# RioTinto

Diavik Diamond Mines (2012) Inc. P.O. Box 2498 Suite 300, 5201-50th Avenue Yellowknife, NT X1A 2P8 Canada T (867) 669 6500 F 1-866-313-2754

Charlie Catholique, Chair Environmental Monitoring Advisory Board PO Box 2577 Yellowknife, NT X1A 2P9 Canada

20 July 2022

Dear Mr. Catholique:

#### Subject: 2021 Environmental Air Quality Monitoring Report

Please find enclosed the Diavik Diamond Mines (2012) Inc.'s (DDMI) Environmental Air Quality Monitoring Report (EAQMP) for 2021. The monitoring program was based on the Environmental Air Quality Monitoring and Management Plan Version 2, which was updated in January 2019. This report summarizes air quality observations from the following programs conducted at DDMI throughout 2021.

- Dustfall Monitoring as part of the Aquatic Effects Monitoring Program (AEMP);
- Snow Core Program as part of the AEMP;
- Emissions Monitoring and Reporting to Environment and Climate Change Canada (ECCC) National Pollutant Release Inventory; and
- Greenhouse Gas Monitoring and Reporting to ECCC.

Please do not hesitate to contact the undersigned at <a href="Moleone-Antwi@riotinto.com">Kofi.Boa-Antwi@riotinto.com</a> or Kyla Gray at <a href="Kyla.gray@riotinto.com">Kyla.gray@riotinto.com</a> or (867)-445-4922 if you have any questions related to this submission.

Yours sincerely,

Kofi Boa-Antwi

Superintendent, Environment

cc: John McCullum, EMAB



Dylan Price, EMAB Imran Maqsood, GNWT Cory Doll, GNWT

Attachment 1: DDMI 2021 Environmental Air Quality Monitoring Report

Document #: ENVI-1338-0722 R0

Template #: DCON-036-1010





## **Diavik Diamond Mine**

# 2021 Environmental Air Quality Monitoring Report – Dustfall

July 2022

Project No.: 0630565-0001



July 2022

### **Diavik Diamond Mine**

### 2021 Environmental Air Quality Monitoring Report – Dustfall

#### **ERM Consultants Canada Ltd.**

1100 Melville Street #1000, Vancouver, BC Canada V6E 4A6

T: +1 604 689 9460 F: +1 604 687 4277

© Copyright 2022 by The ERM International Group Limited and/or its affiliates ("ERM"). All rights reserved. No part of this work may be reproduced or transmitted in any form, or by any means, without the prior written permission of ERM.

#### **EXECUTIVE SUMMARY**

Diavik Diamond Mines (2012) Inc. has collected and reported air quality related data since initial site construction in 2001. In June of 2013, Diavik Diamond Mines submitted an Environmental Air Quality Monitoring Plan (EAQMP) to the Environmental Monitoring Advisory Board. The components of the EAQMP include dust deposition (dustfall) monitoring (as part of the Aquatic Effects Monitoring Program (AEMP)), a snow core program (as part of the AEMP), reporting to the National Pollutant Release Inventory (NPRI), and reporting to the national greenhouse gas reporting program (GHGRP). This report presents an updated Environmental Air Quality Monitoring Report for the Diavik Diamond Mine for the calendar year 2021.

In 2021, dustfall was monitored at 14 dustfall gauges and 27 snow survey stations located at varying distances and directions from the mine. Snow water chemistry was measured at 19 of the snow survey stations and compared to effluent quality criteria (EQC) set out in the Wek'èezhìi Land and Water Board (WLWB) Water Licence W2015L2-0001. The comparison between snow water chemistry and the EQC is made only as a general performance indicator; the EQC apply to effluent water quality and not to snow water.

Annual dustfall estimated from each of the 14 dustfall gauges ranged from 50 to 706 mg/dm²/y in 2021. The annualized dustfall rates estimated from the 2021 snow survey data ranged from 6 to 1,648 mg/dm²/y. All of the annualized dustfall rates estimated from dustfall gauges and snow surveys were less than 5.27 mg/dm²/day (1,924 mg/dm²/y in a year), the non-residential Alberta Ambient Air Quality Guideline for dustfall (Alberta Environment and Parks 2019). Observed dustfall rates at the Dust 3, Dust 10, Dust 11, SS1-1, SS5-1, and SS5-3 stations were higher than 1.77 mg/dm²/day (646 mg/dm²/y in a leap year), the residential Alberta Ambient Air Quality Guideline for dustfall. This Guideline is used only as a general performance indicator. Dustfall rates in 2021 were higher than 2020, but generally within the range of historical data collected for the Mine.

Because the dustfall gauges continuously collect dust throughout the year, and the snow surveys are only representative of dustfall accumulated over the snow cover period, the reported annual dustfall results from the dustfall gauges are expected to provide a better estimate of annual dustfall compared to snow survey results for similar geographic areas. However, results obtained from both methods showed similar spatial patterns, with dustfall generally decreasing with distance away from the Mine.

Snow water chemistry analysis of interest included those variables with effluent quality criteria (EQC; i.e., aluminum, ammonia, arsenic, cadmium, chromium, copper, lead, nickel, nitrite, and zinc). All 2021 sample concentrations were less than their associated reference levels as specified by the "maximum concentration of any grab sample" in Water Licence W2015L2-0001 except for the aluminum concentration at one site.

The Mine reported CAC emissions as part of the annual NPRI submission and emissions were estimated using published emission factors. The 2021 emissions are compared to 2020 emissions. All CAC emissions were relatively consistent between 2020 and 2021. SO<sub>2</sub> emissions increased by 12.3% in 2021 relative to 2020 due to increased diesel usage for small power.

The Mine reported greenhouse gas (GHG) emissions as part of the annual national Greenhouse Gas Emissions Reporting Program (GHGRP) submission, and carbon dioxide equivalent (CO<sub>2</sub>e) emissions were estimated using published emission factors and 100-year global warming potential (GWP) ratios. Starting for 2017 reporting, the GHGRP was changed to require all facilities to report if they emit the equivalent of 10,000 tonnes of CO<sub>2</sub>e (tCO<sub>2</sub>e) or more per year, compared to the previous 50,000 tCO<sub>2</sub>e per year threshold.

Mine GHG emissions of carbon dioxide ( $CO_2$ ), methane ( $CH_4$ ) and nitrous oxide ( $N_2O$ ) totaled 194,258 t $CO_2e$  in 2021, a marginal (0.8%) increase from 2020 emission rates. GHG emissions at the Mine in 2021 were from stationary equipment fuel combustion (76%) and mobile equipment fuel combustion (24%). In 2021, the Mine's 9.2 megawatt wind farm helped to reduce the Mine's GHG footprint by generating 17.0 gigawatt-hours of electricity which saved 3.8 million litres of diesel fuel and thereby prevented the direct release of 10,260 t $CO_2e$ .

### **CONTENTS**

EXE	CUTIV	E SUMMA	RY	I
ACI	RONYN	IS AND AE	BBREVIATIONS	IV
1.	INTR	ODUCTIO	N	1-1
2.	DUS.	TFALL MC	ONITORING	2-1
	2.1	Dustfall	Gauges	2-1
	2.2		Snow Surveys	
	2.3	Snow W	ater Chemistry	2-8
	2.4	Results.		2-8
		2.4.1	Dustfall Gauges	2-9
		2.4.2	Dustfall Snow Surveys	2-10
		2.4.3	Snow Water Chemistry	2-11
3.	NATI	ONAL PO	LLUTANT RELEASE INVENTORY	3-1
	3.1	Program	Overview	3-1
	3.2	Results.		3-1
4.	GRE	ENHOUSE	GAS REPORTING	4-1
	4.1	Program	ı Overview	4-1
	4.2	Results.		4-1
5.	SUM	MARY		5-1
6.	REF	ERENCES		6-1
API	PENDIX		AVIK DIAMOND MINE: 2021 DUST DEPOSITION REPORT ATED MARCH 2022)	
List	of Tab	les		
	Table	2.1-1: Dust	fall and Snow Chemistry Sampling Locations, Diavik Diamond Mine, 2021	2-2
	Table	2.1-2: Dust	fall and Snow Water Chemistry Reference Values	2-6
	Table	2.4-1: Dust	fall Results, Diavik Diamond Mine, 2021	2-8
	Table	2.4-2: Snov	w Water Chemistry Results, Diavik Diamond Mine, 2021	2-11
	Table	4.2-1: NPR	I Results for CAC Emissions, Diavik Diamond Mine, 2020 and 2021	3-1
	Table	3.2-1: GHG	Equivalents for the Diavik Diamond Mine, 2020 and 2021	4-1
List	of Fig	ures		
	Figure	e 2.1-1: Dus	tfall Gauge and Snow Survey Locations, Diavik Diamond Mine, 2021	2-5

DIAVIK DIAMOND MINE 2021 Environmental Air Quality Monitoring Report – Dustfall CONTENTS

#### **List of Photos**

Photo 2.1-1: Dustfall gauge during sample collection. The dustfall gauge consisted of a hollow brass	
cylinder (centre) housed inside a Nipher snow gauge (right).	2-6
Photo 2.2-1: Snow core sample being weighed, with dustfall gauge in background.	2-7
Photo 3.2-1: The Diavik 9.2 megawatt wind farm. The wind farm consists of four wind turbines	4-2

Project No.: 0630565-0001 Client: Rio Tinto July 2022 www.erm.com Version: B.1 Page iii

#### **ACRONYMS AND ABBREVIATIONS**

Terminology used in this document is defined where it is first used. The following list will assist readers who may choose to review only portions of the document.

AEMP Aquatic Effects Monitoring Program

BC British Columbia

BC ENV British Columbia Ministry of Environment and Climate Change

CAC Criteria Air Contaminants

CB Communications Building

CEPA Canadian Environmental Protection Act

CH<sub>4</sub> Methane

cm Centimetre

CO<sub>2</sub> Carbon dioxide

CO<sub>2</sub>e Carbon dioxide equivalent

d Day

DDMI Diavik Diamond Mines (2012) Inc.

dm<sup>2</sup> Square decimetre

Dustfall Dust deposition

EA Environmental Agreement

EAQMP Environmental Air Quality Monitoring Plan

ECCC Environment and Climate Change Canada

EMAB Environmental Monitoring Advisory Board

EMS Environmental Management System

ENR Department of Environment and Natural Resources

EQC Effluent quality criteria

ERM Consultants Canada Ltd.

GHG Greenhouse gas

GHGRP Greenhouse Gas Emissions Reporting Program

GNWT Government of the Northwest Territories

GWP Global warming potentials

L Litre

m Metre

mg Milligram

N<sub>2</sub>O Nitrous oxide

NPRI National Pollutant Release Inventory

PM<sub>2.5</sub> Particulate matter  $\leq$  2.5  $\mu$ m in diameter

QA/QC Quality assurance and quality control

SOP Standard operating procedure

t Tonne (1,000 kg)

tCO<sub>2</sub>e Tonne of carbon dioxide equivalent

the Mine Diavik Diamond Mine

WLWB Wek'èezhìi Land and Water Board

μg Microgram

y Year

#### 1. INTRODUCTION

Diavik Diamond Mines (2012) Inc. (DDMI) has been collecting and reporting air quality related data since initial site construction in 2001. In June of 2013, DDMI submitted an Environmental Air Quality Monitoring Plan (EAQMP) to the Environmental Monitoring Advisory Board (EMAB). The EAQMP was developed to address Article 7.2 (a) of the Environmental Agreement (EA; DDMI 2000). The EAQMP and its results are not part of a Regulatory Instrument but are subject to review by EMAB and the Parties identified under EA Article 7.5.

The purpose of this report is to provide a summary of the 2021 air quality monitoring and emissions data in relation to the Diavik Diamond Mine's (hereafter referred to as the Mine) operational activities. This 2021 Environmental Air Quality Monitoring Report summarizes air quality observations from the following programs conducted at the Mine:

- Dustfall Monitoring as part of the Aquatic Effects Monitoring Program (AEMP);
- Snow Core Program as part of the AEMP; and
- Greenhouse Gas (GHG) Monitoring and Reporting to Environment and Climate Change Canada (ECCC).

In 2021, the primary sources of fugitive dust were associated with unpaved road and airstrip usage, and construction and mining activities at the A21 open pit. Major material transfers in 2021 included the use of haul roads to move waste rock and till (9,240,196 tonnes) and to move kimberlite ore to the processing plant (2,533,761 tonnes). Another source of fugitive dust was truck traffic along the ice road to the Mine. To suppress dust generation, roads, parking areas and the plant site were watered during the summer as needed, as well as the regulatory approved dust suppressant EK35 was used in approved areas such as the airport, the runway and the helipad. The Underground Mine production in 2021 continued at A154 and A418, as well as stripping and production at the A21 open pit. Fugitive dust generation is expected to be greatest during snow-free periods where and when there is site activity. It was expected that the highest fugitive dust generation and resulting dustfall occurred in areas closest to the roads, the airstrip, and mine footprint such as near A21 between May and September. Winter dustfall rates in 2021 were always higher than summer rates except at two sites, suggesting that dust suppression methods used in the summer are effective.

In 2021, the predominant winds at the site were from the east, southeast, and northwest, although winds in general at the site can be described as omnidirectional. Therefore, the expectation is that airborne material will be deposited in all directions around the mine, possibly with higher amounts to the west, northwest, and southeast of the mine.

#### 2. DUSTFALL MONITORING

Community interest in the possible effects of dust deposition (dustfall) on wildlife and aquatic environments is the basis of the focus of DDMl's EAQMP on dustfall. Dustfall is the deposition of airborne particulate matter on vegetation, snow and water, and it is monitored using dustfall collection gauges and snow cores.

In accordance with the EA and the requirement associated with the Aquatic Effects Monitoring Program (AEMP), a dust monitoring program was initiated in 2001 and has gone through various changes since then. The program was designed to achieve the following objectives:

- Determine dustfall rates at various distance from the Mine footprint; and
- Determine the chemical characteristics of dustfall that may be deposited onto, and subsequently into,
   Lac de Gras as a result on mining activities, in support of the AEMP.

In 2021, the dustfall program incorporated three monitoring components, with sampling conducted at varying distances from the Mine infrastructure (13 m to 4,802 m):

- Dustfall gauges (12 monitoring and two control stations);
- Dustfall from snow surveys (24 monitoring and three control locations); and
- Snow water chemistry from snow surveys (16 monitoring and three control locations).

Additional information, data and figures can be found in the full *Diavik Diamond Mine: 2021 Dust Deposition Report* (Appendix C; ERM 2022).

#### 2.1 Dustfall Gauges

Dustfall gauges were placed at 14 stations (including two control stations) around the Mine at distances ranging from approximately 13 m to 4,646 m from mining operations (Table 2.1-1 and Figure 2.1-1). Each gauge collected dustfall year-round, with samples collected approximately every three months. The average total sampling period for the 12 year-round locations was 352 days in 2021.

Dustfall gauge stations consisted of a hollow brass cylinder (52 centimeter (cm) length, 12.5 cm inner diameter) housed in a Nipher snow gauge (Photo 2.1-1). The cylinder collected dustfall, while the Nipher snow gauge reduced air turbulence around the gauge to increase dustfall gauge efficiency. At the end of each sampling period, the cylinder was exchanged with an empty, clean cylinder and content of the retrieved cylinder was processed in the DDMI environment laboratory to determine the mass of collected dustfall. This processing involved filtration, drying and weighing of samples as specified in the standard operating procedures (SOPs) ENVI-908-0119 and ENVI-902-0119 (see Appendices E and G of the *Diavik Diamond Mine: 2021 Dust Deposition Report*).

Once the mass of collected dustfall at a station was measured, the mean daily dustfall rate over the collection period was calculated as:

$$D = \frac{M}{A*T}$$
 [Equation 1]

where:

 $D = \text{mean daily dustfall rate (mg/dm}^2/\text{d)}$  during time period T

M = mass of dustfall collected (mg) during time period T

A = surface area of dustfall gauge collection cylinder orifice (dm<sup>2</sup>; approximately 1.227 dm<sup>2</sup>)

T = number of days of dustfall collection (d)

Table 2.1-1: Dustfall and Snow Chemistry Sampling Locations, Diavik Diamond Mine, 2021

Station ID	2021 Sampling Dates	Total Sample	UTM Co	ordinates <sup>1</sup>	Approx. Distance	Surface	Snow Water	
		Exposure Duration (days)	Easting Northing (m)		from Mining Operations (m)	Description	Chemistry Sampled <sup>2</sup>	
Dustfall Gaเ	ıges							
Dust 1	Jan 4 (2021; start), Apr 4, Jul 5, Sep 15, Dec 9 (2021; end)	339	533964	7154321	70	Land	n/a	
Dust 2A	Jan 5 (2021; start), Mar 30, Jul 5, Sep 19, Jan 14 (2022; end)	374	535678	7151339	425	Land	n/a	
Dust 3	Jan 3 (2021; start), Apr 4, Jul 5, Sep 15, Dec 4 (2021; end)	335	535024	7151872	22	Land	n/a	
Dust 4	Jan 3 (2021; start), Mar 30, Jul 5, Sep 15, Dec 9 (2021; end)	340	531397	7152127	173	Land	n/a	
Dust 5	Jan 5 (2021; start), Mar 30, Jul 2, Sep 16, Dec 9 (2021; end)	338	535696	7155138	1183	Land	n/a	
Dust 6	Jan 3 (2021; start), Apr 4, Jul 5, Sep 15, Dec 4 (2021; end)	335	537502	7152934	13	Land	n/a	
Dust 7	Jan 8 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	371	536819	7150510	1147	Land	n/a	
Dust 8	Jan 8 (2021; start), Apr 4, Jul 2, Sep 16, Dec 10 (2021; end)	336	531401	7154146	1213	Land	n/a	
Dust 9	Jan 5 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	374	541204	7152154	3796	Land	n/a	
Dust 10	Jan 3 (2021; start), Apr 4, Jul 5, Sep 15, Dec 9 (2021; end)	340	532908	7148924	46	Land	n/a	
Dust 11	Jan 6 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	373	531493	7150156	747	Land	n/a	
Dust 12	Jan 8 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	371	529323	7151191	2326	Land	n/a	

Station ID	2021 Sampling Dates	Total Sample	UTM Co	ordinates <sup>1</sup>	Approx. Distance	Surface	Snow Water	
		Exposure Duration (days)	Easting (m)	Northing (m)	from Mining Operations (m)	Description	Chemistry Sampled <sup>2</sup>	
Dustfall Gau	iges (cont'd)							
Dust C1	Jan 8 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	371	534979	7144270	4646	Land	n/a	
Dust C2	Jan 8 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	371	528714	7153276	3031	Land	n/a	
Snow Surve	ys							
SS1-1	Apr 10	191	533915	7154292	30	Land		
SS1-2	Apr 10	191	533909	7154382	115	Land		
SS1-3	Apr 10	191	533967	7154517	260	Land		
SS1-4 <sup>3</sup>	Apr 10	162	534483	7155096	899	Ice	<b>√</b>	
SS1-5	Apr 10	162	535098	7156275	2175	Ice	<b>√</b>	
SS2-1	Apr 9	161	537553	7153474	145	Ice	<b>√</b>	
SS2-2	Apr 9	161	537760	7153435	427	Ice	<b>√</b>	
SS2-3	Apr 9	161	538485	7153933	1194	Ice	✓	
SS2-4 <sup>4</sup>	Apr 9	161	539142	7154686	2164	Ice	✓	
SS3-4	Apr 11	163	536593	7150996	585	Ice	✓	
SS3-5	Apr 11	163	537693	7150790	1325	Ice	✓	
SS3-6	Apr 11	163	536302	7151563	35	Ice	✓	
SS3-7 <sup>5</sup>	Apr 11	163	536346	7151364	239	Ice	✓	
SS3-8	Apr 11	163	536635	7150873	826	Ice	✓	
SS4-1	Apr 12	193	531485	7152217	61	Land		
SS4-2	Apr 12	193	531353	7152263	196	Land		
SS4-3	Apr 12	193	531328	7152476	335	Land		
SS4-4	Apr 12	164	531140	7153172	1022	Ice	✓	
SS4-5	Apr 12	164	531410	7154120	1214	Ice	✓	

Station ID	2021 Sampling Dates	Total Sample	UTM Co	ordinates <sup>1</sup>	Approx. Distance	Surface	Snow Water
		Exposure Duration (days)	Easting (m)	Northing (m)	from Mining Operations (m)	Description	Chemistry Sampled <sup>2</sup>
Snow Surveys	(cont'd)		•	•			
SS5-1	Apr 11	192	533150	7148927	26	Land	
SS5-2	Apr 11	192	533149	7148871	55	Land	
SS5-3	Apr 11	163	533149	7148700	259	Ice	✓
SS5-4	Apr 11	163	533153	7147948	941	Ice	✓
SS5-5 <sup>6</sup>	Apr 11	163	533148	7146953	1894	Ice	✓
SSC-1	Apr 11	192	534989	7144273	4802	Land	√8
SSC-2	Apr 12	193	528714	7153273	3042	Land	√8
SSC-3 <sup>7</sup>	Apr 11	192	538649	7148747	3550	Land	√8

#### Notes:

<sup>&</sup>lt;sup>1</sup> UTM Zone 12W, NAD83.

 $<sup>^{2}</sup>$  n/a = not applicable.

<sup>&</sup>lt;sup>3</sup> Duplicate sample for snow water chemistry was collected at station SS1-4 (SS1-4-4 & SS1-4-5).

<sup>&</sup>lt;sup>4</sup> Duplicate sample for dustfall snow surveys was collected at SS2-4 station (SS2-4-4 & SS2-4-5).

<sup>&</sup>lt;sup>5</sup> Duplicate sample for snow water chemistry was collected at station SS3-7 (SS3-7-4 & SS3-7-5).

<sup>&</sup>lt;sup>6</sup> Duplicate sample for dustfall snow surveys was collected at station SS5-5 (SS5-5-4 & SS5-5-5).

<sup>&</sup>lt;sup>7</sup> Duplicate samples for dustfall snow surveys and snow water chemistry were collected at station SSC-3 (SSC-3-4 & SSC-3-5).

<sup>&</sup>lt;sup>8</sup> Snow water chemistry was sampled over ice, adjacent to the on-land control station; see Section 2.3 for further details.

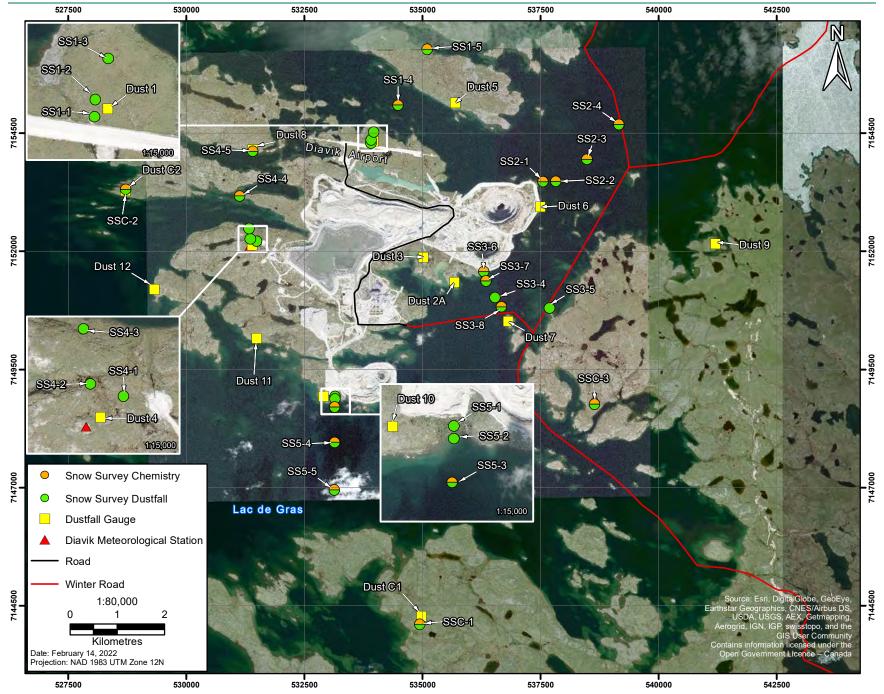


Figure 2.1-1: Dustfall Gauge and Snow Survey Locations, Diavik Diamond Mine, 2021

www.erm.com Project No.: 0207514-0021 Client: DIAVIK DIAMOND MINES (2012) INC. GIS # DIA-12-034



Photo 2.1-1: Dustfall gauge during sample collection. The dustfall gauge consisted of a hollow brass cylinder (centre) housed inside a Nipher snow gauge (right).

The mean daily dustfall rate (mg/dm²/d) was then multiplied by 365 days to estimate the mean annual dustfall rate (mg/dm²/y).

The Northwest Territories has no guidelines or objectives for dustfall deposition. The estimated dustfall rates are compared to the Alberta Ambient Air Quality Guidelines for dustfall (Table 2.1-2; Alberta Environment and Parks 2019), which are used only as general performance indicators and are not a regulatory requirement in compliance evaluation. The Alberta Ambient Air Quality Guidelines for dustfall include a guideline for residential and recreation areas (53 mg/dm² per 30 days) and a guideline for commercial and industrial areas where higher dustfall rates are expected (158 mg/dm² per 30 days). To compare against the Alberta Ambient Air Quality Guidelines, the daily and annual thresholds are calculated based on the 30-day objectives. The daily threshold ranged from 1.77 mg/dm²/d to 5.27 mg/dm²/d, while the annual threshold ranged from 647 to 1,928 mg/dm²/day. Snow water chemistry data were compared to effluent quality criteria (EQC) set out in Wek'èezhìi Land and Water Board (WLWB) Water Licence W2015L2-0001 (formerly W2007L2-0003). DDMI compares the snow water chemistry data to the EQC only as a general performance indicator only. There is no intention or requirement that these samples must meet the EQC.

Table 2.1-2: Dustfall and Snow Water Chemistry Reference Values

Parameter	Value	Unit	Comment	Source
Dustfall Rate	53 or 158	mg/dm²/ 30 day	Alberta Ambient Air Quality Guidelines for dustfall	(Alberta Environment and Parks, 2019).
Aluminum-Total	3,000 μg/L Max. grab sampl		Max. grab sample concentration	W2015L2-0001
Ammonia-N	monia-N 12,000 µg/L Ma		Max. grab sample concentration	W2015L2-0001
Arsenic-Total	100	μg/L	Max. grab sample concentration	W2015L2-0001
Cadmium-Total	3	μg/L	Max. grab sample concentration	W2015L2-0001
Chromium-Total 40 µg/L		Max. grab sample concentration	W2015L2-0001	
Copper-Total 40 µ		μg/L	Max. grab sample concentration	W2015L2-0001

Parameter	Value	Unit	Comment	Source
Lead-Total 20 µg/L		Max. grab sample concentration	W2015L2-0001	
Nickel-Total	100	μg/L	Max. grab sample concentration	W2015L2-0001
Nitrite-N	2,000	μg/L	Max. grab sample concentration	W2015L2-0001
Zinc-Total	20	μg/L	Max. grab sample concentration	W2015L2-0001

#### 2.2 Dustfall Snow Surveys

Dustfall snow surveys were performed at 24 monitoring and three control sites along five transects around the Project (Table 2.1-1 and Figure 2.1-1). Across stations, the distance from mining operations ranged from approximately 26 m to 2,175 m for the monitoring stations and from 3,042 m to 4,802 m for the control stations. The average total sampling period for the monitoring stations in 2021 was 192 and 162 days for the land and ice stations, respectively (control stations not included). The start dates correspond to the first snowfall for land stations (October 1, 2020), and freeze up of ice stations (October 30, 2020).

At each snow survey station, a snow corer was used to drill into the snowpack to retrieve a cylindrical snow core (6.1 cm inner diameter; Photo 2.2-1). Cores were extracted at each station and composited in the field to ensure a representative snow sample was obtained for the station. A minimum of three snow cores were collected at each (land and ice) of the snow sampling stations, as outlined in the Snow Core Survey SOP (ENVI-909-0119). Composited samples were bagged and brought to the DDMI environment lab for processing as specified in the Snow Core Survey SOP (ENVI-909-0119) and the Quality Assurance/Quality Control SOP (ENVI-902-0119). Processing of snow cores involved filtration, drying in a high heat oven, and weighing. For quality assurance and control (QA/QC), duplicate samples were collected at stations SS2-4, SS5-5 and SSC-3.

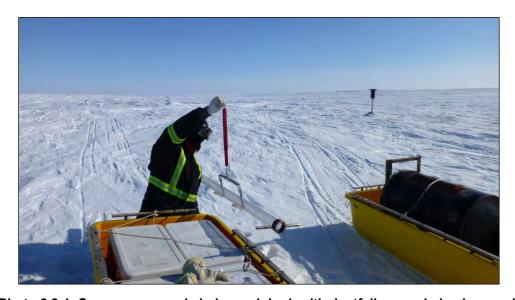


Photo 2.2-1: Snow core sample being weighed, with dustfall gauge in background.

Mean daily dustfall rate (mg/dm²/d) was then calculated over the collection period using Equation 1, with surface area (A) equal to the surface area of the snow corer tube orifice (0.2922 dm²) multiplied by the number of snow cores used for the composited sample at the station. The mean annual dustfall rate (mg/dm²/y) was estimated by multiplying the mean daily dustfall rate by 365 days.

 www.erm.com
 Version: B.1
 Project No.: 0630565-0001
 Client: Rio Tinto
 July 2022
 Page 2-7

Dustfall rates were compared to the Alberta Ambient Air Quality Objectives and Guidelines for dustfall (Table 2.1-2), which served as general performance indicators only.

#### 2.3 Snow Water Chemistry

Snow water chemistry analysis was performed on snow cores extracted from 19 locations, including 16 dustfall snow survey stations located on ice and three samples taken on ice adjacent to the three control locations (Table 2.1-1 and Figure 2.1-1). The distance of the snow survey stations from mining operations in 2021 ranged approximately 35 m to 2,175 m, while this distance ranged from 3,042 m to 4,802 m for the control locations. The average total sampling period in 2021 for the snow survey stations was 162 days (control stations not included). At each station located over water, cores were collected for chemistry analysis immediately after the dustfall snow cores were extracted.

Snow water chemistry cores were extracted using a snow corer in accordance with the dustfall snow survey core extraction. A minimum of three cores at each site were extracted and composited to obtain the necessary 3 L of snow water required for the laboratory chemical analysis. Snow cores were then processed and prepared for shipment to Bureau Veritas (BV) where the chemical analysis was performed. For QA/QC purposes, duplicate samples were collected at stations SS1-4, SS3-7 and SSC-3, in addition to an equipment blank sample (SS EBW). Snow water chemistry sampling methodology is detailed in SOP ENVI-909-0119 (see Appendix F of the *Diavik Diamond Mine: 2021 Dust Deposition Report*).

Effluent Quality Criteria (EQC), including "maximum average concentration" and "maximum concentration of any grab sample," are stipulated in DDMI's Water Licence (W2015L2-0001) for aluminum, ammonia, arsenic, cadmium, chromium, copper, lead, nickel, nitrite, and zinc (Table 2.1-2). Snow water chemistry results for these variables were compared to the "maximum concentration of any grab sample." This comparison is used as a general performance indicator only and is not a regulatory requirement in compliance evaluation. These results are also presented as part of DDMI's Annual AEMP Report submitted on March 31 each year.

#### 2.4 Results

Dustfall and snow water chemistry results were grouped into zones based on their relative distance from the mine footprint (Table 2.4-1). Station groupings into zones were first established at the outset of the program; however, these groupings were re-established in 2013 using satellite imagery of the site.

Table 2.4-1: Dustfal	ll Results, Dia	avik Diamond	Mine, 2021

Zone ID (m)	Number of Stations	2021 D	ustfall (mg/dm²/y) Dustfall Sn	from Dustfall Gau ow Surveys	ges and	
	in Zone	Median	Mean	Minimum	Maximum	
0 - 100	9	386	599	105	1648	
101 - 250	5	173	233	20	589	
251 - 1,000	10	66	226	6	833	
1,001 - 2,500	11	84	107	6	279	
> 2,500	1	50	-	-	-	
Control	5	36	54	14	101	

In 2021, the primary sources of fugitive dust were associated with unpaved road and airstrip usage and construction and mining activities at the A21 open pit. In 2021, the distances to mining operations were the same as in 2020. The distances to mining operations are shown in Table 2.1-1.

Major waste rock material transfers in 2021 included the use of haul roads (9,240,196 tonnes) and the transfer of kimberlite ore to the crusher (2,533,761 tonnes). Another source of fugitive dust was truck traffic along the ice road to the Project. Although, the ice road is mainly covered by ice and snow there is always some exposed rock material that creates fugitive dust. However, the consistency in the dust deposition rate near the ice road alignment sites between winter and summer, in addition to the relatively lower deposition rates at these sites (e.g., Dust 7, SS2-4, SS3-5 and SS3-8) indicated that the contributions of dust from the ice road were modest relative to other sources. To suppress dust generation, roads, parking areas and the plant site were watered during the summer and regulatory approved dust suppressant EK35 was used in approved area. In 2021, approximately 19,037 m<sup>3</sup> of water was applied to the plant site and haul roads. The exact impact of dust suppression could not be determined from the data collected in 2021; however, it is likely that road watering and dust suppressant reduced the amount of dust generated at the mine. In 2021, Underground Mine production continued at A154 and A418, as well as stripping and production at the A21 open pit. Fugitive dust generation is generally expected to be greatest during snow-free periods where and when there is site activity. Accordingly, it was expected that the highest fugitive dust generation and resulting dustfall would have occurred in areas closest to the roads, the airstrip, and mine footprint such as near A21 between May and September. Winter dustfall rates were always higher than summer rates except at two sites, suggesting that dust suppression methods used in the summer are effective.

Wind directions at the site in 2021 were generally omnidirectional with northwest, southeast and east being the dominant directions. Therefore, the expectation is that airborne material will be deposited in all directions around the mine with a west, northwest and southeast emphasis. Similar to previous years, the results show that the proximity to the mine activity is a stronger indicator of dust deposition than wind direction. This is supported by the fact that the three highest dust deposition rates in 2021 (Dust 10, 3, and 11) are located south of the mine footprint which was not a dominant downwind direction. Dust 10 and Dust 3, which are located only 46 and 22 m from the mine, respectively, recorded the highest dustfall rate of the dustfall gauges in 2021.

Results from the dustfall gauges, dustfall snow surveys, and the snow water chemistry analyses are presented below.

Snow water chemistry results that were below analytical detection limits were substituted with half the detection limit for the calculation of statistics and for graphing purposes.

#### 2.4.1 Dustfall Gauges

For each station, total dustfall collected throughout the year is summarized by zone in Table 2.4-1. The following list describes tables or figures that are included in the *Diavik Diamond Mine: 2021 Dust Deposition Report* (Appendix C; ERM 2022):

- 2021 annual dustfall collected at each station, relative to the Mine;
- Historical records of annual dustfall for each station from 2002 to 2021;
- A comparison of dustfall versus distance from the Mine footprint for 2021 and historical 2002 to 2021 datasets; and
- Boxplots summarizing the dustfall magnitude distribution from all stations during each year from 2002 to 2021.

The three highest estimated dustfall rates in 2021 measured using gauges occurred at Dust 3 (706 mg/dm²/y; 22 m from the Project), followed by Dust 10 (669 mg/dm²/y; 46 m from the Project) and Dust 11 (664 mg/dm²/y; 747 m from the Project). This is similar to 2020 and 2019 as the highest rates were recorded at the same three sites (Dust 3, Dust 10 and Dust 11). The elevated rate at Dust 3 site is

explained by its proximity to the Project footprint, while the high rate at Dust 10 is due to its location adjacent to the A21 open pit. Dust 11 is located west of the Waste Rock Storage Area - South Country Rock Pile (WRSA-SCRP; Figure 2.1-1). The lowest dustfall rate was recorded at Dust 9 (50 mg/dm²/y; 3,796 m), lower than the control stations Dust C1 (98 mg/dm²/y; 4,646 m to the south) and Dust C2 (101 mg/dm²/y; 3,031 m; Table 2.1-1 and Figure 2.1-1). This is similar to 2020 results and is explained by the distance of the Dust 9 site from the Project footprint.

The dustfall rates estimated from dustfall gauges in 2021 were slightly higher on average but comparable to 2020 rates. Out of 12 sites, 7 locations recorded lower deposition rates in 2021 than 2020, with an average rate of 333 mg/dm²/y and 319 mg/dm²/y in 2021 and 2020, respectively. The higher dustfall values recorded since 2018 compared to previous years suggest that dustfall rates from 2018 to 2021 were likely influenced by the surface activity at the mine, particularly at the A21 open pit, which began in December 2017, while the dustfall rates in 2017 were related mainly to the airstrip (DDMI 2018, 2019).

The annualized dustfall rates estimated from gauges at all stations were less than the Alberta Ambient Air Quality objective for dustfall of 1,922 mg/dm²/y, which is applied to industrial locations. The lower objective of 646 mg/dm²/y that is applied to residential and recreational areas was exceeded at three sites that recorded the highest dustfall rates in 2021 (Dust 3, Dust 10 and Dust 11). The Alberta Ambient Air Quality Objectives and Guidelines recommends that dustfall objectives be used as general performance indicators only with no compliance requirement; thus, these objectives are used here for comparison purposes only; there are currently no standards or objectives for the Northwest Territories.

#### 2.4.2 Dustfall Snow Surveys

Annual dustfall rates estimated from each snow survey station in 2021 are summarized in Table 2.4-1. Historical records of annual dustfall rates for each station, the relationship between annual dustfall rates and distance from the Mine footprint, boxplots summarizing dustfall rates measured in each year, and the data quality assurance and quality control are presented in the annual dust deposition report (Appendix A).

