24.08	24.06	24.06	24.08	24.11	24.10	24.09	24.08	24.09	24.14	24.20	24.23	24.26	24.26	24.28	24.28	24.29	24.30	24.31	24.16	24.31	24.06
4	24.33	24.34	24.34	24.35	24.36	24.36	24.37	24.37	24.36	24.34	24.31	24.29	24.27	24.24	24.22	24.20	24.20	24.19	24.16	24.14	24.12	24.11	24.10	24.11	24.26	24.37	24.10
5	24.12	24.12	24.14	24.16	24.18	24.21	24.24	24.26	24.30	24.35	24.39	24.41	24.41	24.41	24.44	24.46	24.47	24.48	24.49	24.48	24.50	24.50	24.50	24.50	24.36	24.50	24.12
6	24.51	24.50	24.49	24.49	24.48	24.48	24.48	24.47	24.48	24.47	24.46	24.45	24.44	24.43	24.42	24.43	24.42	24.41	24.41	24.41	24.42	24.41	24.40	24.40	24.45	24.51	24.40
7	24.41	24.41	24.41	24.42	24.42	24.42	24.44	24.44	24.45	24.47	24.49	24.49	24.49	24.50	24.52	24.53	24.54	24.55	24.56	24.57	24.58	24.58	24.59	24.61	24.50	24.61	24.41
8	24.62	24.62	24.62	24.62	24.59	24.59	24.59	24.58	24.59	24.59	24.58	24.57	24.54	24.52	24.51	24.50	24.49	24.49	24.51	24.52	24.53	24.53	24.54	24.55	24.56	24.62	24.49
9	24.55	24.55	24.57	24.58	24.59	24.60	24.59	24.60	24.62	24.63	24.63	24.61	24.60	24.60	24.60	24.60	24.60	24.61	24.61	24.61	24.60	24.59	24.58	24.56	24.60	24.63	24.55
10	24.56	24.55	24.54	24.54	24.53	24.52	24.51	24.51	24.52	24.53	24.53	24.51	24.49	24.50	24.50	24.51	24.51	24.52	24.54	24.55	24.56	24.55	24.55	24.56	24.53	24.56	24.49
11	24.55	24.55	24.55	24.54	24.54	24.54	24.54	24.53	24.54	24.54	24.52	24.50	24.48	24.48	24.48	24.48	24.46	24.45	24.46	24.46	24.46	24.46	24.46	24.46	24.50	24.55	24.45
12	24.46	24.45	24.45	24.44	24.42	24.40	24.37	24.35	24.34	24.34	24.35	24.32	24.28	24.26	24.27	24.29	24.31	24.33	24.32	24.32	24.33	24.32	24.31	24.31	24.35	24.46	24.26
13	24.31	24.31	24.28	24.25	24.23	24.20	24.16	24.11	24.09	24.08	24.12	24.12	24.10	24.10	24.12	24.19	24.24	24.28	24.33	24.37	24.41	24.43	24.47	24.49	24.24	24.49	24.08
14	24.50	24.52	24.53	24.55	24.57	24.58	24.59	24.60	24.62	24.63	24.64	24.63	24.63	24.63	24.64	24.65	24.66	24.68	24.70	24.70	24.71	24.71	24.70	24.69	24.63	24.71	24.50
15	24.69	24.69	24.68	24.66	24.64	24.62	24.61	24.60	24.59	24.59	24.58	24.56	24.52	24.50	24.49	24.50	24.50	24.48	24.46	24.46	24.45	24.44	24.46	24.47	24.55	24.69	24.44
16	24.48	24.49	24.50	24.51	24.51	24.51	24.51	24.51	24.53	24.54	24.54	24.55	24.53	24.52	24.51	24.51	24.50	24.49	24.49	24.49	24.50	24.49	24.50	24.49	24.51	24.55	24.48
17	24.48	24.46	24.45	24.45	24.42	24.39	24.38	24.38	24.37	24.35	24.34	24.33	24.30	24.30	24.30	24.29	24.30	24.33	24.34	24.34	24.35	24.36	24.37	24.39	24.37	24.48	24.29
18	24.40	24.41	24.42	24.43	24.44	24.44	24.44	24.45	24.46	24.48	24.49	24.50	24.51	24.52	24.53	24.55	24.56	24.58	24.60	24.62	24.64	24.65	24.67	24.67	24.52	24.67	24.40
19	24.68	24.69	24.69	24.69	24.69	24.68	24.67	24.66	24.66	24.66	24.65	24.62	24.57	24.54	24.51	24.48	24.45	24.43	24.41	24.38	24.37	24.37	24.37	24.36	24.55	24.69	24.36
20	24.35	24.34	24.34	24.33	24.32	24.32	24.34	24.34	24.35	24.35	24.33	24.33	24.31	24.29	24.28	24.27	24.27	24.27	24.27	24.28	24.29	24.30	24.32	24.34	24.31	24.35	24.27
21	24.35	24.36	24.36	24.37	24.36	24.37	24.37	24.38	24.38	24.39	24.38	24.37	24.36	24.34	24.33	24.33	24.34	24.34	24.34	24.34	24.35	24.35	24.35	24.36	24.36	24.39	24.33
22	24.36	24.35	24.35	24.34	24.33	24.32	24.32	24.32	24.31	24.30	24.29	24.26	24.24	24.22	24.22	24.21	24.20	24.21	24.22	24.23	24.23	24.23	24.23	24.22	24.27	24.36	24.20
23	24.21	24.20	24.20	24.20	24.19	24.20	24.20	24.22	24.24	24.25	24.26	24.25	24.23	24.21	24.21	24.21	24.21	24.22	24.23	24.22	24.21	24.20	24.19	24.18	24.21	24.26	24.18
24	24.16	24.15	24.15	24.14	24.13	24.12	24.11	24.10	24.09	24.10	24.10	24.08	24.06	24.04	24.04	24.04	24.04	24.05	24.07	24.07	24.07	24.08	24.09	24.09	24.09	24.16	24.04
25	24.09	24.09	24.09	24.09	24.09	24.09	24.10	24.11	24.12	24.13	24.13	24.12	24.09	24.07	24.07	24.07	24.08	24.09	24.10	24.11	24.11	24.11	24.11	24.11	24.10	24.13	24.07
26	24.10	24.09	24.09	24.09	24.08	24.08	24.09	24.10	24.11	24.11	24.11	24.10	24.08	24.07	24.08	24.08	24.09	24.11	24.13	24.14	24.14	24.15	24.15	24.16	24.11	24.16	24.07
27	24.16	24.16	24.16	24.16	24.16	24.16	24.16	24.16	24.17	24.19	24.18	24.17	24.15	24.15	24.16	24.18	24.18	24.20	24.20	24.22	24.23	24.25	24.25	24.26	24.18	24.26	24.15
28	24.27	24.27	24.28	24.28	24.28	24.27	24.27	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	24.27	24.28	24.27
29	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
30	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
31	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	24.54	24.56	24.52
Avg	24.37	24.37	24.37	24.37	24.37	24.36	24.36	24.37	24.37	24.38	24.38	24.37	24.35	24.35	24.35	24.35	24.36	24.36	24.37	24.37	24.37	24.37	24.38	24.38	24.37	24.45	24.29
Max	24.69	24.69	24.69	24.69	24.69	24.68	24.67	24.66	24.66	24.66	24.65	24.63	24.63	24.63	24.64	24.65	24.66	24.68	24.70	24.70	24.71	24.71	24.70	24.69	24.63	24.71	24.55
Min	24.09	24.09	24.09	24.09	24.08	24.08	24.06	24.06	24.08	24.08	24.10	24.08	24.06	24.04	24.04	24.04	24.04	24.05	24.07	24.07	24.07	24.08	24.09	24.09	24.09	24.13	24.04