Annualized dustfall rates estimated from 2021 snow survey data ranged from 6 to 1,648 mg/dm²/y (Table 2.4-1). The maximum dust deposition rate was recorded at SS5-1 followed by SS1-1 (1,102 mg/dm²/y). The higher dustfall rate at SS5-1 is associated with the mine activity at A21 open pit (Figure 2.1-1). SS1-1 is located due north of the airstrip, which explains the higher levels of dustfall found here. This site recorded the highest rates from 2017 to 2020.

In general, snow survey dustfall rates decreased with increasing distance from the Project. Mean dustfall rates estimated using both dustfall gauges and snow surveys within the 0 m to 100 m, 101 m to 250 m, 251 m to 1,000 m, 1,001 m to 2,500 m, and control zones were 599, 233, 226, 107, and 54 mg/dm²/y, respectively (Table 2.4-1). Dustfall rates at stations SS1-1, SS5-1, SS1-2, Dust 11, SS5-3, Dust 7, Dust 8, Dust 12 and SS4-5 were greater than the upper limit of the 95% confidence interval (CI) for their respective zones in 2021. The 95% CI was exceeded at two sites in each of the 0 m to 100 m zone (SS1-1 and SS5-1) and the 251 m to 1,000 m zone (Dust 11 and SS5-3), one site in the 101 m to 250 m zone (SS1-2) and at four sites in the 1,001 m to 2,500 m zone (Dust 7, Dust 8, Dust 12 and SS4-5). In the 0 m to 100 m zone, the exceedance can be explained by the adjacent location to the airstrip for SS1-1 and the A21 open pit for SS5-1, while the exceedance at the 251 m to 1,000 m zone is likely explained by the proximity to the A21 open pit for both sites. The exceedance of the 95% CI in the 1,001 m to 2,500 m zone is associated with dust from the ice road for Dust 7 and likely with the airstrip for Dust 8. The low dust deposition rate at some sites in this zone (e.g., SS1-5 and SS2-3; Table 2.4-1) resulted in a relatively low value of the 95% CI, which led to four exceedances for this zone.

Annualized dustfall estimated from snow survey stations in 2021 were generally comparable to 2020 dustfall estimates, with several stations recording higher rates in 2021 than 2020. The annualized dustfall

rates estimated from snow surveys in 2021 never exceeded the upper limit (which applies to industrial locations) of the Alberta Ambient Air Quality Objectives and Guidelines at any station, while only SS1-1, SS5-1, and SS5-3 exceeded the lower limit of these guidelines (which applies to residential and recreational areas).

#### 2.4.3 Snow Water Chemistry

The maximum snow water chemistry results for 2021 are presented in Table 2.4-2. All analytical results for snow water chemistry and data quality assurance and quality control analysis are included in the Diavik Diamond Mine: 2021 Dust Deposition Report (Appendix C; ERM 2022).

Table 2.4-2: Snow Water Chemistry Results, Diavik Diamond Mine, 2021

Zone ID (m)	Number	2021 Maximum Snow Water Chemistry Res							/ Resul	esults (µg/L)			
	of Stations in Zone	Aluminum	Ammonia	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Nitrite	Phosphorous	Zinc	
0 - 100	1	3360	70.00	0.28	0.04	28.9	4.66	4.75	60.2	0.50	158.0	18.6	
101 - 250	2	608.3	33.00	0.08	0.01	4.51	0.85	0.45	7.15	0.50	26.40	3.50	
251 - 1,000	6	560.8	24.33	0.06	0.01	3.24	0.92	0.59	4.22	0.72	23.85	3.12	
1,001 - 2,500	7	257.7	23.43	0.06	0.01	2.24	0.50	0.23	3.28	0.60	14.03	1.40	
Control	3	262.5	22.83	0.05	0.01	2.77	0.42	0.26	3.68	0.50	5.38	1.60	

All 2021 sample concentrations, except aluminum at one site, were less than their associated reference levels as specified by the "maximum concentration of any grab sample" in Water Licence W2015L2-0001.

In 2021, most concentrations within the closest zone from the mine footprint (0 m to 100 m zone) were generally higher than 2019 and 2020 records (e.g. aluminum, arsenic, chromium, copper, lead, nickel, phosphorous and zinc). The average concentrations and areal deposition rates of snow water chemistry variables of interest decreased with increasing distance from the Project.

#### 3. NATIONAL POLLUTANT RELEASE INVENTORY

#### 3.1 Program Overview

According to ECCC, air issues such as smog and acid rain result from the presence of, and interactions between a group of pollutants known as Criteria Air Contaminants (CAC) and some related pollutants. CAC, in particular, refer to a group of pollutants that include:

- Sulphur oxides (SO<sub>x</sub>);
- Nitrogen oxides (NO<sub>x</sub>);
- Particulate matter (PM);
- Volatile organic compounds (VOC);
- Carbon monoxide (CO); and
- Ammonia (NH<sub>3</sub>).

CAC are produced from a number of sources, including burning of fossil fuels and it is in part because of these shared sources that CAC are grouped together.

While there is no regulatory requirement or standard for these pollutant releases in the Northwest Territories, the National Pollutant Release Inventory (NPRI) is a legislated, publicly accessible inventory used to track the amount of pollutant releases (to air, water and land), disposals and transfers for recycling. The program is administered by ECCC and is a requirement of the *Canadian Environmental Protection Act* (CEPA 1999) for owners and operators of facilities that meet the NPRI reporting requirements published in the Canada Gazette, Part I (ECCC 2022a). Reporting requirements are normally revised every one or two years, with accompanying revised guidance documents (ECCC 2021). NPRI reports containing emissions of CACs are to be submitted to ECCC before June 1 each year.

NPRI substance emissions were derived by DDMI using emission factor calculations in the ECCC NPRI Toolbox (ECCC 2022b). Operational values such as fuel usage and mobile equipment hours were recorded at the Mine throughout the year and weather conditions from the Mine's on-site weather station were used to calculate NPRI values.

#### 3.2 Results

Table 4.2-1 compares the Mine's 2021 NPRI CAC emission submission results (K. Gray, pers. comm.) against the 2020 NPRI submission. NPRI reports for previous years (2001 to 2019) are available on the NPRI website (ECCC 2022c).

All CAC emissions were relatively consistent between 2020 and 2021.  $SO_2$  emissions increased by 12.3% in 2021 relative to 2020 due to increased diesel usage for small power.

Table 4.2-1: NPRI Results for CAC Emissions, Diavik Diamond Mine, 2020 and 2021

CAC Emissions	2021 Reporting Threshold (tonnes)	2020 (tonnes)	2021 (tonnes)	Reasons for Changes from Previous Year
Carbon Monoxide (CO)	20	800.6	712.9	No change
Sulphur Dioxide (SO2)	20	7.3	8.2	Increased use of diesel engine in 2021
Oxides of Nitrogen (NOx expressed as NO2)	20	2,376.3	2,277.0	No change

DIAVIK DIAMOND MINE 2021 Environmental Air Quality Monitoring Report – Dustfall

CAC Emissions	2021 Reporting Threshold (tonnes)	2020 (tonnes)	2021 (tonnes)	Reasons for Changes from Previous Year
Volatile Organic Compounds (VOC)	10	59.4	56.6	No change
Total Particulate Matter (TPM)	20	815.9	814.8	Decreased due to use of dust suppressant on approved area in 2021
Particulate Matter ≤ 10 μm (PM <sub>10</sub> )	0.5	326.8	324.5	Decreased due to use of dust suppressant on approved area in 2021
Particulate Matter ≤ 2.5 μm (PM <sub>2.5</sub> )	0.3	73.5	72.5	Decreased due to use of dust suppressant on approved area in 2021

Project No.: 0630565-0001 Client: Rio Tinto July 2022 www.erm.com Version: B.1 Page 3-2

#### 4. GREENHOUSE GAS REPORTING

#### 4.1 Program Overview

While there is no territorial regulatory requirement or standard for GHG release in the Northwest Territories, the national Greenhouse Gas Emissions Reporting Program (GHGRP) is Canada's legislated, publicly accessible inventory of facility-reported GHG data and information. The program is administrated by ECCC and is a requirement of the CEPA 1999 for owners or operators of facilities that emit GHGs above a certain threshold. Starting for 2017 reporting, the GHGRP requirement applied to all facilities that emit the equivalent of 10,000 tonnes of carbon dioxide equivalent units (tCO<sub>2</sub>e) or more, per year (ECCC 2019a, ECCC 2022d). The previous threshold was 50,000 tCO<sub>2</sub>e per year. GHG reports are to be submitted prior to June 1 each year.

GHG emissions were derived by DDMI using emission factor calculations in the Guidance Manual for Estimating Greenhouse Gas Emissions (Environment Canada 2004). Operational values such as fuel usage and mobile equipment hours were recorded at the Mine throughout the year.

Three GHG emissions are calculated for the Mine: CO<sub>2</sub>, methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). To calculate CO<sub>2</sub>e, 100-year Global Warming Potentials (GWP) are used to convert CH<sub>4</sub> and N<sub>2</sub>O from tonnes to tCO<sub>2</sub>e. The CH<sub>4</sub> and N<sub>2</sub>O GWP multipliers used were 25 and 298, respectively (ECCC 2019b).

#### 4.2 Results

Table 3.2-1 compares 2020 and 2021 GHG emissions results for the Mine. The 2021 GHG emission reporting information was filed with ECCC on June 1, 2022 (K. Gray, pers. Comm.). GHG reports for previous years (2001 to 2021) are published by ECCC and available from the open government website (ECCC 2022e).

Constituent	2020 (t)	2020 (tCO <sub>2</sub> e)	2021 (t)	2021 (tCO <sub>2</sub> e)
CO <sub>2</sub>	192,171	192,171	193,685	193,685
CH <sub>4</sub>	6	141	5	136
N <sub>2</sub> O	1	430	1	437
Total	_	192,742	_	194,258

Table 3.2-1: GHG Equivalents for the Diavik Diamond Mine, 2020 and 2021

GHG emissions results for the previous year are typically released by ECCC in April, ten months following submission on June 1 of each year (e.g., 2021 data reported by June 1, 2022 are expected to be released by ECCC in April of 2023).

CO₂e emissions increased in 2021 compared with 2020 (Table 3.2-1) by 0.8%. GHG emissions at the Mine are from stationary equipment fuel combustion and on-site transportation (76% and 24% of GHG emissions, respectively.

In 2021, the Mine's 9.2 megawatt wind farm (consisting of four turbines; Photo 3.2-1) generated 17.0 gigawatt-hours of electricity (8.6% energy penetration) and saved 3.8 million litres of diesel fuel needed for power, thereby reducing the Mine's CO<sub>2</sub>e by 10.3 kilotonnes.



Photo 3.2-1: The Diavik 9.2 megawatt wind farm. The wind farm consists of four wind turbines.

#### 5. SUMMARY

In 2021, dustfall was monitored at 14 dustfall gauges and 27 snow survey stations located at varying distances and directions from the mine. Snow water chemistry was measured at 19 of the snow survey stations and compared to EQC set out in the WLWB Water Licence W2015L2-0001.

Annual dustfall estimated from each of the 14 dustfall gauges ranged from 50 to 706 mg/dm²/y in 2021. The annualized dustfall rates estimated from the 2021 snow survey data ranged from 6 to 1,648 mg/dm²/y. All of the annualized dustfall rates estimated from dustfall gauges and snow surveys were less than 5.27 mg/dm²/day (1,924 mg/dm²/y in a year), the non-residential Alberta Ambient Air Quality Guideline for dustfall (Alberta Environment and Parks 2019). Observed dustfall rates at the Dust 3, Dust 10, Dust 11, SS1-1, SS5-1, and SS5-3 stations were higher than 1.77 mg/dm²/day (646 mg/dm²/y in a year), the residential Alberta Ambient Air Quality Guideline for dustfall. This Guideline is used only as a general performance indicator. Dustfall rates in 2021 increased in comparison with 2020, but generally within the range of historical data collected for the Mine.

Because the dustfall gauges continuously collect dust throughout the year, and the snow surveys are only representative of dustfall accumulated over the snow cover period, the reported annual dustfall results from the dustfall gauges are expected to provide a better estimate of annual dustfall compared to snow survey results for similar geographic areas. However, results obtained from both methods showed similar spatial patterns, with dustfall generally decreasing with distance away from the Mine.

Snow water chemistry analysis of interest included those variables with effluent quality criteria (EQC; i.e., aluminum, ammonia, arsenic, cadmium, chromium, copper, lead, nickel, nitrite, and zinc). All 2021 sample concentrations were less than their associated reference levels as specified by the "maximum concentration of any grab sample" in Water Licence W2015L2-0001 except for the aluminum concentration at one site. This comparison is used as a general performance indicator only.

The Mine reported CAC emissions as part of the annual NPRI submission and emissions were estimated using published emission factors. The 2021 emissions are compared to 2020 emissions. All CAC emissions were relatively consistent between 2020 and 2021. SO<sub>2</sub> emissions increased by 12.3% in 2021 relative to 2020 due to increased diesel usage for small power.

The Mine reported GHG emissions as part of the annual national GHGRP submission, and CO<sub>2</sub>e emissions were estimated using published emission factors and 100-year GWP ratios. Starting for 2017 reporting, the GHGRP was changed to require all facilities to report if they emit the equivalent of 10,000 tCO<sub>2</sub>e or more per year, compared to the previous 50,000 tCO<sub>2</sub>e per year threshold.

Mine GHG emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O totalled 194,258 tCO<sub>2</sub>e in 2021, a 0.8% increase from 2020. GHG emissions at the Mine in 2021 were from stationary equipment fuel combustion (76%) and mobile equipment fuel combustion (24%). In 2021, the Mine's 9.2 megawatt wind farm helped to reduce the Mine's GHG footprint by generating 17 gigawatt-hours of electricity which saved 3.8 million litres of diesel fuel and thereby prevented the direct release of 10.3 tCO<sub>2</sub>e.

 www.erm.com
 Version: B.1
 Project No.: 0630565-0001
 Client: Rio Tinto
 July 2022
 Page 5-1

#### 6. REFERENCES

Definitions of the acronyms and abbreviations used in this reference list can be found in the Glossary and Abbreviations section.

- Alberta Environment and Parks. 2019. *Alberta Ambient Air Quality Objectives and Guidelines Summary*. <a href="https://open.alberta.ca/dataset/0d2ad470-117e-410f-ba4f-aa352cb02d4d/resource/4dd8097-6787-43f3-bb4a-908e20f5e8f1/download/aaqo-summary-jan2019.pdf">https://open.alberta.ca/dataset/0d2ad470-117e-410f-ba4f-aa352cb02d4d/resource/4dd8097-6787-43f3-bb4a-908e20f5e8f1/download/aaqo-summary-jan2019.pdf</a> (accessed June 2022).
- CEPA. 1999. Canadian Environmental Protection Act, S.C. 1999, c. 33.

  <a href="https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/publications/canadian-environmental-protection-act-1999.html">https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-1999.html</a>

  (accessed June 2022).
- Cirrus Consultants. 1998. Diavik Diamonds Mine: Environmental Effects Report Climate and Air Quality.
- DDMI. 2000. Environmental Agreement. Submitted to the Environmental Monitoring Advisory Board.
- DDMI. 2013. *Environmental Air Quality Monitoring Plan.* Submitted to the Environmental Monitoring Advisory Board.
- ECCC. 2019a. *Greenhouse Gas Reporting: Facilities*. <a href="https://www.canada.ca/en/environment-climate-change/greenhouse-gas-emissions/facility-reporting.html">https://www.canada.ca/en/environment-climate-change/greenhouse-gas-emissions/facility-reporting.html</a> (accessed June 2022).
- ECCC. 2019b. *Global warming potentials*. <a href="https://www.canada.ca/en/environment-climate-change/greenhouse-gas-emissions/quantification-guidance/global-warming-potentials.html">https://www.canada.ca/en/environment-climate-change/greenhouse-gas-emissions/quantification-guidance/global-warming-potentials.html</a> (accessed June 2022).
- ECCC. 2021. Guide for Reporting to the National Pollutant Release Inventory (NPRI) 2020 and 2021. https://publications.gc.ca/collections/collection\_2020/eccc/En81-1-2020-eng.pdf (accessed June 2022).
- ECCC. 2022a. Legal requirements: Canada Gazette notices. <a href="https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/report/legal-requirements-gazette-notices.html">https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/report/legal-requirements-gazette-notices.html</a> (accessed June 2022).
- ECCC. 2022b. *Tools to calculate emissions*. <a href="https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/report/sector-specific-tools-calculate-emissions.html">https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/report/sector-specific-tools-calculate-emissions.html</a> (accessed June 2022).
- ECCC. 2022c. Tools and resources for the National Pollutant Release Inventory data.

  <a href="https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/tools-resources-data.html">https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/tools-resources-data.html</a> (accessed June 2022).
- ECCC. 2022d. *Technical Guidance on Reporting Greenhouse Gas Emissions 2020 Data*. Environment and Climate Change Canada. <a href="http://publications.gc.ca/collections/collection-2021/eccc/En81-29-2020-eng.pdf">http://publications.gc.ca/collections/collection-2021/eccc/En81-29-2020-eng.pdf</a> (accessed June 2022).
- ECCC. 2022e. Canada's official greenhouse gas inventory. <a href="https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/inventory.html">https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/inventory.html</a> (accessed June 2022).
- Environment Canada. 2004. *Metal Mining: A Guidance Manual for Estimating Greenhouse Gas Emissions*. Environment Canada. <a href="http://publications.gc.ca/site/eng/257563/publication.html">http://publications.gc.ca/site/eng/257563/publication.html</a> (accessed June 2022).

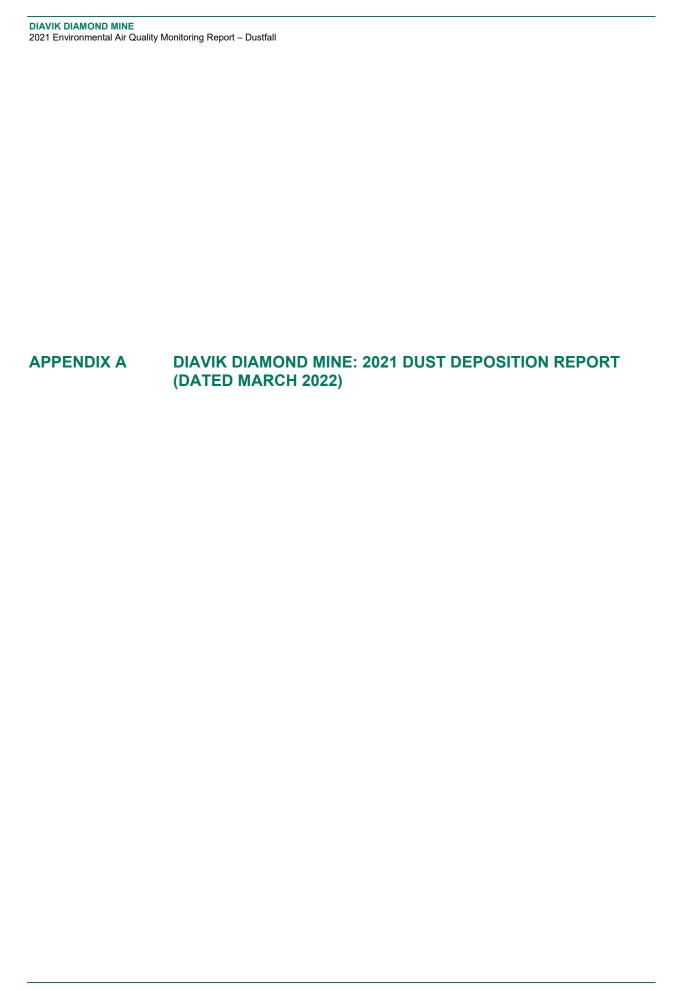
DIAVIK DIAMOND MINE REFERENCES

ERM. 2022. *Diavik Diamond Mine: 2021 Dust Deposition Report*. Prepared for Diavik Diamond Mines (2012) Inc. by ERM Consultants Canada Ltd.: Vancouver, British Columbia.

#### **Personal Communication**

2021 Environmental Air Quality Monitoring Report - Dustfall

Gray, K. 2022. Rio Tinto Diavik Diamond Mine Environment Advisor. Personal communication to ERM on June 1, 2022 with Diavik 2021 NPRI and GHG submission data.



 www.erm.com
 Version: B.1
 Project No.: 0630565-0001
 Client: Rio Tinto
 July 2022





### **Diavik Diamond Mine**

**2021 Dust Deposition Report** 

March 2022

Project No.: 0630556-0001



March 2022

### **Diavik Diamond Mine**

### **2021 Dust Deposition Report**

#### **ERM Consultants Canada Ltd.**

#1000 - 1100 Melville Street Vancouver, BC Canada V6E 4A6

T: +1 604 689 9460 F: +1 604 687 4277

© Copyright 2022 by The ERM International Group Limited and/or its affiliates ("ERM"). All rights reserved. No part of this work may be reproduced or transmitted in any form, or by any means, without the prior written permission of ERM.

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022

#### **EXECUTIVE SUMMARY**

Potential air and water quality concerns associated with airborne fugitive dust, which may result from Diavik Diamond Mine (the Project) mining activities, were identified in the Diavik Diamond Mine *Environmental Assessment Report*. In accordance with the Environmental Assessment and requirements associated with the Aquatic Effects Monitoring Program (AEMP), a dust monitoring program was initiated in 2001. The program was designed to achieve the following objectives:

- determine dust deposition (dustfall) rates at various distances from the mine project footprint; and
- determine the chemical characteristics of dustfall that may be deposited onto, and subsequently into, Lac de Gras as a result of mining activities, in support of the AEMP.

In 2021, dustfall monitoring included three components, with sampling conducted at varying distances around the mine from 13 to 4,802 metres (m) away from infrastructure:

- dustfall gauges (12 monitoring and 2 control locations);
- dustfall from snow surveys (24 monitoring and 3 control locations); and
- snow water chemistry from snow surveys (16 monitoring and 3 control locations).

As expected, dustfall rates generally decreased with distance from the Project. The proximity to mine activity was the strongest indicator of dustfall deposition. In 2021, the annual dustfall estimated from each of the 14 dustfall gauges ranged from 50 to 706 mg/dm²/y. Dust 3 (22 m from the Project) had the highest recorded dustfall followed by Dust 10 (46 m from the Project). Although it is expected that fugitive dust generation is higher during snow-free periods because of exposed road surfaces, the summer (July to September) rates were lower at most sites than the winter rates, which is likely explained by the dust suppression applied on haul roads, parking areas and the plant site during the snow-free season.

The annualized dustfall rates estimated from the 2021 snow survey data ranged from 6 to 1,648 mg/dm²/y. Although there are no dustfall standards for the Northwest Territories, dustfall rates at all stations in 2021 were lower than the non-residential objective (1,922 mg/dm²/y) documented in the Alberta Ambient Air Quality Objectives and Guidelines (Alberta Environment and Parks 2019), and only SS1-1, SS5-1, and SS5-3 dustfall stations exceeded the lower limit (646 mg/dm²/y) of these guidelines, which applies to residential and recreational areas. These objectives are used as general performance indicators only.

Snow water chemistry analytes of interest included those variables with effluent quality criteria (EQC; i.e., aluminum, ammonia, arsenic, cadmium, chromium, copper, lead, nickel, nitrite, and zinc) or a load limit (i.e., phosphorus) specified in the Type A Water Licence (W2015L2-0001, formerly W2007L2-0003). All 2021 snow water chemistry sample concentrations were well below their associated reference levels as specified by the "maximum concentration of any grab sample" in Water Licence W2015L2-0001 except for the aluminum concentration at one site. Concentrations in 2021 were generally higher than the previous few years but comparable to levels on and before 2010. Typically, concentrations decreased with distance from the Project.

### **CONTENTS**

EXE	CUTIVE	SUMMA	\RY			
ACF	RONYMS	AND A	BBREVIATIONS	١		
1.	INTRO	DUCTIO	ON	1-1		
2.	METHODOLOGY					
	2.1	Dustfall	Gauges	2-1		
	2.2	Dustfall	Snow Surveys	2-6		
	2.3	Snow W	Snow Water Chemistry			
3.	RESU	LTS		3-1		
	3.1 Dustfall Gauges			3-		
	3.2	Dustfall	Dustfall Snow Surveys			
	3.3	Snow W	Vater Chemistry	3-12		
		3.3.1	Aluminum	3-12		
		3.3.2	Ammonia	3-12		
		3.3.3	Arsenic	3-15		
		3.3.4	Cadmium	3-15		
		3.3.5	Chromium	3-15		
		3.3.6	Copper	3-15		
		3.3.7	Lead	3-15		
		3.3.8	Nickel	3-15		
		3.3.9	Nitrite	3-18		
		3.3.10	Phosphorus			
		3.3.11	Zinc			
	3.4	Evaluati	ion of Existing Control Sites	3-18		
	3.5	Quality	Assurance and Control	3-18		
4.	SUMN	IARY		4-1		
5.	REFE	RENCES	S	5-1		
APF	PENDIX A	A AI	NNUAL CHANGES TO DUSTFALL PROGRAM			
APF	PENDIX I	B DI	USTFALL GAUGE ANALYTICAL RESULTS			
APF	PENDIX (	C DI	USTFALL SNOW SURVEY FIELD SHEETS AND ANALYTICAL RESULT	S		
APF	PENDIX I	D SI	NOW WATER CHEMISTRY ANALYTICAL RESULTS			
APPENDIX E			DUST GAUGE COLLECTION STANDARD OPERATING PROCEDURE (ENVI-908-0119)			
APF	PENDIX I	F SI	SNOW CORE SURVEY STANDARD OPERATING PROCEDURE (ENVI-909-0119)			
			QUALITY ASSURANCE/QUALITY CONTROL STANDARD OPERATING PROCEDURE (ENVI-902-0119)			

#### **List of Tables**

	Table 2-1: Dustfall and Snow Chemistry Sampling Locations, Diavik Diamond Mine, 2021	2-2
	Table 2.2-1: Dustfall and Snow Water Chemistry Reference Values	2-7
	Table 3-1: Dustfall and Snow Water Chemistry Results, Diavik Diamond Mine, 2021	3-3
	Table 3.5-1: Sample Duplicates	3-20
	Table 3.5-2: Analytical Blanks for QA/QC Program	3-21
List	t of Figures	
	Figure 2-1: Dustfall Gauge and Snow Survey Locations, Diavik Diamond Mine, 2021	2-5
	Figure 3.1-1: Dustfall Results, Diavik Diamond Mine, 2021	3-2
	Figure 3.1-2: Calculated Annual Dust Deposition Rates at Dustfall Gauges and Snow Survey Locations up to 1,000 m from the Project Footprint, Diavik Diamond Mine, 2002 to 2021	3-7
	Figure 3.1-3: Calculated Annual Dust Deposition Rates at Dustfall Gauges and Snow Survey Locations greater than 1,000 m from the Project Footprint, Diavik Diamond Mine, 2002 to 2021	3-8
	Figure 3.1-4: Dust Deposition versus Distance from Project Footprint, Diavik Diamond Mine, 2021	3-9
	Figure 3.1-5: Dust Deposition Box Plot, Diavik Diamond Mine, 2002 to 2021	3-10
	Figure 3.3-1: Snow Water Chemistry Results: Aluminum, Ammonia, Nitrite, Phosphorus, Arsenic, Cadmium, Chromium, Copper, Lead, Nickel and Zinc, 2021	3-13
	Figure 3.3-2: Snow Water Chemistry Results: Aluminum, Ammonia and Arsenic, 2001 to 2021	3-14
	Figure 3.3-3: Snow Water Chemistry Results: Cadmium, Chromium and Copper, 2001 to 2021	3-16
	Figure 3.3-4: Snow Water Chemistry Results: Lead, Nickel and Nitrite 2001 to 2021	3-17
	Figure 3.3-5: Snow Water Chemistry Results: Phosphorus and Zinc, 2001 to 2021	3-19
List	t of Photos	
	Photo 2.1-1: Dustfall gauge during sample collection. The dustfall gauge consisted of a hollow brass cylinder (centre) housed inside a Nipher snow gauge (right)	2-1
	Photo 2.2-1: Snow core sample being weighed, with dustfall gauge in background	

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page iii

#### **ACRONYMS AND ABBREVIATIONS**

AEMP Aquatic effects monitoring program

BC British Columbia

BC MOE British Columbia Ministry of Environment

BV Bureau Veritas

CI Confidence interval

DDMI Diavik Diamond Mines (2012) Inc.

DL Detection limit

Dustfall Dust deposition

EQC Effluent quality criteria

ERM Consultants Canada Ltd.

Fugitive Dust Atmospheric dust arises from mechanical disturbance of granular material exposed to

the air and is not discharged to the atmosphere in a confined flow stream.

IQR The interquartile range of the box plot. In box plots, the middle 50% of data occurs

within the limits of the interquartile range.

Q1 The lower quartile of the box plot. In box plots, 25% of data lie below than this value.

Q3 The upper quartile of the box plot. In box plots, 25% of data lie above than this value.

QA/QC Quality assurance and quality control

the Project Diavik Diamond Mine

RPD Relative percent difference

SCRP South Country Rock Pile

SOP Standard operating procedure

WLWB Wek'èezhìi Land and Water Board

WRSA Waste Rock Storage Area: an elevated surface constructed from dumping waste rock.

#### 1. INTRODUCTION

Potential air and water quality concerns associated with airborne fugitive dust, which may result from Diavik Diamond Mine (the Project) mining activities, were identified in the Diavik Diamond Mine *Environmental Assessment Report* (DDMI 1998). In accordance with the Environmental Assessment and requirements associated with the Aquatic Effects Monitoring Program (AEMP), a dust monitoring program was initiated in 2001. The program was designed to achieve the following objectives:

- determine dust deposition (dustfall) rates at various distances from the mine project footprint; and
- determine the chemical characteristics of dustfall that may be deposited onto, and subsequently into, Lac de Gras as a result of mining activities, in support of the AEMP.

Since 2001, the dustfall monitoring program has gone through various changes, including an increase in the number of sampling locations, the relocation of some sampling stations, and improvements to the dustfall sampling methodology. Appendix A of the Dust Deposition Report summarizes the amendments and additions to the dustfall monitoring program since 2001. This report includes a comparison between the 2021 observations of dustfall to all site-specific historical data collected since 2002. Historical dustfall monitoring results have been presented each year in the Diavik Diamond Mine Dust Deposition reports from 2001 to 2020 (DDMI 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020 and 2021). The historical data presented are not considered to be representative of baseline conditions because construction of the mine began in 2001.

#### 2. METHODOLOGY

The 2021 dustfall monitoring program incorporated three monitoring components:

- dustfall gauges (12 monitoring and 2 control locations);
- dustfall from snow surveys (24 monitoring and 3 control); and
- snow water chemistry from snow surveys (16 monitoring and 3 control).

Sampling was completed at varying distances around the mine along five transects, including three control locations (Table 2-1, Figure 2-1).

## 2.1 Dustfall Gauges

Dustfall gauges were placed at 14 stations (including two control stations) around the Project at distances ranging from approximately 13 m to 4,646 m from mining operations (Table 2-1; Figure 2-1). The 12 stations (plus 2 control stations) collected dustfall year-round, with samples collected approximately every three months. The average total sampling period for the 12 year-round locations was 352 days in 2021.

Dustfall gauges consisted of a hollow brass cylinder (52 cm length, 12.5 cm inner diameter) housed in a Nipher snow gauge (Photo 2.1-1). The cylinder collected dustfall, while the Nipher snow gauge reduced air turbulence around the gauge to increase dustfall catch efficiency. The cylinder was exchanged with an empty, clean cylinder at the end of each sampling period, and the content of the cylinder that was retrieved was processed in the Diavik Diamond Mines (2012) Inc. (DDMI) environment lab to determine the mass of collected dustfall. This processing involved filtration, drying in a high heat oven, and weighing of samples as specified in the Dust Gauge Collection Standard Operating Procedure (SOP; ENVI-908-0119; Appendix E) and the Quality Assurance/Quality Control SOP (ENVI-902-0119; Appendix G).



Photo 2.1-1: Dustfall gauge during sample collection. The dustfall gauge consisted of a hollow brass cylinder (centre) housed inside a Nipher snow gauge (right).

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 2-1

Table 2-1: Dustfall and Snow Chemistry Sampling Locations, Diavik Diamond Mine, 2021

Station ID	2021 Sampling Dates	Total Sample	UTM Co	ordinates <sup>1</sup>	Approx. Distance	Surface	Snow Water
		Exposure Duration (days)	Easting (m)	Northing (m)	from Mining Operations (m)	Description	Chemistry Sampled <sup>2</sup>
Dustfall Ga	uges						
Dust 1	Jan 4 (2021; start), Apr 4, Jul 5, Sep 15, Dec 9 (2021; end)	339	533964	7154321	70	Land	n/a
Dust 2A	Jan 5 (2021; start), Mar 30, Jul 5, Sep 19, Jan 14 (2022; end)	374	535678	7151339	425	Land	n/a
Dust 3	Jan 3 (2021; start), Apr 4, Jul 5, Sep 15, Dec 4 (2021; end)	335	535024	7151872	22	Land	n/a
Dust 4	Jan 3 (2021; start), Mar 30, Jul 5, Sep 15, Dec 9 (2021; end)	340	531397	7152127	173	Land	n/a
Dust 5	Jan 5 (2021; start), Mar 30, Jul 2, Sep 16, Dec 9 (2021; end)	338	535696 7155138		1183	Land	n/a
Dust 6	Jan 3 (2021; start), Apr 4, Jul 5, Sep 15, Dec 4 (2021; end)	335	537502	7152934	13	Land	n/a
Dust 7	Jan 8 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	371	536819	7150510	1147	Land	n/a
Dust 8	Jan 8 (2021; start), Apr 4, Jul 2, Sep 16, Dec 10 (2021; end)	336	531401	7154146	1213	Land	n/a
Dust 9	Jan 5 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	374	541204	7152154	3796	Land	n/a
Dust 10	Jan 3 (2021; start), Apr 4, Jul 5, Sep 15, Dec 9 (2021; end)	340	532908	7148924	46	Land	n/a
Dust 11	Jan 6 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	373	531493	7150156	747	Land	n/a
Dust 12	Jan 8 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	371	529323	7151191	2326	Land	n/a

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 2-2

Station ID	2021 Sampling Dates	Total Sample	UTM Co	ordinates <sup>1</sup>	Approx. Distance	Surface	<b>Snow Water</b>
		Exposure Duration (days)	Easting (m)	Northing (m)	from Mining Operations (m)	Description	Chemistry Sampled <sup>2</sup>
Dust C1	Jan 8 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	371	534979	7144270	4646	Land	n/a
Dust C2	Jan 8 (2021; start), Mar 30, Jul 2, Sep 16, Jan 14 (2022; end)	371	528714	7153276	3031	Land	n/a
Snow Surve	ys						
SS1-1	Apr 10	191	533915	7154292	30	Land	
SS1-2	Apr 10	191	533909	7154382	115	Land	
SS1-3	Apr 10	191	533967	7154517	260	Land	
SS1-4 <sup>3</sup>	Apr 10	162	534483	7155096	899	Ice	✓
SS1-5	Apr 10	162	535098	7156275	2175	Ice	✓
SS2-1	Apr 9	161	537553	7153474	145	Ice	✓
SS2-2	Apr 9	161	537760	7153435	427	Ice	✓
SS2-3	Apr 9	161	538485	7153933	1194	Ice	✓
SS2-4 <sup>4</sup>	Apr 9	161	539142	7154686	2164	Ice	✓
SS3-4	Apr 11	163	536593	7150996	585	Ice	✓
SS3-5	Apr 11	163	537693	7150790	1325	Ice	✓
SS3-6	Apr 11	163	536302	7151563	35	Ice	✓
SS3-7 <sup>5</sup>	Apr 11	163	536346	7151364	239	Ice	✓
SS3-8	Apr 11	163	536635	7150873	826	Ice	✓
SS4-1	Apr 12	193	531485	7152217	61	Land	
SS4-2	Apr 12	193	531353	7152263	196	Land	
SS4-3	Apr 12	193	531328 7152476		335	Land	
SS4-4	Apr 12	164	531140	7153172	1022	Ice	✓

Station ID	2021 Sampling Dates	Total Sample	UTM Co	ordinates <sup>1</sup>	Approx. Distance	Surface	Snow Water
		Exposure Duration (days)	Easting (m)	Northing (m)	from Mining Operations (m)	Description	Chemistry Sampled <sup>2</sup>
SS4-5	Apr 12	164	531410	7154120	1214	Ice	✓
SS5-1	Apr 11	192	533150	7148927	26	Land	
SS5-2	Apr 11	192	533149	7148871	55	Land	
SS5-3	Apr 11	163	533149	7148700	259	Ice	✓
SS5-4	Apr 11	163	533153	7147948	941	Ice	✓
SS5-5 <sup>6</sup>	Apr 11	163	533148	7146953	1894	Ice	✓
SSC-1	Apr 11	192	534989	7144273	4802	Land	√8
SSC-2	Apr 12	193	528714	7153273	3042	Land	√8
SSC-3 <sup>7</sup>	Apr 11	192	538649	7148747	3550	Land	√8

#### Notes:

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 2-4

<sup>&</sup>lt;sup>1</sup> UTM Zone 12W. NAD83.

 $<sup>^{2}</sup>$  n/a = not applicable.

<sup>&</sup>lt;sup>3</sup> Duplicate sample for snow water chemistry was collected at station SS1-4 (SS1-4-4 & SS1-4-5).

<sup>&</sup>lt;sup>4</sup> Duplicate sample for dustfall snow surveys was collected at SS2-4 station (SS2-4-4 & SS2-4-5).

<sup>&</sup>lt;sup>5</sup> Duplicate sample for snow water chemistry was collected at station SS3-7 (SS3-7-4 & SS3-7-5).

<sup>&</sup>lt;sup>6</sup> Duplicate sample for dustfall snow surveys was collected at station SS5-5 (SS5-5-4 & SS5-5-5).

<sup>&</sup>lt;sup>7</sup> Duplicate samples for dustfall snow surveys and snow water chemistry were collected at station SSC-3 (SSC-3-4 & SSC-3-5).

<sup>&</sup>lt;sup>8</sup> Snow water chemistry was sampled over ice, adjacent to the on-land control station; see Section 2.3 for further details.

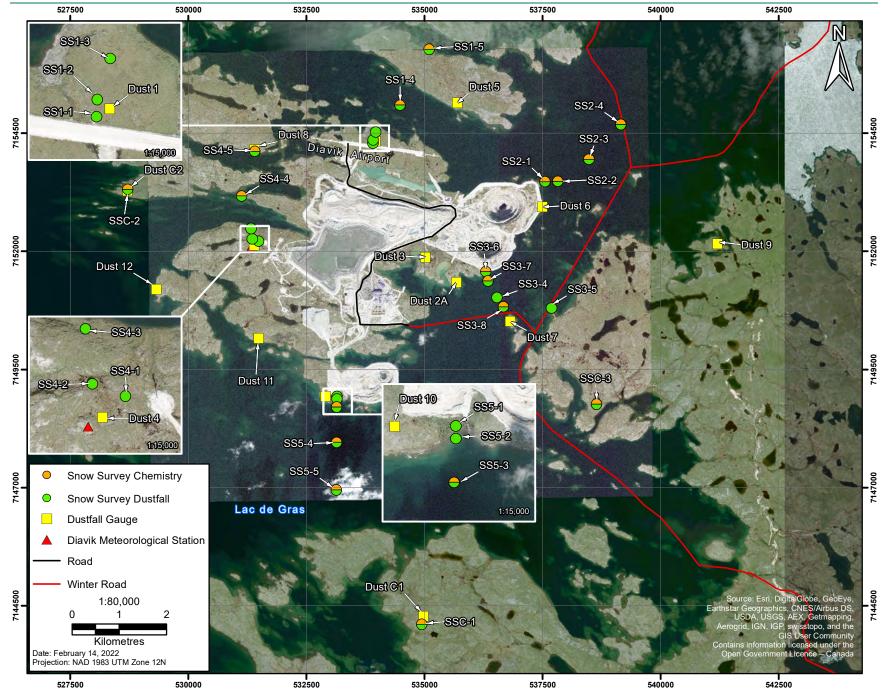


Figure 2-1: Dustfall Gauge and Snow Survey Locations, Diavik Diamond Mine, 2021

www.erm.com Project No.: 0207514-0021 Client: DIAVIK DIAMOND MINES (2012) INC. GIS # DIA-12-034

Once the mass of collected dustfall at a station was measured, the mean daily dustfall rate over the collection period was calculated as:

$$D = \frac{M}{A*T}$$
 [Equation 1]

where:

 $D = \text{mean daily dustfall rate (mg/dm}^2/\text{d)}$  during time period T

M = mass of dustfall collected (mg) during time period T

A = surface area of dustfall gauge collection cylinder orifice (dm²; approximately 1.227 dm²)

T = number of days of dustfall collection (d)

The mean daily dustfall rate (mg/dm²/d) was then multiplied by 365 days to estimate the mean annual dustfall rate (mg/dm²/y). Similarly, seasonal dustfall rates for winter and summer were calculated based on the mean daily rates for winter and summer days, respectively. The summer was defined as the snow-free season, which extends from July to September based on the Dustfall gauges sampling dates (Table 2-1), while the rest of the year is considered winter.

The Northwest Territories has no guidelines or objectives for dustfall deposition. The estimated dustfall rates are compared to the Alberta Ambient Air Quality Objectives and Guidelines for dustfall (Alberta Environment and Parks, 2019), which are used only as general performance indicators and are not a regulatory requirement in compliance evaluation. The Alberta Ambient Air Quality Guidelines for dustfall include a guideline for residential and recreation areas (53 mg/dm² per 30 days) and a guideline for commercial and industrial areas where higher dustfall rates are expected (158 mg/dm² per 30 days). To compare dustfall rates against the Alberta Ambient Air Quality Guidelines, daily and annual thresholds were derived from the 30 days objectives. The calculated daily guideline was 1.77 mg/dm²/d for residential and recreation areas and 5.27 mg/dm²/d for commercial and industrial areas, while the annual guideline was 646 mg/dm²/y for residential and recreation areas and 1,922 mg/dm²/y for commercial and industrial areas. Snow water chemistry data were compared to effluent quality criteria (EQC) set out in Wek'èezhìi Land and Water Board (WLWB) Water Licence W2015L2-0001 (formerly W2007L2-0003).

# 2.2 Dustfall Snow Surveys

Dustfall snow surveys were performed at 24 monitoring and 3 control sites along 5 transects around the Project (Table 2-1 and Figure 2-1). Across stations, the distance from mining operations ranged from approximately 26 m to 2,175 m for the monitoring stations and from 3,042 m to 4,802 m for the control stations. The average total sampling period for the monitoring stations in 2021 was 192 and 162 days for the land and ice stations, respectively (control stations not included). The start dates correspond to the first snowfall for land stations (October 1, 2020), and freeze up of ice stations (October 30, 2020).

At each snow survey station, a snow corer was used to drill into the snow pack to retrieve a cylindrical snow core (6.1 cm inner diameter; Photo 2.2-1). Cores were extracted at each station and composited in the field to ensure a representative snow sample was obtained for the station. A minimum of three snow cores were collected at each (land and ice) of the snow sampling stations, as outlined in the Snow Core Survey SOP (ENVI-909-0119; Appendix F). Composited samples were bagged and brought to the DDMI environment lab for processing as specified in the Snow Core Survey SOP (ENVI-909-0119; Appendix F) and the Quality Assurance/Quality Control SOP (ENVI-902-0119; Appendix G). Processing of snow cores involved filtration, drying in a high heat oven, and weighing. For quality assurance and control (QA/QC), duplicate samples were collected at stations SS2-4, SS5-5 and SSC-3.



Photo 2.2-1: Snow core sample being weighed, with dustfall gauge in background.

Mean daily dustfall rate (mg/dm²/d) was then calculated over the collection period using Equation 1, with surface area (A) equal to the surface area of the snow corer tube orifice (0.2922 dm²) multiplied by the number of snow cores used for the composited sample at the station. The mean annual dustfall rate (mg/dm²/y) was estimated by multiplying the mean daily dustfall rate by 365 days.

Dustfall rates were compared to the Alberta Ambient Air Quality Objectives and Guidelines for dustfall (Table 2.2-1), which served as general performance indicators only.

Table 2.2-1: Dustfall and Snow Water Chemistry Reference Values

Parameter	Value	Unit	Comment	Source
Dustfall Rate	53 or 158	mg/dm²/ 30 day	Alberta Ambient Air Quality Guidelines for dustfall	(Alberta Environment and Parks, 2019).
Aluminum-Total	3,000	μg/L	Max. grab sample concentration	W2015L2-0001
Ammonia-N	12,000	μg/L	Max. grab sample concentration	W2015L2-0001
Arsenic-Total	100	μg/L	Max. grab sample concentration	W2015L2-0001
Cadmium-Total	3	μg/L	Max. grab sample concentration	W2015L2-0001
Chromium-Total	40	μg/L	Max. grab sample concentration	W2015L2-0001
Copper-Total	40	μg/L	Max. grab sample concentration	W2015L2-0001
Lead-Total	20	μg/L	Max. grab sample concentration	W2015L2-0001
Nickel-Total	100	μg/L	Max. grab sample concentration	W2015L2-0001
Nitrite-N	2,000	μg/L	Max. grab sample concentration	W2015L2-0001
Zinc-Total	20	μg/L	Max. grab sample concentration	W2015L2-0001

# 2.3 Snow Water Chemistry

Snow water chemistry analysis was performed on snow cores extracted from 19 locations, including 16 dustfall snow survey stations located on ice and three samples taken on ice adjacent to the three control locations (Table 2-1 and Figure 2-1). The distance of the snow survey stations from mining operations in 2021 ranged approximately 35 m to 2,175 m, while this distance ranged from 3,042 m to 4,802 m for the control locations. The average total sampling period in 2021 for the snow survey stations was 162 days (control stations not included). At each station located over water, cores were collected for chemistry analysis immediately after the dustfall snow cores were extracted.

Snow water chemistry cores were extracted using a snow corer in accordance with the dustfall snow survey core extraction. A minimum of three cores at each site were extracted and composited to obtain the necessary 3 L of snow water required for the laboratory chemical analysis (see Appendix F). Snow cores were then processed and prepared for shipment to Bureau Veritas (BV) where the chemical analysis was performed. For QA/QC purposes, duplicate samples were collected at stations SS1-4, SS3-7 and SSC-3, in addition to an equipment blank sample (SS EBW). Snow water chemistry sampling methodology is detailed in SOP ENVI-909-0119 (see Appendix F).

EQC, including "maximum average concentration" and "maximum concentration of any grab sample," are stipulated in DDMI's Water Licence (W2015L2-0001) for aluminum, ammonia, arsenic, cadmium, chromium, copper, lead, nickel, nitrite, and zinc (Table 2.2-1). Snow water chemistry results for these variables were compared to the "maximum concentration of any grab sample." These results are also presented as part of DDMI's AEMP report.

DDMI measures the chemistry of snow samples as this assists with characterizing the chemical content of the particulate material deposited over time. This is measured as the metal and nutrient concentrations in units of milligrams per litre (mg/L) or microgram per litre (µg/L) of the melted snow sample, which allows for direct comparison to EQC maximum grab sample concentrations. The snow chemistry concentrations (mg/L) were converted to an areal deposition rate in milligrams per square decimetre per year (mg/dm²/y) using Equation 1 multiplied by the collected volume of water (L). The water volume used for snow chemistry analysis was unknown for some stations; thus, an average was calculated (3.419 L) using the known volumes and applied to stations with unknown volumes. The surface area (A) in Equation 1 is equal to the surface area of the snow corer tube orifice (0.2922 dm²) multiplied by the number of water quality cores used for the composited sample at the station. The mean annual deposition rate (mg/dm²/y) was estimated by multiplying the mean daily deposition rate by 365 days. The 2021 snow chemistry results are presented as areal deposition rates and as concentrations when compared to historical data.

DDMI compares the measured total metals levels for dust with EQC only because these criteria provide concentrations that can serve as general performance indicators, in a similar way that dustfall rates are compared with the Alberta Ambient Air Quality Objectives and Guidelines for dustfall (Alberta Environment and Parks, 2019). There is no intention or requirement that snow samples must meet the EQC or Alberta dustfall objectives.

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022
 Page 2-8

#### 3. RESULTS

Dustfall and snow water chemistry results were grouped into zones based on their relative distance from the mine footprint (Table 3-1). Station groupings into zones were first established at the outset of the program; however, these groupings were re-established in 2013 using satellite imagery of the site.

In 2021, the primary sources of fugitive dust were associated with unpaved road and airstrip usage and construction and mining activities at the A21 open pit. Due to construction and mining activities at A21, the distances to mining operations were recalculated in 2019. The revised distances to mining operations are shown in Tables 2-1 and 3-1.

Major waste rock material transfers in 2021 included the use of haul roads (9,240,196 tonnes) and the transfer of kimberlite ore to the crusher (2,533,761 tonnes). Another source of fugitive dust was truck traffic along the ice road to the Project. Although, the ice road is mainly covered by ice and snow there is always some exposed rock material that creates fugitive dust. However, the consistency in the dust deposition rate near the ice road alignment sites between winter and summer, in addition to the relatively lower deposition rates at these sites (e.g., Dust 7, SS2-4, SS3-5 and SS3-8) indicated that the contributions of dust from the ice road were modest relative to other sources. To suppress dust generation, roads, parking areas and the plant site were watered during the summer as needed. In 2021, approximately 19,037 m<sup>3</sup> of water was applied to the plant site and haul roads. The exact impact of dust suppression could not be determined from the data collected in 2021; however, it is likely that road watering reduced the amount of dust generated at the mine. In 2021, Underground Mine production continued at A154 and A418, as well as stripping and production at the A21 open pit. Fugitive dust generation is generally expected to be greatest during snow-free periods where and when there is site activity. Accordingly, it was expected that the highest fugitive dust generation and resulting dustfall would have occurred in areas closest to the roads, the airstrip, and mine footprint such as near A21 between May and September. Winter dustfall rates were always higher than summer rates except at two sites, suggesting that dust suppression methods used in the summer are effective.

Wind directions at the site in 2021 were generally omnidirectional with northwest, southeast and east being the dominant directions. Therefore, the expectation is that airborne material will be deposited in all directions around the mine with a west, northwest and southeast emphasis (Figures 2-1 and 3.1-1). Similar to previous years, the results show that the proximity to the mine activity is a stronger indicator of dust deposition than wind direction. This is supported by the fact that the three highest dust deposition rates in 2021 (Dust 10, 3, and 11) are located south of the mine footprint which was not a dominant downwind direction. Dust 10 and Dust 3, which are located only 46 and 22 m from the mine, respectively, recorded the highest dustfall rate of the dustfall gauges in 2021.

Results from the dustfall gauges, dustfall snow surveys, and the snow water chemistry analyses are presented below.

Snow water chemistry results that were below analytical detection limits were substituted with half the detection limit for the calculation of statistics and for graphing purposes.

## 3.1 Dustfall Gauges

For each station, total dustfall collected throughout the year is summarized in Table 3-1. Annual 2021 dustfall and the station location relative to the Project are presented in Figure 3.1-1, and the historical records of annual dustfall are presented in Figures 3.1-2 and 3.1-3. A comparison of 2021 dustfall versus distance from the mine footprint is presented in Figure 3.1-4. Boxplots summarizing the dustfall magnitude distribution measured annually are presented in Figure 3.1-5. Detailed information on 2021 measurements and calculations for each station are included in Appendix B.

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 3-1

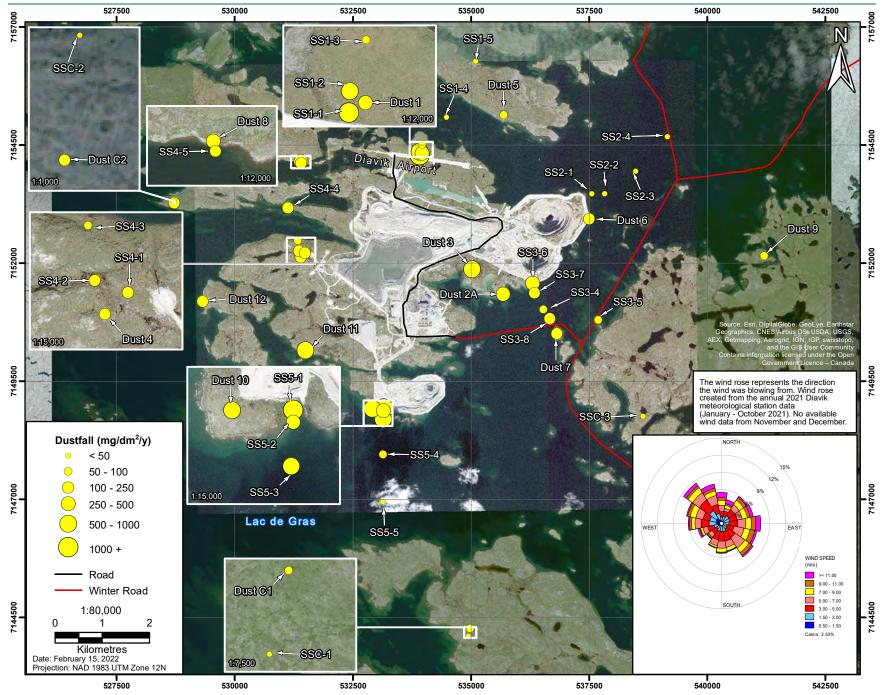


Figure 3.1-1: Dustfall Results, Diavik Diamond Mine, 2021

www.erm.com Project No.: 0630556-01 Client: DIAVIK DIAMOND MINES (2012) INC. GIS # DIA-12-035

Table 3-1: Dustfall and Snow Water Chemistry Results, Diavik Diamond Mine, 2021

Zone	Station	Approx.	Dustfall	Winter	Summer				Sı	now Water Chem	nistry (mg/dn	1²/y)				
		Distance from Mining (m)	(mg/dm²/y)	Dustfall (mg/dm²/y)	Dustfall (mg/dm²/y)	Aluminum	Ammonia	Arsenic	Cadmium <sup>1</sup>	Chromium	Copper	Lead	Nickel	Nitrite	Phosphorus	Zinc
0-100 m	Dust 01	70	386	417	271	-	-	-	-	-	-	-	-	-	-	-
	Dust 03	22	706	728	625	-	-	-	-	-	-	-	-	-	-	-
	Dust 06	13	188	199	150	-	-	-	-	-	-	-	-	-	-	-
	Dust 10	46	669	756	346	-	-	-	-	-	-	-	-	-	-	-
	SS1-1	30	1,102	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS3-6	35	311	-	-	8.8	0.18	0.00074	0.00011	0.076	0.012	0.0124	0.158	0.0013	0.414	0.049
	SS4-1	61	105	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS5-1	26	1,648	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS5-2	55	276	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean			599	525	348	8.8	0.18	0.00074	0.00011	0.076	0.012	0.0124	0.158	0.0013	0.414	0.049
Median		386	572	309	8.8	0.18	0.00074	0.00011	0.076	0.012	0.0124	0.158	0.0013	0.414	0.049	
Standard Deviati	ion		502	266	202	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
95% Confidence	Interval (Mean +/-)		386	423	321	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Upper Limit of 95	% Confidence Inter	val	985	948	669	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Lower Limit of 95	5% Confidence Inter	val	213	102	28	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
101-250 m	Dust 04	173	237	280	74	-	-	-	-	-	-	-	-	-	-	-
	SS1-2	115	589	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS2-1	145	20	-	-	1.1	0.09	0.00019	0.00002	0.007	0.002	0.0009	0.009	0.0016	0.021	0.006
	SS3-7	239	173	-	-	3.8	0.16	0.00046	0.00005	0.029	0.005	0.0027	0.050	0.0022	0.201	0.022
	SS4-2	196	146	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean			233	280	74	2.5	0.13	0.00033	0.00003	0.018	0.003	0.0018	0.029	0.0019	0.111	0.014
Median		173	280	74	2.5	0.13	0.00033	0.00003	0.018	0.003	0.0018	0.029	0.0019	0.111	0.014	
Standard Deviation		214	n/a	n/a	2.0	0.04	0.00019	0.00002	0.015	0.002	0.0013	0.029	0.0004	0.127	0.011	
95% Confidence	95% Confidence Interval (Mean +/-)		265	n/a	n/a	17.7	0.40	0.00171	0.00020	0.139	0.017	0.0116	0.256	0.0039	1.140	0.100
Upper Limit of 95	% Confidence Inter	val	498	n/a	n/a	20.2	0.52	0.00203	0.00023	0.157	0.021	0.0134	0.286	0.0058	1.251	0.114
Lower Limit of 95	5% Confidence Inter	val	0	n/a	n/a	0.0	0.00	0.00000	0.00000	0.000	0.000	0.0000	0.000	0.0000	0.000	0.000

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto

Zone	Station	Approx.	Dustfall	Winter	Summer				Si	now Water Chem	nistry (mg/dn	1²/y)				
		Distance from Mining (m)	(mg/dm²/y)	Dustfall (mg/dm²/y)	Dustfall (mg/dm²/y)	Aluminum	Ammonia	Arsenic	Cadmium <sup>1</sup>	Chromium	Copper	Lead	Nickel	Nitrite	Phosphorus	Zinc
251-1,000 m	Dust 02	425	373	405	248	-	-	-	-	-	-	-	-	-	-	-
	Dust 11	747	664	795	152	-	-	-	-	-	-	-	-	-	-	-
	SS1-3	260	64	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS1-4	899	22	-	-	0.6	0.08	0.00019	0.00002	0.005	0.002	0.0018	0.004	0.0019	0.030	0.005
	SS2-2	427	6	-	-	0.4	0.06	0.00003	0.00001	0.002	0.001	0.0006	0.002	0.0014	0.010	0.003
	SS3-4	585	63	-	-	1.2	0.10	0.00026	0.00003	0.010	0.001	0.0013	0.016	0.0022	0.100	0.006
	SS3-8	826	106	-	-	2.5	0.11	0.00007	0.00005	0.017	0.003	0.0021	0.024	0.0016	0.113	0.017
	SS4-3	335	59	-	-	-	-	-	-	-	-	-	-	-	-	-
	SS5-3	259	833	-	-	5.1	0.09	0.00055	0.00005	0.021	0.010	0.0046	0.021	0.0059	0.126	0.024
	SS5-4	941	67	-	-	2.0	0.09	0.00024	0.00004	0.015	0.002	0.0021	0.026	0.0022	0.156	0.010
Mean			226	600	200	2.0	0.09	0.00022	0.00003	0.012	0.003	0.0021	0.016	0.0025	0.089	0.011
Median			66	600	200	1.6	0.09	0.00021	0.00004	0.012	0.002	0.0019	0.019	0.0020	0.106	0.008
Standard Deviatio	on		297	276	68	1.7	0.02	0.00019	0.00002	0.007	0.003	0.0013	0.010	0.0017	0.057	0.008
95% Confidence In	nterval (Mean +/-)		212	2,475	612	1.8	0.02	0.00020	0.00002	0.007	0.004	0.0014	0.011	0.0018	0.060	0.009
Upper Limit of 95% Confidence Interval			438	3,076	812	3.8	0.11	0.00042	0.00005	0.019	0.007	0.0035	0.026	0.0043	0.149	0.020
Lower Limit of 95%	6 Confidence Inter	<i>r</i> al	14	0	0	0.2	0.07	0.00003	0.00002	0.004	0.000	0.0007	0.005	0.0008	0.029	0.002
1,001-2,500 m	Dust 05	1,183	84	82	90	-	-	-	-	-	-	-	-	-	-	-
	Dust 07	1,147	174	194	96	-	-	-	-	-	-	-	-	-	-	-
	Dust 08	1,213	279	308	179	-	-	-	-	-	-	-	-	-	-	-
	Dust 12	2,326	185	221	47	-	-	-	-	-	-	-	-	-	-	-
	SS1-5	2,175	8	-	-	0.4	0.08	0.00011	0.00001	0.004	0.001	0.0006	0.003	0.0019	0.014	0.003
	SS2-3	1,194	6	-	-	0.5	0.08	0.00015	0.00001	0.004	0.001	0.0006	0.003	0.0019	0.004	0.003
	SS2-4	2,164	24	-	-	0.4	0.10	0.00011	0.00001	0.003	0.001	0.0004	0.004	0.0023	0.029	0.002
	SS3-5	1,325	71	-	-	0.4	0.08	0.00004	0.00001	0.005	0.001	0.0004	0.009	0.0019	0.027	0.002
	SS4-4	1,022	116	-	-	2.4	0.15	0.00070	0.00004	0.022	0.005	0.0017	0.045	0.0050	0.163	0.012
	SS4-5	1,214	210	-	-	2.8	0.14	0.00065	0.00008	0.025	0.005	0.0022	0.028	0.0022	0.157	0.015
	SS5-5	1,894	19	-	-	0.6	0.06	0.00009	0.00002	0.005	0.001	0.0007	0.004	0.0022	0.020	0.003
+2,500 m	Dust 09	3,796	50	58	20	-	-	-	-	-	-	-	-	-	-	-
Mean			107	201	103	1.1	0.10	0.00026	0.00003	0.009	0.002	0.0009	0.014	0.0025	0.059	0.006
Median			84	207	93	0.5	0.08	0.00011	0.00001	0.005	0.001	0.0006	0.004	0.0022	0.027	0.003
Standard Deviatio	on		93	93	55	1.1	0.03	0.00028	0.00003	0.009	0.002	0.0007	0.016	0.0011	0.070	0.005
95% Confidence In	nterval (Mean +/-)		63	148	88	1.0	0.03	0.00026	0.00002	0.009	0.002	0.0006	0.015	0.0010	0.064	0.005
Upper Limit of 95%	6 Confidence Inter	/al	170	350	191	2.1	0.13	0.00053	0.00005	0.018	0.004	0.0016	0.029	0.0035	0.123	0.011
Lower Limit of 95%	6 Confidence Inter	/al	44	53	15	0.1	0.07	0.00000	0.00000	0.001	0.000	0.0003	0.000	0.0014	0.000	0.001

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto

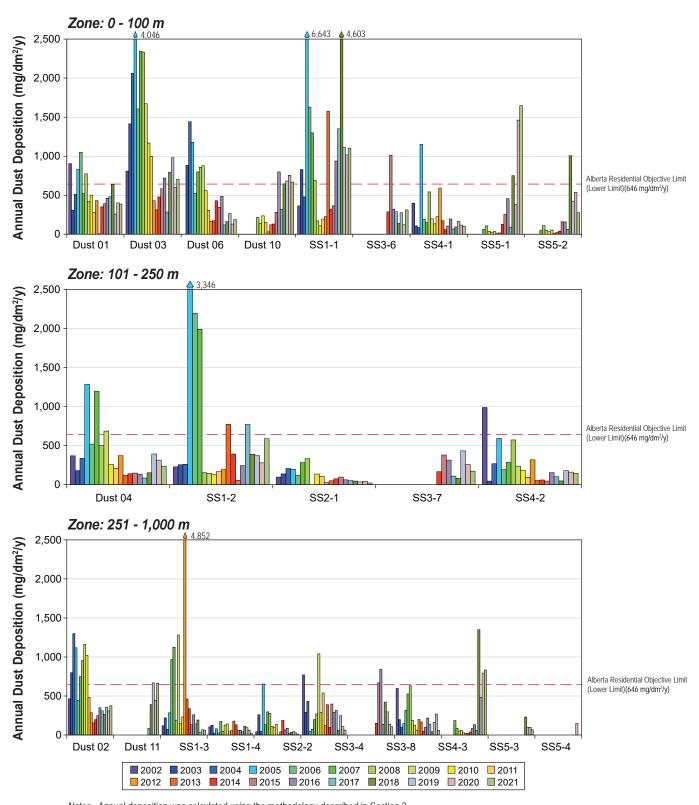
Zone	Station	Approx.	Dustfall	Winter	Summer				S	now Water Chem	nistry (mg/dm	1²/y)				
		Distance from Mining (m)	(mg/dm²/y)	Dustfall (mg/dm²/y)	Dustfall (mg/dm²/y)	Aluminum	Ammonia	Arsenic	Cadmium <sup>1</sup>	Chromium	Copper	Lead	Nickel	Nitrite	Phosphorus	Zinc
Control	Dust C1	4,646	98	87	140	-	-	-	-	-	-	-	-	-	-	-
	Dust C2	3,031	101	121	26	-	-	-	-	-	-	-	-	-	-	-
	SSC-1	4,802	14	-	-	0.3	0.07	0.00009	0.00001	0.004	0.001	0.0004	0.002	0.0016	0.003	0.002
	SSC-2	3,042	36	-	-	1.4	0.09	0.00031	0.00003	0.016	0.002	0.0013	0.026	0.0015	0.027	0.009
	SSC-3	3,550	21	-	-	0.9	0.06	0.00009	0.00001	0.007	0.001	0.0009	0.007	0.0019	0.024	0.004
Mean			54	104	83	0.9	0.07	0.00016	0.00002	0.009	0.001	0.0008	0.012	0.0017	0.018	0.005
Median			36	104	83	0.9	0.07	0.00009	0.00001	0.007	0.001	0.0009	0.007	0.0016	0.024	0.004
Standard Deviatio	n		43	23	81	0.6	0.01	0.00013	0.00001	0.007	0.001	0.0005	0.013	0.0002	0.013	0.004
95% Confidence I	nterval (Mean +/-)		53	211	726	1.4	0.03	0.00032	0.00003	0.017	0.002	0.0012	0.032	0.0004	0.032	0.009
Upper Limit of 95%	Upper Limit of 95% Confidence Interval		107	315	809	2.2	0.11	0.00048	0.00005	0.026	0.004	0.0020	0.044	0.0021	0.050	0.014
Lower Limit of 95%	6 Confidence Inter	val	1	0	0	0.0	0.04	0.00000	0.00000	0.000	0.000	0.0000	0.000	0.0012	0.000	0.000

Notes:

Dash (-) = not available (snow water chemistry not sampled).

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto

<sup>&</sup>lt;sup>1</sup> For measurements that were less than the detection limit, half the detection limit was used for calculations.

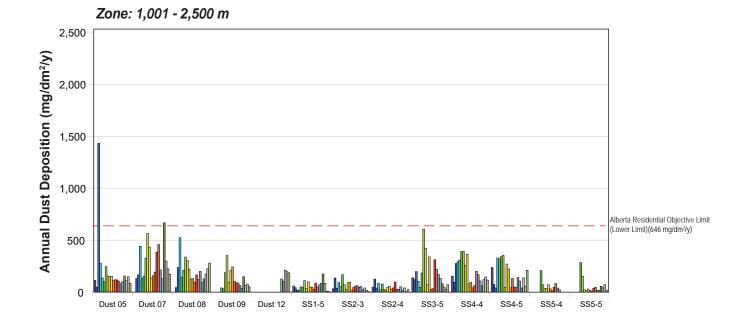


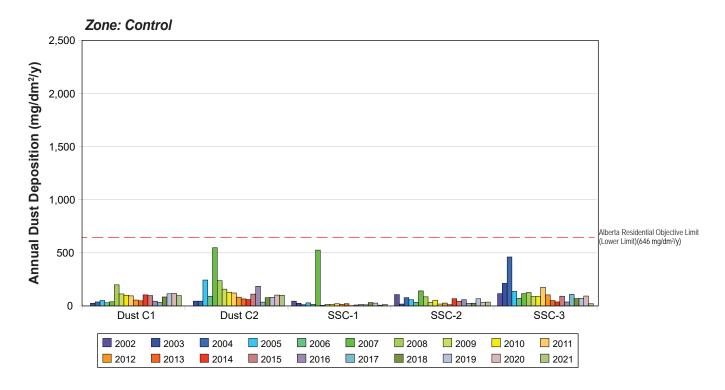
Notes: Annual deposition was calculated using the methodology described in Section 2. See Table 2-1 for actual 2021 sample exposure times.

Station locations have been grouped into zones based on their distance from the 2019 Project footprint (see Section 3 for further details).

SS5-4 moved to 251-1,000 m zone in 2018

Figure 3.1-2: Calculated Annual Dust Deposition Rates at Dustfall Gauges and Snow Survey Locations up to 1,000 m from the Project Footprint, Diavik Diamond Mine, 2002 to 2021





Notes: Annual deposition was calculated using the methodology described in Section 2.

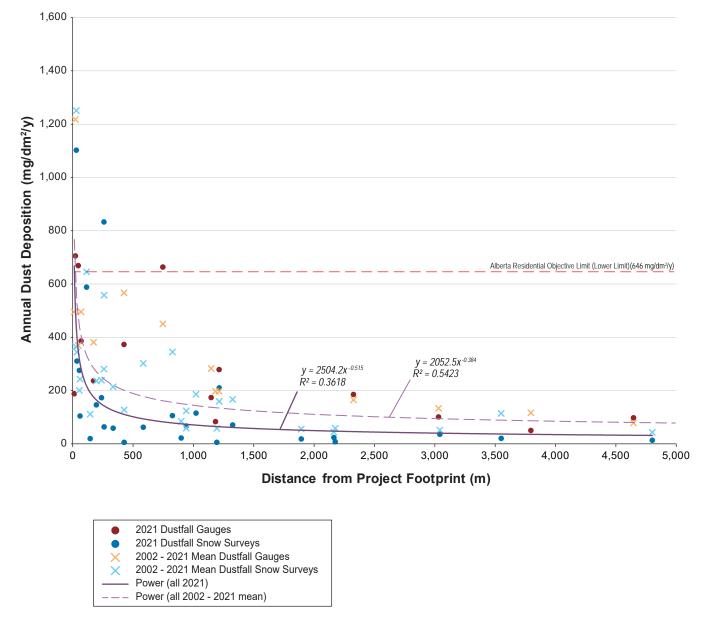
See Table 2-1 for actual 2021 sample exposure times.

Station locations have been grouped into zones based on their distance from the 2019 Project footprint (see Section 3 for further details).

New locations added in 2019only include FFA-4, FFB-4, FF1-2 and LDS-1

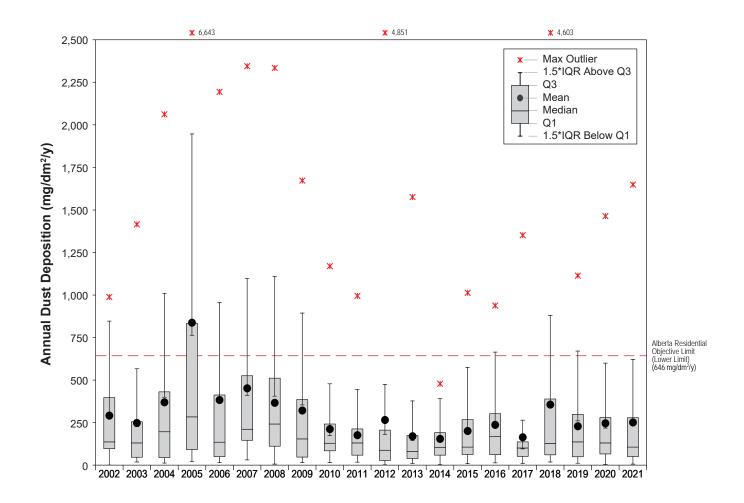
SS5-4 moved to 251-1,000 m zone in 2018

Figure 3.1-3: Calculated Annual Dust Deposition Rates at Dustfall Gauges and Snow Survey Locations greater than 1,000 m from the Project Footprint, Diavik Diamond Mine, 2002 to 2021



Notes: Annual deposition was calculated using the methodology described in Section 2. See Table 2-1 for actual 2021 sample exposure times.

Figure 3.1-4: Dust Deposition Versus Distance from Project Footprint, Diavik Diamond Mine, 2021



Notes: Box plots represent the magnitude distribution of the annual dustfall rates.
Annual deposition is calculated using the methodology described in Section 2.
See Table 2-1 for actual 2021 sample exposure times.
O1: Lower quartile (25% of data are less than this value),
O3: Upper quartile (25% of data are greater than this value),
IQR = Q3 - Q1 (the interquartile range).

Figure 3.1-5: Dust Deposition Box Plot, Diavik Diamond Mine, 2002 to 2021

The three highest estimated dustfall rates in 2021 measured using gauges occurred at Dust 3 (706 mg/dm²/y; 22m from the Project), followed by Dust 10 (669 mg/dm²/y; 46m from the Project) and Dust 11 (664 mg/dm²/y; 747 m from the Project). This is similar to 2020 and 2019 as the highest rates were recorded at the same three sites (Dust 3, Dust 10 and Dust 11). The elevated rate at Dust 3 site is explained by its proximity to the Project footprint, while the high rate at Dust 10 is due to its location adjacent to the A21 open pit. Dust 11 is located west of the Waste Rock Storage Area - South Country Rock Pile (WRSA-SCRP; Figure 2-1). The lowest dustfall rate was recorded at Dust 9 (50 mg/dm²/y; 3,796 m), lower than the control stations Dust C1 (98 mg/dm²/y; 4,646 m to the south) and Dust C2 (101 mg/dm²/y; 3,031 m; Table 3-1; Figures 3.1-3 and 3.1-4). This is similar to 2020 results and is explained by the distance of the Dust 9 site from the Project footprint.

The dustfall rates estimated from dustfall gauges in 2021 were slightly higher on average but comparable to 2020 rates (Figure 3.1-5). The box plots in Figure 3.1-5 represent the magnitude distribution of dustfall rates from dustfall gauges and snow surveys. All the 2021 mean, median, first quartile (Q1, the median of the lower half of the data) and third quartile (Q3; the median of the upper half of the data) of the dustfall distribution was similar to 2020 and 2019 results. The 1.5× IQR (interquartile range) above Q3, which defines the lower threshold of outliers, in 2021 was 622 mg/dm²/y, which is similar to the last two years results. Out of 12 sites, 7 locations recorded lower deposition rates in 2021 than 2020, with an average rate of 333 mg/dm²/y and 319 mg/dm²/y in 2021 and 2020, respectively (Figures 3.1-2 to 3.1-4). The higher dustfall values recorded since 2018 compared to previous years suggest that dustfall rates from 2018 to 2021 were likely influenced by the surface activity at the mine, particularly at the A21 open pit, which began in December 2017, while the dustfall rates in 2017 were related mainly to the airstrip (DDMI 2018, 2019).

The annualized dustfall rates estimated from gauges at all stations were less than the Alberta Ambient Air Quality objective for dustfall of 1,922 mg/dm²/y, which is applied to industrial locations. The lower objective of 646 mg/dm²/y that is applied to residential and recreational areas was exceeded at three sites that recorded the highest dustfall rates in 2021 (Dust 3, Dust 10 and Dust 11). The Alberta Ambient Air Quality Objectives and Guidelines recommends that dustfall objectives be used as general performance indicators only with no compliance requirement; thus, these objectives are used here for comparison purposes only; there are currently no standards or objectives for the Northwest Territories.