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Barometric Pressure (inches of mercury)
February 2021

A-23

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	24.54	24.54	24.53	24.53	24.52	24.51	24.51	24.50	24.50	24.48	24.47	24.45	24.43	24.41	24.40	24.39	24.39	24.38	24.37	24.35	24.34	24.34	24.33	24.33	24.44	24.54	24.33
2	24.33	24.33	24.32	24.31	24.30	24.30	24.29	24.29	24.29	24.29	24.30	24.27	24.23	24.21	24.19	24.18	24.18	24.17	24.16	24.14	24.13	24.13	24.13	24.14	24.23	24.33	24.13
3	24.15	24.16	24.15	24.16	24.16	24.17	24.18	24.18	24.19	24.20	24.20	24.19	24.19	24.19	24.19	24.20	24.21	24.22	24.23	24.25	24.26	24.27	24.28	24.29	24.20	24.29	24.15
4	24.30	24.30	24.31	24.31	24.31	24.31	24.30	24.30	24.31	24.30	24.29	24.28	24.26	24.25	24.24	24.25	24.26	24.26	24.26	24.26	24.26	24.25	24.24	24.23	24.28	24.31	24.23
5	24.22	24.20	24.19	24.16	24.14	24.11	24.09	24.07	24.06	24.06	24.07	24.08	24.07	24.07	24.06	24.05	24.06	24.09	24.11	24.15	24.22	24.27	24.30	24.30	24.13	24.30	24.05
6	24.31	24.30	24.29	24.28	24.25	24.23	24.21	24.19	24.17	24.15	24.11	24.08	24.05	24.01	23.99	23.98	23.98	23.99	24.02	24.04	24.05	24.06	24.07	24.07	24.12	24.31	23.98
7	24.08	24.09	24.10	24.11	24.11	24.11	24.12	24.13	24.14	24.15	24.16	24.16	24.15	24.13	24.12	24.12	24.12	24.12	24.12	24.12	24.12	24.11	24.10	24.09	24.12	24.16	24.08
8	24.09	24.08	24.07	24.07	24.06	24.07	24.07	24.09	24.11	24.13	24.16	24.18	24.19	24.20	24.21	24.22	24.24	24.24	24.25	24.25	24.26	24.26	24.26	24.26	24.17	24.26	24.06
9	24.26	24.26	24.25	24.24	24.23	24.24	24.23	24.24	24.25	24.26	24.26	24.27	24.27	24.27	24.26	24.27	24.27	24.27	24.30	24.30	24.29	24.30	24.29	24.28	24.26	24.30	24.23
10	24.28	24.27	24.26	24.26	24.26	24.25	24.26	24.26	24.27	24.29	24.30	24.30	24.29	24.28	24.27	24.28	24.29	24.29	24.31	24.32	24.33	24.33	24.33	24.35	24.29	24.35	24.25
11	24.35	24.35	24.37	24.38	24.38	24.38	24.38	24.40	24.42	24.45	24.47	24.47	24.47	24.45	24.45	24.44	24.44	24.42	24.41	24.41	24.39	24.38	24.37	24.36	24.41	24.47	24.35
12	24.35	24.35	24.34	24.33	24.32	24.31	24.31	24.31	24.32	24.33	24.34	24.35	24.36	24.34	24.34	24.34	24.36	24.35	24.34	24.33	24.33	24.33	24.32	24.32	24.33	24.36	24.31
13	24.30	24.29	24.29	24.27	24.26	24.25	24.24	24.24	24.25	24.27	24.28	24.29	24.30	24.29	24.29	24.31	24.32	24.32	24.33	24.34	24.34	24.35	24.35	24.35	24.30	24.35	24.24
14	24.35	24.35	24.34	24.31	24.30	24.30	24.30	24.29	24.30	24.31	24.30	24.29	24.27	24.24	24.24	24.23	24.23	24.22	24.22	24.22	24.20	24.19	24.18	24.16	24.26	24.35	24.16
15	24.14	24.13	24.12	24.10	24.08	24.07	24.06	24.05	24.04	24.03	24.00	23.98	23.96	23.93	23.91	23.90	23.90	23.89	23.89	23.89	23.89	23.89	23.90	23.89	23.98	24.14	23.89
16	23.90	23.91	23.92	23.92	23.93	23.94	23.95	23.95	23.97	23.98	23.99	24.00	24.01	24.01	24.02	24.04	24.05	24.05	24.07	24.09	24.09	24.10	24.11	24.12	24.00	24.12	23.90
17	24.13	24.14	24.16	24.17	24.18	24.20	24.22	24.23	24.26	24.28	24.28	24.30	24.30	24.30	24.32	24.34	24.37	24.39	24.41	24.43	24.44	24.45	24.46	24.47	24.30	24.47	24.13
18	24.47	24.47	24.49	24.50	24.50	24.51	24.52	24.52	24.52	24.53	24.52	24.51	24.48	24.47	24.46	24.46	24.45	24.44	24.44	24.42	24.39	24.37	24.34	24.32	24.46	24.53	24.32
19	24.29	24.28	24.26	24.26	24.25	24.25	24.25	24.26	24.26	24.28	24.29	24.29	24.27	24.28	24.27	24.26	24.26	24.23	24.24	24.25	24.23	24.22	24.23	24.24	24.26	24.29	24.22
20	24.23	24.23	24.22	24.21	24.21	24.21	24.20	24.21	24.22	24.23	24.23	24.22	24.22	24.22	24.22	24.22	24.23	24.24	24.26	24.28	24.29	24.29	24.30	24.31	24.24	24.31	24.20
21	24.32	24.32	24.33	24.33	24.33	24.33	24.33	24.33	24.35	24.34	24.34	24.35	24.34	24.34	24.33	24.34	24.33	24.33	24.32	24.33	24.33	24.34	24.36	24.36	24.34	24.36	24.32
22	24.37	24.35	24.34	24.32	24.30	24.30	24.29	24.30	24.32	24.35	24.34	24.34	24.34	24.32	24.31	24.29	24.27	24.24	24.22	24.20	24.17	24.16	24.14	24.12	24.28	24.37	24.12
23	24.10	24.09	24.08	24.08	24.12	24.13	24.15	24.19	24.21	24.22	24.23	24.24	24.25	24.25	24.26	24.27	24.27	24.29	24.31	24.33	24.34	24.35	24.36	24.37	24.23	24.37	24.08
24	24.38	24.39	24.41	24.41	24.43	24.44	24.46	24.49	24.52	24.53	24.54	24.54	24.55	24.55	24.55	24.55	24.56	24.56	24.56	24.57	24.56	24.57	24.57	24.55	24.51	24.57	24.38
25	24.54	24.52	24.51	24.48	24.46	24.43	24.40	24.38	24.37	24.33	24.28	24.25	24.20	24.19	24.16	24.16	24.14	24.12	24.11	24.10	24.08	24.07	24.06	24.05	24.27	24.54	24.05
26	24.04	24.03	24.01	24.01	24.00	23.99	23.98	23.97	23.97	23.97	23.98	23.97	23.97	23.95	23.95	23.95	23.95	23.95	23.98	24.00	24.01	24.02	24.03	24.03	23.99	24.04	23.95
27	24.04	24.05	24.06	24.07	24.08	24.09	24.10	24.12	24.15	24.17	24.17	24.18	24.20	24.20	24.21	24.23	24.25	24.26	24.29	24.31	24.32	24.32	24.33	24.33	24.19	24.33	24.04
28	24.33	24.32	24.32	24.32	24.32	24.32	24.32	24.33	24.34	24.33	24.32	24.32	24.33	24.33	24.34	24.36	24.36	24.37	24.39	24.42	24.43	24.46	24.48	24.49	24.36	24.49	24.32
Avg	24.26	24.25	24.25	24.25	24.24	24.24	24.24	24.24	24.25	24.26	24.26	24.26	24.25	24.24	24.23	24.24	24.24	24.24	24.25	24.25	24.25	24.26	24.26	24.26	24.25	24.34	24.16
Max	24.54	24.54	24.53	24.53	24.52	24.51	24.52	24.52	24.52	24.53	24.54	24.54	24.55	24.55	24.55	24.55	24.56	24.56	24.56	24.57	24.56	24.57	24.57	24.55	24.51	24.57	24.38
Min	23.90	23.91	23.92	23.92	23.93	23.94	23.95	23.95	23.97	23.97	23.98	23.97	23.96	23.93	23.91	23.90	23.90	23.89	23.89	23.89	23.89	23.89	23.90	23.89	23.98	24.04	23.89