## 3.2 Dustfall Snow Surveys

Annual dustfall rates estimated from each snow survey station in 2021 are summarized in Table 3-1. Historical records of annual snow survey dustfall rates for each station are presented in Figures 3.1-2 and 3.1-3. The relationships between annual snow survey dustfall rates and distance from the mine footprint are shown in Figures 3.1-1 and 3.1-4. Boxplots summarizing the magnitude of dustfall rates measured annually are presented in Figure 3.1-5. 2021 snow survey field datasheets and laboratory results are included in Appendix B. Duplicate samples collected at stations SS2-4, SS5-5, and SSC-3 for QA/QC purposes are discussed in Section 3.4.

Annualized dustfall rates estimated from 2021 snow survey data ranged from 6 to 1,648 mg/dm²/y (Table 3-1; Figures 3.1-2 and 3.1-3). The maximum dust deposition rate was recorded at SS5-1 followed by SS1-1 (1,102 mg/dm²/y). The higher dustfall rate at SS5-1 is associated with the mine activity at A21 open pit (Figure 3.1-1). SS1-1 is located due north of the airstrip, which explains the higher levels of dustfall found here. This site recorded the highest rates from 2017 to 2020.

In general, snow survey dustfall rates decreased with increasing distance from the Project. Mean dustfall rates estimated using both dustfall gauges and snow surveys within the 0 m to 100 m, 101 m to 250 m, 251 m to 1,000 m, 1,001 m to 2,500 m, and control zones were 599, 233, 226, 107, and 54 mg/dm²/y, respectively (Table 3-1). Dustfall rates at stations SS1-1, SS5-1, SS1-2, Dust 11, SS5-3, Dust 7, Dust 8, Dust 12 and SS4-5 were greater than the upper limit of the 95% confidence interval (CI) for their respective

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 3-11

zones in 2021. The 95% CI was exceeded at two sites in each of the 0 m to 100 m zone (SS1-1 and SS5-1) and the 251 m to 1,000 m zone (Dust 11 and SS5-3), one site in the 101 m to 250 m zone (SS1-2) and at four sites in the 1,001 m to 2,500 m zone (Dust 7, Dust 8, Dust 12 and SS4-5). In the 0 m to 100 m zone, the exceedance can be explained by the adjacent location to the airstrip for SS1-1 and the A21 open pit for SS5-1, while the exceedance at the 251 m to 1,000 m zone is likely explained by the proximity to the A21 open pit for both sites. The exceedance of the 95% CI in the 1,001 m to 2,500 m zone is associated with dust from the ice road for Dust 7 and likely with the airstrip for Dust 8. The low dust deposition rate at some sites in this zone (e.g., SS1-5 and SS2-3; Table 3-1) resulted in a relatively low value of the 95% CI, which led to four exceedances for this zone.

Annualized dustfall estimated from snow survey stations in 2021 were generally comparable to 2020 dustfall estimates (Figure 3.1-5), with several stations recording higher rates in 2021 than 2020 (Figures 3.1-2 and 3.1-3). The annualized dustfall rates estimated from snow surveys in 2021 never exceeded the upper limit (which applies to industrial locations) of the Alberta Ambient Air Quality Objectives and Guidelines at any station, while only SS1-1, SS5-1, and SS5-3 exceeded the lower limit of these guidelines (which applies to residential and recreational areas).

## 3.3 Snow Water Chemistry

A summary of the snow water chemistry results for each variable of interest (i.e., variables with EQC and phosphorus) is provided below. The full suite of analytical results for snow water chemistry is included in Appendix D. For QA/QC purposes, duplicate samples were collected at stations SS1-4, SS3-7 and SSC-3 station. An equipment blank sample was also collected. Results of QA/QC samples are discussed in Section 3.4.

All 2021 sample concentrations, except aluminum at one site, were less than their associated reference levels as specified by the "maximum concentration of any grab sample" in Water Licence W2015L2-0001.

In 2021, most concentrations within the closest zone from the mine footprint (0 m to 100 m zone) were generally higher than 2019 and 2020 records (e.g. aluminum, arsenic, chromium, copper, lead, nickel, phosphorous and zinc). The average concentrations and areal deposition rates of snow water chemistry variables of interest decreased with increasing distance from the Project (Figure 3.3-1).

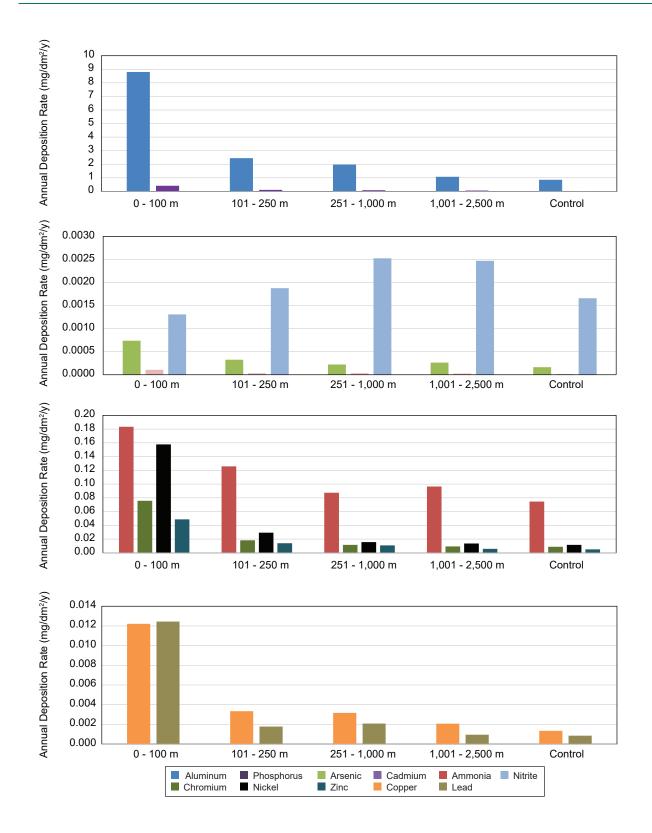
## 3.3.1 Aluminum

Aluminum concentrations in 2021 were considerably higher than 2019 and 2020 results in all zones (Figure 3.3-2). Aluminum areal deposition rates measured in 2021 ranged from 0.3 mg/dm $^2$ /y at SSC-1 station in the control zone to 8.8 mg/dm $^2$ /y at station SS3-6 in the 0 to 100 m zone (Table 3-1). All 2021 aluminum concentration except SS3-6 were below the EQC concentration specified in the Water Licence for maximum grab sample concentrations (3,000  $\mu$ g/L; Figure 3.3-2). The concentration at SS3-6 was 3,360  $\mu$ g/L.

#### 3.3.2 Ammonia

Ammonia areal deposition rates measured in 2021 ranged from 0.06 mg/dm²/y at SS2-2 station in the 1,001 to 2,500 m zone to 0.18 mg/dm²/y at SS3-6 station in the 101 to 250 m zone (Table 3-1). The 2021 median concentrations in all zones were generally similar to historical data (Figure 3.3-2). The ammonia 2021 areal deposition rates varied little among zones except for zone 0 to 100 m, which had relatively high deposition rates (Figure 3.3-1). All 2021 and historical ammonia concentrations were well below the EQC specified in the Water Licence for maximum grab sample concentrations (Figure 3.3-2).

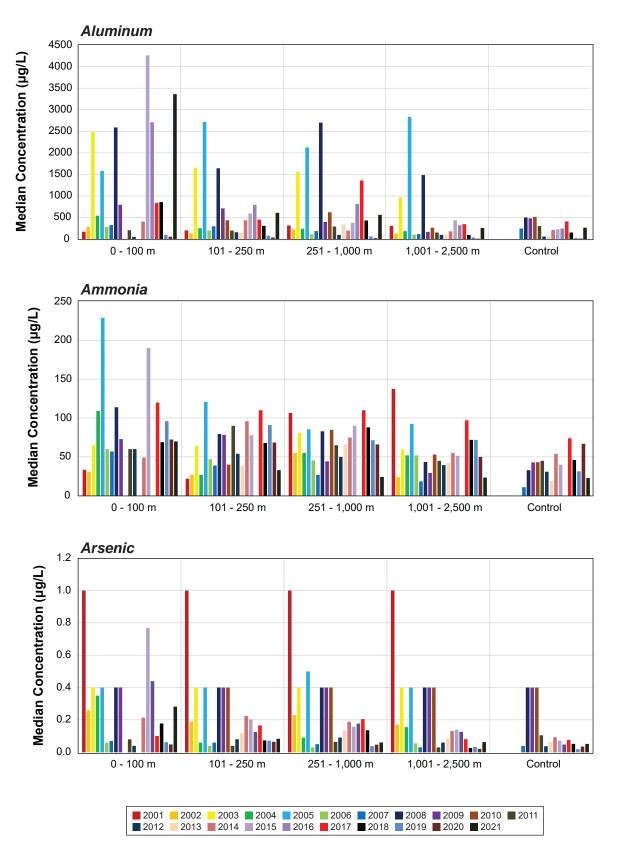
www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 3-12



Notes: Values used for the 0-100 m zone represent one sample rather than the median.

EQC (µg/L) = 3000 for Aluminum, 12000 for Ammonia, 100 for Arsenic, 3 for Cadmium, 40 for Chromium, 40 for Copper, 20 for Lead, 100 for Nickel, 2000 for Nitrite, 20 for Zinc, no EQC specified for Phosphorus

Figure 3.3-1: Snow Water Chemistry Results: Aluminum, Ammonia, Nitrite, Phosphorus, Arsenic, Cadmium, Chromium, Copper, Lead, Nickel and Zinc, 2021



Notes: Values used for the 0-100 m zone represent one sample rather than the median. EQC ( $\mu$ g/L) = 3000 for Aluminum, 12000 for Ammonia, and 100 for Arsenic

Figure 3.3-2: Snow Water Chemistry Results: Aluminum, Ammonia and Arsenic, 2001 to 2021

## 3.3.3 Arsenic

Arsenic areal deposition rates measured in 2021 ranged from less than the analytical detection limit (< 0.00005 mg/dm²/y) at SS2-2 and SS3-5 to 0.00074 mg/dm²/y at SS3-6 in the 0 to 100 m zone (Table 3-1). Arsenic 2021 areal deposition rates were similar at all distances from the Project except for the 0 to 100 m zone (Figure 3.3-1), and the 2021 median concentrations were generally similar to historical median concentrations (Figure 3.3-2). All concentrations were well below the EQC specified in the Water Licence for maximum grab sample concentrations.

#### 3.3.4 Cadmium

Cadmium areal deposition rates measured in 2021 ranged from less than the analytical detection limit (< 0.000014 mg/dm²/y) at multiple stations to 0.0001 mg/dm²/y at SS3-6 in the 0 to 100 m zone (Table 3-1). Cadmium concentrations in 2021 were similar or less than historical medians and concentrations (Figure 3.3-3). All concentrations were well below the EQC specified in the Water Licence for maximum grab sample concentrations.

#### 3.3.5 Chromium

Chromium areal deposition rates measured in 2021 ranged from 0.002 mg/dm²/y at SS2-4 in the 1,001 to 2,500 m zone to 0.076 mg/dm²/y at SS3-6 (Table 3-1; Figure 3.3-1). The 2021 median concentrations were comparable to historical concentrations in each zone (Figure 3.3-3). The chromium 2021 areal deposition rate decreased with increasing distance from the Project footprint (Figure 3.3-1), and none of the concentrations exceeded the EQC specified in the Water Licence for maximum grab sample concentrations (Figure 3.3-3).

## *3.3.6* Copper

Copper areal deposition rates measured in 2021 ranged from 0.0006 mg/dm²/y at SS3-5 in the 1,001 to 2,500 m zone to 0.012 mg/dm²/y at SS3-6 (Table 3-1). Median 2021 copper concentrations were generally comparable to historical levels (Figure 3.3-3). All concentrations were less than the EQC specified in the Water Licence for maximum grab sample concentrations.

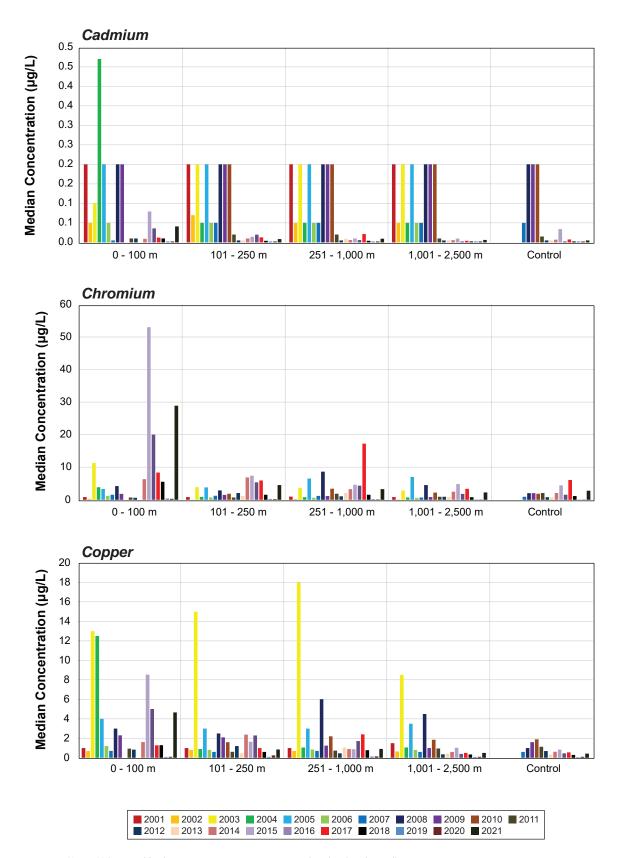
#### 3.3.7 Lead

Lead areal deposition rates measured in 2021 ranged from 0.0004 mg/dm²/y at SS2-4 and SS3-4 in the 1,001 to 2,500 m zone to 0.012 mg/dm²/y at station SS3-6 (Table 3-1). The 2021 lead median concentrations in the 0 to 100 m zone (only one station) were considerably higher than 2019 and 2020 levels. The concentration in all other zones were similar to historical levels, with little variance among zones except for the 0 to 100 m zone (Figures 3.3-1 and 3.3-4). All concentrations were well below than the EQC specified in the Water Licence for maximum grab sample concentrations.

#### 3.3.8 Nickel

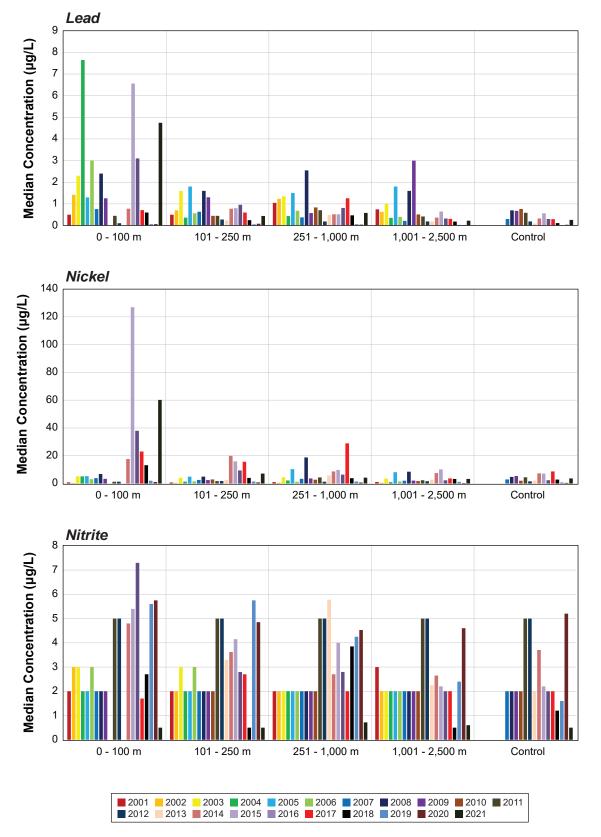
Nickel areal deposition rates measured in 2021 ranged from 0.0021 mg/dm²/y at SSC-1 station to 0.157 mg/dm²/y at SS3-6 station (Table 3-1). Similar to lead, median 2021 nickel concentrations in the 0 to 100 m zone were higher than the 2019 and 2020 levels (Figures 3.3-4). The concentration in all other zones show little variance (Figure 3.3-1). All concentrations were well below than the EQC specified in the Water Licence for maximum grab sample concentrations.

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 3-15



Notes: Values used for the 0-100 m zone represent one sample rather than the median.  $EQC\ (\mu g/L) = 3$  for Cadmium, 40 for Chromium, and 40 for Copper.

Figure 3.3-3: Snow Water Chemistry Results: Cadmium, Chromium and Copper, 2001 to 2021



Notes: Values used for the 0-100 m zone represent one sample rather than the median. EQC  $(\mu g/L) = 20$  for Lead, 100 for Nickel, and 2000 for Nitrite.

Figure 3.3-4: Snow Water Chemistry Results: Lead, Nickel and Nitrite 2001 to 2021

#### 3.3.9 *Nitrite*

Nitrite areal deposition rate measured in 2021 ranged from 0.0013 mg/dm²/y at SS3-6 in the 0 to 100 m zone to 0.0059 mg/dm²/y at the SS5-3 station in the 251 to 1,000 m zone (Table 3-1). Dissolved nitrite 2021 areal deposition rate were higher at the 101 to 250 m, 251 to 1,000 m and 1001 to 2,500 m zones (Figure 3.3-1). All concentrations were well below the EQC specified in the Water Licence for maximum grab sample concentrations.

# 3.3.10 Phosphorus

Phosphorus areal deposition rates measured in 2021 ranged from 0.003 mg/dm²/y at SSC-1 station to 0.414 mg/dm²/y at station SS3-6 (Table 3-1). Phosphorous 2021 areal deposition rates decreased with increasing distance from the Project (Figure 3.3-1) and were generally comparable to historical rates (Figure 3.3-5). Although the Water Licence has a load limit for phosphorus, there is no EQC specified for this parameter.

#### 3.3.11 Zinc

Zinc areal deposition rates measured in 2021 ranged from 0.002 mg/dm²/y at multiple stations to 0.049 mg/dm²/y at SS3-6 station (Table 3-1). Similar to lead and nickel, the median 2021 zinc concentration in the 0 to 100 m zone (one station only) was higher than 2019 and 2020 levels (Figure 3.3-5). There was little variability among other zones (Figure 3.3-1). All concentrations were well below the EQC specified in the Water Licence for maximum grab sample concentrations.

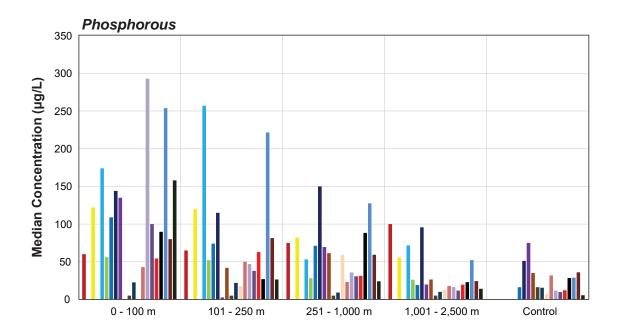
# 3.4 Evaluation of Existing Control Sites

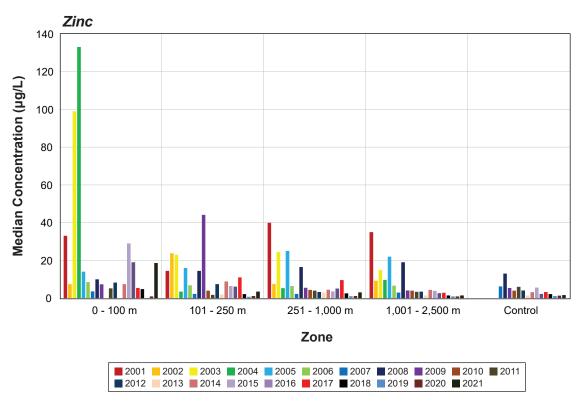
The lowest dustfall rates in 2021 were at stations SS2-3 and SS2-2, which are 1,194 m and 427 m from mining activity, respectively. The second lowest dustfall rate was at station SS1-5, 2,175 m from mining operations. In addition, the mean dustfall rate in the control zone was the lowest of all the zones. The SS2 transect stations (SS2-1, SS2-2, SS2-3 and SS2-4), in addition to station SS1-5 all recorded low dustfall rates. Stations SS2-2, SS2-3 and SS1-5 recorded lower dustfall rates than the control sites SSC-1, SSC-2 and SSC-3, indicating that the rates at these two control sites may not be representative of background values and that dustfall rates at the control sites are potentially affected by the Project. However, the potential effects of the Project on the dustfall in the control zone have marginal impacts on the dustfall monitoring program since dustfall rates at the control zone are lower than rates within zones closer to the Project area (e.g., zones 0 m to 100 m, 101 m to 250 m). Concentrations of several snow water chemistry variables were generally consistent with distance from mining activity (zinc, nitrite, copper, ammonia, arsenic, cadmium) indicating that snow chemistry concentrations for these variables are likely not influenced by Project activity.

## 3.5 Quality Assurance and Control

Dustfall gauge, dustfall snow survey and snow water chemistry sampling and analysis were conducted by experienced technicians following SOPs ENVI-908-0119, ENVI-909-0119, and ENVI-902-0119 to ensure proper field sampling and laboratory analysis. As part of SOP ENVI-909-0119, duplicate and blank samples were taken for some snow survey and snow water chemistry sample sites (Table 2-1). The results from these samples are summarized in Tables 3.5-1 and 3.5-2.

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 3-18





Notes: Values used for the 0-100 m zone represent one sample rather than the median. EQC ( $\mu$ g/L) = 20 for Zinc, no EQC specified for Phosphorus.

Figure 3.3-5: Snow Water Chemistry Results: Phosphorus and Zinc, 2001 to 2021

**Table 3.5-1: Sample Duplicates** 

Parameter			Duplicate Analyti (DUPW1/DUPW2;			Analytical Detection		Relative	Percent Di (%)	ifference <sup>a</sup>	
	SS2-4	SS5-5	SS1-4	SS3-7	SSC-3	Limit (µg/L)	SS2-4	SS5-5	SS1-4	SS3-7	SSC-3
Dustfall	23.5/24.0	19.9/17.4	n/a	n/a	21.9/19.5	0.1	2%	14%	n/a	n/a	12%
Aluminum	n/a	n/a	0.56/0.65	3.53/4.16	0.87/0.86	0.2	n/a	n/a	16%	16%	1%
Ammonia	n/a	n/a	0.08/0.08	0.17/0.15	0.07/0.06	5	n/a	n/a	5%	11%	6%
Arsenic	n/a	n/a	0.0002/0.0002	0.0004/0.0005	0.0001/0.0001	0.02	n/a	n/a	3%	22%	4%
Cadmium	n/a	n/a	0.00001/ 0.00003	0.00006/ 0.00004	0.00001/ 0.00001	0.005	n/a	n/a	110%	26%	0%
Chromium	n/a	n/a	0.006/0.005	0.03/0.03	0.01/0.01	0.05	n/a	n/a	24%	16%	1%
Copper	n/a	n/a	0.0018/0.0013	0.0043/0.0051	0.0009/0.0008	0.05	n/a	n/a	27%	17%	12%
Lead	n/a	n/a	0.0026/0.0011	0.0026/0.0028	0.0009/0.0009	0.005	n/a	n/a	84%	8%	1%
Nickel	n/a	n/a	0.004/0.004	0.05/0.05	0.01/0.01	0.02	n/a	n/a	18%	6%	12%
Dissolved Nitrite	n/a	n/a	0.0019/0.0019	0.0022/0.0022	0.0019/0.0019	1	n/a	n/a	5%	0%	0%
Phosphorus	n/a	n/a	0.03/0.03	0.22/0.18	0.00/0.02	2	n/a	n/a	13%	17%	8%
Zinc	n/a	n/a	0.005/0.004	0.02/0.02	0.00/0.00	0.1	n/a	n/a	33%	14%	2%

#### Notes:

For measurements that were less than the detection limit, half the detection limit was used for calculations and are italicized.

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 3-20

<sup>&</sup>quot;-" = parameter is not measured.

<sup>&</sup>lt;sup>a</sup> Relative difference between duplicates, with respect to their mean: RPD = 100 × |rep1 − rep2| / [(rep1 + rep2)/2].

Table 3.5-2: Analytical Blanks for QA/QC Program

Parameter	SS Equipment Blank Sample (µg/L)	Percent of Equipment Blank Sample Above Detection Limit	Detection Limit (μg/L)
Aluminum	2.78	1390%	0.2
Ammonia	8.20	164%	5
Arsenic	<0.02	-	0.02
Cadmium	<0.005	-	0.005
Chromium	0.20	400%	0.05
Copper	0.07	144%	0.05
Lead	0.03	514%	0.005
Nickel	0.10	480%	0.02
Nitrite	1.30	130%	1
Phosphorus	2.60	130%	2
Zinc	<0.1	-	0.1

Note: For measurements that were less than the detection limit, half the detection limit was used for calculations and are italicized.

The relative percent difference (RPD) of duplicate samples from a site represents the amount of variation between duplicates. According to the Project AEMP, the data quality objective for duplicate water quality samples is a RPD of 40% when concentrations are  $\geq$  5 times the detection limit (DL; AEMP 2017). RPD values are only calculated when concentrations are  $\geq$  5 times the DL (BC MOE 2013). The calculated RPD values exceeded 40% on two occasions.

The results of the QA/QC duplicates indicate that snow chemistry is spatially variable on the scale of metres within which the duplicates are collected. The data quality objective from the AEMP (i.e., RPD less than 40%) is designed for surface *liquid* water samples. Surface water in a stream or lake will mix more readily than snow, particularly once snow has settled and has been compacted by wind. Site-specific differences between snow core sampling replicates may result in differences in the chemical composition of the snow. RPD exceeded the 40% threshold once for lead at SS1-4 station when concentrations are ≥ 5 times the detection limit (in the other exceedance, the concentration was < 5 times the detection limit). The absolute difference between observations was small in magnitude. The similarity in the magnitude of the variability is consistent with small-scale spatial variation, rather than data quality issues. The results of the sampling network of 23 sites has been demonstrated to detect and quantify Project effects on snow water chemistry (Section 3.3), and these results are concluded to be reliable despite the small-scale variation identified in the QA/QC program.

Most blank sample concentration were either slightly above the analytical DL (e.g. ammonia, copper, nitrite, phosphorus) or below it (e.g. arsenic, cadmium and zinc; Table 3.5-2), which indicates negligible impacts of contamination on these variable concentrations. For other variables (aluminum, chromium, lead and nickel), the blank sample concentrations are  $\geq$  4 times the analytical DL. However, these blank concentrations were still well below the concentrations of snow chemistry samples, suggesting that the potential bias due to contamination on the snow chemistry results is negligible. As an example, the aluminum concentrations ranged from 81 µg/L at SS2-4 to 3360 µg/L at SS3-6 (compared to 2.78 µg/L in the blank sample).

Additionally, all variable concentrations were below the detection limit in a blank demineralized water sample to analyze for leachate from the snow sample bag (bag sample), which would be expected for an uncontaminated blank.

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022
 Page 3-21

#### 4. SUMMARY

Median dustfall rates from dustfall gauges measured in 2021 were slightly higher than 2020 results but lower than 2019 rates. The 2021 rates from snow surveys were comparable to 2020 results. Similar to historical results, dustfall rates in 2021 decreased with distance from the Project. Annual dustfall estimated from the 14 dustfall gauges ranged from 50 to 706 mg/dm²/y. The annualized dustfall rates estimated from the 2021 snow survey data ranged from 6 to 1,648 mg/dm²/y. Because dustfall gauges continuously collect dust throughout the year, and the snow surveys are only representative of dustfall accumulated over the snow-covered period, the reported annual dustfall results from the dustfall gauges are expected to provide a better estimate of annual dustfall compared to snow survey results for similar geographic areas. However, results obtained from both methods showed similar overall patterns. It is unknown why the maximum dustfall rate from the snow surveys was more than double the highest value from the dustfall gauges, although the highest rates were all very close to mining activity. Dustfall rates in 2021 were generally within the historical data range. Annualized dustfall rates estimated from each snow survey station in 2021 were comparable to historical dustfall estimates.

As expected, dustfall rates generally decreased with distance from the Project with the lowest dustfall rate recorded at stations SS2-2 and SS2-3. The SS2 transect stations (SS2-1, SS2-2, SS2-3, and SS2-4), in addition to station SS1-5 all recorded low dustfall rates. Stations SS2-2, SS2-3, and SS1-5 recorded lower dustfall rates than the control sites SSC-1, SSC-2 and SSC-3, indicating that the rates at the control sites may not be representative of background values and that dustfall rates at the control sites are potentially affected by the Project. However, the potential effects of the Project on the dustfall in the control zone have marginal impacts on the dustfall monitoring program since dustfall rates at the control zone are lower than rates within zones closer to the Project area (e.g., zones 0 m to 100 m and 101 m to 250 m). Concentrations of several snow water chemistry variables were consistent or decreased with distance from mining activity (zinc, nitrite, copper, ammonia, arsenic, cadmium) indicating that snow chemistry concentrations for these variables are likely not related to the Project activity.

Areas that were closer to the Project, roads, and airstrip received more dustfall than other areas. Mean dustfall rates estimated using both dustfall gauges and snow surveys within the 0 m to 100 m, 101 m to 250 m, 251 m to 1,000 m, 1,001 m to 2,500 m and control zones were 599, 233, 226, 107, and 54 mg/dm²/y, respectively. Although there are no dustfall standards for the Northwest Territories, all the 2021 dustfall rates were well below the non-residential (1,922 mg/dm²/y) Alberta Ambient Air Quality Objective for dustfall (Alberta Environment and Parks 2019). Dust 3, Dust 10 and Dust 11 stations were higher than the residential limit of the Alberta Ambient air Quality Objective for dustfall (1.77 mg/dm²/d; 646 mg/dm²/y). These objectives are used only as general performance indicators.

Snow water chemistry analytes of interest included those variables with EQC (i.e., aluminum, ammonia, arsenic, cadmium, chromium, copper, lead, nickel, nitrite, and zinc) or a load limit (i.e., phosphorus) specified in the Type "A" Water Licence (W2015L2-0001, formerly W2007L2 0003). Most 2021 sample concentrations were well below their associated reference levels as specified by the "maximum concentration of any grab sample" specified in Water Licence W2015L2 0001. Concentrations in 2021 were generally higher than the 2019 and 2020. Typically, concentrations decreased with distance from the Project. The highest concentrations for all variables were less than their corresponding EQC other than SS3-6 for Aluminum.

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022
 Page 4-1

#### 5. REFERENCES

Definitions of the acronyms and abbreviations used in this reference list can be found in the Acronyms and Abbreviations section.

- AEMP. 2017. Aquatic Effects Monitoring Program- Quality Assurance Project Plan Version 3.1. Diavik Diamond Mines Inc. Produced by Golder Associates. June 2017.
- Alberta Environment and Parks. 2019. *Alberta Ambient Air Quality Objectives and Guidelines Summary*. February 2019: <a href="https://open.alberta.ca/dataset/0d2ad470-117e-410f-ba4f-aa352cb02d4d/resource/4dd8097-6787-43f3-bb4a-908e20f5e8f1/download/aaqo-summary-jan2019.pdf">https://open.alberta.ca/dataset/0d2ad470-117e-410f-ba4f-aa352cb02d4d/resource/4dd8097-6787-43f3-bb4a-908e20f5e8f1/download/aaqo-summary-jan2019.pdf</a> (accessed in January 2022).
- BC MOE. 2013. British Columbia Field Sampling Manual, Part II. British Columbia Ministry of Environment.
- DDMI. 1998. Environmental Assessment Report. Diavik Diamond Mines Inc.: Yellowknife, NT.
- DDMI. 2002. Diavik Diamond Mine Dust Deposition 2001. Diavik Diamond Mines Inc.
- DDMI. 2003. Diavik Diamond Mine Dust Deposition 2002. Diavik Diamond Mines Inc.
- DDMI. 2004. Diavik Diamond Mine Dust Deposition 2003. Diavik Diamond Mines Inc.
- DDMI. 2005. Diavik Diamond Mine Dust Deposition 2004. Diavik Diamond Mines Inc.
- DDMI. 2006. Diavik Diamond Mine Dust Deposition 2005. Diavik Diamond Mines Inc.
- DDMI. 2007. Diavik Diamond Mine Dust Deposition 2006. Diavik Diamond Mines Inc.
- DDMI. 2008. Diavik Diamond Mine Dust Deposition 2007. Diavik Diamond Mines Inc.
- DDMI. 2009. Diavik Diamond Mine Dust Deposition 2008. Diavik Diamond Mines Inc.
- DDMI. 2010. Diavik Diamond Mine Dust Deposition 2009. Diavik Diamond Mines Inc.
- DDMI. 2011. Diavik Diamond Mine Dust Deposition 2010. Diavik Diamond Mines Inc.
- DDMI. 2012. Diavik Diamond Mine Dust Deposition 2011. Diavik Diamond Mines Inc.
- DDMI. 2013. Diavik Diamond Mine Dust Deposition 2012. Diavik Diamond Mines Inc.
- DDMI. 2014. Diavik Diamond Mine Dust Deposition 2013. Diavik Diamond Mines Inc.
- DDMI. 2015. Diavik Diamond Mine Dust Deposition 2014. Diavik Diamond Mines Inc.
- DDMI. 2016. Diavik Diamond Mine Dust Deposition 2015. Diavik Diamond Mines Inc.
- DDMI. 2017. Diavik Diamond Mine Dust Deposition 2016. Diavik Diamond Mines Inc.
- DDMI. 2018. Diavik Diamond Mine Dust Deposition 2017. Diavik Diamond Mines Inc.
- DDMI. 2019. Diavik Diamond Mine Dust Deposition 2018. Diavik Diamond Mines Inc.
- DDMI. 2020. Diavik Diamond Mine Dust Deposition 2019. Diavik Diamond Mines Inc.
- DDMI. 2021. Diavik Diamond Mine Dust Deposition 2020. Diavik Diamond Mines Inc.
- WLWB (Wek'èezhìı Land and Water Board). 2021. Wek'èezhìı Land and Water Board Type A Water Licence #W2015L2-0001. Effective 19 October 2015. Amended 8 June 2021. Yellowknife, NT, Canada
- WLWB. 2007. Wek'èezhìı Land and Water Board Type A Water Licence #W2007L2-0003. Effective November 1, 2007.

www.erm.com Version: C.1 Project No.: 0630556-0001 Client: Rio Tinto March 2022 Page 5-1

DIAVIK DIAMOND MINE 2021 Dust Deposition Report		
APPENDIX A	ANNUAL CHANGES TO DUSTFALL PROGRAM	

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022

# **Appendix A: Annual Changes to Dustfall Program**

## 2001

The 2001 dust monitoring program was based entirely upon snow survey samples collected along four radial transects emanating from the project footprint outward to a distance of approximately 1,000 metres. All sample locations were analyzed for dust deposition, while only those locations on Lac de Gras were analyzed for snow water chemistry.

#### 2002

DDMI amended the dust monitoring program, in response to recommendations made by the Mackenzie Valley Land and Water Board, to include two snow survey control locations. In addition, five dust gauges (passive dust collectors) were deployed, one along each of the snow survey transects and one at a control location, in efforts to enhance the monitoring program.

## 2003

In response to further recommendations, the dust monitoring program was modified. All four snow survey transects were extended in length to a distance of approximately 2,000 metres from the project footprint. An additional five dust gauges, including a second control, were deployed.

#### 2004

Increased construction activity necessitated further changes to the dust monitoring program. One dust gauge (Dust 02) was removed from its location to accommodate project footprint expansion, and subsequently relocated and redeployed (Dust 2A).

## 2005

Dust deposition monitoring was carried out with no modifications to either the snow survey or the dust gauge portion of the program.

## 2006

An additional dust gauge was deployed bringing the total to eleven (including two controls). Testing of Mini-Vol portable air samplers were conducted to determine feasibility of incorporation into the dust monitoring program. Preliminary findings proved the inclusion of the Mini-Vol samplers would be impractical.

#### 2007

The snow survey portion of the program was amended with an additional snow survey transect being incorporated bringing the total number of transects to five. As well, snow water chemistry samples were collected adjacent to the pre-existing control locations as background references.

Two additional dust gauges (temporary) were deployed adjacent to two pre-existing dust gauges. The intent of the temporary gauges was to compare results from the same location when sample collection frequency is altered.

 DDMI initiated contact with Environment Canada and Golder Associates with regards to remodeling dust deposition with the intent of revising predictions made in the 1998 environmental effects report.

In light of dust deposition monitoring results from previous years, several control measures were adopted to reduce dust generation on site, including the utilization of EK-35 (suppressant) on the airport apron, taxiway and helipad, and fitting a second 830E haul truck with tank for haul road watering.

#### 2008

All of the dust gauges were modified to accommodate the replacement of the polyacrylic dust gauge inserts with brass Nipher gauge inserts, to minimize loss associated with damage during the collection and handling of the dust gauges.

An additional dust gauge was added to the program bringing the total to twelve permanently deployed (including two control), and two temporary (reference) dust gauges.

Three snow survey sample points were not sampled as they had become overtaken by construction activity and expansion of the project footprint.

Additional preparations for dust deposition modelling were completed including data collection, identification of point source inputs, selection of a modelling program and inputs (with regulator input) and discussion of cumulative effects.

#### 2009

The two temporary dust gauges deployed in 2007 were decommissioned. All twelve permanent gauges were collected quarterly. An error in collection/deployment resulted in "No Data" being collected for Dust 3 between July 11 and September.

Snow survey sampling was conducted in April. An error in collection/analysis resulted in the Dust Deposition sample for SS2-1 being compromised; as such "No Dust Deposition Data" was available for this location.

## 2010

All twelve permanent dust gauges were collected quarterly during 2010. Overall, there was a reduction of observed dustfall deposition from 2009 to 2010, with the exception of Dust 1 and Dust 10.

Snow survey sampling was conducted throughout the month of April. An error in collection/processing resulted in two missing stations for the water quality analysis. SS2-1 field results were collected; however, the sample was compromised during processing in the lab. An error also resulted with the collection of SS5-2; data collection for water quality analysis was missed in the field. No data for these two stations resulted in Zone 1 having no data for the various water chemistry results and SS5-2 was not represented in Zone 3 data for 2010.

#### 2011

All twelve permanent dust gauges were collected quarterly during 2011. During collection and repair to Station Dust 5 in September, the sample was compromised and therefore not processed, which resulted in data loss.

Snow survey sampling was conducted throughout the month of April. Due to an internal error shipping samples, water quality samples for stations SS1-4, SS1-5, SS2-1, SS2-2, SS2-3, SS2-4, and SSC-3 arrived at the Maxxam laboratory past the recommended holding time.

#### 2012

All twelve permanent dust gauges were collected quarterly during 2012. During collection in June, repairs were conducted on Station Dust 9 as it was found on its side, the sample was compromised, which resulted in data loss. Overall in 2012, 8 of the 12 dust gauges reported lower deposition rates compared to 2011.

Snow survey sampling was conducted on April 30, and on May 4 and 5.

#### 2013

All twelve permanent dust gauges were collected quarterly during 2013. Station Dust 5 was dismantled upon arrival in September and the sample was compromised, which resulted in data loss for that quarter.

Snow survey sampling was conducted at 24 locations from April 26 to 28.

#### 2014

All twelve permanent dust gauges were collected quarterly during 2014.

Snow survey sampling was conducted at 24 locations from April 7 to May 12. Three additional sites, SS3-6, SS3-7, SS3-8, were installed.

#### 2015

No changes were made to the dustfall program in 2015.

All twelve permanent dust gauges were collected quarterly during 2015.

Snow survey sampling was conducted at 24 locations from March 31 to April 10.

#### 2016

Due to construction activities at A21, the distance to mining operations decreased for dustfall stations Dust 10, SS5-1, SS5-2, SS5-3, SS5-4, SS5-5, Dust C1, and Control 1. The new distances to mining operations are shown in Table 2-1. Dust 10 station was 670 m from mining operations and now is 46 metres from mining operations.

All twelve permanent dust gauges were collected quarterly during 2016.

Snow survey sampling was conducted at 27 locations from March 3 to April 7.

#### 2017

All twelve permanent dust gauges were collected quarterly during 2017.

During collection of Stations Dust 3 Dust 4, Dust 8 and Dust 10 in July were compromised and an indeterminate amount of sample was lost.

Two new permanent dust gauges (Dust 11 and Dust 12) were deployed on 2017-Oct-05.

Dust 11 and 12 are 0.805 km and 2.58 km respectively from mining operations.

Snow survey sampling was conducted at 27 locations from April 1 to April 10.

#### 2018

No changes to the dustfall program were made in 2018. All fourteen permanent dust gauges were collected quarterly during 2018.

www.erm.com Project No.: 0630556-0001 Client: Rio Tinto Page 3 of 4

## 2019

Four new stations are added to the snow survey monitoring network to help assessing the efficiency of the existing control stations. The stations added include FF1-2, FFA-4, FFB-4 and LDS-1. All 14 permanent dust gauges were collected quarterly during 2019.

Snow survey sampling was conducted at 31 locations from April 4 to May 8.

#### 2020

Four stations were removed in 2020. The removed stations include FF1-2, FFA-4, FFB-4 and LDS-1. All 14 permanent dust gauges were collected quarterly during 2020.

Snow survey sampling was conducted at 24 locations from April 3 to April 17.

One lab blank and one equipment blank were run every quarter. Equipment blanks commenced July 20, 2020 (Q2), lab blanks commenced January 5, 2021 (Q4).

## 2021

All 14 permanent dust gauges were collected quarterly during 2021.

Snow survey sampling was conducted at 24 locations from April 9 to April 12.

One lab blank and one equipment blank were run every quarter.

APPENDIX B  DUSTFALL GAUGE ANALYTICAL RESULTS		
APPENDIX B DUSTFALL GAUGE ANALYTICAL RESULTS	DIAVIK DIAMOND MINE 2021 Dust Deposition Report	
APPENDIX B DUSTFALL GAUGE ANALYTICAL RESULTS		
APPENDIX B DUSTFALL GAUGE ANALYTICAL RESULTS		
	APPENDIX B	DUSTFALL GAUGE ANALYTICAL RESULTS

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022

Appendix B: Dustfall Gauge Analytical Results

Comple Date	Duct	Eiltor #	Wajaht	Filtor +	Cumulativa	Duct	Dava	Duct	Duet
Sample Date	Dust Gauge ID	Filter #	Weight of Filter	Filter + Residue	Cumulative Weight of	Dust Deposition	Days Deployed	Dust Deposition	Dust Deposition
	Gauge ID		(mg)	(mg)	Residue (mg)	(mg/dm <sup>2</sup> )	Deployed	(mg/dm <sup>2</sup> /d)	(mg/dm <sup>2</sup> /y
			( )/	( )/	3,	(mg/am/)		(mg/am /a)	(mg/am/)
nitial deployn			400.6	174.0	F4.0	ı	I 00	0.46	1
4-Apr-21	Dust 1	1	123.6	174.9	51.3		90	0.46	
5-Jul-21		1	113.1	187.3					
		2	111.6	131.6					
		3	111.5	151.7	040.4		00	0.0	
45 0 04	1	4	111.2	225.2	248.4		92	2.2	
15-Sep-21		1	113.7	147.7	05.0		70	0.7	
Doc 24	1	2	122.5	154.1	65.6		72	0.7	
9-Dec-21		1	117.2	191.9	74.7	250	85	0.7	200.0
		I 0004			TOTALS	359	339	1.0	386.2
nitial deployn			400.0	0.40.0	000.7	1	0.4	0.47	1
30-Mar-21	Dust 2A	1	123.2	346.9	223.7		84	2.17	ļ
5-Jul-21		1	112.6	169.2	440.5		07	1.0	ļ
10 Can 01	4	2	111.7	168.6	113.5		97	1.0	<u> </u>
19-Sep-21		1	119	130.7					<u> </u>
		2	117.4	130					
		3	121.4	135.3	60.4		70	0.7	
14-Jan-22	1	4	121.4	146.6 152.7	63.4		76	0.7	
14-Jan-22		1	116.7		60.0		447	0.5	
		2	112.5	145.3	68.8 <b>TOTALS</b>	200.7	117	0.5	070.5
Initial deployn	nent date: 3-	Jan-2021			TOTALS	382.7	374	1.1	373.5
4-Apr-21	Dust 3	1	118.5	267.2		I			
•		2	123.8	214	238.9		91	2.14	
5-Jul-21	1	1	111.1	250.4					
		2	111.4	175.5					
		3	111.5	184.2	276.1		92	2.5	
15-Sep-21		1	118.5	161.4					
		2	124.5	166					
		3	125.7	192.6	151.3		72	1.7	
4-Dec-21	1	1	118.4	246.5	128.1		80	1.3	
	<u> </u>				TOTALS	647.1	335	1.9	705.7
Initial deployn	nent date: 3-	Jan-2021							
30-Mar-21	Dust 4	1	126.3	195.5	69.2		86	0.7	
5-Jul-21	1	1	112.5	199					<u> </u>
		2	110.9	178.3	153.9		97	1.3	
15-Sep-21		1	127.1	137					
		2	115.9	124	18		72	0.2	
9-Dec-21		1	118	147.3	29.3		85	0.3	
	1	1	1		TOTALS	220.5	340	0.6	236.7
Initial deployn	nent date: 5-	Jan-2021							
	nent date: 5-	Jan-2021	124.9	144.2	19.3		84	0.2	
30-Mar-21			124.9 113.6	144.2 129.8	19.3		84	0.2	
30-Mar-21		1			19.3		94	0.2	
30-Mar-21 2-Jul-21		1	113.6 117.1	129.8					
Initial deployn 30-Mar-21 2-Jul-21 16-Sep-21 9-Dec-21		1 1 2	113.6	129.8 132.3	31.4		94	0.3	

Appendix B: Dustfall Gauge Analytical Results

	Dust Gauge ID	Filter #	Weight	Filter +	Cumulative Weight of	Dust	Days	Dust	Dust
	Gauge ID		of Filter (mg)	Residue (mg)	Weight of Residue (mg)	Deposition (mg/dm²)	Deployed	Deposition (mg/dm²/d)	Deposition (mg/dm²/y)
			(1119)	(1119)	rtooiaao (mg)	(IIIg/aIII )		(mg/am /a)	(IIIg/uiii /y
Initial deployn									ı
4-Apr-21	Dust 6	1	121.2	150.7	29.5		91	0.3	
5-Jul-21		1	113.3	156.8					
		2	110.7	151.5	84.3		92	8.0	
15-Sep-21		1	123.8	130.4					
		2	127	130.9					
		3	116.9	124.3					
		4	124.4	142.9	36.4		72	0.4	
3-Jan-21		1	117.6	179.5	61.9		80	0.6	
					TOTALS	172.9	335	0.5	188.4
Initial deployn			1212						
30-Mar-21	Dust 7	1	124.6	178.8	54.2		81	0.6	
2-Jul-21		1	113.7	169					
10.0		2	110.7	117.5	62.1		94	0.5	
16-Sep-21		1	118.4	125.4					
		2	124.5	130.9					
		3	118.1	124.3	04.0		70	0.0	
44.1.00		4	119.1	124.1	24.6		76	0.3	
14-Jan-22		1	111.8	156.1	75.0		400		
		2	111	142.5	75.8	4=0=	120	0.5	4=0.0
Initial daulares		I 0004			TOTALS	176.7	371	0.5	173.8
Initial deployn 4-Apr-21			119.4	135.9	84.5		86	0.8	
4-Apr-2 r	Dust 8	2	115.8	183.8	04.5		00	0.6	
2-Jul-21		1	115.6	200.7					
Z-Jui-Z i		2	111.1	193.3	167.5		89	1.53	
16-Sep-21	4				107.5		09	1.55	
			122.0	100 0					
10-0ер-21		1	122.9	123.2					
10-36ρ-21		2	124.7	123.1					
10-Зер-21		2	124.7 120	123.1 149.4					
10-оер-21		2 3 4	124.7 120 124.7	123.1 149.4 118.6					
10-оер-21		2 3 4 5	124.7 120 124.7 123.5	123.1 149.4 118.6 123.7					
10-оер-21		2 3 4 5 6	124.7 120 124.7 123.5 124.1	123.1 149.4 118.6 123.7 124.4					
10-оер-21		2 3 4 5 6 7	124.7 120 124.7 123.5 124.1 118.9	123.1 149.4 118.6 123.7 124.4 130.3					
10-оер-21		2 3 4 5 6 7 8	124.7 120 124.7 123.5 124.1 118.9 118.9	123.1 149.4 118.6 123.7 124.4 130.3 120.2					
10-оер-21		2 3 4 5 6 7 8	124.7 120 124.7 123.5 124.1 118.9 118.9	123.1 149.4 118.6 123.7 124.4 130.3 120.2 122.4					
10-оер-21		2 3 4 5 6 7 8 9	124.7 120 124.7 123.5 124.1 118.9 118.9 120.9	123.1 149.4 118.6 123.7 124.4 130.3 120.2 122.4 121.2					
то-оер-21		2 3 4 5 6 7 8 9 10	124.7 120 124.7 123.5 124.1 118.9 120.9 121.3	123.1 149.4 118.6 123.7 124.4 130.3 120.2 122.4 121.2 119.4					
то-оер-21		2 3 4 5 6 7 8 9 10 11	124.7 120 124.7 123.5 124.1 118.9 120.9 121.3 117.2 119.6	123.1 149.4 118.6 123.7 124.4 130.3 120.2 122.4 121.2 119.4 120.4					
10-оер-21		2 3 4 5 6 7 8 9 10 11 12	124.7 120 124.7 123.5 124.1 118.9 120.9 121.3 117.2 119.6 118.3	123.1 149.4 118.6 123.7 124.4 130.3 120.2 122.4 121.2 119.4 120.4 121.6					
10-оер-21		2 3 4 5 6 7 8 9 10 11 12 13	124.7 120 124.7 123.5 124.1 118.9 120.9 121.3 117.2 119.6 118.3 119.7	123.1 149.4 118.6 123.7 124.4 130.3 120.2 122.4 121.2 119.4 120.4 121.6 122.5	15 Q		76	0.5	
		2 3 4 5 6 7 8 9 10 11 12 13 14 15	124.7 120 124.7 123.5 124.1 118.9 120.9 121.3 117.2 119.6 118.3 119.7	123.1 149.4 118.6 123.7 124.4 130.3 120.2 122.4 121.2 119.4 120.4 121.6 122.5 119	45.8		76	0.5	
10-Dec-21		2 3 4 5 6 7 8 9 10 11 12 13	124.7 120 124.7 123.5 124.1 118.9 120.9 121.3 117.2 119.6 118.3 119.7	123.1 149.4 118.6 123.7 124.4 130.3 120.2 122.4 121.2 119.4 120.4 121.6 122.5	45.8		76	0.5	

Appendix B: Dustfall Gauge Analytical Results

Sample Date	Dust	Filter #	Weight	Filter +	Cumulative	Dust	Days	Dust	Dust
	Gauge ID		of Filter	Residue	Weight of	Deposition	Deployed	Deposition	Deposition
			(mg)	(mg)	Residue (mg)	(mg/dm <sup>2</sup> )		(mg/dm <sup>2</sup> /d)	(mg/dm²/y
nitial deployn	nent date: 5-	Jan-2021							
30-Mar-21	Dust 9	1	127.4	137.5	10.1		84	0.2	
2-Jul-21		1	114.3	126.9					
		2	114	125	23.6		94		
16-Sep-21		1	118.9	120.4					
		2	118.2	121.7	5		76	0.2	
14-Jan-22		1	110.7	135.3	24.6		120	0.1	
					TOTALS	51.6	374	0.5	50.4
Initial deployn	.5.				•				
4-Apr-21	Dust 10	1	118.2	155.9					
		2	115.5	348.8	271		91	2.4	
5-Jul-21		1	111.6	257.1					
		2	113.9	196.8					
		3	111.4	215.2					
		4	112.4	136.7	356.5		92	3.2	
15-Sep-21		1	123.1	135.3					
		2	122.9	135.2					
		3	123.1	138.4					
		4	124	145.3					
		5	119.8	142.4	83.7		72	1.0	
9-Dec-21		1	118.2	171.4	53.2		85	0.5	
					TOTALS	623.2	340	1.8	669.0
Initial deployn	.5.					1			
30-Mar-21	Dust 11	1	126.3	356	229.7		83	2.26	
2-Jul-21		1	110.6	128.5					
		2	110.3	117.9					
		3	115.3	139.4					
		4	110	172.2					
		5	114.4	149.3	504.4		0.4	4.4	
10.0		6	115.2	469.9	501.4		94	4.4	
16-Sep-21		1	119	157.8	38.8		76	0.4	
14-Jan-22		1	111.8	142.9	60.4		400	0.4	
		2	111.3	142.6	62.4	670.6	120	0.4	004.0
luitial damlassu	aant data. O	lam 2024			TOTALS	678.6	373	1.7	664.0
Initial deployn	Dust 12	Jan-2021 1	124.2	227	102.8		81	0.5	
30-Mar-21 2-Jul-21	Dust 12	1	1124.2	121.9	102.8		ΟI	0.5	
∠-Jui-∠ l									
		2	111.9	141.3	02.2		04	0.7	
16 Can 21	-	3	112.3	166.8	93.3		94	0.7	
16-Sep-21		1	119.1	120.9	1				
		2	124.4	128.2					
		3	123.6	125.1	40		70	0.5	
14 lan 00	4	4	123	127.9	12		76	0.5	
14-Jan-22		1	112.6	123	00.4		400	0.4	
	<u> </u>	2	116.1	128.8	23.1	400 =	120	0.4	467.1
					TOTALS	188.5	371	0.5	185.4

## Appendix B: Dustfall Gauge Analytical Results

Sample Date	Dust	Filter #	Weight	Filter +	Cumulative	Dust	Days	Dust	Dust
	Gauge ID		of Filter	Residue	Weight of	Deposition	Deployed	Deposition	Deposition
			(mg)	(mg)	Residue (mg)	(mg/dm <sup>2</sup> )		(mg/dm <sup>2</sup> /d)	(mg/dm <sup>2</sup> /y)
Initial deployn	nent date: 8-	Jan-2021			.1				
30-Mar-21	Dust C1	1	124.8	152.1	27.3		81	0.3	
2-Jul-21		1	111.7	155.9	44.2		94	0.4	
16-Sep-21		1	124.5	127.4					
		2	125.8	139.9					
		3	124.1	142.9	35.8		76	0.4	
14-Jan-22		1	115.7	130.8	15.1		120	0.1	
					TOTALS	99.8	371	0.3	98.2
Initial deployn	nent date: 8-	Jan-2021							-
30-Mar-21	Dust C2	1	123.9	175.2	51.3		81	0.5	
2-Jul-21		1	111	167.1	56.1		94	0.5	
16-Sep-21		1	124.7	126.3					
		2	125.3	130.3	6.6		76	0.1	
14-Jan-22		1	110.7	122.8	12.1		120	0.1	
	•				TOTALS	102.8	371	0.3	101.1

DIAVIK	DIAMOND	MINE
2021 Di	ist Deposition	on Report

APPENDIX C DUSTFALL SNOW SURVEY FIELD SHEETS AND ANALYTICAL RESULTS

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022

	Dust Gauge Collection Fie	ld Sheet		
		No:	ENVI-1	78-0312
Area:	8000	Revision:	R0	
Effective Date:	26-Mar-2012	By:	Dianne	Dul
Task:	Dust Gauge Collection Field Sheet			
		Page:	1 0	of 2
GENERAL LOCATION NAME: DC SAMPLED BY: GPS COORDINATES (UT DESCRIPTION:	DATE (dd-mmm-yyyy): 20  NG  TYPE OF SAMPLE: Dust  TM): 533964  E 7154321	<u>₩1- 04</u> ~ 04 >N (Zone)	Other	) <u>:</u> /329
Precipitation: rain / mist / Snow Cover: 0%, 10%,	Wind Direction: NA Wind Spe / snow (N/A) Cloud Co 25%, 50%, 75%, 100% Dust in an	ver: 0%, 0%, 2	Visible	
Date Sample Collected was	Deployed 3021-01-04 13:46 - 6 water when melted, Pickel	place of Ve	gitation	of at water
Total Volume of Water	After Melting: 380 (mL)			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	123,6	174.9	5/3	
2		3		
3				
4		· · · · ·		
5				
6				
7				
8				

\$13

174.9

Document #: ENVI-178-0312 R0 Effective Date: 26-March-2012

123,6

9 10 11

**Totals** 

بح
0
_
4.4
1000
100

	Dust 0	Sauge Collecti	on Field Sheet		
	Dustic	zauge Conecu		END (1.476.55	10
			No:	ENVI-178-03	12
Area:	8000		_ Revision:	R0	
Effective Date:	26-Mar-2012		By:	Dianne Dul	
Task:	Dust Gauge C	Collection Field			
			Page:	1 of	2
GENERAL LOCATION NAME: 0 SAMPLED BY: 4 GPS COORDINATES (UT	st 2A	DATE (dd-mmm-yy		TIME (24:00): <u>/○3</u>	36
GPS COORDINATES (UT	rm): 535673	E_7/5/3	N (Zone)	12W	
DESCRIPTION:	1 Dust	7.00-2	90 E.C.		
CLIMATE CONDITIONS ( Air Temp:33'C Precipitation: rain / mist / Snow Cover: 0%, 10%,  COLLECTION COMMEN	Wind-Direction snow / N/A 25%, 50%, 75%, TS: (i.e. damage to	n: W C C D D station, bugs - twi	ind Speed (knots): Oud Cover: 0%, 10%, ust in area: Visible, Not gs in sample, hole in ve	Visible	100
<b>Date Sample Collected was</b>	· · ·				
S	omple appear	ed wery cloudy t	ulte.		
Total Volume of Water	After Melting :(	5 ≤ ∞ (mL)	18		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	123.2	341.9	223.7	
2				
3				
4				
5				
6				
7				-
8		(0)		
9				
10				
11				
Totals	1232	346.9	2237	

	Dust Gauge Collection Fie	ld Sheet		
		No:	ENVI-178-	0312
Агеа:	8000	Revision:	R0	
Effective Date:	26-Mar-2012	By:	Dianne Du	
Task:	<b>Dust Gauge Collection Field Sheet</b>	:		
		Page:	1 of	2
GENERAL LOCATION NAME: Property of the second secon	DATE (dd-mmm-yyyy):			
SAMPLED BY: 1) 17 (	NG TYPE OF SAMPLE: Dust		Other	
· · · · · · · · · · · · · · · · · · ·	M): 535024 E 7151872	N (Zone)	12.00	
DESCRIPTION:	1 Dust			
Precipitation: rain / mist / Snow Cover: 0%, 10%,	Wind-Direction: Wind Spec Snow N/A Cloud Cov 25%, 50%, 75%, 100% Dust in an	ver: 0% 10%, 2 ea: Visible, Not	Visible	%, 100
	TS: (i.e. damage to station, bugs - twigs in sa  Deployed 2021 - 01 - 03	mpie, noie in ves	stibule, etc.}	
Very cloudy w	vater, one piece at regetation	n in water		
Total Volume of Water	After Melting: 60 (mL)			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	118.5	267.2	148.7	Piece of Verstuck on litter, police off without
2	173.8	214.0	90.2	
3				
4				
5				
6				
7				
8				
9		_		
10				
11				
Totals	2423	481.2	238.9	

	<u>Dust Gauge Collection</u>	Field Sheet		
		No:	ENVI-178-	-0312
Area:	8000	Revision:	R0	
Effective Date:	26-Mar-2012	By:	Dianne Du	ıl
Task:	<b>Dust Gauge Collection Field S</b>	heet		
		Page:		2
GENERAL				
LOCATION NAME: D.	15+ 04 DATE (dd ====	. 2021-03-30	TIRE (04.00)	11.05
LOCATION NAME: DE SAMPLED BY:	DATE (dd-mmm-yyyy	): 20K1 0 ) //	Other_	00
CRO COORDINATES (15	M): 531397 E 71521		1025-10362	
GPS COORDINATES (UT	M): S5101 E /1321	<i>♣ )</i> N (Zone)	1261	
DESCRIPTION:	1 Dust			
CLIMATE CONDITIONS (	if nampling outside)			
CLIMATE CONDITIONS (		(2)		
	1	d Speed (knots):	<del></del>	
Precipitation: rain / mist /		d Cover: 0%, 10%,		5%, 100
Snow Cover: 0%, 10%,	25%, 50%, 75%, 100% Dus	t in area: Visible, Not	Visible	
COLLECTION COMMEN	TS: (i.e. damage to station, bugs - twigs	in sample, hole in ve	estibule, etc.)	
<b>Date Sample Collected was</b>	Deployed 20240/03	•••		
	Stightly cloudy			
	902			
Total Volume of Water	After Melting: (mL)			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	126.3	195.5	69.2	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
Totals	126.3	195.5	69.2	

Ellipsia	D 40 0 11		
	Dust Gauge Collect	tion Field Sheet	
		No:	ENVI-178-0312
Area:	8000	Revision:	R0 =
Effective Date:	26-Mar-2012	By:	Dianne Dul
Task:	<b>Dust Gauge Collection Fiel</b>	d Sheet	
		Page:	1 of <u>2</u>
CENEDAL			
GENERAL LOCATION NAME: Du	. + 5	2011 62.70	- 1 W
LOCATION NAME: 10	DATE (dd-mmm-)	(VVVV): 20)1-03.30	
SAMPLED BY: 60			Other
GPS COORDINATES (U		55138 N (Zone)	12W
DESCRIPTION:	21 Dust		
	Wind Direction:	Wind Speed (knots): Cloud Cover: 0%, 10%, 2 Dust in area: Visible, Not wigs in sample, hole in ve	Visible
Date Sample Collected was	Denloyed 2-70 /-0/-95		
Most	ly clear, small amount of	districtle insan	rple
Total Volume of Water	After Melting : 375 (mL)		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	124.9	144.2	19.3	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
Totals	124.9	144.2	14.3	

H	70
-	4
þ	
È	7
Ė	2
6	<b>S</b>

Dust Gauge Collection Fie	ld Sheet	
Area: 8000 Effective Date: 26-Mar-2012 Task: Dust Gauge Collection Field Sheet	No: Revision: By:	ENVI-178-0312 R0 Dianne Dul
	Page:	1 of 2
GENERAL  LOCATION NAME: DUST 6  SAMPLED BY: BP, NG  TYPE OF SAMPLE: DUST  GPS COORDINATES (UTM): 537502 E 7152934  DESCRIPTION: Q   DUST	) - 04-04 N (Zone)	TIME (24:00):14 07 Other
Precipitation: rain / mist / snow / N/A Cloud Cov Snow Cover: 0%, 10%, 25%, 50%, 75%, 100% Dust in ar	ea: Visible, Not	25%, 50%, 75%, 100 Visible
COLLECTION COMMENTS: (i.e. damage to station, bugs - twigs in sa	mple, hole in ve	stibule, etc.)
Date Sample Collected was Deployed 3071 - 01 - 03		(4)
Total Volume of Water After Melting: 435 (mL)		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	1212	150.7	29.5	
2		<u>-</u>		
3				
4				<del></del> _
5		-		
6				
7				
8				
9				
10				
11				
Totals	121.2	180.7	29.5	(2)

	Dust Gauge Collection Fig	ald Chaot		
<u> </u>	Dust Gauge Collection Fie			
		No:	ENVI-178-0312	<u> </u>
Area:	8000	Revision:	R0	
Effective Date:	26-Mar-2012	By:	Dianne Dul	
Task:	<b>Dust Gauge Collection Field Shee</b>	<u>t</u>		
		Page:	_1of	2
GENERAL LOCATION NAME:	DATE (dd-mmm-yyyy): 2  TYPE OF SAMPLE: Dust  TM): 536819 E 7150510	021-03- <u>30</u> N (Zone)	TIME (24:00): 1つけて Other 」1ユレ	D
Precipitation: rain / mist Snow Cover: 0%, 10%,	Wind Direction: Wind Special Vision Wind Wind Special Vision Wind Wind Wind Wind Wind Wind Wind Win	ver: 0%, 0%, rea: Visible, No	25%, 50%, 75%, 10 t Visible	00
	ITS: (i.e. damage to station, bugs - twigs in sa	ample, hole in ve	estibule, etc.)	
Date Sample Collected was	Slightly cloudy, while dust is ble			
Total Volume of Water	After Melting: 475 (mL)			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	124.6	178.8	54.2	
2				
3		***		
4				
5				-
6				
7				,
8				
.9				
10				
11				
Totals	124.6	178.8	54.2	

7	
0	
3	

Dust Gauge Collection Field Sheet								
		Dust	Gauge Colle	ection Fiel	d Sheet			
					No:	ENV	I-178-03	312
Area:		8000			Revision:	R0		
Effectiv		26-Mar-2012			By:	Dian	ne Dul	
Task:		Dust Gauge	Collection F	ield Sheet				
					Page:	1	of _	2
GENERAL  LOCATION NAME: Dust 08  SAMPLED BY: GC TYPE OF SAMPLE: Dust Other  GPS COORDINATES (UTM): E N (Zone)  DESCRIPTION: Q   Dust Wat collected								
CLIMATE	CONDITIONS (if	sampling outside	<u>a)</u>					
Air Temp	c	Wind Direction	on:	Wind Spee	d (knots):			
	tion: rain / mist /			-	er: 0%, 10%,		0%, 75%,	100
Snow Co	ver: 0%, 10%, 2	5%, 50%, 75%	i, 100%	Dust in are	ea: Visible, No	t Visible		
		S: (i.e. damage t	to station, bugs	- twigs in sar	nple, hole in ve	estibule,	etc.)	
Date Samp	le Collected was	Deployed	7 8					
Out sit	r visited	in hellcopte	7 30 of 1	larch, Tub	r wes com	pletely	y covere	d 54
Mon	end not vis	ible						
Total Volume of Water After Melting :(mL)								
Filter				Resid	iuo I			
#	Weight of F	ilter Filter	+ Residue	Weig		Co	mments	
1				44518	111			
2								
3								

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1		***		
2				
3				
4				
5				
6				
7				
8				
9	=			
10				
11				
Totals				

	Di	st Gauge Collection	Field Sheet			
			No:	EN	/I-178-0	312
Area:	8000		Revision:	R0 Dianne Dul		
Effective Date: 26-Ma		012	Ву:			
Task:	Dust Gauge Collection Field S		eet			
			Page:	1	of	2
	ist 8	DATE (dd-mmm-yyyy):	\	TIME (2	24:00): <u></u> [	14

GPS COORDINATES (UTM): 53/40 QI DUST DESCRIPTION: CLIMATE CONDITIONS (if sampling outside) Air Temp: -20 °C Wind Direction: Precipitation: rain / mist / snow / N/A Wind Speed (knots):\_\_ Cloud Cover: 0%, 10%, 25%, 50%, 75%, 100 Snow Cover: 0%, 10%, 25%, 50%, 75%, (100%) Dust in area: Visible, Not Visible

COLLECTION COMMENTS: (i.e. damage to station, bugs - twigs in sample, hole in vestibule, etc.)

Snow almost up to top of the gauge holder, lots of snow in the tube. Collected snown bile, as it was not visible from the helicopten

Total Volume of Water After Melting: 1355 (mL)

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	119-4	135,9	16.5	
2	115.8	183.6	680	
3	W. W.	-		
4				
5				
6				
7				
8				
9				
10				· ·
11				
Totals	235.2	319.7	84.5	

	Dust Gauge Collection Fie	ld Sheet				
Area: Effective Date:	8000 26-Mar-2012	No: Revision: By:	ENVI-178-0312 R0 Dianne Dul			
Task:	Dust Gauge Collection Field Sheet	Page:	1 of 2			
Cation Name:   Description:   Description:   Cation:   Description:   Descripti						
	TS: (i.e. damage to station, bugs - twigs in sa	mple, hole in ve	stibule, etc.)			
Date Sample Collected was	Deployed <u>202 /- 0 /- 0 S</u>					
Total Volume of Water	After Melting: 275 (mL)					

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	1274	137.5	10.1	
2		8		
3				
4				
5				
6				
7		<del>_</del>		
8				
9				
10				
11				
Totals	127.4	137.5	10,1	

Dust Gauge Collection	on Field Sheet
<u> </u>	No: ENVI-178-0312
Area: 8000	Revision: R0
Effective Date: 26-Mar-2012	By: Dianne Dul
Task: Dust Gauge Collection Field	Sheet
	Page: <u>1</u> of <u>2</u>
GENERAL LOCATION NAME: DUST D  SAMPLED BY: IP, NG TYPE OF SAMPLE:  GPS COORDINATES (UTM): 532403 E 71460  DESCRIPTION: Q1 DUST	Oust Other N (Zone) 124
Snow Cover: 0%, 10%, 25%, 50%, 75%, (100%) Du	oud Cover: 0%, 10%, 25%, 50%, 75%, 100  ust in area: Visible, Not Visible
COLLECTION COMMENTS: (i.e. damage to station, bugs - twig	gs in sample, hole in vestibule, etc.)
Date Sample Collected was Deployed 2011-01-03	w 1
Total Volume of Water After Melting : 545 (mL)	

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	118.3	155.9	37.7	
2	115.5	348.8	233.3	
3				
4				
5				
6				
7				
8	5+			
9				
10				
11				
Totals	233.7	5047	271.0	

N
<b>—</b>
0
7

	Dust Gauge Colle	ction Field	d Sheet			
			No:	ENV	<u>l-178-03</u>	12
Area:	8000		Revision:	R0		
Effective Date:	26-Mar-2012		By:	Dian	ne Dul	
Task:	<b>Dust Gauge Collection Fi</b>	eld Sheet				
	li .		Page:	1_	of _	2
GENERAL LOCATION NAME: D SAMPLED BY: GC GPS COORDINATES (U DESCRIPTION: Q	DATE (dd-mmn TYPE OF SAMF TM): 53/463 E 715	n-yyyy): 20: PLE: Dust	2 <i>1-03-30</i>	TIME (24 Other  プレ	:00): 10	ч
Precipitation: rain / mist Snow Cover: 0%, 10%,	Wind Direction:	Dust in area	1 (knots): er: 0%, 10%, a: Visible, Not	Visible		100
	TS: (i.e. damage to station, bugs	twigs in sam	ple, hole in ve	stibule,	etc.)	
Oust tube was full. Samp	barry piking out above be closely, with white dost	the snow + black de	ty, tobe	was a	most co-	npletely
	922					
Total Volume of Water	After Melting: 700 (mL)	)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	126.3	356.0	229.7	
2				
3				
4				
5		············		
6				
7				
8				
9				
10			0	
11				
Totals	126.3	356.0	229.7	· · · · · · · · · · · · · · · · · · ·

Document #: ENVI-178-0312 R0 Effective Date: 26-March-2012

N
0
$\Box$
-
-
0

111-11			
	Dust Gauge Collection	Field Sheet	
		No:	ENVI-178-0312
Area:	8000	Revision:	R0
Effective Date:	26-Mar-2012	Ву:	Dianne Dul
Task:	<b>Dust Gauge Collection Field Sh</b>	eet	
		Page:	1 of 2
GENERAL LOCATION NAME: SAMPLED BY: GPS COORDINATES (UT DESCRIPTION:		2021-03-30 ust) N (Zone)	TIME (24:00): 1113 Other
	Wind Direction: Wind Sonow / TV/A Cloud	n area: Visible, Not	
	Deployed 202 /-0/-0%	i sample, note in ve	subule, etc.)
<u>=</u>	by, white dest in sample		
Total Volume of Water	After Melting: SS (mL)		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	124.2	227.0	102.8	
2				
3				
4				
5		9		
6				
7				
8				17.
9				
10				
11		-		
Totals	1242	2270	107.8	

	Dust Gauge Collection F	ield Sheet	
- V	Dust Gauge Conscitori		EN (1 470 0040
	0000	No:	ENVI-178-0312
Area:	8000	Revision:	R0
Effective Date:	26-Mar-2012	By:	Dianne Dul
Task:	<b>Dust Gauge Collection Field She</b>		
		Page:	<u>1</u> of <u>2</u>
GPS COORDINATES (UT DESCRIPTION: Wind	,	2021 - 03 - 30 1 t (Zone)	TIME (24:00): 1051 Other
CLIMATE CONDITIONS (		(0	
	Wind Direction: Wind Sp	eed (knots):	_
Precipitation: rain / mist /		over: 0%, 10%, 2	25%, 50%, 75%, 100
Snow Cover: 0%, 10%,	25%, 50%, 75%, 100% Dust in	area: Visible, Not	Visible
COLLECTION COMMEN	TS: (i.e. damage to station, bugs - twigs in	sample, hole in ve	stibule, etc.)
Date Sample Collected was	Deployed 2031 - 01 - 08 1318 by	BP, CC	1 1
The tube w	Deployed 2021 - 01 - 08 12:13 by	in the field	, but was corrected
upon collection	mon Morch 30th. Collected	with helico	pter
Total Volume of Water	After Melting: 440 (mL)		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	124.8	152.1	27.3	
2				
3				
4				
5		<del></del>		
6				
7				
8	-			
9				
10				
11				
Totals	124.8	1521	273	

	Dust Gauge Co	ilection Fiel	u Sneet			
			No:	ENV	l-178-03	312
Area:	8000		Revision:	R0		
Effective Date:	26-Mar-2012		By:	Dian	ne Dui	
Task:	<b>Dust Gauge Collection</b>	Field Sheet				
			Page:	1_	of _	2
GENERAL LOCATION NAME: DV SAMPLED BY: GPS COORDINATES (UT DESCRIPTION: Q 1	DATE (dd-m TYPE OF SA TM): 528714 E	mm-yyyy): 20 AMPLE: Dust 71532-76				21_
Precipitation: rain / mist / Snow Cover: 0%, 10%,	Wind Direction:	Dust in are	er: 0%, 10%) 2 ea: Visible, Not	Visible		100
	TS: (i.e. damage to station, bu	gs - twigs in sar	nple, hole in ve	stibule,	etc.)	
	Deployed 2021-08 Some plant Lebus in:	sample				
Total Volume of Water	After Melting 625	/ml \			12	

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	123.9	175.2	51.3	
2	ш			
3		·		
4		<u> </u>		Ti .
5				
6				
7				2
8				······································
9		E		
10				
11				<del> </del>
Totals	123.9	175.2	51.3	

þ	7
-	$\sim$
(	
	-1
į	₹.
Ć	2

	Dust Gauge Colle	ection Field	Sheet			E
		N	lo:	ENVI	-178-03	312
Area:	8000	R	levision:	R0		
Effective Date:	26-Mar-2012	В	By:	Diani	ne Dul	
Task:	Dust Gauge Collection F	ield Sheet	,			
		Р	age:	1	of _	2
CENEDAL					-	
<u>GENERAL</u> LOCATION NAME: <u> </u>	R//1					
		m-yyyy): 202 /				
SAMPLED BY: <u>RP</u>	_					
GPS COORDINATES (U	TM):E		N (Zone)			
DESCRIPTION:						
Precipitation: rain / mist	Wind Direction:	Wind Speed ( Cloud Cover: Dust in area:	0%, 10%,	25%, 50	%, 75%,	100
COLLECTION COMMEN	NTS: (i.e. damage to station, bugs	- twigs in samp	le, hole in ve	stibule, e	etc.)	
Date Sample Collected wa	s Deployed					
	Very little visib	ile destru so	imple			
×	2.5					
Total Volume of Water	After Melting: 350 (ml	L)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	124.4	124.0	0	
2				
3				
4				
5				
6				
7		-		
8				
9				
10				
11				
Totals	1244	124.0	0	, U