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Barometric Pressure (inches of mercury)
March 2021

A-24

	<< 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	24.50	24.51	24.51	24.51	24.52	24.52	24.52	24.51	24.51	24.49	24.48	24.48	24.47	24.45	24.43	24.40	24.39	24.37	24.35	24.34	24.32	24.33	24.33	24.32	24.44	24.52	24.32	
	24.32	24.32	24.32	24.33	24.34	24.35	24.34	24.33	24.32	24.31	24.31	24.30	24.30	24.27	24.26	24.25	24.24	24.24	24.25	24.25	24.25	24.25	24.24	24.25	24.29	24.35	24.24	
	24.26	24.27	24.27	24.28	24.29	24.30	24.31	24.32	24.33	24.32	24.33	24.33	24.34	24.33	24.32	24.32	24.32	24.32	24.32	24.32	24.33	24.34	24.36	24.36	24.32	24.36	24.26	
	24.37	24.37	24.38	24.38	24.39	24.39	24.40	24.41	24.42	24.42	24.44	24.45	24.47	24.48	24.49	24.50	24.52	24.52	24.52	24.52	24.53	24.54	24.57	24.58	24.58	24.46	24.58	24.37
	24.59	24.60	24.61	24.61	24.61	24.61	24.61	24.60	24.60	24.59	24.58	24.58	24.57	24.54	24.53	24.52	24.51	24.49	24.47	24.46	24.44	24.43	24.41	24.40	24.54	24.61	24.40	
6	24.38	24.37	24.35	24.32	24.30	24.28	24.24	24.23	24.20	24.18	24.17	24.16	24.14	24.12	24.10	24.11	24.13	24.17	24.20	24.22	24.23	24.25	24.27	24.28	24.22	24.38	24.10	
	24.29	24.30	24.31	24.31	24.32	24.34	24.34	24.35	24.36	24.38	24.39	24.38	24.38	24.37	24.36	24.37	24.37	24.38	24.38	24.39	24.39	24.39	24.40	24.40	24.36	24.40	24.29	
	24.40	24.40	24.40	24.39	24.39	24.39	24.38	24.38	24.36	24.34	24.32	24.30	24.27	24.25	24.23	24.21	24.20	24.20	24.21	24.22	24.21	24.21	24.21	24.21	24.30	24.40	24.20	
	24.21	24.21	24.21	24.21	24.21	24.23	24.24	24.26	24.28	24.30	24.31	24.32	24.31	24.30	24.30	24.30	24.29	24.28	24.27	24.28	24.28	24.28	24.26	24.25	24.27	24.32	24.21	
	24.23	24.23	24.23	24.22	24.21	24.22	24.22	24.22	24.22	24.22	24.22	24.22	24.23	24.23	24.23	24.24	24.24	24.24	24.26	24.29	24.31	24.32	24.34	24.35	24.25	24.35	24.21	
11	24.36	24.37	24.37	24.36	24.37	24.37	24.38	24.39	24.41	24.41	24.41	24.40	24.41	24.40	24.39	24.39	24.39	24.39	24.40	24.42	24.44	24.45	24.47	24.47	24.40	24.47	24.36	
	24.48	24.49	24.49	24.48	24.48	24.49	24.49	24.51	24.52	24.51	24.50	24.51	24.50	24.50	24.49	24.49	24.48	24.48	24.48	24.49	24.51	24.52	24.53	24.53	24.50	24.53	24.48	
	24.54	24.54	24.54	24.53	24.53	24.53	24.54	24.56	24.57	24.56	24.55	24.55	24.55	24.54	24.53	24.53	24.53	24.53	24.53	24.54	24.54	24.54	24.54	24.53	24.54	24.57	24.53	
	24.51	24.50	24.47	24.46	24.46	24.46	24.46	24.46	24.45	24.45	24.43	24.40	24.38	24.35	24.34	24.33	24.32	24.30	24.28	24.26	24.25	24.24	24.22	24.20	24.37	24.51	24.20	
	24.19	24.19	24.18	24.17	24.16	24.15	24.16	24.17	24.17	24.17	24.18	24.17	24.17	24.16	24.17	24.19	24.20	24.22	24.25	24.27	24.29	24.29	24.29	24.29	24.20	24.29	24.15	
16	24.29	24.29	24.30	24.30	24.30	24.31	24.31	24.32	24.32	24.34	24.33	24.32	24.32	24.32	24.31	24.31	24.32	24.33	24.33	24.34	24.35	24.36	24.37	24.37	24.32	24.37	24.29	