V	
0	
البيز	
5	

Dust Gauge Collection	Field Sheet	Symmetric		JE II
	No:	ΕΝV	/I-178-0	312
Area: 8000	Revision:	R0		
Effective Date: 26-Mar-2012	By:		ne Dul	
Task: Dust Gauge Collection Field SI			,	
	Page:	1	of	2
GENERAL				
OCATION NAME: FBWZ DATE (dd-mmm-yyyy)	2021-03-27	TIME (2	4:00): 👓	320
SAMPLED BY: RP TYPE OF SAMPLE: D				
GPS COORDINATES (UTM):EE				
DESCRIPTION: Q Dust				
ACCOUNT HOM.				
CLIMATE CONDITIONS (if sampling outside)				
	Speed (knots):			
· · · · · · · · · · · · · · · · · · ·	d Cover: 0%, 10%,		0%. 75%	. 100
•	in area: Visible, No			
COLLECTION COMMENTS: (i.e. damage to station, bugs - twigs	in sample, hole in v	stibule,	etc.)	
Date Sample Collected was Deployed				
Very little visible dust				
rely in the vision dust	-moumple			
Fotal Volume of Water After Melting: 375 (ml.)			<del></del>	

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	126.5	125.3	0	
2				
3		<del></del>		
4				
5		<del></del>		
6				<del></del>
7				
8				
9				
10		Ų.		
11				
Totals	126.5	126.3	0	

Zi
0
$\mathbf{H}$
2
<b>a</b>

	Dust Gauge	Collection Fiel	d Sheet	Txv. I	0 1	
Area: Effective Date:	8000 26-Mar-2012		No: Revision: By:	R0	i-178-0: ne Dul	312
Task:	Dust Gauge Collec	tion Field Sheet	<b>-</b> y.	Bian	iic Dai	
			Page:	_1_	of _	2
GENERAL						
LOCATION NAME:	UST DATE	(dd-mmm-yyyy): <u>05</u>	-07-2021	TIME (24	1:00): 13	36
SAMPLED BY: BP	FG TYPE	OF SAMPLE: (Dust)				
GPS COORDINATES (	JTM): 533964	E 7154321	N (Zone	12		7.
	Dust Analysis		. (			
DESCRIPTION. (1)	Dasi magni					
CLIMATE CONDITIONS	(if sampling outside)					
	Wind Direction:	V) Mind Cons	d (kmata).	2 -		
Precipitation: rain / mis		Cloud Cov	d (knots): er: 0%, 10%,-	2501 ) 51	10/ 750/	100
	25%, 50%, 75%, 100%		er. 076, 1076- ea: Visible, No		70, 1570,	, 100
3110W COVEI, 078, 1078,	2370, 3070, 7370, 10070	Dust III ale	a. VISIDIC, INC	VISIDIE	)	
COLLECTION COMME	NTS: (i.e. damage to statio	n. bugs - twigs in san	nple. hole in v	estibule.	etc.)	
	as Deployed <u> </u>					
Sample volum						
Samuela lialit	Laura con't co	an through	/ . l			
sample light	brown, con 1 54	e mayn	. cloudy)		م د د ماد	+100
Suspended	brown, can't se dust particle	es at butto	n and	organ	IIC MA	LITO
•						
otal Volume of Water	After Melting: 360	(mL)				

113.1 111.6 111.5 111.2	187.3 131.6 151.7 225.2	74.2 20 40.2	
//1.5	151.7	40.2	
//1.5	, , , , ,	40.2	
1/1,2	2257		
	207.2	114	
	-		
			· · · · · · · · · · · · · · · · · · ·
447.4	695.8	-342.6	
	447.4	447.4 695.8	447.4 695.8 342.6

248.4

<b>7</b> :
0
H
H.
2
<b>8</b>

	Dust Gauge Co	lection Fiel	d Sheet	W	
			No:	ENVI-17	8-0312
Area:	8000		Revision:	R0	0 0012
Effective Date:	26-Mar-2012		By:	Dianne D	Oul
Task:	<b>Dust Gauge Collection</b>	Field Sheet	a market		
			Page:		2
GENERAL DA	3+	=			/!! > -
LOCATION NAME: 2 F	DATE (dd-mi	mm-yyyy): <u>05</u> -	-07-2021	TIME (24:00):	1955
GPS COORDINATES (UT	M): <u>535678                                    </u>	7151339	N (Zone)	12	
DESCRIPTION: 12 [	oust Analysis				
	if sampling outside) Wind Direction: 56 snow / N/A 25%, 50%, 75%, 100%		d (knots): er: 0%, 10%, ( ea: Visible, Not		75%, 100
COLLECTION COMMEN	TS: (i.e. damage to station, bug	js - twigs in sar	nple, hole in ve	estibule, etc.)	
Date Sample Collected was Sample Volume	Deployed 2021-03-30 540 mL				
	e suspended du	st at b	ofton		
Slightly cloud	7				
27 #0-					
Total Volume of Water	After Melting: 540	mL)			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	112.6	169.2	56.6	
2	111.7	168.6	56.6 56.9	
3				
4				
5				
6				
7				
8				
9		_		
10	*1			
11				
Totals	224.3	337.8	113.5	

Zi
0
H
3
<b>5</b>

	Dust 0	Sauge Collec	ction Field	d Sheet		1000	
	V 1	1)		No:	EΝ\	/1-178-03	312
Area:	8000			Revision:	R0		31
Effective Date:	26-Mar-2012			By:	Diar	ne Dul	
Task:	Dust Gauge (	Collection Fie	eld Sheet	II IIC	K T		
				Page:	_1_	of _	2
GENERAL							
LOCATION NAME: 1	ist 3	DATE (dd-mmm	-vvvv): 05-	07-2021	TIME (2	4:00): 14	06
SAMPLED BY: BP	-6	TYPE OF SAMP	LE: Dust		Other	4.00 <i>j</i>	V W
GPS COORDINATES (L							
			):() /~	N (ZONE	")		
DESCRIPTION: (Q)	Dust mai	4515	<u></u>				
OLINATE CONDITIONS	<i>(11</i> 1 - 1 - 1 - 1 - 1 - 1 - 1 -						
CLIMATE CONDITIONS					2		
Air Temp: <u>13</u> °C Precipitation: rain / mis	Wind Directio	n: <u>5</u> W	Wind Speed	i (knots):	2		
							100
Snow Cover 0%, 10%,	25%, 50%, 75%	, 100%	Dust in are	a: Visible No	t Visible	)	
COLLECTION COMME				iple, hole in v	estibule,	, etc.)	_
Date Sample Collected wa	is Deployed <u> ⋧♢⋧</u>	1-04-04	3.36				
Sample Volume	- 280 ML	والناء	, m	1.0	1 1	4	
Sample volonie	vriy grey-1	on VISIBLE	Susper	rded d	LUST	WITH	
little organic	matter a	t bottom	L				
Total Volume of Water	A.E	\$(D (mL)					

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	111.1	250.4	139.3	
2	111.4	175.5	64.1	
3	111.5	184,2	72.7	
4				
5				
6				
7				
8				
9				
10				
11				
Totals	334	(010.1	276.1	

-
4
$\Xi$

	Dust Gauge Coll	ection Field Sheet	Jones	X X		
	13 191	No:	EN	VI-178-0	312	
Area:	8000	Revision:	R0	R0 Dianne Dul		
Effective Date:	26-Mar-2012	Ву:	Dia			
Task:	<b>Dust Gauge Collection</b> I	Field Sheet				
		Page:	1	of _	2	
<u>GENERAL</u>						
LOCATION NAME:	MS+ 4 DATE (dd-mn	m-yyyy): 05-07-2021	TIME (2	24:00): /3	5/2	
SAMPLED BY: BP	FG TYPE OF SAM	MPLE: (Dust)	Other_			
	JTM): 531397 E					
	Dust Analysis				·	
DESCRIPTION. () Z	is as Armay Sta	<del></del>				
CLIMATE CONDITIONS	(if sampling outside)					
Air Tomp: 14 ·C	Wind Direction: 5W	Wind Speed (knots): 1/	)			
Precipitation: rain / mis		Cloud Cover: 0%, 10%, 3		50% 75%	100	
	25%, 50%, 75%, 100%	and the second s			, 100	
Onow Cover: 070,71070,	2576, 3076, 7576, 10076	Dust III alea. Visible 1400	VISIDIE			
COLLECTION COMME	NTS: (i.e. damage to station, bug	s - twigs in sample, hole in ve	stibule	. etc.)		
	as Deployed 2021-03-30 7			,,		
Sample Volum	e 440 mL					
sample visible	e with suspended dus	t at bottom				
Slightly cloud	t.i					
- 5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	3					
T-4-137-1	- A64 NO-141					
iotai volume of Watei	· After Melting : 나니ㅇ(n	ıL)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	112.5	199.0	86.5	
2	110.9	178,3	67.4	
3		- Aller		
4				
5				
6				
7				
8				
9				
10				
11				
Totals	223.4	377.3	153.9	

	Z.
C	
E	
	2
3	5

	Dust Gauge Colle	ection Field Sheet			
a training	HTE SET	No:	ENVI-178-0312 R0		
Area:	8000	Revision:			
Effective Date:	26-Mar-2012	By:	Dianne Dul		
Task:	<b>Dust Gauge Collection F</b>	ield Sheet	hill		
		Page:	of	2	
GENERAL	1 ~				
LOCATION NAME:	DATE (dd-mm	m-yyy <u>y):3031-07-03</u>		3:53	
SAMPLED BY: BP	<u>FG</u> TYPE OF SAM UTM): <u>\$35696</u> E <u>7</u>	PLE: Dust	Other		
GPS COORDINATES (	UTM): S35696 E_7	155/38 N (Zone)	12W		
	Dust Sampling				
DECORAL FIGHT. 134	James James				
CLIMATE CONDITIONS	6 (if sampling outside)				
Air Temp: 16 °C	Wind Direction:	Wind Speed (knots):			
Precipitation: rain / mis		Cloud Cover: 0%, 10%,		100	
	, 25%, 50%, 75%, 100%	Dust in area: Visible, Not		a, 100	
Silow Cover, 076, 1076	, 23%, 30%, 73%, 100%	Dust ill alea. Visible, Not	VISIDIE		
COLLECTION COMME	NTS: (i.e. damage to station, bugs	- twigs in sample, hole in ve	stibule, etc.)		
	as Deployed 202/-03-30 ?		0		
Sample Volum					
		1 1 21/2		_	
sumple light	yellowish suspende	ed dust with	organ:		
Matter at	battom		_		
	2011011				
Total Volume of Wate	r After Melting: 240 (m	IJ			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	113.6	129.8	16.2	
2	117.1	132.3	15.2	
3	1			
4				
5				
6				
7				
8				
9				
10				
11				f:
Totals	230.7	262.1	31.4	

Zi
0
=
0

	Dust Gauge Collection Fie	ld Sheet		NI GEN			
F-71-1111		No:	ENVI-178	8-0312			
Area:	8000	Revision:	R0				
Effective Date:	26-Mar-2012	By:	Dianne D	Dul			
Task:	<b>Dust Gauge Collection Field Sheet</b>	a more in	102	7-3			
10		Page:	<u>1</u> of	2			
GENERAL							
LOCATION NAME: Du	5+ 6 DATE (dd-mmm-yyyy): OS	5-07-2021	ΓΙΜΕ (24:00):	13:55			
	TYPE OF SAMPLE: Dust						
GPS COORDINATES (UT	rm): 537502 E 7152934	N (Zone)	12				
DESCRIPTION: <u>೧</u> ಎ	Dust Analysis						
CLIMATE CONDITIONS	(if sampling outside)						
	Wind Direction: 50 Wind Spec		7				
	vind Direction: wind Spet	ea (knots):	500/	759/ 100			
Precipitation: rain / mist / snow / N/A Cloud Cover: 0%, 10%, 25%, 50%, 75%, 100							
Snow Cover: 0%, 10%, 25%, 50%, 75%, 100% Dust in area: Visible, Not Visible							
COLLECTION COMMEN	TS: (i.e. damage to station, bugs - twigs in sa	mple, hole in ve	stibule, etc.)				
	Deployed 2021-04-04 14:44						
Sample Volum							
Sample cloud	y with visible suspended	dust a	A botto	n			
THE CIOUS	y with visible sosperior		V				
Total Volume of Water	After Melting: 320 (mL)						

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	113,3	156.8	43.5	
2	110.7	156.8 151.5	40.8	
3	3			
4				
5				
6				<del></del>
7				
8				
9				
10				
11				
Totals	224	308,3	84.3	

77
0
H
H

	Dust Gauge Col	lection Field Sheet		
Time?		No:	ENVI-178-0312	
Area:	8000	Revision:	R0	
Effective Date:	26-Mar-2012	By:	Dianne Dul	
Task:	<b>Dust Gauge Collection</b>	Field Sheet		
		Page:	1 of	2
GENERAL				
LOCATION NAME:	DATE (dd-mr	nm-yyyy): <u>62-07-2021</u>	TIME (24:00): <u>/3</u>	:34
SAMPLED BY: BP			Other	
GPS COORDINATES (	UTM): <u>\$36819</u> E	7/505/0 N (Zone)	124	
DESCRIPTION: つコ	Dust Sampling			
CLIMATE CONDITIONS	(if sampling outside)			
Air Temp: 16 'C	Wind Direction:	Wind Speed (knots):		
Precipitation: rain / mis		Cloud Cover: (0%, 10%,		, 100
Snow Cover: 0%, 10%,	25%, 50%, 75%, 100%	Dust in area: Visible, Not		•
	NTS: (i.e. damage to station, bug	s - twigs in sample, hole in ve	stibule, etc.)	
Date Sample Collected w	as Deployed 2 02 1-03-30 7			
Sample Volun	ne 450 mL			
Sample visible	Suspended to be	4 Comment	bles of Laft	-
Swiffic - 1010-0	suspended dust, b	is of organic mai	fact all both	om
	1100			
lotal volume of Water	r After Melting: 450 (n	nL)		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	113.7	169.0	55,3	
2	1/0.7		6.8	
3	- %		0	-
4				
5				
6				
7				
8				
9		-		
10				
11	S1025			
Totals	224.4	286.5	62.1	

	Dust Gauge Colle	ction Field Sheet		
		No:	ENVi-178-03	312
Area:	8000	Revision:	R0	
Effective Date:	26-Mar-2012	By:	Dianne Dul	
Task:	<b>Dust Gauge Collection Fi</b>	eld Sheet		T III
	L LUIS	Page:	1 of _	2
<u>GENERAL</u>			,	
LOCATION NAME:	DATE (dd-mmn	1-VVVV): 3031-07-02	TIME (24:00): //-	12
SAMPLED BY: BP F	TYPE OF SAME	PLE: Dust	Other	
	JTM): 531401 E 7		12	
	Dust sampling			
DESCRIPTION. STATE	3031 94mp1 2		<del></del>	
CLIMATE CONDITIONS	(if sampling outside)			
	Wind Direction:	Wind Speed (knots): 5	=	
Precipitation: rain / mis		Cloud Cover: 0%, 10%, 2		100
	25%, 50%, 75%, 100%			100
	2070, 0070, 1070, 1007			
COLLECTION COMME	NTS: (i.e. damage to station, bugs -	twigs in sample, hole in ve	stibule, etc.)	
Date Sample Collected wa	as Deployed 2021-04-04	Garge	holder low above	water
sample volur	ne (880+890) 1770	)mL	nd learning	
	, leaf + lichen picces			
			U	
Total Volume of Water	After Melting: 1770 (mL	)		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	115.4	200.7	85,3	
2	111,1	193,3	જa.a	
3				
4				
5				
6				
7				
8				
9				
10				
11				
Totals	226.5	394	167.5	

Zi
0
2
<b>8</b>

	Dust Gauge Co	llection Field Sheet	
	TEL THE	No:	ENVI-178-0312
Area:	8000	Revision:	R0
Effective Date:	26-Mar-2012	By:	Dianne Dul
Task:	Dust Gauge Collection	Field Sheet	IIE
× '8	DEST.	Page:	1 of 2
<u>GENERAL</u>			
LOCATION NAME: DY	ST 9 DATE (dd-m	mm-yyyy):02-07-2021	TIME (24:00): /3:/7
SAMPLED BY: BP	FG TYPE OF SA	MPLE: (Dust)	Other
GPS COORDINATES (	UTM): 54/204 E	7/52/54 N (Zone)	124
	Dust Sampling		
CLIMATE CONDITIONS	(if sampling outside)		
Air Temp: 16 °C	Wind Direction:	Wind Speed (knots):/	7 — — —
Precipitation: rain / mis		Cloud Cover 0%, 10%,	
	25%, 50%, 75%, 100%	Dust in area: Visible, Not	
	NTS: (i.e. damage to station, bug	gs - twigs in sample, hole in ve	stibule, etc.)
·	as Deployed 202/-03-30		
sample volu	me 150 mL		
Sample dark	grey/brownish, clos	ady, with organic p	varticles at
bottom			
Total Volume of Water	r After Melting: 150	mL)	

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	114.3	126.9	12.6	···
2	- 114.0	125.0	11	
3				
4				
5				
6				
7				
8				
9				
10				
11				
Totals	228,3	251.9	23.6	

H
0
3
Image: Control of the control of th
0

0312 
<b>2</b>
<b>2</b>
537
537
%, 10 <b>0</b>
st at

Total Volume of Water After Melting: 430 (mL)

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	111.6	257.1	145.5	
2	1.13.9	196.8	82.9	
3	111.4	215.2	103.8	
4	112.4	136.7	24.3	
5				
6				
7				
8				
9				
10				
11				
Totals	449,3	805.8	-5849	

356.5

Document #: ENVI-178-0312 R0 Effective Date 26-March-2012

	Dust Gauge Collect	tion Field Sheet		III EX
Market		No:	ENVI-178-0	312
Area:	8000	Revision:	R0	11.7
Effective Date:	26-Mar-2012	By:	Dianne Dul	
Task:	<b>Dust Gauge Collection Fiel</b>	d Sheet	N III	
		Page:	1 of	2
GENERAL				
	UST 11 DATE (dd-mmm-)	1602-40-60 MANA	TIME (24:00): /2	:40
	FG TYPE OF SAMPL		Other	11 11 11
	UTM): \$3/463 E 715			
		N (ZOIIE)	12.77	
DESCRIPTION: <u>עא</u>	Dust Sampling			
CLIMATE CONDITIONS	(if sampling outside)			
			, = -	
		Wind Speed (knots):		400
Precipitation: rain / mis		Cloud Cover: 0% 10%		, 100
Snow Cover: 0%,)10%,	25%, 50%, 75%, 100%	Dust in area: Visible, Not	Visible	
COLLECTION COMME	NTS: (i.e. damage to station, bugs - to	wigs in sample, hole in ve	stibule, etc.)	
Date Sample Collected w	as Deployed 2-02/-9-3°			
Sample volume	(560+450+550+6	175 + 480 + 35	0+275)	
Sample cloud	) visible dust and org	ianic matter a	+ botton	1

Total Volume of Water After Melting: 3146 (mL)

Filter #	Weight of Filter.	Filter + Residue	Residue Weight	Comments
1	110.6	128.5	17.9	
2	110.3	117.9	7.6	
3	115.3	139.4	24.1	
4	110.0.	172.2	62.3	
5	114.4	149.3	34.9	
6	115.2	469.9	354.7	
7				
8				
9	<u>#</u>			
10				
11				
Totals	675.8	1177.2	501.4	

Zi
0
H
H.
$\supset$
<b>8</b>

	Dust Gauge Col	lection Field Sheet	
		No:	ENVI-178-0312
Area:	8000	Revision:	R0
Effective Date:	26-Mar-2012	By:	Dianne Dul
Task:	<b>Dust Gauge Collection</b>	Field Sheet	UIIII
100		Page:	_1 of _2
GENERAL			2
	UST 12 DATE (dd-mi	mm-vvvv): 2021-07-07	TIME (24:00): /2:24
SAMPLED BY: 13P	FG TYPE OF SA	MPLE: Dust	Other_
			124
		7   31171 N (2016	17-47
DESCRIPTION:(リン	Dust Sampline		
CLIMATE CONDITIONS			
Air Temp:C		Wind Speed (knots):	
Precipitation: rain / mis			25%, 50%, 75%, 100
Snow Cover:(0%,)10%,	25%, 50%, 75%, 100%	Dust in area: Visible, No	ot Visible
	NTS: (i.e. damage to station, bug	s - twigs in sample, hole in v	restibule, etc.)
Date Sample Collected wa	as Deployed 2-02/-03-30		
Sample volu	me 640 mL		
sample visi	ble suspended du	ist, cloudy	
	-3		
Total Volume of Water	After Melting: 640	mL)	

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	112.5	121.9	9,4	
2	111.9	141.3	29.4	
3	112.3	166.8	54.5	
4		•		
5				
6				
7				
8				
9				
10				
11				
Totals	336.7	430	93.3	

0
H
7

	Dust Gauge Colle	ction Field Sheet			
Area:	8000	No: Revision:	ENVI-178-0312 R0		
Effective Date: Task:	26-Mar-2012  Dust Gauge Collection Fig.	By:	Dianne Dul	ul	
Tuon.	Bust Guage Golloston Th	Page:	1 of	2	
GENERAL					
LOCATION NAME: DU	IST CI DATE (dd-mmm	1-yyyy): 02-07-2021 1	TIME (24:00): /3	00:	
	F() TYPE OF SAMP		Other		
	JTM): 534979 E 7				
	nust Sampling				
PEOGRA HOM. TO A	17 VISTI Sairtying				
CLIMATE CONDITIONS	(if sampling outside)				
	Wind Direction:	Wind Speed (knots):	7		
Precipitation: rain / mis		Cloud Cover: 0%, 10%,		100	
	25%, 50%, 75%, 100%			, 100	
	NTS: (i.e. damage to station, bugs -	twigs in sample, hole in ve	stibule, etc.)		
Date Sample Collected w	as Deployed 2021-03-30				
Sample volu	ime 470mL				
1010	ible suspended du	cf with little	organia		
Sampie VIS	ible suspended ord		e or got in	_	
mafter at	battom				
Total Volume of Water	After Melting: 470 (mL	)			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	111.7	155.9	44.2	
2	T	2,4		
3				
4				
5				
6				
7				
8				
9				
10				
11				
Totals	111.7	155.9	44.2	

70
0
Ħ

Dust Gauge Collection Field Sheet								
	1945	No: Revision: By:	ENVI-178-0312 R0 Dianne Dul					
Area:	8000 26-Mar-2012							
Effective Date:								
Task:	<b>Dust Gauge Collection Field Shee</b>							
	E END	Page:	1	of _	2			
GENERAL								
	S+ C2 DATE (dd-mmm-yyyy): O'	2-07-2021	TIME (	24:00): /2	:07			
SAMPLED BY: BP IC TYPE OF SAMPLE: Dust Other								
GPS COORDINATES (UTM): 528714 E 7153276 N (Zone) 121.1  DESCRIPTION: (32 Dust Sampling								
CLIMATE CONDITIONS (if sampling outside)								
Air Temp: 16 C Wind Direction: E Wind Speed (knots): 7								
Precipitation: rain / mist / snow ( N/A ) Cloud Cover: (0%, 10%, 25%, 50%, 75%, 100								
		rea: Visible No						
COLLECTION COMMENTS: (i.e. damage to station, bugs - twigs in sample, hole in vestibule, etc.)								
-	as Deployed <u>292 /- 93-39</u>							
Sample volume Sample (Sligh	fly visible with dust partie	cles on bi	otto	M				
Clou	dy)							
	,-							
Total Volume of Water	After Melting: 850 (mL)							

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	111.0	167.1	56.1	-
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
Totals	111.0	[67.1	56.1	

0	
$\mathbf{H}$	
H	
=	
<u>a</u>	

	<u>Dust Gauy</u>	e Collection Fi				
			No:	ENVI	-178-03	312
Area:	8000		Revision:	R0		
Effective Date:	<u>26</u> -Mar-2012		By:	Diant	ne Dul	
Task:	Dust Gauge Collec	ction Field Shee				
			Page:	1	of	2
					_	
<u>GENERAL</u>						
	UST EBW DATE			TIME (24:	:00):	
SAMPLED BY: <u>SS</u>	FG TYPE	OF SAMPLE: Dust	)	Other		
GPS COORDINATES (	UTM):	E	N (Zone)			
-5-						
DESCRIPTION: ()	Dust Analys	\5				
DESCRIPTION: (3)	Dust Analys	\5			·	
		\S				5
CLIMATE CONDITION	S (if sampling outside)					
CLIMATE CONDITION  Air Temp:C	S (if sampling outside) Wind Direction:	Wind Sp				100
CLIMATE CONDITION Air Temp:C Precipitation: rain / mi	S (if sampling outside) Wind Direction:	Wind Sp	eed (knots): over: 0%,10%,	 <del>25%;    </del> 50		100
CLIMATE CONDITION Air Temp:C Precipitation: rain / mi Snow Cover: 0%, 10%	S (if sampling outside)  Wind Direction:  st / snow / N/A  , 25%, 50%, 75%, 100%	Wind Spo Cloud Co Dust in a	eed (knots):_ over: 0%,10%,- irea: Visible, Not	<del></del> 2 <del>5%; 5</del> 0 Visible	% <u>,</u> 75%,	100
CLIMATE CONDITION Air Temp:C Precipitation: rain / mi Snow Cover: 0%, 10% COLLECTION COMME	S (if sampling outside)  Wind Direction:  st / snow / N/A  , 25%, 50%, 75%, 100  ENTS: (i.e. damage to static	Wind Spo Cloud Co Dust in a	eed (knots):_ over: 0%,10%,- irea: Visible, Not	<del></del> 2 <del>5%; 5</del> 0 Visible	% <u>,</u> 75%,	100
CLIMATE CONDITION Air Temp:C Precipitation: rain / mi Snow Cover: 0%, 10%	S (if sampling outside)  Wind Direction:  st / snow / N/A  , 25%, 50%, 75%, 100  ENTS: (i.e. damage to static	Wind Spo Cloud Co Dust in a	eed (knots):_ over: 0%,10%,- irea: Visible, Not	<del></del> 2 <del>5%; 5</del> 0 Visible	% <u>,</u> 75%,	100
CLIMATE CONDITION Air Temp:C Precipitation: rain / mi Snow Cover: 0%, 10%  COLLECTION COMME Date Sample Collected w	S (if sampling outside)  Wind Direction:  st / snow / N/A  , 25%, 50%, 75%, 100  ENTS: (i.e. damage to static	Wind Spon, bugs - twigs in s	eed (knots): over: 0%, 10%, irea: Visible, Not ample, hole in ve	25%, 50 Visible	% <u>,</u> 75%,	100
CLIMATE CONDITION Air Temp:C Precipitation: rain / mi Snow Cover: 0%, 10%  COLLECTION COMME Date Sample Collected w	S (if sampling outside)  Wind Direction:  st / snow / N/A  25%, 50%, 75%, 1009  ENTS: (i.e. damage to station of the station o	Wind Spool Cloud Co.  Dust in a con, bugs - twigs in s	eed (knots):over: 0%, 10%,over: Visible, Notample, hole in ve	25%, 50 Visible	% <u>,</u> 75%,	100
CLIMATE CONDITION Air Temp:C Precipitation: rain / mi Snow Cover: 0%, 10%  COLLECTION COMME Date Sample Collected w	S (if sampling outside)  Wind Direction:  st / snow / N/A  25%, 50%, 75%, 1009  ENTS: (i.e. damage to stational data and serior se	Wind Spool Cloud Co.  Dust in a con, bugs - twigs in s	eed (knots):over: 0%, 10%,over: Visible, Notample, hole in ve	25%, 50 Visible	% <u>,</u> 75%,	100
CLIMATE CONDITION Air Temp:C Precipitation: rain / mi Snow Cover: 0%, 10%  COLLECTION COMME Date Sample Collected w	S (if sampling outside)  Wind Direction:  st / snow / N/A  25%, 50%, 75%, 1009  ENTS: (i.e. damage to station of the station o	Wind Spool Cloud Co.  Dust in a con, bugs - twigs in s	eed (knots):over: 0%, 10%,over: Visible, Notample, hole in ve	25%, 50 Visible	% <u>,</u> 75%,	100

Total Volume of Water After Melting: \_\_\_\_\_(mL)

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	110.5	110.4	0.1	
2				
3				
4			W.	
5			- C	
6				
7				
8			×	
9				
10				
11				
Totals	110.5	110.4	0-1	

Hally and the same of the same	Dust Gauge Collec	tion Field Shoot	W	
	Dust Gauge Collec			
		No:	ENVI-178-0	0312
	8000	Revision:	R0	_
	26-Mar-2012	By:	Dianne Dul	
Task:	Dust Gauge Collection Fiel			
		Page: _	of	2
GENERAL LOCATION NAME: DU SAMPLED BY:	DATE (dd-mmm-	уууу): <u>15-Sept-2</u> 011т E: Dust	IME (24:00): <u>\                                   </u>	
GPS COORDINATES (UTI	M):E	N (Zone) _		
DESCRIPTION:				
Precipitation: rain / mist /	Wind Direction:	Wind Speed (knots): 18 Cloud Cover: 0%, 10%, 29 Dust in area: Visible, Not V	 5%, <b>50%,</b> 75%	<b>6,</b> 100
	S: (i.e. damage to station, bugs - t		tibule, etc.)	
Date Sample Collected was I	Deployed 2021-07-05	13:36		
lots of bugs in	semple water, jusy b	rown edlove, somew	hat toolid	
	325			

Total Volume of Water After Melting : 325 (mL)

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	113.7	147.7	34	
2	123.5	15 4. 1	31.6	
3				
4		(a)		
5		<u>.</u>		
6				
7				2
8				
9				
10				
11			11	
Totals	236.2	301.8	65.6	

	Dı	st Gauge Co	lection Fie	ld Sheet			
A	9000	100 00 00000		No:		/I-178-0	312
Area:	8000	340		Revision:		D. I	
Effective Date:	26-Mar-20		Field Cheek	By:	Diar	ne Dul	
Task:	Dust Gau	ge Collection	rieia Sneei				
				Page:	_1_	of _	2
GENERAL LOCATION NAME: 0 SAMPLED BY:			mm-yyyy): <u>)</u> MPLE: Dust	021-9-19		4:00):/(	
GPS COORDINATES (	JTM):	Е		N (Zone)			
DESCRIPTION:							
Air Temp: C Precipitation: rain Inis Snow Cover: 0%, 10%,	t)snow / N/A		Cloud Co	ed (knots): ver: 0%, 10%, rea: Visible No	25%, 5	0%, 75% <u>,</u>	100
COLLECTION COMME	NTS: (i.e. dama	ige to station, bug	ıs - twigs in sa	mple, hole in ve	stibule,	etc.)	
Date Sample Collected wa	as Deployed 🜙	021-07-05	14:35			- 4	
Collected 2021	- 09 - 18 /	0 14:47	-				
pretty clear i Vater get ilou litters were vi	roter sti	ight grey e	colour, for	size inere	ensed	thers. os mor	·c
Total Volume of Water	· After Melting	: 7 <b>6</b> 5 (	mL)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	119.0	130.7	11.7	
2	1/7.4	130.6	12.6	
3	121.4	135.3	13.9	
4	121.4	146.6	25.2	Still guile after bug pieces on f.
5				
6				
7				
8		W		
9				- 345
10				256.71 0 197
11				
Totals	4792	542.6	63.4	The second secon

Document # ENVI-178-0312 R0 Effective Date: 26-March-2012 This is not a controlled document when printed 10.2 Forms

Zi
0
2
0

		Dust Gauge Collec	ction Field Shee	
		Dust Gauge Collec	No:	ENVI-178-0312
Area:	8000		Revisi	
		ar-2012	By:	Dianne Dul
Task:	-	Gauge Collection Fie		
			Page:	_1 of2_
GENERAL LOCATIOI SAMPLED	N NAME: Drs+ 3	DATE (dd-mmm	-yyyy): 1011 - 9 - 14	TIME (24:00): 3 i 3 3
	,			Zone)
DESCRIPT	—			
Snow Cov		50%, 75%, 100%  damage to station, bugs -	Dust in area: Visib	
		ed 2021-07-05		e in vestibule, etc.)
10/5	of buys, qui fine dust par	te torbid with b	rown-grey woth	r had more coarse
Total Volu	me of Water After N	lelting: 669 (mL)	A figure to m	caspice before 3x cinsing
Filter	Weight of Filter	Filter + Residue	Residue	Comments

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	118,5	161,4	42.9	-
2	124.5	166.0	41.5	
3	125.7	192.6	66.9	II
4	_			
5				
6				
7				
8				
9				
10				
11				
Totals	3687	520	151.3	

	Dust Gauge Collection	Field Sheet	
		No:	ENVI-178-0312
Area:	8000	Revision:	R0
Effective Date:	26-Mar-2012	By:	Dianne Dul
Task:	<b>Dust Gauge Collection Field St</b>		
		Page:	_1 of2
	DATE (dd-mmm-yyyy)  TYPE OF SAMPLE: ©		
Precipitation: rain / mist / Snow Cover 0%, 10%,	Wind Direction: Wind Snow N/A Cloud	d Cover: 0%, 10%, 2 in area: Visible, Not	
	Deployed 3021-07-05 0 15:12		
los of buys,	some insect eggs? stock to the f.	to the sixtes of	the TSS funnel.
Total Volume of Water /	After Melting: 535 (mL)		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	127.1	137.0	9.9	· · · · ·
2	115.9	124.0	8.1	
3				
4		-		
5				
6				
7				
8				
9				
10		-		
11				
Totals	243	261	18	

Dust Gauge Co	llection Field Sheet		N. J	
8000 26-Mar-2012	No: Revision: By:	R0		312
Dust Gauge Collection	Page:	1	of	2
Oust 5 DATE (dd-mi	mm-yyyy): <u>2021-04-16</u> MPLE: Dust	TIME (24 Other_	s:00):/	3/1
UTM):E	N (Zone)			
	<u>-</u>			
st / snow /N/A	Cloud Cover: 0%, 10%,	25%, 50	)%, 75%	, 100
:NTS: (i.e. damage to station, bug	ıs - twigs in sample, hole in ve	stibule,	etc.)	
	B000  26-Mar-2012  Dust Gauge Collection  DATE (dd-minus):  E  S (if sampling outside)  Wind Direction:  St / snow / (N/A)  25%, 50%, 75%, 100%  NTS: (i.e. damage to station, bugges Deployed 2021-07-02	Revision:  26-Mar-2012  Dust Gauge Collection Field Sheet  Page:  DATE (dd-mmm-yyyy): 2021-04-16  TYPE OF SAMPLE: Dust  UTM):  E  N (Zone)  St / snow / (N/A)  St / snow / (N/A)  Cloud Cover: 0%, 10%, 25%, 50%, 75%, 100%  ENTS: (i.e. damage to station, bugs - twigs in sample, hole in versions)	No: ENV   Revision: R0   By: Dian   Dust Gauge Collection Field Sheet   Page: 1	No: Revision: R0   Dust Gauge Collection Field Sheet   Page: 1 of

Total Volume of Water After Melting: 👉 🗠 🗀

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	117.1	140,0	22.9	
2				
3				
4				
5				
6				
7				· · · · · · · · · · · · · · · · · · ·
8				
9				
10		25		N.
11				
Totals	117.1	140	22.9	

	Dust Gauge Colle	ction Field Sheet	
		No:	ENVI-178-0312
Area:	8000	Revision:	R0
Effective Date:	26-Mar-2012	Ву:	Dianne Dul
Task:	<b>Dust Gauge Collection Fi</b>		
		Page:	1 of2
	DATE (dd-mmm		
Precipitation: rain / mist / Snow Cover 0%) 10%, COLLECTION COMMEN	Wind Direction: Snow N/A 25%, 50%, 75%, 100%  TS: (i.e. damage to station, bugs -	Cloud Cover: 0%, 10%, Dust in area: Visible, Not twigs in sample, hole in ve	25%, 50%, 75%, 100 t Visible
Date Sample Collected was	Deployed 2021-07-05 (	PFG T77	
Many, Many,	Many buys. Brown-	Grey colour, qui	te turbid
Total Volume of Water	After Melting: 550 (mL		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	123-8	130.4	6.6	
2	127.0	130.9	3.9	
3	116.9	124.3	7.4	Some Residue lost into Crucible
4	124,4	142.9	18.5	Some Residue lost into Crucibl
5				
6				
7				
8				

528.5

364

492.1

9 10 11

**Totals** 

	Dust (	Sauge Collec	tion Fiel	d Sheet		1 T	
Area: Effective Date: Task:	8000 26-Mar-2012 Dust Gauge (	Collection Fie	Id Sheet	No: Revision: By:	R0	l-178-03 ne Dul	312
				Page:	_1_	of _	2
GENERAL LOCATION NAME: Do. SAMPLED BY: GC.							
GPS COORDINATES (UT		E		N (Zone)	)		
CLIMATE CONDITIONS ( Air Temp: *C Precipitation: rain / mist / Snow Cover: 0% 10%,  COLLECTION COMMEN	Wind Direction Snow N/A 25%, 50%, 75%	n: <u>N E</u> 100%	Cloud Cove	er: 0%, 10%, ea: Visible, No	 25%, 50 t Visible	,	100
Date Sample Collected was	Deployed 1011	01-02 @	13:34				
Total Volume of Water	After Melting: 6	35 (mL)					

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	118.4	123.4	7.0	
2	124.5	130.9	6.4	
3	118.1	124.3	6.2	
4	119.1	124.1	5.0	
5				
6				·
7				
8				
9				
10		@		
11				
Totals	480.1	504.7	24.6	

		2011						
	Dust Gau	ge Collec	tion Field S	Sheet	HI TO	MESSAGE.		
			Ne	o:	ENV	-178	-0312	>
Area:	8000		Re	evision:	R0	-		
Effective Date:	26-Mar-2012	•	B <sub>3</sub>	<b>/</b> :	Dianı	ne Dı	ال	
Task:	<b>Dust Gauge Colle</b>	ection Fiel	ld Sheet					,
			Pa	ige:		of	-	2
GENERAL LOCATION NAME: Do	(1 of ) 50 DAT 110	E (dd-mmm- <sub>)</sub> E OF SAMPL	yyyy): <u>202/-</u> E: Dust	09-16	TIME (24 Other	:00):	135	50
GPS COORDINATES (UT								
DESCRIPTION:								
CLIMATE CONDITIONS (		_						
Air Temp:'C	Wind_Direction:	NE ,	Wind Speed (k	nots): 16				
Precipitation: rain / mist /	( )	•	Cloud Cover:			%, 75	i%, 10	00
Snow Cover 0%, 10%,	25%, 50%, 75%, 10	0%	Dust in area:	Visible, Not	Visible			
COLLECTION COMMENT	ΓS: (i.e. damage to sta	tion, bugs - tv	wigs in sample	e, hole in ve	stibule, e	etc.)		
5050 01	ocya tilted f the stand		Simple flogs, ds site,	Analysa	level	is	e t	14,
Total Volume of Water	After Melting: 58	(mL)						

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	122,9	123.2	0.3	
2	124.7	123.1	-11.6	
3	120.0 2.	2 149.4	29.9	
4	124.7	,118.6	-6.1	
5	113.5	V 123.7	0.7	
6	124.1	114.4	0.3	
7	(18.9 6)	130.3	164	
8	118.9	120.2	1.3	
9	120.9	121.4	1,5	
10	121.3	121.2	0.1	
11	117.2	119,4	2.2	
Totals				

	Dust Gauge Collection Fie	ld Sheet	V\$=31==110p1p1=378==1
		No:	ENVI-178-0312
Area: 8000		Revision	
	nr-2012	By:	Dianne Dul
	Gauge Collection Field Sheet		
		Page:	1 of 2
GPS COORDINATES (UTM):	DATE (dd-mmm-yyyy): 2 (Dust	/	TIME (24:00): 1350 Other
CLIMATE CONDITIONS (if sampling Air Temp: C Wing		ed (knots):	a
Precipitation; rain / mist / snow N			, 25%, 50%, 75%, 100
Snow Cover: 0%) 10%, 25%, 50	~	ea: Visible, N	· · · ·
COLLECTION COMMENTS: (i.e. c	damage to station, bugs - twigs in sa	mple, hole in	vestibule, etc.)
Date Sample Collected was Deployed	1		
Samph quickly Thus	le contamet a viscous, pela, clogget filters, despit a longenumber of filter	tonous mo Le conta v s v eve c	ateral that owns very title dust.
Total Volume of Water After Me	elting :(mL)		

	Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
<b>以</b>	1	119.6	120.4	0.8	
3[	2	118.3	121,6	3.3	
4	3	119.7	122.5	2.8	
[5]	4	118.9	119.0	0.1	
	<i>[</i> 5				
	6	1813.6	1859.4	45.8	
	7				
	В				
	9				
	10				
	1/1				
Γ	Totals	1813.6	1859.4	45.8	

						ARADINA		
	Dust	Gauge Co	ollectic	n Fiel	Sheet	Siemocii		
					No:	EN	/1-178-	0312
Area:	8000			_	Revision:	R0		
Effective Date:	26-Mar-201	2		_	By:	Diar	nne Du	
Task:	<b>Dust Gauge</b>	Collection	Field	Sheet				
					Page:	1	of	2
GENERAL LOCATION NAME: 0, SAMPLED BY: 6,	st 9	DATE (dd-r	nmm-yyy	/y): <u>α⁄0</u>	1-9-16	TIME (2	4:00):	5:12
GPS COORDINATES (U								
DESCRIPTION:								
CLIMATE CONDITIONS  Air Temp: C  Precipitation: rain / mist  Snow Cover 0% 10%,	Wind Direct	ion: <u>ME</u>	Clo	oud Cove	d (knots): er: 0%, 10%, a: Visible, No	25%, 5	60%, <b>7</b> 5%	%, 1 <b>00</b>
COLLECTION COMMEN	TS: (i.e. damage	to station, bu	ıgs - twig	gs in san	ple, hole in v	estibule,	etc.)	
Date Sample Collected was	Deployed 2021	-07-02	01	317				
Snokey was	ter collor -16, 14:	lots	0C F	ougs	, Picked	) Su	mple	np
Total Volume of Water	After Melting:	33%	(mL)					

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	118.9	120.4	1.5	
2	118.2	121.7	3.5	leaked abit of water
3		5		
4		H)		
5				
6				
7				
8				
9				
10				
11				
Totals	237.1	242.1	0.2	

THE PARTY NAMED IN	Duet Cauge Co	allostion Field	1 Chaot			
	Dust Gauge Co		- Aut			
			No:	ENV	<u>/I-178-03</u>	12
Area:	8000		Revision:	R0		
Effective Date:	26-Mar-2012		By:	Diar	ne Dul	
Task:	<b>Dust Gauge Collection</b>	Field Sheet				
			Page:	1	of _	2
GENERAL			<del>.</del>		U.	
LOCATION NAME:	+ 10 DATE (dd.	nmm-yyyy): <u>202</u>	1-9-15	TIBAE (2)	4.00. 17	119
SAMPLED BY: BP		AMPLE: Dust			4.00): <u> </u>	
	<del></del>			_		
GPS COORDINATES (U	TTM):E		N (Zone)			
DESCRIPTION:						
CLIMATE CONDITIONS	(if sampling outside)		. 0			
Air Temp:C	Wind Direction:	Wind Speed	l (knots): <u> </u>			
Precipitation: rain / mist	/ snow N/A	Cloud Cove	r: 0%, 10%,	25%, 5	0%, 75%,	100
Snow Cover: 0%,)10%,	25%, 50%, 75%, 100%	Dust in are	a: Visible, Not	Visible		
<u> </u>						
	NTS: (i.e. damage to station, bu			stibule,	etc.)	
Date Sample Collected wa	s Deployed <u> </u>	15 37 B	P.FG			
	r amount of buys.					
	<b>J</b>	/				

Total Volume of Water After Melting: 680 (mL)

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	123.1	135.3	12.2	
2	122.9	135. 7	13.3	
3	(23.1	138.4	153	
4	124.0	145.3	21.3	
5	119.8	142.4	22.6	
6		,		
7				
8				
9				· · · · · · · · · · · · · · · · · · ·
10				
11				
Totals	612-9	696.6	83.7	

	Dust Gauge Colle	ction Fiel	d Sheet			
			No:	ENV	I-178-03	312
Area:	8000		Revision:	R0		_
Effective Date:	26-Mar-2012		By:		ne Dul	
Task:	<b>Dust Gauge Collection Fie</b>	eld Sheet				
			Page:	1_	of _	2
SAMPLED BY:	DATE (dd-mmm  BD TYPE OF SAMP  TM):E	PLE: PUSP	(	Other		
CLIMATE CONDITIONS (	if sampling outside)					
Air Temp:C	Wind Direction: NE	Wind Spee	d (knots): 10	_		
Precipitation: rain / mist /			er: 0%, 10%, 2	— 25%, 50	)%, <b>75</b> %,	100
	25%, 50%, 75%, 100%		ea: Visible, Not		•	
COLLECTION COMMENT	TS: (i.e. damage to station, bugs -	twigs in sar	nple, hole in ves	stibule, (	etc.)	
Date Sample Collected was	Deployed 2021-07-02 @	12:40				
Sample picked v.	P 2021-09-16@ 14:10	)				
- little Smokey						
- very few Bu	95					
- after pow	igs -, Cilter very gre	!en				

Total Volume of Water After Melting : 1088 (mL)

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	119.0	157.8	3918	
2				
3				
4				
5		***		
6				
7				
8				
9				
10				
11				
Totals	119.0	157.8	34.8	

	Dust	Gauge Colle	ction Fiel	d Sheet			
				No:	ENV	I-178-0	312
Area:	8000			Revision:	R0		
Effective Date:	26-Mar-2012	!	<del></del>	By:	Dian	ne Dul	
Task:	<b>Dust Gauge</b>	Collection Fi	eld Sheet	•			
				Page:	_1_	of	2
GENERAL		-	,				
LOCATION NAME: De	1st 12	DATE (dd-mmn	n-vvvv):202	1-09-16	TIME (24	:00): /	403
SAMPLED BY:							
GPS COORDINATES (U				N (Zone	_		
DESCRIPTION:							
Air Temp: C Precipitation: rain / mist Snow Cover 0%, 10%,	/ snow ( N/A )		Cloud Cove	d (knots): er: 0%, 10%, a: Visible, No	25%, 50	%, 75%	5, 100
COLLECTION COMMEN			- twigs in san	nple, hole in v	estibule, (	etc.)	
Date Sample Collected was	· ·						
Som	yple most )	clear bt u	ith man	) bugs, s	ome	ave	Luith
au	white mesido	He.					
Total Volume of Water	After Melting:_(	550 (mL	)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	119.1	120.9	1.8	brown filters
2	124.4	128.2	3.8	
3	123.6	125.1	1.5	Vifine partiely, totally filled
4	173.0	127.9	4.4	
5		0		
6				
7				
8				
9				
10				
11				
Totals	440]	5021	12.0	

	Dust Gauge Goi	lection Field Sheet		
		No:	ENVI-	-178-0312
Area:	8000	Revision:	R0	
Effective Date:	26-Mar-2012	By:	Diann	e Dul
Task:	Dust Gauge Collection 1	Field Sheet		
		Page:	1	of
GENERAL C	1-1	0 411		1.11
LOCATION NAME: $oldsymbol{oldsymbol{oldsymbol{oldsymbol{A}}}$	DATE (dd-mn	nm-yyyy): 2-22/-07-/6	TIME (24:	00): 1977
SAMPLED BY: <u>\G</u> (	TYPE OF SAI	MPLE: Oust	Other	
GPS COORDINATES (	UTM):E	N (Zone)	)	
CLIMATE CONDITIONS	S (if sampling outside)			
Air Tomp: 1 'C	Wind Direction: NE	Wind Speed (knots):		
Precipitation: rain / mis		Cloud Cover: 0%, 10%,		2/ 7E0/ 10
	25%, 50%, 75%, 100%	*		70, 7370, 10
Show Cover 0% 10%	25%, 50%, 75%, 100%	Dust in area: Visible, No	Visible	
COLLECTION COMME	NTS: (i.e. damage to station, bug	s - twigs in sample, hole in ve	estibule e	ite )
	as Deployed 2021-07-02	- tingo iii odinpie, tiote iii ve	adibaio, o	10.7
	Very clear, lots of be	25		
	, y charry			

Total Volume of Water After Melting: 925 (mL)

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	124.5	127.4	2.9	bright forest green Colour
2	125.8	139.9	14.1	
3	124.1	142.9	18.8	
4				
5				
6				
7				
8				
9	70			
10				
11			*	
Totals	374.4	4102	35.8	

	Dus	t Gauge Coll	ection Fiel	d Sheet			
			<del> </del>	No:	ENV	′i-178-0	312
Area:	8000			Revision:	R0		
Effective Date:	26-Mar-201	2		Ву:	Dian	ne Dul	
Task:	Dust Gauge	e Collection F	ield Sheet				
				Page:	_1_	of	2
GENERAL					. <u></u> .		
	ustcz	DATE (dd-mm	m-vvvv): 20	1-09-16	TIME (2	4-00): 13	52
LOCATION NAME: D	BD	TYPE OF SAM	PLE: Dust				
GPS COORDINATES (U					_		
DESCRIPTION:							
CLIMATE CONDITIONS Air Temp: C Precipitation: rain / mist Snow Cover 0%, 10%,	Wind Direc	tion: NE	Cloud Cov	d (knots): 0 er:_0%, 10%, ea:Visible, No	25%, 5	0%, 75%,	, 100
COLLECTION COMMEN	ITS: (i.e. damage	e to station, bugs	- twigs in sar	nple, hole in v	estibule,	etc.)	
Date Sample Collected wa	s Deployed 200	2/-07-02					
All	ample clau. Filters h	Ly, yellovish,	c:thmany green	bigs. Sne	Ils terr	ble.	
Total Volume of Water	After Melting	500 m	 L)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	124.7	126.3	1.6	BALL C n success
2	125.3	130.3	5.0	
3	П	н., 1	Ì	
4				
5				
6			12	
7				
8				
9				
10				
11				
Totals	250	256.6	6.6	

					d Sheet			
		0000			No:		-178-0312	2
Area:	ive Deter	8000 36 Mar 204			Revision:		an Dud	
Task:	ive Date:	26-Mar-201	Collection F	iold Shoot	By:	Diani	ne Dul	
lask.		Dust Gauge	; Odilection 1	iela Grieet	Page:	1	of	2
GENER	<u>AL</u>	017		2 av	11		111.	
LOCATI	ON NAME:	DW	DATE (dd-mm	m-yyyy): <u></u>	11-04-14			
			TYPE OF SAM					
			E		N (Zone	<b>∌</b> )	<del>-</del>	
DESCRI	PTION:							
CLIMAT	E CONDITIONS	(if sampling outsi	de)					
			ion:	Wind Spee	d (knots):			
	p: 0 ation: rain / mist				er: 0%, 10%,		% 75% 1	na
-			%, 100%		er. 076, 1076, ea: Visible, N		101 L2/01 L	00
SHOW C	G +41. G /0, 1G /0,	2070, 0070, 70	70, 100/0	Pust III dit	er Alginia' (Al	or Algini <u>a</u>		
COLLEC	CTION COMMEN	TS: (i.e. damage	to station, bugs	- twigs in sar	mple, hole in v	restibule, e	etc.)	
Date San	ple Collected was	Deployed						
01	Ld # 210	777						
	24 04 16	/ / / 人						
Total Vo	lume of Water	After Melting:	730 (m	L)				
Filter #	Neight of		730 (m	Resid	I	Cor	nments	
Filter #		Filter Filte	er + Residue		I	Cor	nments	
Filter	Weight of	Filter Filte		Resid Weig	I	Cor	mments	
Filter # 1	Weight of	Filter Filt	er + Residue	Resid Weig	ht		mments	
Filter # 1	Weight of	Filter Filt	er + Residue	Resid Weig	ht	Cor 5 m L	nments	
Filter # 1 2 3	Weight of	Filter Filt	er + Residue	Resid Weig	43	5mL		
Filter # 1 2 3 4	Weight of	Filter Filt	e <b>r + Residue</b> 5, ત્રે 6 · 6	Resid Weig	43	5mL		st le
Filter # 1 2 3 4 5	Weight of	Filter Filt	e <b>r + Residue</b> 5, ત્રે 6 · 6	Resid Weig	43	5mL	nments	st le

126.0

126.2

8

9

10 11 Totals

三BW#4

673mL

redid with tobe from

1
$\sim$
<b>U</b> ,
ini
linto

	Dust Gauge Co	llection Field	Shoot			
	Dust Gauge CO					
			o:		<u>/I-178-0</u>	312
Area:	8000		evision:	R0		
Effective Date:	26-Mar-2012		y:	Dian	ne Dul	
Гask:	<b>Dust Gauge Collection</b>			4		
			age:		of _	2
BENERAL						
	) at al DATE (dd m	mm mandi A oo t	17-04	TIBEE (2)	4.000 17	2 < 9
RAMPLED BY: RP	DATE (dd-m	MDI E. ( Diet	12-01	Other	4:00): <u> </u>	1,01
SPS COORDINATES (U	5339(4)					
	TM): 333741 E	7154321	N (Zone)	126	/	
DESCRIPTION:						
N MARTE CONDITIONS	//					
CLIMATE CONDITIONS	(it sampling outside)		16			
Air Temp: <u>-32</u> °C		_ Wind Speed (	knots):			10
Precipitation: rain / mist	/ISITONY / IN/A	Cioua Cover:	0%, 10%,	ZD70, 5	0%, 75%	, 100
Snow Cover: 0%, 10%,	25%, 50%, 75%, 100%	Dust in area:	Visible, No	t Visible		
COLLECTION COMMEN	ITS: (i.e. damage to station, bug	gs - twigs in sampl	e. hole in ve	estibule.	etc.)	
ate Sample Collected was	s Deployed 202 1-09-15	<u>_</u>		•		
•	Sample very clear,	mornal weekle	2 1.01			
7	- , , , , , , , , , , , , , , , , , , ,	MINISTER DISCON	COSE			
otal Volume of Water	After Melting: 570 (	(mL)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	117.2	191.9	74.7	
2	-			
3	W			
4			1	
5				
6				
7				
8				
9				
10				
11				
Totals			74.7	

banand
1
00
'possile
-
~
-15
<b>James</b>
Name of Street
Aires
1

	Dust Gauge Collection Fiel	d Sheet		
Area: Effective Date: Task:	8000 26-Mar-2012 Dust Gauge Collection Field Sheet	No: Revision: By: Page:	ENVI-17 R0 Dianne D	Dul
GENERAL LOCATION NAME: D SAMPLED BY: C GPS COORDINATES (UT DESCRIPTION:	DATE (dd-mmm-yyyy): 14  BD TYPE OF SAMPLE: Dust  TM): 535678 E 7/5/339	N (Zone)	IME (24:00): Other/	10:50
Precipitation: rain / mist / Snow Cover: 0%, 10%,	Wind Direction: 5 Wind Speed Snow/N/A Cloud Cov Dust in and	er: 0%, 10%, 2 ea: Visible, Not	Visible	75%, (100
	TS: (i.e. damage to station, bugs - twigs in sar  Deployed 1011-07-18 0 ?  Y (olove of water	npie, noie in ves	anduie, etc.)	
Total Volume of Water	After Melting: 770 (mL)			×

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	116.7	152.7	36.0 mg	dark Brown
2	112.5	145.3	32.8	
3		-		400
4				
5				
6				
7				
8				
9			×	
10		8		
11				
Totals			68.8	

Z
0
5
$\Rightarrow$
0

	Dust Gauge Collection Fie	ld Sheet		T/S	
		No:	ENVI-	-178-03	312
Area:	8000	Revision:	R0		
Effective Date:	26-Mar-2012	By:	Diann	e Dul	
Task:	<b>Dust Gauge Collection Field Shee</b>	t			_
		Page:	1	of _	2
GENERAL					
LOCATION NAME:	DATE (dd-mmm-yyyy): 2 TYPE OF SAMPLE: (Dust)				14
GPS COORDINATES (UT	M): 535024 E 7/5/x72	N (Zone)	12W		
DESCRIPTION:			···		
Snow Cover: 0%, 10%,	Wind Direction: Wind Spe Snow N/A Cloud Co 25%, 50%, 75%, 100% Dust in a	rea: Visible Not	Visible		100
	TS: (i.e. damage to station, bugs - twigs in sa	imple, hole in ve	stibule, e	tc.)	
	Deployed 2021-09-15 Slightly cloudy, several flies in sa	mple			
Total Volume of Water	After Melting: 740 (mL)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	119.4	2465	127.1	
2				
3				
4				
5				
6				
7				
8				
9				·
10				
11				
Totals	Well		127.1	

	Dust Gauge Col	lection Fiel	d Sheet	78-1		
			No:	ENVI-	178-03	12
Area:	8000		Revision:	R0		
Effective Date:	26-Mar-2012		By:	Diann	e Dul	
Task:	<b>Dust Gauge Collection</b>	Field Sheet	-			
			Page:	_1_	of _	2
<u>GENERAL</u>						
LOCATION NAME: DV	DATE (dd-mi	nm-yyyy): 🛂 ၁၁	2/-12-09	TIME (24:	00): 141	13
SAMPLED BY: BP	β () TYPE OF SA	MPLE: Dust	,	Other		
GPS COORDINATES (UT	гм): <u>\$3/397</u> е	7/52/27	N (Zone)	12W		
DESCRIPTION:		·				
Precipitation: rain / mist s Snow Cover: 0%, 10%,	Wind Direction: W	Cloud Cove	d (knots): 1 der: 0%, 10%, va: Visible, No	25%, 50% t Visible		100
	Deployed 202/-09-15	-		•		
	5 ample most	y elear, n	ninimal do	rst visi	le	
Total Volume of Water	After Melting: 1050 (i	nL)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	119.0	147.3	29,0	Several hair-like fibres on
2	4			
3				
4				
5		-		
6				
7	-			
8				
9				
10		•		
11				
Totals	X=7U_3(U_3)		29.0	

bosonel
7
0
1
5
=
0

<u> </u>	ield Sheet	
	No:	ENVI-178-0312
Area: 8000 Effective Date: 26-Mar-2012	Revision:	
	By:	Dianne Dul
Task: Dust Gauge Collection Field She		4 05 0
	Page:	of
GENERAL		
LOCATION NAME: Nust 5 DATE (dd-mmm-yyyy): 2	1-021-12-07	TIME (24:00): /536
LOCATION NAME: DUST 5 DATE (dd-mmm-yyyy): 2  SAMPLED BY: RP NG TYPE OF SAMPLE: Dus	it	Other
GPS COORDINATES (UTM): 535676 E 7155/38	N (Zone)	124
DESCRIPTION:		
	cover: 0%, 10%, area: Visible, No	25%, 50%, 75%, 100 t Visible
Date Sample Collected was Deployed 2021-09-16		
Mostly clear, one fly in sample		
·		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	119.9	141.6	21.7	
2				
3		X		
4				
5				
6				
7				
8				
9				
10				
11		i i		
Totals	MALESTY		21.7	

	Dust Gauge Collection Fie	ld Sheet	1	
		No:	ENVI-1	78-0312
Area:	8000	Revision:	R0	
Effective Date:	26-Mar-2012	By:	Dianne	Dul
Task:	<b>Dust Gauge Collection Field Sheet</b>			
		Page:	1	of 2
GENERAL LOCATION NAME:	/5+ 6 DATE (dd-mmm-yyyy): <u>₹</u> o	- 1-17-0H	FIME (24.00	n. 1476
SAMPLED BY: RD !	TYPE OF SAMPLE: Dust			n. 19 20
V 30	rm): <u>537502</u> E 7/52934			
	E 1132730 E 1132761	N (Zone)	<u> 12W</u>	
DESCRIPTION:				
CLIMATE CONDITIONS	(if sampling outside)			
Air Temp: <u>-32</u> 'C	Wind Direction: Wind Spee	ed (knots): <u> 1</u>		
Precipitation: rain / mist	Wind Direction: Wind Spec	ver: 0%, 10%, 2	 2 <u>5</u> %,_ 50%,	75%, (100)
		ea: Visible, Not		
COLLECTION COMMEN	TS: (i.e. damage to station, bugs - twigs in sa	mnie hole is ver	stibule etc	
	Deployed 202 /- 0 9-15	inple, note in ve.	onbaio, oto	·- <i>/</i>
1 0	Stightly closely, a few	begs:n san	nple	
Total Volume of Water	After Melting: 260 (mL)			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	117.6	179.5	61.9	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				<u> </u>
Totals			61.9	

	Dust G	auge Col	lection Fiel	d Sheet	, L	30	160.85
		1 1		No:	ENV	′l-178-	0312
Area:	8000			Revision:	R0		
Effective Date:	26-Mar-2012			By:	Dian	ne Du	l
Task:	Dust Gauge Co	ollection	Field Sheet				
			•	Page:	_1_	of	2
GENERAL LOCATION NAME:	<u>1547</u> c	DATE (dd-mn	nm-yyyy): <u>{4</u> WPLE: Dust	-01-2022			0:40
GPS COORDINATES (UT				N (Zone	12W	(	
DESCRIPTION:			·				100
CLIMATE CONDITIONS ( Air Temp: - 10 °C Precipitation: rain / mist / Snow Cover: 0%, 10%,	Wind Direction	: 5E	Cloud Cov	d (knots):	25%, 5	0%, 75° >	%, 100
COLLECTION COMMEN	TS: (i.e. damage to	station, bug	s - twigs in sar	nple, hole in v	estibule,	etc.)	
Pate Sample Collected was	Deployed 2021-	vn of	@ 14:2; for dry 1	7			
Total Volume of Water	After Melting : 6	50 (n	nL)				

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	111.8	156,1	44.3	
2	111.0	142.5	31,5	filter drapped, mo visible lass of dus
3				(on counter)
4			1	
5				
6				
7				
8				
9				
10				
11		· · · · · · · · · · · · · · · · · · ·		
Totals			75.8	

_
$\square$
0
U.
-
3

	Dust	Gauge Collec	tion Fiel	d Sheet			
				No:	FNV	I-178-0	312
Area:	8000			Revision:	R0	. 170-0	
Effective Date:	26-Mar-2012			By:		ne Dul	-
Task:	Dust Gauge	Collection Fie	ld Sheet				
				Page:	_1_	of	2
GENERAL							_
LOCATION NAME: De	15+8	DATE (dd-mmm-	-vvvv): 302	1-12-10	TIME (24	:00): 10	30
SAMPLED BY: NO BE	>	TYPE OF SAMPI	LE: Dust		-		
GPS COORDINATES (UT				N (Zone	12	W	_
DESCRIPTION: QH	1		<del></del>		<i>'</i>		
CLIMATE CONDITIONS (	if sampling outside	<u>)</u>					
Air Temp:26*C	Wind Direction	n:E	Wind Spee	d (knots): 7			
Precipitation: rain / mist		0.00		er: 0%, 10%		)%, 75%	, 100
Snow Cover: 0%, 10%,	25%, 50%, 75%	100%		ea: Visible, No		)	
COLLECTION COMMEN			twigs in san	nple, hole in v	estibule,	etc.)	
Date Sample Collected was			1 N				
Clear w/ 50	we my:to	tine parti	culate	•			
settled on	bottom.	6: noch	5				
residue on filters	before dryi	ng looks g	reenish		•		
Total Volume of Water	After Melting: 8	25 mL (mL)					

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	8.011	118.4	7.6mg	
2	114.2	123.8	9.6	
3		a Yang ang		
4	K.			
5	-	_		
6				
7				
8				
9				
10				
11				
Totals	225	3-17.5	17.2	

Dust Gauge Coll	ection Field Sheet			SIE.
	No:	EN	/I-178-0	312
8000	Revision:	R0 Dianne Dul		
26-Mar-2012	By:			
<b>Dust Gauge Collection F</b>	Field Sheet			
	Page:	1	of	2
	8000 26-Mar-2012	8000 Revision: 26-Mar-2012 By: Dust Gauge Collection Field Sheet Page:	8000 Revision: R0  26-Mar-2012 By: Diam  Dust Gauge Collection Field Sheet Page: 1	8000 Revision: R0  26-Mar-2012 By: Dianne Dul

GENERAL  LOCATION NAME: Dust 9  SAMPLED BY: GC BD TYPE OF SAMPLE: Dust Other  GPS COORDINATES (UTM): S41204 E 7152154 N (Zone) 12W
DESCRIPTION:
CLIMATE CONDITIONS (if sampling outside)         Air Temp:
COLLECTION COMMENTS: (i.e. damage to station, bugs - twigs in sample, hole in vestibule, etc.)
Date Sample Collected was Deployed 2021-09-16 @ 14:34  Mostly clar, gray, one mosquito  dark brown residue on filter

Total Volume of Water After Melting: 468 (mL)

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	1/0,7	135.3	24.6	
2				
3				
4				
5				
6				<del></del>
7				<del> </del>
8				
9				
10				
11				
Totals			24.6	

	d
	ĕ
	,
L	7
H	3
6	<b>†</b>

Dust Gauge Co	llection Field Sheet	
	No:	ENVI-178-0312
Area: 8000	Revision:	R0
Effective Date: 26-Mar-2012	By:	Dianne Dul
Task: Dust Gauge Collection		
	Page:	1 of 2
GENERAL		
	mm-vvvv): 202/-12-09 -	TIME (24:00): 14 57 _
LOCATION NAME: DUST 10 DATE (dd-m	MPLE: Dust	Other
GPS COORDINATES (UTM): 532966 E	7/48924 N (Zone)	12W
DESCRIPTION:	. (20110)	
DESCRIPTION.		<del></del>
CLIMATE CONDITIONS (if sampling outside)		
Air Temp: -32 °C Wind Direction:	Wind Speed (knots):	
Precipitation: rain / mist (snow) N/A	Cloud Cover: 0%, 10%,	_
Snow Cover: 0%, 10%, 25%, 50%, 75%, (100%)	Dust in area: Visible, (Not	
COLLECTION COMMENTS: (i.e. damage to station, bu	gs - twigs in sample, hole in ve	stibule, etc.)
Date Sample Collected was Deployed 202 /- 09-15		
Slightly cloudy	, some dust visible	
U	7.5.0	
Total Volume of Water After Melting: 840	mL)	

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	1182	171.4	53, 2	1
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
Totals			53, 2	

	Dust Gauge Collection	n Field Sheet		
		No:	<b>ENVI-178</b>	-0312
Area:	8000	Revision:	R0	
Effective Date:	26-Mar-2012	Ву:	Dianne Di	ul
Task:	Dust Gauge Collection Field	Sheet		
		Page: _	<u>1</u> of	2
GENERAL  LOCATION NAME: 100 SAMPLED BY: (2)	DATE (dd-mmm-yy)  BD TYPE OF SAMPLE:	y): 14-01-2022 7	TIME (24:00):_ Other	11:35
	TM): <u>53/493</u> <u>E 7/50</u>			
DESCRIPTION:	- 1			
Precipitation: rain / mist	Wind Direction: 5  Wi	nd Speed (knots): 7 oud Cover: 0%, 10%, 2 ust in area: Visible, Not		5%, (100)
COLLECTION COMMEN	TS: (i.e. damage to station, bugs - twi	js in sample, hole in ves	stibule, etc.)	
Date Sample Collected was $grand - grand$	Deployed 2021-01-16@  colour of water	14:10 and filter,	no buys	
Total Volume of Water	After Melting: 1178 (mL)			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	111.8	142.9	3/11	
2	111.3	142.6	31,3	
3				
4				<u> </u>
5				
6				
7				
8				
9				
10				
11				
Totals			62,4	

刀
<b>,</b>
0
H

	<u>Dust Gauge Collection Fie</u>	eld Sheet	
		No:	ENVI-178-0312
Area:	8000	Revision:	R0
Effective Date:	26-Mar-2012	By:	Dianne Dul
Task:	<b>Dust Gauge Collection Field Shee</b>	<u>t                                      </u>	
		Page:	1 of 2
GENERAL			2.0
LOCATION NAME:	005+12 DATE (dd-mmm-yyyy): 14	1-01-7055	TIME (24:00): 11:50
SAMPLED BY:	TYPE OF SAMPLE: Dust		Other
GPS COORDINATES (U	TYPE OF SAMPLE: Dust	N (Zone)	12W
DESCRIPTION:			
Precipitation: rain / mist Snow Cover: 0%, 10%, COLLECTION COMMEN	Wind Direction: 5 F Wind Spe	ver: 0%, 10%, 2 rea: Visible Not	
Total Volume of Water	After Melting: 959 (mL)		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	112.6	123.0	10.4	
2	116.1	128.8	12.7	<u> </u>
3				
4	`			
5				
6				
7				
8				
9				
10				
11				
Totals			23,1	

J
<b>_</b>
0

	Dust Gauge Colle	ection Fiel	d Sheet			
Area: Effective Date: Task:	8000 26-Mar-2012 Dust Gauge Collection F		No: Revision: By:	R0	l-178-0: ne Dul	312
I don.	Dust Gauge Collection 1	iela Officet	Page:	1_	of _	2
	<u>SFC</u> DATE (dd-mm <u>13 17</u> TYPE OF SAM TM): <u>5349719</u> E					
Precipitation: rain / mist. Snow Cover: 0%, 10%, COLLECTION COMMEN	Wind Direction: 5 E /(snow) N/A 25%, 50%, 75%, 100%) TS: (i.e. damage to station, bugs	Cloud Cover Dust in are - twigs in san	er: 0%, 10%, ea: Visible, Not	25%, 50 Visible	ě.	100
Date Sample Collected was	Deployed 2021-09-16, or is light brown brown	RILLIS	}			ite
Total Volume of Water	After Melting: 6 40 (m	L)				
Filter		Resid	ue			

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	115.7	130.8	15.1	
2				
3		·		
4				
5				
6		<del>-</del>		
7				
8				
9				
10				
11		- · · · · · · · · · · · · · · · · · · ·		
Totals			15.1	

	Dust Gauge Collect	ion Field Sheet		
Area:	8000	No: Revision:	R0	78-0312
Effective Date: Task:	26-Mar-2012 Dust Gauge Collection Field	By: d Sheet	Dianne	Dul
		Page:	1 (	of2
GENERAL	USE CT DATE (dd mmm u	14-61-201) .	FIRST (04-04	12° 10
SAMPLED BY: 60	DATE (dd-mmm-y	: Dust	i iME (24:00 Other	); ( \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	TM): <u>528714</u> e <u>715</u>			
DESCRIPTION:		_	·	
Precipitation: rain / mist Snow Cover: 0%, 10%, COLLECTION COMMEN	Wind Direction: 5 C V (Snow) N/A C C C C C C C C C C C C C C C C C C C	Cloud Cover: 0%, 10%, 20  Oust in area: Visible, (lot vigs in sample, hole in ve	25%, 50%, Visible	
Date Sample Collected was Wed (r 15 cl) filter residu through the	s Deployed 2021-09-16 @  1 dr, no visible bugs / c is dark bearn after  dust	17:55 dust drying mith wh	ltz filt	er showing
Total Volume of Water	After Melting: 900 (mL)		i.i.	