	24.39	24.40	24.41	24.42	24.43	24.44	24.45	24.45	24.45	24.46	24.46	24.46	24.46	24.45	24.44	24.44	24.43	24.43	24.42	24.42	24.43	24.44	24.44	24.44	24.44	24.46	24.39	
	24.44	24.44	24.45	24.45	24.45	24.46	24.46	24.45	24.44	24.45	24.45	24.45	24.44	24.42	24.41	24.40	24.39	24.39	24.38	24.37	24.37	24.38	24.38	24.42	24.46	24.37		
	24.38	24.38	24.38	24.37	24.36	24.36	24.35	24.33	24.33	24.33	24.33	24.35	24.34	24.32	24.31	24.32	24.32	24.31	24.32	24.32	24.32	24.33	24.32	24.33	24.34	24.38	24.31	
	24.33	24.32	24.30	24.28	24.29	24.27	24.26	24.26	24.27	24.27	24.28	24.26	24.26	24.25	24.25	24.25	24.25	24.24	24.26	24.27	24.28	24.29	24.30	24.29	24.27	24.33	24.24	
21	24.31	24.32	24.33	24.35	24.37	24.38	24.39	24.39	24.38	24.39	24.39	24.38	24.38	24.37	24.36	24.34	24.34	24.33	24.32	24.32	24.31	24.30	24.29	24.28	24.35	24.39	24.28	
	24.27	24.25	24.22	24.21	24.20	24.19	24.19	24.18	24.18	24.18	24.19	24.18	24.17	24.17	24.17	24.18	24.18	24.18	24.19	24.20	24.21	24.23	24.25	24.27	24.20	24.27	24.17	
	24.29	24.31	24.32	24.34	24.36	24.38	24.40	24.42	24.44	24.47	24.48	24.50	24.50	24.51	24.49	24.49	24.49	24.49	24.48	24.47	24.48	24.47	24.45	24.43	24.44	24.51	24.29	
	24.40	24.38	24.34	24.31	24.28	24.26	24.23	24.22	24.21	24.18	24.16	24.14	24.10	24.08	24.06	24.05	24.03	24.02	24.01	24.00	24.00	23.99	23.99	23.97	24.14	24.40	23.97	
	23.96	23.96	23.96	23.96	23.96	23.97	23.98	23.99	24.01	24.03	24.04	24.05	24.06	24.06	24.07	24.08	24.09	24.10	24.12	24.14	24.17	24.18	24.19	24.20	24.06	24.20	23.96	
26	24.20	24.20	24.21	24.22	24.22	24.22	24.24	24.25	24.25	24.25	24.25	24.24	24.24	24.23	24.24	24.25	24.25	24.27	24.29	24.31	24.33	24.34	24.36	24.37	24.26	24.37	24.20	
	24.38	24.38	24.39	24.40	24.41	24.42	24.44	24.46	24.48	24.49	24.50	24.50	24.50	24.50	24.50	24.49	24.49	24.49	24.48	24.47	24.47	24.46	24.46	24.45	24.46	24.50	24.38	
	24.44	24.43	24.44	24.41	24.38	24.36	24.36	24.36	24.34	24.32	24.30	24.27	24.22	24.18	24.16	24.11	24.09	24.05	24.02	23.99	23.96	23.90	23.85	23.80	24.20	24.44	23.80	
	23.79	23.84	23.86	23.89	23.89	23.93	23.97	23.99	24.00	24.05	24.09	24.12	24.14	24.16	24.17	24.18	24.18	24.20	24.21	24.23	24.26	24.27	24.29	24.31	24.08	24.31	23.79	
	24.31	24.32	24.32	24.33	24.34	24.36	24.38	24.39	24.40	24.41	24.42	24.42	24.42	24.42	24.42	24.43	24.44	24.46	24.47	24.47	24.50	24.51	24.53	24.55	24.42	24.55	24.31	
31	24.57	24.59	24.60	24.61	24.62	24.63	24.64	24.65	24.64	24.64	24.64	24.63	24.63	24.62	24.61	24.60	24.60	24.59	24.57	24.55	24.55	24.54	24.55	24.54	24.60	24.65	24.54	
	24.33	24.34	24.34	24.34	24.34	24.34	24.34	24.35	24.35	24.35	24.35	24.35	24.34	24.34	24.33	24.32	24.32	24.32	24.32	24.32	24.33	24.33	24.34	24.34	24.34	24.34	24.25	
	24.59	24.60	24.61	24.61	24.62	24.63	24.64	24.65	24.64	24.64	24.64	24.63	24.63	24.62	24.61	24.60	24.60	24.59	24.57	24.55	24.55	24.57	24.58	24.58	24.60	24.65	24.54	
	23.79	23.84	23.86	23.89	23.89	23.93	23.97	23.99	24.00	24.03	24.04	24.05	24.06	24.06	24.06	24.05	24.03	24.02	24.01	23.99	23.96	23.90	23.85	23.80	24.06	24.20	23.79	

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Relative Humidity (Percent)
January 2021

A-25

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	69.2	69.9	69.4	68.5	70.1	71.8	76.0	81.3	82.8	76.9	74.5	63.0	52.5	52.0	49.9	57.2	58.2	63.7	68.6	73.6	73.7	77.2	73.5	72.6	68.6	82.8	49.9
2	70.8	70.7	75.3	77.0	75.2	78.6	80.1	76.0	72.4	70.2	64.2	59.0	55.7	50.8	48.3	48.2	51.6	53.2	54.4	52.8	53.5	58.4	59.5	58.9	63.1	80.1	48.2
3	59.8	61.8	61.4	62.4	59.8	53.4	52.5	52.9	52.9	53.5	52.2	50.1	53.6	66.4	63.3	55.6	49.0	49.1	46.1	46.1	48.8	50.0	50.2	51.2	54.3	66.4	46.1
4	53.1	52.8	53.9	57.6	64.0	67.7	61.9	68.5	72.8	63.7	57.2	44.5	37.3	47.7	53.1	55.8	65.1	77.6	71.0	74.3	72.6	71.5	69.6	74.2	62.0	77.6	37.3
5	85.1	86.0	88.0	79.6	68.3	64.0	61.7	62.2	63.0	60.3	55.3	52.7	51.3	50.7	50.2	50.5	54.6	63.2	62.0	63.7	72.9	76.3	79.6	82.5	66.0	88.0	50.2
6	82.2	81.3	81.3	78.6	71.2	76.4	74.8	73.4	74.1	69.1	55.9	44.8	39.3	37.6	38.9	38.6	49.3	62.3	64.9	70.8	71.0	71.4	72.6	74.3	64.8	82.2	37.6
7	74.9	72.5	71.1	77.6	87.5	88.7	88.5	89.5	89.6	88.2	85.6	85.5	83.7	83.2	85.0	86.7	87.9	88.9	89.4	89.8	90.3	90.3	90.0	89.8	85.6	90.3	71.1
8	89.8	89.3	89.0	88.2	87.3	87.5	88.1	89.0	88.9	87.6	83.3	78.5	74.9	72.3	69.3	65.0	72.9	86.4	85.4	83.4	83.6	83.5	83.3	82.2	82.9	89.8	65.0
9	80.8	80.6	80.0	80.0	80.0	78.7	77.9	77.4	77.2	80.0	80.5	78.4	74.9	68.0	62.3	61.2	68.9	82.5	83.6	80.3	79.1	77.9	77.0	76.4	76.8	83.6	61.2
10	75.9	76.2	76.7	76.4	75.8	75.6	75.7	75.2	75.8	77.8	76.3	75.8	69.8	54.0	49.8	47.3	61.8	79.4	81.8	82.9	82.0	81.9	81.2	81.1	73.6	82.9	47.3
11	80.2	79.7	78.5	78.7	78.0	78.0	77.5	77.6	77.6	79.4	81.1	79.4	73.1	61.8	53.9	59.4	70.0	78.2	84.0	85.4	85.1	85.0	84.4	84.1	77.1	85.4	53.9
12	84.6	84.8	83.9	85.0	84.7	84.5	79.1	77.8	79.0	68.7	50.8	46.4	45.2	48.0	48.1	48.8	54.5	62.0	65.3	65.9	70.4	72.4	73.0	75.9	68.3	85.0	45.2
13	78.0	77.1	68.4	65.7	63.2	61.8	64.6	61.3	56.6	58.7	82.8	61.1	38.7	30.2	34.6	40.8	45.3	46.5	48.4	50.9	53.8	66.4	77.5	67.0	58.3	82.8	30.2
14	61.4	59.9	57.6	59.3	61.1	61.0	61.2	62.1	65.5	58.7	54.6	48.7	43.3	39.1	36.9	37.6	42.0	49.8	50.2	59.3	67.7	71.5	75.0	77.1	56.7	77.1	36.9
15	77.9	77.6	77.4	77.1	77.0	77.2	76.8	76.8	77.6	76.3	75.6	71.1	63.6	54.8	57.4	64.8	78.8	86.8	89.6	85.8	83.0	81.3	81.0	78.1	76.0	89.6	54.8
16	76.6	82.4	82.3	81.3	62.8	75.6	76.4	78.3	78.9	73.3	65.9	54.6	51.1	50.1	48.5	48.6	55.1	64.6	67.3	74.5	78.2	79.2	79.3	78.9	69.3	82.4	48.5
17	80.4	81.0	81.7	82.2	81.4	68.8	60.1	63.9	66.3	71.9	69.7	67.3	71.9	70.6	65.5	61.7	60.1	63.3	64.0	67.9	73.9	80.7	87.6	86.5	72.0	87.6	60.1
18	83.6	85.7	85.7	84.9	85.2	86.2	85.8	85.5	83.9	81.1	83.6	81.3	81.1	76.7	75.7	83.9	84.1	82.5	83.7	82.3	84.5	85.9	82.3	80.7	83.2	86.2	75.7
19	81.7	84.7	83.2	79.3	77.0	75.3	74.3	73.4	73.1	73.6	78.9	74.6	72.7	64.2	56.9	60.4	57.5	66.1	69.5	60.8	54.2	56.8	46.9	40.3	68.1	84.7	40.3
20	41.7	43.6	37.2	42.8	40.5	40.9	41.5	44.4	63.5	62.8	41.9	41.3	40.5	41.5	42.2	43.6	47.6	51.7	61.9	57.8	50.0	58.1	72.6	78.1	49.5	78.1	37.2
21	79.8	81.3	80.5	79.0	77.3	78.5	79.6	81.0	81.0	82.4	74.9	61.8	63.5	60.0	70.5	76.9	80.7	82.9	84.3	84.6	84.5	84.8	84.9	84.0	78.3	84.9	60.0
22	82.6	82.5	81.8	81.9	81.2	80.2	79.1	79.8	79.8	79.9	77.6	72.5	63.3	66.9	56.0	63.4	70.7	81.5	82.3	79.5	77.0	74.9	74.0	73.1	75.9	82.6	56.0
23	72.1	70.7	70.6	70.3	69.1	69.1	69.5	72.6	74.8	77.3	79.1	79.6	78.3	76.5	68.1	62.1	63.9	76.0	81.4	80.0	77.4	76.2	75.1	74.1	73.5	81.4	62.1
24	73.1	72.6	73.3	74.7	75.0	75.7	75.3	74.7	74.7	76.0	78.7	79.1	74.0	51.8	46.8	46.6	45.2	64.6	73.7	73.1	72.0	76.2	79.0	79.2	70.2	79.2	45.2
25	79.0	77.8	77.6	76.6	75.4	75.7	75.8	76.5	77.5	77.6	77.4	72.2	59.5	61.1	61.8	65.0	69.4	77.4	78.7	79.3	82.2	81.1	80.7	78.3	74.7	82.2	59.5
26	76.6	78.6	78.8	79.7	79.7	81.0	80.1	78.9	77.4	73.3	69.1	69.1	67.9	65.0	62.3	63.3	64.1	75.3	79.5	78.5	78.4	76.1	75.2	74.7	74.3	81.0	62.3
27	73.9	73.6	72.7	72.0	72.6	73.3	72.3	73.4	73.9	75.9	78.5	80.7	54.7	50.1	49.1	56.0	56.4	57.2	54.6	54.5	56.3	59.6	57.4	60.9	65.0	80.7	49.1
28	67.9	68.3	71.7	73.5	73.1	73.5	75.8	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	72.0	75.8	67.9
29	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
30	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI			
31	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	48.5	48.9	47.8	46.9	52.0	62.7	65.9	68.3	68.2	75.6	79.3	81.7	62.2	81.7	46.9
Avg	74.7	75.1	74.6	74.6	73.3	73.5	72.9	73.5	74.5	73.1	70.6	65.7	60.1	57.1	55.4	57.0	61.3	69.1	71.1	71.6	72.3	74.3	75.1	74.9	69.8	82.5	51.9
Max	89.8	89.3	89.0	88.2	87.5	88.7	88.5	89.5	89.6	88.2	85.6	85.5	83.7	83.2	85.0	86.7	87.9	88.9	89.6	89.8	90.3	90.3	90.0	89.8	85.6	90.3	75.7
Min	41.7	43.6	37.2	42.8	40.5	40.9	41.5	44.4	52.9	53.5	41.9	41.3	37.3	30.2	34.6	37.6	42.0	46.5	46.1	46.1	48.8	50.0	46.9	40.3	49.5	66.4	30.2

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Relative Humidity (Percent)
February 2021

A-26

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	79.1	80.4	79.3	80.6	81.2	81.7	82.3	82.1	81.3	70.8	55.4	44.7	41.1	37.3	37.1	41.0	40.9	43.1	48.8	61.1	51.7	56.0	64.6	65.5	62.0	82.3	37.1
2	68.6	71.6	69.3	68.1	69.6	62.3	63.0	69.5	68.3	56.3	43.4	40.0	37.4	39.3	38.8	40.4	45.3	50.6	52.0	53.6	55.3	57.6	68.5	88.4	57.4	88.4	37.4
3	88.3	83.3	77.4	66.8	65.8	68.4	74.1	78.2	79.6	69.9	61.4	56.1	54.7	57.9	64.4	59.0	57.0	61.4	68.6	67.6	70.6	72.4	74.7	77.5	69.0	88.3	54.7
4	80.5	80.7	80.5	80.7	76.5	72.3	70.0	68.1	69.3	62.3	61.0	59.6	59.0	61.5	62.6	67.9	77.2	74.2	65.6	72.7	76.8	67.7	69.0	69.2	70.2	80.7	59.0
5	70.8	77.6	82.6	84.5	85.4	86.6	86.8	86.8	86.3	83.9	77.3	75.1	78.2	78.8	76.7	76.6	79.2	80.0	76.9	77.8	69.8	66.7	69.2	67.7	78.4	86.8	66.7
6	71.6	71.9	72.2	72.8	73.1	74.0	75.6	76.0	76.1	75.9	74.9	74.9	74.5	73.1	74.7	76.4	80.2	80.2	76.6	75.8	74.3	73.7	72.7	71.9	74.7	80.2	71.6
7	71.3	68.9	68.4	67.3	68.1	68.8	69.1	69.0	68.5	66.7	63.8	63.6	61.9	58.3	57.4	58.7	60.7	68.2	72.0	74.2	74.7	74.1	73.6	73.2	67.5	74.7	57.4
8	73.2	72.9	73.2	73.5	73.2	73.7	74.3	74.2	71.7	69.7	66.9	65.2	63.6	66.2	67.9	68.2	68.5	68.6	69.6	70.0	69.9	70.1	69.9	70.2	70.2	74.3	63.6
9	70.3	70.7	70.8	70.9	70.9	71.0	71.4	71.4	70.9	69.7	67.9	66.7	63.7	62.7	64.1	66.6	65.6	69.7	70.3	70.4	70.8	71.5	71.5	71.7	69.2	71.7	62.7
10	72.1	72.6	73.1	73.4	73.6	73.8	74.1	73.8	72.9	70.3	67.0	53.5	55.2	61.6	65.3	66.1	67.1	68.1	67.6	67.7	67.2	67.6	67.0	65.9	68.2	74.1	53.5
11	65.7	65.7	65.2	64.8	64.4	64.3	64.2	63.8	62.9	59.0	54.3	55.7	60.2	60.8	59.6	60.6	62.6	64.4	65.8	66.0	65.6	64.2	62.5	61.0	62.6	66.0	54.3
12	59.3	58.8	58.1	57.8	57.1	57.3	56.6	56.9	57.4	56.6	55.1	52.8	48.5	50.5	60.6	60.8	61.2	65.3	69.6	67.9	66.2	65.9	65.1	64.3	59.6	69.6	48.5
13	63.1	62.1	61.4	60.4	59.6	59.4	58.9	59.2	60.1	62.2	64.5	61.9	55.5	50.4	58.8	62.8	63.9	69.0	71.0	69.8	67.2	66.6	67.4	67.3	62.6	71.0	50.4
14	66.5	65.0	64.4	64.4	64.6	63.6	63.8	64.6	64.5	63.7	59.6	58.7	56.2	56.5	63.6	67.2	70.2	72.9	73.6	73.6	73.9	74.5	74.7	75.2	66.5	75.2	56.2
15	75.2	75.8	75.9	76.5	76.8	76.8	78.1	77.6	77.9	76.3	78.7	80.1	80.7	81.7	83.0	83.8	85.1	86.4	86.8	86.7	86.6	86.6	86.4	86.1	81.1	86.8	75.2
16	85.4	85.6	85.4	85.6	86.4	85.7	85.9	84.6	83.5	80.3	77.1	76.5	73.7	73.0	74.2	76.5	77.4	74.7	72.5	72.7	76.9	76.9	77.7	80.9	79.5	86.4	72.5
17	82.8	83.0	83.2	82.9	81.0	82.5	83.4	83.2	80.7	79.1	73.8	66.1	70.4	72.8	74.8	75.6	71.9	75.0	78.0	78.2	78.4	79.9	80.0	80.5	78.2	83.4	66.1
18	80.0	79.7	79.2	79.0	79.2	79.0	78.9	79.0	76.1	73.8	64.1	60.1	56.8	55.8	49.0	41.2	53.9	67.4	76.2	75.1	77.2	78.8	77.9	75.8	70.5	80.0	41.2
19	75.4	69.3	79.9	80.9	81.6	78.5	76.7	75.3	76.1	68.6	67.1	65.7	67.1	63.1	60.4	69.6	80.6	77.0	74.4	69.0	71.7	70.9	73.0	75.1	72.8	81.6	60.4
20	76.9	80.4	81.1	82.0	79.1	77.8	78.5	78.5	79.1	78.7	78.4	65.7	63.5	61.8	57.0	56.1	56.6	62.8	73.3	76.5	74.5	66.0	65.7	64.1	71.4	82.0	56.1
21	62.2	62.9	64.2	68.4	68.5	68.9	69.2	68.7	68.6	66.2	65.3	64.6	62.6	61.2	61.4	62.2	65.4	66.5	66.5	65.6	65.8	66.3	67.4	68.3	65.7	69.2	61.2
22	67.2	66.9	66.5	63.3	63.6	61.3	62.5	60.1	59.2	56.9	58.2	55.9	54.0	54.1	54.3	53.2	59.2	63.7	66.2	74.1	76.1	83.3	86.9	88.2	64.8	88.2	53.2
23	82.7	68.4	67.7	68.2	61.0	58.0	56.5	60.4	59.6	58.9	59.5	60.7	60.0	51.9	47.1	51.5	60.0	54.5	54.5	57.6	59.7	66.6	72.7	74.6	61.3	82.7	47.1
24	76.1	77.8	78.0	78.3	76.9	76.4	75.9	77.1	76.5	65.0	62.5	69.0	66.6	63.0	56.9	54.3	52.6	51.8	57.4	64.7	60.9	70.5	74.3	77.1	68.3	78.3	51.8
25	76.8	78.3	76.5	75.5	74.5	73.1	74.7	76.5	75.8	72.3	44.6	37.4	37.1	36.4	49.1	45.9	54.2	66.3	70.3	73.5	73.8	61.2	54.0	55.0	63.0	78.3	36.4
26	57.4	59.8	60.5	70.3	64.8	63.9	61.7	62.0	59.3	58.9	57.2	55.0	49.9	50.0	50.5	49.4	51.8	58.4	63.8	69.4	74.3	77.3	76.9	77.6	61.7	77.6	49.4
27	79.3	80.5	82.2	81.1	81.1	81.1	81.2	80.4	80.1	74.4	66.9	65.1	60.5	66.9	60.5	56.2	54.7	66.3	73.1	75.4	80.4	80.2	81.1	79.6	73.7	82.2	54.7
28	80.8	75.2	68.9	63.6	60.8	61.4	62.6	65.0	62.6	55.2	53.7	56.6	58.6	59.1	59.2	61.4	64.3	66.8	68.4	69.8	70.7	75.3	81.6	82.5	66.0	82.5	53.7
Avg	73.5	73.1	73.0	72.9	72.1	71.5	71.8	72.2	71.6	67.9	63.6	61.0	59.7	59.5	60.3	61.0	63.8	66.9	68.9	70.6	70.8	71.0	72.4	73.4	68.4	79.4	55.4
Max	88.3	85.6	85.4	85.6	86.4	86.6	86.8	86.8	86.3	83.9	78.7	80.1	80.7	81.7	83.0	83.8	85.1	86.4	86.8	86.7	86.6	86.6	86.9	88.4	81.1	88.4	75.2
Min	57.4	58.8	58.1	57.8	57.1	57.3	56.5	56.9	57.4	55.2	43.4	37.4	37.1	36.4	37.1	40.4	40.9	43.1	48.8	53.6	51.7	56.0	54.0	55.0	57.4	66.0	36.4

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Relative Humidity (Percent)
March 2021

A-27

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	83.7	83.6	81.5	80.6	79.7	78.8	79.3	81.5	82.3	79.8	68.4	58.2	55.0	53.2	53.9	54.2	53.2	54.7	56.5	65.8	68.2	72.5	76.7	79.7	70.0	83.7	53.2
2	75.3	73.8	77.6	75.2	72.8	77.8	79.9	79.0	67.2	62.6	49.4	48.9	46.1	47.1	49.4	51.6	53.3	55.7	55.1	59.9	63.3	66.1	72.7	71.4	63.8	79.9	46.1
3	77.5	79.6	83.6	83.5	84.0	83.6	82.6	81.9	78.0	67.6	53.9	42.4	35.1	33.4	33.7	37.9	46.0	48.7	51.3	60.9	68.8	72.1	74.8	76.3	64.0	84.0	33.4
4	77.2	78.0	78.6	79.9	79.4	79.7	80.5	77.8	69.3	55.6	48.0	47.9	40.0	28.7	30.7	27.0	26.5	32.7	52.2	58.6	61.9	70.4	77.0	77.7	59.8	80.5	26.5
5	79.5	79.2	79.6	80.4	81.5	82.0	81.7	80.7	78.2	71.3	58.4	50.5	43.3	42.4	39.2	40.8	35.8	39.2	44.1	53.2	62.6	67.6	69.6	68.2	62.9	82.0	35.8
6	67.8	72.5	74.7	76.6	77.2	74.5	71.8	71.5	67.0	55.4	43.5	28.8	29.0	29.7	30.1	32.9	40.4	50.1	73.7	86.0	67.0	63.5	68.1	72.9	59.4	86.0	28.8
7	75.7	73.0	76.2	80.4	83.4	84.2	84.7	84.3	79.9	74.0	66.6	64.8	57.6	55.5	50.5	45.6	45.8	43.6	56.8	66.1	68.6	69.5	76.9	81.1	68.5	84.7	43.6
8	84.0	84.2	85.9	85.9	85.3	84.5	85.0	84.3	82.8	78.9	79.7	77.0	80.4	75.6	63.5	65.5	60.0	64.8	77.6	89.0	89.2	85.5	87.1	86.3	80.1	89.2	60.0
9	85.1	86.9	87.7	87.7	87.7	87.3	87.7	87.1	85.2	79.7	73.7	67.6	67.5	67.7	64.7	58.9	62.0	66.3	80.4	85.2	82.9	80.5	79.1	78.5	78.2	87.7	58.9
10	77.0	76.7	76.2	75.8	75.4	74.8	75.4	76.4	82.4	83.2	73.3	58.5	57.6	54.4	52.0	48.8	51.3	56.7	68.4	76.7	81.0	82.5	83.2	81.2	70.8	83.2	48.8
11	79.1	77.9	76.3	76.2	75.1	74.9	73.8	74.8	77.8	77.2	65.8	61.0	61.1	56.8	51.5	45.0	42.3	44.3	55.7	68.7	77.6	81.1	82.6	81.7	68.3	82.6	42.3
12	80.5	79.7	79.2	77.5	77.1	76.7	77.3	76.2	76.5	71.8	56.0	43.6	43.7	44.3	40.6	39.0	40.5	41.7	59.2	71.0	79.1	81.5	82.0	83.6	65.8	83.6	39.0
13	82.5	82.9	82.0	81.6	80.4	80.6	79.0	78.1	74.5	63.0	44.9	40.9	34.1	35.4	34.7	27.8	35.1	33.2	35.1	34.0	44.3	55.3	61.0	63.6	56.8	82.9	27.8
14	62.2	58.7	64.0	70.3	73.1	69.1	62.6	60.4	61.0	62.0	63.5	62.6	62.6	59.7	63.1	64.5	60.0	55.0	55.3	58.1	63.5	71.1	76.6	79.8	64.1	79.8	55.0
15	83.7	85.9	87.0	87.4	85.9	85.1	84.5	84.4	85.0	81.1	60.9	44.7	39.9	34.6	38.3	39.2	43.2	50.1	64.6	69.6	73.0	73.7	74.4	76.6	68.0	87.4	34.6
16	76.1	78.0	77.8	81.9	82.9	81.9	82.9	80.8	75.9	62.3	50.8	53.9	47.2	49.7	44.1	41.0	43.1	42.6	49.9	62.9	65.2	71.7	76.5	78.2	64.9	82.9	41.0
17	79.8	83.7	84.2	84.8	84.8	85.2	85.9	81.1	62.0	58.8	52.1	43.1	38.8	37.4	37.3	38.5	37.4	41.6	54.2	55.6	53.6	48.5	50.3	53.5	59.7	85.9	37.3
18	60.3	70.0	75.1	80.8	82.3	83.1	83.3	78.5	63.9	53.4	42.4	40.1	39.8	36.1	33.2	30.9	29.6	33.3	46.9	57.4	63.8	71.1	75.6	77.5	58.7	83.3	29.6
19	78.4	81.1	81.9	83.1	83.2	83.1	82.1	79.5	69.1	45.7	37.8	53.6	52.3	46.3	46.5	66.2	82.3	80.3	86.7	85.1	88.8	88.7	89.6	86.8	73.3	89.6	37.8
20	82.1	86.6	88.3	88.9	88.3	88.5	88.8	88.7	87.2	84.9	77.4	52.1	48.9	42.4	36.7	36.1	42.9	47.5	47.9	55.9	63.2	68.2	75.0	61.2	67.8	88.9	36.1
21	60.0	62.4	65.0	72.9	78.2	79.2	82.4	75.3	68.2	62.6	58.3	54.0	51.9	47.5	47.8	46.3	46.9	48.3	51.9	59.9	60.4	60.1	60.2	62.5	60.9	82.4	46.3
22	69.5	72.7	71.5	67.4	63.3	62.6	63.2	65.3	67.6	73.9	67.4	60.8	57.6	53.3	51.6	49.4	49.2	48.4	54.9	65.2	70.2	72.6	72.8	75.1	63.6	75.1	48.4
23	77.2	79.9	80.5	83.0	82.0	83.5	83.2	83.4	78.4	73.0	70.0	68.8	64.8	64.4	70.3	67.3	60.4	57.3	60.3	70.2	75.2	78.6	82.7	83.0	74.1	83.5	57.3
24	83.5	83.6	83.3	73.3	65.7	65.6	66.0	61.2	57.0	57.1	57.8	55.1	50.3	50.3	52.8	48.7	51.0	52.5	66.6	79.2	82.1	82.4	83.0	80.6	66.2	83.6	48.7
25	80.6	81.4	81.2	79.4	78.5	80.8	82.0	81.7	79.2	72.9	67.3	60.0	60.1	63.0	67.2	68.3	70.9	71.8	70.7	73.7	77.5	78.6	80.2	78.0	74.4	82.0	60.0
26	78.2	81.0	83.3	84.7	85.2	85.1	84.7	82.3	76.9	67.9	62.9	60.9	59.4	55.3	55.0	55.3	55.0	55.5	60.3	62.4	65.0	66.7	66.9	67.4	69.1	85.2	55.0
27	71.6	71.5	73.8	78.1	81.4	85.4	85.8	85.3	76.7	66.9	62.7	59.2	54.6	51.6	45.7	44.9	45.9	45.4	49.8	54.9	65.9	70.8	58.2	51.7	64.1	85.8	44.9
28	51.5	52.1	50.8	54.7	62.8	51.3	50.4	49.4	38.4	32.9	31.6	31.8	27.8	26.2	24.2	22.6	21.1	19.2	20.7	29.6	22.2	25.3	29.7	30.4	35.7	62.8	19.2
29	39.0	75.1	82.3	68.0	50.4	55.3	51.9	56.4	65.9	76.1	80.1	67.2	64.3	63.3	58.4	57.9	55.9	50.7	51.3	58.1	67.4	75.8	73.1	81.5	63.6	82.3	39.0
30	81.8	81.2	74.5	71.5	76.4	72.3	72.3	73.5	56.3	55.3	62.9	59.9	53.1	50.0	51.5	58.2	54.8	53.0	51.2	54.4	56.6	60.9	64.3	68.2	63.1	81.8	50.0
31	71.6	78.3	80.3	81.9	81.1	81.1	80.5	80.2	76.8	56.1	52.6	49.8	45.9	42.8	39.6	37.6	36.4	35.5	38.7	53.7	62.6	68.8	75.2	78.4	61.9	81.9	35.5
Avg	74.6	77.1	78.2	78.5	78.2	78.0	77.8	76.8	72.5	66.5	59.4	53.8	50.6	48.3	47.0	46.7	47.7	49.0	56.4	63.9	67.4	70.4	72.7	73.3	65.2	83.0	42.6
Max	85.1	86.9	88.3	88.9	88.3	88.5	88.8	88.7	87.2	84.9	80.1	77.0	80.4	75.6	70.3	68.3	82.3	80.3	86.7	89.0	89.2	88.7	89.6	86.8	80.1	89.6	60.0
Min	39.0	52.1	50.8	54.7	50.4	51.3	50.4	49.4	38.4	32.9	31.6	28.8	27.8	26.2	24.2	22.6	21.1	19.2	20.7	29.6	22.2	25.3	29.7	30.4	35.7	62.8	19.2

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Precipitation (Inches)
January 2021

	<< 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	Tot	Max
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.03	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.03
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.01	0.05	0.02	0.00
18	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.07	0.01
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	0.00	0.00
29	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI		
30	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI		
31	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.06
Tot	0.00	0.01	0.00	0.01	0.00	0.01	0.03	0.04	0.03	0.02	0.05	0.01	0.00	0.07	0.01	0.03	0.02	0.03	0.00	0.00	0.01	0.01	0.02	0.01	0.42	0.00
Max	0.00	0.01	0.00	0.01	0.00	0.01	0.02	0.03	0.03	0.01	0.04	0.01	0.00	0.06	0.01	0.02	0.01	0.01	0.00	0.00	0.01	0.01	0.02	0.01	0.13	0.06

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Precipitation (Inches)
February 2021

	<< 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	Tot	Max
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
3	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.01	0.06	0.10	0.06	0.06	0.05	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.10
6	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.03	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.03
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01
15	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.01	0.00	0.01	0.22	0.03
16	0.00	0.01	0.01	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.02
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	0.01	0.01	0.02	0.02	0.01	0.07	0.11	0.07	0.08	0.06	0.06	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.03	0.03	0.01	0.02	0.03	0.86	0.00
Max	0.01	0.01	0.01	0.02	0.01	0.06	0.10	0.06	0.06	0.05	0.04	0.01	0.03	0.02	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.01	0.01	0.01	0.39	0.10

**Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Precipitation (Inches)
March 2021**

[illegible]

A-30

APPENDIX B: PERFORMANCE AUDIT REPORTS

FIRST QUARTER 2021



BISON ENGINEERING, INC.

Bison Engineering

Preliminary Meteorological Parameters Audit Form

Audit Dates: 04/13/2021 Tower Lowered : 10:35 MST Tower Back Up : 13:40 MST
 Client: Tintina Resources
 Site: Black Butte
 AUDITOR: Steve Heck PRECEDING CALIBRATION BY: Don Milmine

Temperature

Audit Device: Control Company - digital thermometer Model 4000
 Meter S/N: 130236679 Temperature Sensor: Climatronics 100093
 Last certified: Nov 2020 S/N X17929 (Upper), S/N X17927 (Lower) - Matched Set

Temperature bath results

	9m	9m	2m	2m	9m - 2m
Audit	DAS	DAS	DAS	DAS	DAS
Value	Value	Diff.	Value	Diff.	Diff.
°C	°C	°C	°C	°C	°C
0.05	0.17	0.12	0.16	0.11	0.01
16.01	15.99	-0.02	15.96	-0.05	0.03
36.78	36.99	0.21	36.94	0.16	0.05

Wind Direction

		<u>Linearity Check from DAS</u>				
Sensor height:	9 Meter	Setpoint	Clockwise	Counter-CW	Diff CW	Diff CCW
Sensor (Make/model number):	Climatronics/ 102083	0	1.2	1.2	1.2	1.2
Serial Number :	P1336C	30	30.9	30.8	0.9	0.8
Crossarm orientation (from Garmin GPS):	179.1 / 359.1	60	60.9	60.8	0.9	0.8
GPS location at sensor:		90	91.3	91.0	1.3	1.0
N 46 deg 46.351 min, W 110 deg 52.949 min		120	121.3	121.0	1.3	1.0
GPS location at sighting point:		150	150.9	150.9	0.9	0.9
N 46 deg 46.309 min, W 110 deg 52.948 min		180	181.1	180.7	1.1	0.7
Sensor response aligned with crossarm (as found):	180.6	210	210.4	210.4	0.4	0.4
Sensor response aligned with crossarm (as left):	180.9	240	240.7	240.7	0.7	0.7
		270	270.6	270.6	0.6	0.6
Linearity Audit Device: Climatronics 101966, SN 70		300	300.7	300.6	0.7	0.6
		330	330.8	330.7	0.8	0.7
Threshold Torque: 0.05 oz.-in. (Waters Model 366-1 torque watch)				Max Diff	1.3	1.2

Wind Speed

Sensor height:: 9 Meter
 Sensor (Make/model number): Climatronics/ 102083
 Serial Number : P1336C
 Calibration device: Weathertronics 300 rpm synchronous motor
 Weathertronics 600 rpm synchronous motor

Synchronous motor checks

Threshold Torque: 0.005 oz.-in.
 (Waters Model 366-3 torque watch)

Known	Known	DAS	DAS
Value	Value	Value	Diff.
RPM	m/s	m/s	m/s
0	0.22	0.22	0.00
300	6.66	6.65	-0.01
600	13.09	13.09	0.00

Solar Radiation

Audit Device: Eppley Pyranometer, SN 16166F3 (certified by Eppley January 2021)

Time (MST)	CTS Value (W/m2)	Site Value (W/m2)	Diff. (%)	Diff. (% FS)
1345	527	505	-4.2	-1.7
1347	458	438	-4.4	-1.5
1351	502	478	-4.8	-1.8

Relative Humidity

Site Sensor: Met One 083E-0-35

Sensor Height: 2 meters

Reference Std: Assmann Psychrometer, thermometer calibrations checked September 2020

Ref Dry-Bulb:	-1.4	deg C	BP = 24.56 in. Hg
Ref Wet-Bulb	-4.2	deg C	
Ref RH:	53.7	%RH	
Station RH:	52.0	%RH	
Diff:	-1.7	%RH	

Barometric Pressure

Audit Device: Wallace & Tiernan Model FA185260, S/N LL03297.

Checked against Bison Mercury barometer (Butte) September 2019

Audit Value:	24.58	in Hg
Station Value:	24.62	in Hg
Diff:	0.04	in Hg

Precipitation

Rain Gauge = Met One Model 375D, Serial No. X15682

Level checked OK

Wind Screen in place

8" opening

559 ml water added

Calibration is 8.24 ml per tip

Known audit value is $559 / 8.24 = 67.8$ tips (so 67 or 68 full tips expected)

Unit registered 71 tips

% difference from expected = +4.4%

Signature Site Operator : _____

Signature Auditor :  _____