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	110.7	122,8	12.1	
2				
3				
4		<del></del>		
5			ļ	
6				
7		<del></del>		
8				
9				
10				
11				·
Totals		The state of the s	12.1	

The second
4
0
1000
_
<b>I</b>
beed "
want?
-

	Dust Gauge Colle	ction Field Sheet		
		No:	ENVI-178	3-0312
Area:	8000	Revision:	R0	
Effective Date:  Ze-Mar-2012  Dust Gauge Collection Fiel  Date (dd-mmm-)  Date (dd-mmm-)  Date (dd-mmm-)  Type of Sampling  Description:  CLIMATE CONDITIONS (if sampling outside)  Air Temp:  Precipitation: rain / mist / snow / N/A		By:	Dianne D	ul
Task:	Dust Gauge Collection Fie	eld Sheet		_
		Page:	of	2
GENERAL				
LOCATION NAME:	DATE (dd-mmm	-yyyy): 202 +12-04	TIME (24:00):	0856
SAMPLED BY:	P TYPE OF SAMP	LE: Dust		
GPS COORDINATES (U	TM):E	N (Zone	)	
Air Temp:*C Precipitation: rain / mist	Wind Direction:	Wind Speed (knots): Cloud Cover: 0%, 10%, Dust in area: Visible, No	25%, 50%, 7	5%, 100
COLLECTION COMMEN	ITS: (i.e. damage to station, bugs -	twigs in sample, hole in v	estibule, etc.)	
	Dust and small preces of p. Dust gauge was scaled incorre as a result.			large
Total Volume of Water	After Melting: //oo(mL)	)		

Total Volume of	Water	After	Melting:_	1100	(mL)

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	119.8	120.9	1.1	
2				
3				
4				
5		-		
6				
7				
8				
9				
10				
11				
Totals			1,1	

=	7
P	~
7	
6	٧,
	3
5	+
C	)

	Dust Gauge Collection	n Field Sheet	
		No:	ENVI-178-0312
Area:	8000	Revision:	R0
Effective Date:	26-Mar-2012	Ву:	Dianne Dul
Task:	<b>Dust Gauge Collection Field S</b>	Sheet	
		Page:	1 of 2
GENERAL			
LOCATION NAME: E8	アルニ DATE (dd-mmm-yyy)	1): 2021-12-04	TIME (24:00): 0857
	TYPE OF SAMPLE:	Dust	Other
GPS COORDINATES (UT	M):E		
DESCRIPTION:		<u>-</u>	
CLIMATE CONDITIONS ( Air Temp:*C Precipitation: rain / mist / Snow Cover: 0%, 10%,	Wind Direction: Win snow / N/A Close	d Speed (knots): ud Cover: 0%, 10%, : it in area: Visible, Not	25%, 50%, 75%, 100
COLLECTION COMMENT	rs: (i.e. damage to station, bugs - twigs	s in sample, hole in ve	stibule, etc.)
Date Sample Collected was			
	No visible Lust		
Total Volume of Water	After Melting: YOO (mL)		

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	1126	119.2	0	
2				
3				
4				
5				
6				· · · · · · · · · · · · · · · · · · ·
7				
8				
9				
10				
11				
Totals			0	

4.0
_

	Dust Gauge Colle	ection Field Sheet	
		No:	ENVI-178-0312
Area:	8000	Revision:	R0
Effective Date:  Task:  Dust Gauge Collection Field Shape Collection NAME:  LOCATION N	Ву:	Dianne Dul	
Effective Date:  Cask:  Dust Gauge Collection Field Sheet Gauge Collection	ield Sheet		
		Page:	1 of 2
LOCATION NAME: L. SAMPLED BY: G			
T.			
Air Temp:C Precipitation: rain / mist / Snow Cover: 0%, 10%,	Wind Direction:/ / snow / N/A 25%, 50%, 75%, 100%	Wind Speed (knots):  Cloud Cover: 0%, 10%, 2  Dust in area: Visible, Not	Visible
Date Sample Collected was		- tango in dampie, noie in ve	stibule, etc.)
Total Volume of Water	After Melting :(m	L)	

Filter #	Weight of Filter	Filter + Residue	Residue Weight	Comments
1	112.2	111.7	0	
2				
3				
4				
5				
6				
7				
8			!	
9	77			
10				
11				
Totals	Parisus reducing			

_	<del></del>		Snow	Sampling F	ield Sheet			
Area Effe	ctive Dat		00 -Mar-2012			No: Revision By:		/I-177-0312 Oul
las	K.	SIII	ow Sampii	ing Field Sil	eet	Page:	1 evision Tra	of 3
	ERAL							
LOC	ATION NAME	∷ <u>SSI-</u>	1	DATE (yyyy-mr	mm-dd): <u>202</u>	1-04-12	TIME (2	4:00): <u>1344</u>
SAM	PLED BY: _	BP PL		TYPE OF SA	AMPLE: Dust	Water	Quality [	QAQC://A
				E				
DESC	CRIPTION: D	istance to D	iavik	_km & Direction	·	0	n: Land 🔀	&/or Lake
CLIM	ATE CONDI	TIONS						
	in Area: Vis Ipitation: Rai		Not Visible ow / N/A	1	Cloud Cover: ( Snow Conditio			75% / 100% ked [7] Wet [] Dry []
Du		Depth	Length	Weight of	Weight of	Water		Comments
Dus	Core Number	of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	Content- SWE	Dust Present Yes/No	(core waighed bag #
Dust C		of	of Snow	Tube	Empty Tube-SWE (cm)	Content-	Present	(core weighed, bag #, changes in snow condition)
Dust Core	Number	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE	Present Yes/No	(core weighed, bag #, changes in snow
<b>Dust Cores</b>	Number 1	of Snow (cm)	of Snow Core (cm) 49	Tube & Core- SWE (cm)	Empty Tube-SWE (cm) 39	Content- SWE (cm)	Present Yes/No	(core weighed, bag #, changes in snow condition)
<b>Dust Cores</b>	Number  1 2	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm) 56	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y N	(core weighed, bag #, changes in snow condition)
<b>Dust Cores</b>	Number  1 2 3	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No Y N Y N	(core weighed, bag #, changes in snow condition)
Dust Cores	Number  1 2 3	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No Y N Y N	(core weighed, bag #, changes in snow condition)
Dust Cores	Number  1 2 3 4	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No Y N Y N Y N	(core weighed, bag #, changes in snow condition)
Dust Cores	Number  1 2 3 4	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N	(core weighed, bag #, changes in snow condition)
	1 2 3 4 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  N  P N  N  N  N	(core weighed, bag #, changes in snow condition)
	1 2 3 4 1 2 3 3 3 4	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N	(core weighed, bag #, changes in snow condition)
	1 2 3 4 1 2 3 4	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 5 5	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 5 6	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
Dust Cores Water Quality Cores	1 2 3 4 5 6 7	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 5 6 7 8	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 5 6 7 8 9	of Snow (cm)	of Snow Core (cm) 49 59	Tube & Core- SWE (cm) 56 59	Empty Tube-SWE (cm) 39 39	Content- SWE (cm)	Present Yes/No  Y NO Y N	(core weighed, bag #, changes in snow condition)

Water Quality (Min. of 3 cores - Total Water Content SWE =/> 100)

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Task:		Snow San	npling Fie	ıld Sne	<u>et</u>	Pag	ge: 2 of	3
		•			Tota		of Melted Snow: 1735	
	Sample Fil		1					
		ht of Filter (mg)	Filter + Re (mg		Resid	due Weig (mg)		
1 124.			630		St	05.8	Vegetation remared for	m
3								_
4								
Tota	ils 1246		630.4	AM	505	5.8		
Water	Quality Be	ottles		Tarrala		1301	of Melted Snow:Sample Comments	
Filling Order	Anaiysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	DI Batch # for QAQC, Location preserved if not in field, changes	labe
1	Metals Total	60 mL Falcon Tube (x2)	Y					
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y					
3	Total Mercury	40 mL clear glass (pre-preserved)	N	0			_ =	
4	Nutrients	120 mL plastic (pre preserved)						
5	Ammonia	40 mL glass vial (pre-preserved)						
6	Routine	1000 mL plastic						
7	TSS/Turb/pH	1000 mL plastic	Y					
itions	ıl Informa						/REP2, Filter Blank ges during sampling event, follow-up a	netio.

			Snow:	Sampling F	•			
		00	00			No:		/1-177-0312
Area	a: ctive Dat	800	00 -Mar-2012		<del></del>	Revision	: <u>R9</u> D. D	A. al
Tas				ing Field Sh		By:	<u>D. L</u>	iui
las	Α.	<u> </u>	OW Campi	ilg i leid on		Page:	1	of 3
								cking Only not for Print
GENE		5.61	_					
LOCA	TION NAME	# <u>721-</u>	2	DATE (yyyy-mr	mm-dd): <u>202</u>	10/10	TIME (2	4:00): <u>/40&gt;</u>
SAM	PLED BY:	RPPL		TYPE OF SA	AMPLE: Dust	Water	Quality [	QAQC:MA
GPS	COORDINAT	res (utm): ,	53392	3 <u>e</u> 7	154367	N (	zone)	12W
DESC	RIPTION: D	istance to D	iavik	_km & Direction		o	n: Land \Bigg	&/or Lake
	ATE CONDI							
			nd Direction:	<u>// v</u>	Vind Speed:	<u> </u>	5.	
Dust	in Area: Vis	ible 🗀 N	Jot Visible	1 (	Cloud Cover: 0	1% / 10% / 2!	5% / 50% Å	75% / 100%
Preci	pitation: Rai	n / Mist / Sno	ow NA					(ed ☑ Wet ☐ Dry ☐
		Depth	Length	Weight of	Weight of	Water		Comments
	Core							
		of	of Snow	Tube	Empty	Content-	Dust Present	(core weighed, bag #,
D	Number	Snow	Соге	& Core-	Tube-SWE	SWE	Dust Present Yes/No	
Dust (		Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)		Present	(core weighed, bag #, changes in snow
Dust Core	Number	Snow (cm)	Core (cm) 46	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present Yes/No	(core weighed, bag #, changes in snow
Dust Cores	Number  1 2	Snow (cm) ABS 69	Core (cm) 46	& Core- SWE (cm)	Tube-SWE (cm) 39	SWE (cm)	Present Yes/No Y N	(core weighed, bag #, changes in snow condition)
Dust Cores	Number  1 2 3	Snow (cm)	Core (cm) 46	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present Yes/No Y N Y N	(core weighed, bag #, changes in snow
Dust Cores	Number  1 2	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No Y N Y N Y N	(core weighed, bag #, changes in snow condition)
Dust Cores	Number  1 2 3 4	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm)	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No Y N Y N Y N Y N	(core weighed, bag #, changes in snow condition)
Dust Cores	Number  1 2 3 4	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
Dust Cores	1 2 3 4 1 2 2	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
Dust Cores	Number  1 2 3 4	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 1 2 2	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 1 2 3 3	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N Y N Y N Y N Y N Y N Y N Y N Y N Y	(core weighed, bag #, changes in snow condition)
	Number  1 2 3 4	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 5 5	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 5 6	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N Y N Y N Y N Y N Y N Y N Y N Y N Y	(core weighed, bag #, changes in snow condition)
Dust Cores Water Quality Cores	1 2 3 4 5 6 7	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N Y N Y N Y N Y N Y N Y N Y N Y N Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 5 6 7 8 9	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 5 6 7 8 9 10	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N Y N Y N Y N Y N Y N Y N Y N Y N Y	(core weighed, bag #, changes in snow condition)
	1 2 3 4 5 6 7 8 9	Snow (cm) ABS 69	Core (cm) 46 53 54	& Core- SWE (cm) \$0 \$2 \$3	Tube-SWE (cm) 39 39 39	SWE (cm) 11 13 14	Present Yes/No  Y N Y N Y N Y N Y N Y N Y N Y N Y N Y	(core weighed, bag #, changes in snow condition)

\*\* Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> - Wt. of Empty Tube<sub>SWE</sub> \*\*

Dust Sample Filters  Filter # Weight of Filter (mg)  1 124.5 394.5 270.0  Total Volume of Melter (mg)  Sample Type* Type* Type*	D. Dul		
Filter # Weight of Filter (mg)  1	2 of 3		
(mg) (mg) (mg) (mg)	d Snow: 1265		
2   3   4	Comments		
Totals   24.5   394.5   270.0    Water Quality Bottles   Total Volume of Melter   Type   Type   Type   Type   Type   Type   Type   Local    Metals   60 mL Falcon   Y                          Metals   Total   Total   Tube (x2)   Y                          Metals   Total   40 mL clear glass (pre-preserved)   N			
Totals 24.5 394.5 270.0  Water Quality Bottles Total Volume of Melte  Filling Order Analysis Bottle Type Triple Type Type Type Local  1 Metals Total Falcon Tube (x2) Y			
Water Quality Bottles  Total Volume of Melte    Filling Order			
Water Quality Bottles  Total Volume of Melte    Filling Order			
Filling Order  Analysis Bottle Type  Triple Rinse  Type* Type* Type*  Locat  Metals Total  Metals Dissolved  Tube (x2)  Total  Total  Total  Total  Total  Amercury  Total  Amercury  Amercury  Amercury  Amercury  Amercury  Amercury  Amercury  Amercury  Amercury  Triple Rinse  Triple Rinse  Triple Rinse  Type* Type*  Type*  Type*  Type*  Type*  Type*  Type*  Type*  Locat  N  D  D  D  D  D  D  D  D  D  D  D  D	d Snow:		
1 Total Tube (x2)  2 Metals Dissolved 60 mL Falcon Tube (x2)  3 Total Mercury 40 mL clear glass (pre-preserved)  4 Nutrients 120 mL plastic (pre-preserved)  Ammonia 40 mL glass vial	Sample Comments <u>DI Batch # for QAQC</u> , ion preserved if not in field, labe changes		
2 Dissolved Tube (x2)  Tube (x2)  Total 40 mL clear glass (pre-preserved)  Nutrients 120 mL plastic (pre-preserved)  Ammonia 40 mL glass vial	California Carine Section of California Cali		
3 Mercury (pre-preserved) N	933.40.03		
Ammonia 40 mL glass vial N			
6 Routine 1000 mL plastic Y 🗆 🗆	40		
7 TSS/Turb/pH 1000 mL plastic Y			
*Sample Type: GW, DUPW1/DUPW2, FBW, TBW, EBW, REP1/REP2, Fil	er Blank		
itional Information e color, odor if applicable: (equipment issues, safety concerns, weather problems, changes during	sampling event, follow-up action		

	_		Snow	Sampling F	ield Sheet			
			3.1.3.1.1			No:	ΕNI	VI-177-0312
Area	a:	80	00			Revision		VI-177-0312
	ctive Dat		-Mar-2012			By:		Dul
Tasi				ing Field Sh		<b>-</b> ,.		
•			*** **********************************			Page:	1	of 3
						Page 3 for Re		cking Only not for Print
	ERAL	111	0		107	1.04/10		1.1-7
								24:00): 1423
SAMI	PLED BY: _	BYY	<u>'L</u>	TYPE OF SA	AMPLE: Dust	Water	Quality	QAQC:_NA
						/ -		
GPS (	COORDINAT	res (utm):	<u>&gt;55760</u>	E	1134511	N (	zone)	&/or Lake
DESC	<b>RIPTION:</b> D	istance to D	iavik <u>/</u>	_km & Direction		0	n: Land	&/or Lake
CLIM	ATE CONDI	TIONS						
Air Te	 emp: _^	'C Wi	nd Direction:	1/ V	Vind Speed:	≪ kts	S.	
				<u> </u>		0		
Dust	in Area: Vis	ible 🔲 N	√vot Visible	,	Cloud Cover: 0			
Preci	pitation: Rai	in / Mist / Sn	OW KNA		Snow Conditio	n: Crystallize	ed 🔲 Pac	ker Wet Dry D
			1			1		
l		Depth	Length	Weight of	Weight of	Water	Dust	Comments
	Core	of	of Snow	Tube i		Comtout	Dugi	
			-, -,,		Empty	Content-	Present	(core weighed, bag #
Du	Number	Snow	Core	& Core-	Tube-SWE	SWE	Present Yes/No	changes in snow condition)
Dust (			Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Yes/No	changes in snow
Dust Core	Number	Snow (cm)	Core (cm)	& Core-	Tube-SWE (cm)	SWE (cm)	Yes/No	changes in snow
Dust Cores	Number 1	Snow (cm) 39 3フ	Core (cm) 2 4 3 /	& Core- SWE (cm)	Tube-SWE (cm) 38	SWE (cm) //	Yes/No	changes in snow condition)
Dust Cores	Number 1 2	Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Yes/No Y NY Y N	changes in snow condition)
Dust Cores	Number  1 2 3	Snow (cm) 39 3フ	Core (cm) 2 4 3 / 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y N Y N	changes in snow condition)
Dust Cores	Number  1 2 3 4	Snow (cm) 39 3フ	Core (cm) 2 4 3 / 34	& Core- SWE (cm)	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No  Y (N)  Y (N)  Y (N)  Y (N)  Y (N)	changes in snow condition)
Dust Cores	Number  1 2 3 4	Snow (cm) 39 3フ	Core (cm) 2 4 3 / 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N) Y (N) Y (N) Y N > 25) Y N	changes in snow condition)
Dust Cores	1 2 3 4 1 2 2	Snow (cm) 39 3フ	Core (cm) 2 4 3 / 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N) Y (N) Y (N) Y N  25) Y N	changes in snow condition)
Dust Cores	1 2 3 4 1 2 3 3	Snow (cm) 39 3フ	Core (cm) 2 4 3 / 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y N Y N Y N Y N Y N Y N	changes in snow condition)
Cores	1 2 3 4 1 2 2	Snow (cm) 39 3フ	Core (cm) 2 4 3 / 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N) Y (N) Y (N) Y N  25) Y N Y N Y N	changes in snow condition)
Cores	1 2 3 4 1 2 3 3	Snow (cm) 39 3フ	Core (cm) 2 4 3 / 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y N Y N Y N Y N Y N Y N	changes in snow condition)
Cores	1 2 3 4 1 2 3 4	Snow (cm) 39 3フ	Core (cm) 24 31 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N) Y (N) Y (N) Y N  25) Y N Y N Y N	changes in snow condition)
Cores	1 2 3 4 5 5	Snow (cm) 39 3フ	Core (cm) 24 31 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N)	changes in snow condition)
Cores	1 2 3 4 5 6	Snow (cm) 39 3フ	Core (cm) 24 31 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N)	changes in snow condition)
Dust Cores Water Quality Cores	1 2 3 4 5 6 7	Snow (cm) 39 3フ	Core (cm) 24 31 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N) Y (N) Y (N) Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)
Cores	1 2 3 4 5 6 7 8 9	Snow (cm) 39 3フ	Core (cm) 24 31 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N)	changes in snow condition)
Cores	1 2 3 4 5 6 7 8 9 10	Snow (cm) 39 3フ	Core (cm) 24 31 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N)	changes in snow condition)
Cores	1 2 3 4 5 6 7 8 9	Snow (cm) 39 3フ	Core (cm) 24 31 34	& Core- SWE (cm) 47 50	Tube-SWE (cm) 38 39 39	SWE (cm) 9 12 12	Yes/No Y (N)	changes in snow condition)

Area: Effect Task:	tive Date:	8000 26-Mar-2 Snow Sa	2012 Impling Fie	ald She	et t	Rev By:	rision: R9 D. Dul	
l acm.		Ones: and	приту	7100 00112		Pag Page	ge: 2 Of 3 for Revision Tracking Only not	3 for Pri
Dust S	Sample Fil	ters			Total	l Volume	of Melted Snow: 1055	(
Filter		ht of Filter (mg)	ter Filter + Residue (mg)		Resid	due Wei (mg)		
1 2		2.9	152.2		29	7.3	School sells of grass.	remin
3			Wali so					
4 Tota	de log	9	152.2	Side (1)	2	9,3		
	Quality B		152				of Melted Snow:	
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *			Sample Comments  DI Batch # for QAQC,  Location preserved if not in field changes	
1	Metals Total	60 mL Falcon Tube (x2)	Y					
2	Metals Dissolved	60 mL Falcon Tube (x2)	Υ					345-
3	Total Mercury	40 mL clear glass (pre-preserved)	N					
4	Nutrients	120 mL plastic (p preserved)						
5	Ammonia	40 mL glass via (pre-preserved)						
6	Routine	1000 mL plastic						
1	TSS/Turb/pH	1000 mL plastic						
	al Informa odor if applicab	ation					/REP2, Filter Blank Jes during sampling event, follow-up	action

			Snow	<u>Sampling F</u>	ield Sheet			
								/I-177-0312
\rea			000			Revision		
	ctive Dat		6-Mar-2012			Ву:	<u>D. D</u>	oul
as	K:	<u>S</u>	now Sampl	ing Field Sh		D	4	of 3
						Page: Page 3 for R	evision Tra	of 3 cking Only not for Print
	ERAL		C ( 1)					1011 1
								4:00): <u>144 S</u>
AMI	PLED BY: _	RIPP	<u>L</u>	TYPE OF SA	AMPLE: Dust	Water	r Quality [	QAQC: DVPL/ DW 8/or Lake
PS	COORDINA	TES (UTM)	: 5244	KS_E	7155094	N	zone)	2W
ESC	CRIPTION: C	istance to	Diavik2_	_km & Direction		0	n: Land	&/or Lake
	ATE CONDI					,		
ir To	emp: <u>~ 구 /</u>	_'C V	Vind Direction:		Vind Speed:	<u> </u>	s.	
ust	in Area: Vis	sible 🗍	Not (Visible	1	Cloud Cover: (	0% / 10% / 2	5% (50%)	75% / 100%
	pitation: Ra							ked ☑ Wet ☐ Dry ☐
-		Depth	Length	Weight of	Weight of	Water	Dunt	Comments
	Core	of	of Snow	Tube	Empty	Content-	Dust Present	(core weighed, bag a changes in snow
?	Number	Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Yes/No	condition)
Dust Co	I	i (Cilli)	1 1141111	SAAC (CIIII)				
	1		1			10	Y (N)	1, 3,300
st Core	2	40	28	49	39 39		Y (N) Y (N)	
et Cores	100 100 100 100		1	49		10	Y N Y N	
et Cores	2	40 39	28	49	39 39	10	YN	
et Cores	2	40 39	28 28 48	49	39 39 34	9 14	Y N Y N Y N	
et Corac	2	40 39	28 28 48	49 48 53	39 39 34	9 14	Y N Y N Y N	
et Cores	2 3 4	40 39 48	2 % 2 % 4 % Dust (Min.	49 48 53 of 3 cores – To	39 39 34	10 9 14 tent SWE =/	Y N Y N Y N > 25)	
et Cores	2 3 4	40 39 48 50 50	2 % 2 % 4 % Dust (Min.	49 48 53 of 3 cores - To	39 39 34 otal Water Con 38 34	10 9 14 tent SWE =1	Y N Y N Y N > 25)	
Corps	2 3 4	40 39 48	2 8 2 8 4 8 Dust (Min.	49 53 of 3 cores - To	39 39 34 otal Water Cont 38 39	9 14 tent SWE =1	Y N Y N Y N > 25) Y N Y N	
Corps	2 3 4	40 39 48 50 50	2 8 2 8 4 8 Dust (Min. 49 49 49 49	49 53 of 3 cores - To 55 55	39 39 34 otal Water Con 38 34	19 14 tent SWE =1	Y N Y N Y N > 25) Y N Y N	
Cores	2 3 4	5° 5° 5° 5°	2 8 2 8 4 8 Dust (Min.	49 53 of 3 cores - To 55 55 55	39 39 34 otal Water Con 38 39 39 38	10 9 14 tent SWE =1 16 16	Y N Y N Y N Y N Y N Y N Y N Y N	
Cores	2 3 4	50 50 50	2 8 2 8 4 8 Dust (Min.) 49 49 49 48	49 53 of 3 cores - To 55 55 55 55	39 39 34 otal Water Con 38 39 39 39	10 9 14 tent SWE =1 16 16	Y N Y N Y N Y N Y N Y N Y N Y N	
Cores	2 3 4 1 2 3 4 5 6 7	50 50 50 50 50 50	28 28 48 98 0000 (Min.) 49 49 49 49 49 50 49	49 48 53 of 3 cores - To 55 55 55 55 55 55 55 55	39 39 34 otal Water Con 38 39 39 38	10 9 14 tent SWE =1 16 16	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	
Cores	2 3 4 1 2 3 4 5 6 7	50 50 50 50 50 50 50	28 28 48 98 Dust (Min.) 49 49 49 49	49 48 53 of 3 cores - To 55 55 55 55 55 55	39 39 39 38 39 39 38 38	10 9 14 tent SWE =1 16 16	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	
st Cores Water Quality Cores	2 3 4 1 2 3 4 5 6 7 8 9	50 50 50 50 50 50 50 50 49	28 28 48 49 49 49 49 50 49 48 47	49 48 53 of 3 cores - To 55 55 55 55 55 55 55 55	39 39 34 34 39 39 38 38 38	10 9 14 tent SWE =1 16 16 16 17 17	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	
Cores	2 3 4 1 2 3 4 5 6 7 8 9 10	50 50 50 50 50 50 50 50 50 50 50 50	28 28 48 98 0000 (Min.) 49 49 49 49 49 50 49	49 48 53 of 3 cores - To 55 55 55 55 55 55 55 55 55 55 55	39 39 34 otal Water Con 38 39 39 38 38 38 38	10 9 14 tent SWE =1 15 16 16 17 17 17	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	
Cores	2 3 4 1 2 3 4 5 6 7 8 9	50 50 50 50 50 50 50 50 50 50 50 50 49 48	28 28 48 49 49 49 49 49 49 49 49 49 49	49 48 53 of 3 cores - To 55 55 55 55 55 55 55 55	39 39 34 34 39 39 38 38 38 38 38 38	10 9 14 15 16 16 17 17 17 15 16 17	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	

Document # ENVI-134-0112 R6 Effective Date 01-January-2012

Area: Effect Task:	tive Date:	8000 26-Mar-20 Snow Sar		eld She	et	Ву:		R9 D. D		
	To 1 4					Page Page		of 3 ng Only not for Prin		
Dust :	Sample Fi	Iters			Tota	il Volume	e of Melted	d Snow:	1130	(
Filter		ht of Filter (mg)	Filter + R		Resid	due Wei	ight	C	Commen	ts
1	i	3,5	132.		8	,7				- 65
2										
3										
4 Tota	-12 (2.2)				0	0		118.18	A STATE OF THE STA	Trainid m
10ta	als 123,	2	132.2		8.	†				2
Water	r Quality B	ottles			Tota	ıl Volume	e of Meltec		2020 + 1	
	=A 11	Bottle	Triple	Sample Type *	Sample Type *	Sample Type *		Samp	le Comment h # for QAQ	s
Filling Order	Analysis	Туре	Rinse	DUPW	Туре	Туре	Location	ion prese	rved if not in changes	
1	Metals Total	60 mL Falcon Tube (x2)	<b>(</b> T)	Ø						
2	Metals Dissolved	60 mL Falcon Tube (x2)	Ŷ	⊠′						
3	Total Mercury	40 mL clear glass (pre-preserved)	N							
4	Nutrients	120 mL plastic (propreserved)	re- N	₽ ₽				8 6	<i>;</i>	
5	Ammonia	40 mL glass vial (pre-preserved)		Ø						
6	Routine	1000 mL plastic	000	Ø				Ş		
7	TSS/Turb/pH	1000 mL plastic	6	Ø						
	Perchlorete	: 60ヘレ plusts *Sample Type: GV	DI IDW/1/DI	UPW2 FBW	V TRW F	:D/V( BEb.	4/DED2 Filt	Blank		
color, o		ation ble: (equipment issu	ues, safety con	ncems, wear	ather proble				event, follow	⊬up action
, leck	odly buss i	nto 1 before pe	owing into	willes						

			<u>Snow</u>	<u>Sampling F</u>	ield Sheet					
						No:	EΝ\	/I-177-0312		
Area	a:	80	00			Revision	: R9			
Effe	ctive Dat		-Mar-2012			Ву:	D. C	Oul		
Tas	k:	Sn	ow Sampli	ow Sampling Field Sheet						
							1 evision Tra	of 3 cking Only not for Print		
GENI	ERAL									
LOC	ATION NAME	:_551-4	1-5	DATE (yyyy-mr	nm-dd): <u>206</u>	21-04-10	TIME (2	4:00):		
SAMI	PLED BY:	BP PL		TYPE OF SA	AMPLE: Dust	Water	· Quality [	A QAQC: DUP		
GPS	COORDINAT	ES (UTM):	5 34485	E	7155094	N (	zone)	12		
DESC	CRIPTION: D	istance to D	liavik	_km & Direction	5	0	n: Land	&/or Lake		
CLIM	ATE CONDIT	<u>IONS</u>								
Air Te	emp: <u>-21</u>	c wi	nd Direction:	<u>N</u> v	Vind Speed:	<u>8</u> .kt	s.			
	in Area: Vis pitation: Rai		Not Visible X ow /N/A		Cloud Cover: ( Snow Conditio	0% / 10% / 2! n: Crystallize	5% / (50%) / ed ☐ Paci	/ 75% / 100% ked ☑ Wet ☐ Dry ☐		
Dust	Core Number	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Weight of Empty Tube-SWE (cm)	Water Content- SWE (cm)	Dust Present Yes/No	Comments (core weighed, bag a changes in snow condition)		
	1	1					ΥN			
Cor	-						Y N			

Dust	Core Number	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Weight of Empty Tube-SWE (cm)	Water Content- SWE (cm)	Dust Present Yes/No	Comments (core weighed, bag #, changes in snow condition)
	1						YN	
Cores	2						YN	
(n	3	_				The second line of the second li	Y N	
	4						YN	
			Dust (Min.	of 3 cores – To	tal Water Con	tent SWE =/:	> 25)	
	1	50	49	55	38	17	Y N	
	2	49	48	54	39	15	YN	
	3	48	47	54	38	16	YW	
€	4	50	49	55	38	17	YN	
ate	5	44	48	54	38	16	YN	
Ď	6	48	47	53	38	15	YN	
Water Quality Cores	7	49	48	54	38	16	Y W	
Co	8	· · · · · ·					YN	
res	9						ΥN	
	10						YN	
	11						YN	
	12						ΥN	

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

	tive Date:	8000 26-Mar-20			_	No:	vision:	ENVI-177-0312 R9 D. Dul
Task:		Snow Sam	pling Fie	eld Sher	et		principal W	
	- 122					Page Page	Je: e 3 for Rev	2 of 3 rision Tracking Only not for Pr
Dust	Sample Fil	iters			Tota	il Volume	of Meltec	d Snow:
Filte		ht of Filter F (mg)	ter Filter + Residue (mg)		Resid	due Wei	ight	Comments
1					,			
2								
3								
4 Tota								
Totals								TO BE TO A SHEW YOUR DESIGNATION OF THE PERSON OF THE PERS
Water	r Quality B	ottles		71.31	Tota	ıl Volume	of Melter	d Snow: <u>1950 + 1425</u> 3375
Filling Order		Bottle Type	Triple Rinse	Sample Type *	Type *	Sample Type *	,	Sample Comments  DI Batch # for QAQC, ion preserved if not in field, label changes
1	Metals Total	60 mL Falcon Tube (x2)	Ý	Ø				Charges
2	Metals Dissolved	60 mL Falcon Tube (x2)	<b>(</b> )	Ø				
3	Total Mercury	40 mL clear glass (pre-preserved)	N					=
4	Nutrients	120 mL plastic (pre- preserved)	N	Ø				
5	Ammonia	40 mL glass vial (pre-preserved)	N					
6	Routine	1000 mL plastic	0	Ø				
7	TSS/Turb/pH	1000 mL plastic	0	Ø				The state of the s
	Perchloride	*Sample Type: GW,	ni ieW1/Di	IDIA/2 FBI	ATRW. E	PW REP	·/PEP2. Fill	or Plank
	al Informa	ation		ncems, wea				sampling event, follow-up action
e color, o	odor if applicat	ole: (equipment issues	outling					

			Snow	Sampling F	ield Sheet			
Are: Effe Tas	ctive Dat	e: <u>2</u>	000 6-Mar-2012	ing Field Sh		No: Revision By:		/I-177-0312 rul
ı as	n.	3	now Sampi	ing rield on		Page:	1	of 3
GENI LOC	ERAL ATION NAME	: <u> </u>	1-5	DATE (yyyy-mr	mm-dd): <u>20</u>			4:00): 1842
SAM	PLED BY:	RA P		TYPE OF SA	AMPLE: Dust	Water	Quality [	DAQC:
3PS DESC	COORDINAT	ES (UTM)	: <u>5331</u> Diavik_4	EE	715629	0	zone)	2 W 2 &/or Lake X
Air T		c ∧			Vind Speed:	v		FER 11008
Preci	ipitation: Rai	n / Mist / S	Not Visible Now / N/A		Snow Conditio	n: Crystallize	ed D Pack	ted ☑ Wet ☐ Dry ☐
D.	Core Number	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Weight of Empty Tube-SWE (cm)	Water Content- SWE (cm)	Dust Present Yes/No	Comments (core weighed, bag changes in snow condition)
ķ							Y (N)	
ist C	1	44	50	\$5	39	16	-	
st Cores	2	44	30	57	39 38	19	YN	
st Cores						19	-	
ıst Cores	2	49	44	57	38		YN	
ıst Cores	2	49	44	57	39	19	Y N Y N	
Dust Cores	2	49	44	57 57	39	19	Y N Y N	

	1	49	49	57	39	14	Y	N	
İ	2	48	40	53	39	14	Y	N	
Ì	3	50	44	53	39	16	Y	N	
≨ │	4	48	40	54	39	15	Y	N	
ater	5	49	49	57	39	14	Y	N	
Water Quality	6	49	42	55	34	16	Y	N	
	7	50	43	55	38	17	Y	N	
g	8						Y	N	
Cores	9						Y	N	
Ì	10						Y	N	
Ì	11	1					Y	N	
Ì	12			<del>                                     </del>			Y	N	

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Enecu Task:	ive Date:	26-Mar-20 Snow Sar		eld She	et	Ву:		D. Du	
						Pag Page	ge: e 3 for Rev	2 islon Track	Of 3 king Only not for P
Dust S	Sample Fil	iters			Tota	l Volume	of Melted	I Snow:_	1645
Filter		(mg)	Filter + R (mg		Resid	due Wei	ight	Co	mments
1		.0	121.3			3.3			
3							_	2	
4									
Total	ls 118.0		121.3		3,3	3		AP WE	
Nater	Quality B	ottles							Commania
Filling Analysis Order		Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *		DI Batch i on preserve	Comments # for QAQC, ed if not in field, labe anges
1	Metals Total	60 mL Falcon Tube (x2)	Y						
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y						
3	Total Mercury	40 mL clear glass (pre-preserved)	N						
4	Nutrients	120 mL plastic (pre preserved)	re- N						
5	Ammonia	40 mL glass vial (pre-preserved)	N						
6	Routine	1000 mL plastic	Y						
7	TSS/Turb/pH	1000 mL plastic	Y						
		*Sample Type: GV	W, DUPW1/DI	UPW2, FBV	V, TBW, E	.BW, REP1	I/REP2, Filti	er Blank	
	I Information if applicable	ation  ble: (equipment issue	eafety co	ncems, wes	ther probl	ame chan	aes during s	emnling ey	ent follow-up action
COIO, CC	Of it approve	ie. (equipmen	ies, saidty co.	ICENTION THE	titer press	Alla, Grang	Jes com.,5	dinpers -	CILL TORON UP U.S.

" 			- Cnow	Campling E	iold Chook			
			Snow	Sampling F				
Area	<b>.</b> .	80	00			No: Revision		<u>/I-177-0312</u>
	a. ective Dat		-Mar-2012	)		Revision By:	i: <u>R9</u> D. D	l
Tas				ling Field Sh		Dy.	<u>D.</u> D	,ui
							1	
						Page 3 for R	evision Trac	king Only not for Print
	ERAL	- 5(2-	,					
								4:00): 12 10
SAMI	PLED BY: <u>/</u>	VLBP P	<u>L</u>	TYPE OF S/	AMPLE: Dust	Water	r Quality	QAQC:
		" (1944)	52756	1 - 7	153471	75	. /	211
GPS	COORDINA	res (utm):	( <u>)</u>	<u> </u>	100171	N (	zone)/	24/ 8/or Lake
DESC	RIPTION: D	istance to D	iiavik <u>( /</u>	_ km & Direction		o	n: Land [_	_ &/or Lake L△I
CLIM	ATE CONDI	TIONS		. A				
Air T	emp: <u>-23</u>	_c wi	nd Direction:	NA V	Vind Speed:	kt	s.	
Duet	In Area: Vis	ible	Not Visible 🔯	71 (	Cloud Cover: (	104 / 1004 / 20	E9/ 1 <b>5</b> 09/)1	750/ / 1000/
Preci	in Alea. Vis ipitation: Rai	in / Mist / Sn	ow/ N/A					ked Wet Dry
	Promote				••••	,	3 <b>44</b> . 22.	
		Depth	Length	Weight of	Weight of	Water		Comments
	Core	Depth of	Length of Snow	Weight of Tube	Weight of Empty	Water Content-	Dust	Comments (core weighed, bag #
		of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	Content- SWE	Dust Present Yes/No	
Dust	Core Number	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content-	Present Yes/No	(core weighed, bag # changes in snow
Dust	Core Number	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weighed, bag # changes in snow
	Core Number	of Snow (cm)	of Snow Core (cm) 29	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weighed, bag # changes in snow
Dust	Core Number	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y N Y N	(core weighed, bag # changes in snow
Dust	Core Number	of Snow (cm)	of Snow Core (cm) 29	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weighed, bag # changes in snow
Dust	Core Number	of Snow (cm) 533 50	of Snow Core (cm) 2.9 51 L[4] Dust (Min.	Tube & Core- SWE (cm)	Empty Tube-SWE (cm) 38 39 otal Water Cont	Content- SWE (cm)	Present Yes/No N Y N Y N Y N	(core weighed, bag # changes in snow
Dust	Core Number  1 2 3 4	of Snow (cm)	of Snow Core (cm) 29 51 LIU Dust (Min.	Tube & Core- SWE (cm) 49 56 52 of 3 cores – To	Empty Tube-SWE (cm) 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N > 25)	(core weighed, bag # changes in snow
Dust	Core Number  1 2 3 4	of Snow (cm) 533 50	of Snow Core (cm) 2.9 51 L[4] Dust (Min.	Tube & Core- SWE (cm) 49 56 52 of 3 cores – To	Empty Tube-SWE (cm) 38 39 otal Water Cont	Content- SWE (cm)	Present Yes/No N Y N Y N Y N	(core weighed, bag # changes in snow
Dust	Core Number  1 2 3 4	of Snow (cm)	of Snow Core (cm) 29 51 LIU Dust (Min.	Tube & Core- SWE (cm) 49 56 52	Empty Tube-SWE (cm) 38 39	Content- SWE (cm)	Present Yes/No Y N Y N Y N > 25)	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4	of Snow (cm)	of Snow Core (cm) 29 51 44 Dust (Min.	Tube & Core- SWE (cm) 49 56 52 of 3 cores – To	Empty Tube-SWE (cm) 38 39 otal Water Con	Content- SWE (cm)	Present Yes/No N Y N Y N Y N > 25)	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4	of Snow (cm) (cm) 53 50 49 49	of Snow Core (cm) 29 51 LIU Dust (Min.	Tube & Core- SWE (cm) 49 56 52 of 3 cores – To	Empty Tube-SWE (cm) 38 39 otal Water Cont 39 39 39	Content- SWE (cm)	Present Yes/No N Y N Y N Y N > 25) Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4	of Snow (cm) (cm) 53 53 50 48 49	of Snow Core (cm) 29 51 44 Dust (Min.	Tube & Core- SWE (cm) 49 56 52 of 3 cores – To	Empty Tube-SWE (cm) 38 39 39 39 39 39	Content- SWE (cm)	Present Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4  1 2 3 4 5	of snow (cm) 53 53 50 49 49 49	of Snow Core (cm) 29 51 44 Dust (Min. 43 44 48 45	Tube & Core- SWE (cm) 49 56 52 of 3 cores – To	Empty Tube-SWE (cm) 38 39 stal Water Cont 39 39 39 39 39	Content- SWE (cm) 11 18 13 14 16 13	Present Yes/No N N Y N Y N Y N > 25) Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4  1 2 3 4  5 6 7	of snow (cm) 53 53 50 49 49 50	of Snow Core (cm) 29 51 44 Dust (Min. 43 44 46 45 44	Tube & Core- SWE (cm) 49 56 51 51 54 51 51	Empty Tube-SWE (cm) 38 39 stal Water Cons 39 39 39 39 39	Content- SWE (cm)	Present Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4  1 2 3 4 5 6 7 8	of snow (cm) 53 53 50 49 49 49	of Snow Core (cm) 29 51 44 Dust (Min. 43 44 48 45	Tube & Core- SWE (cm) 49 56 52 of 3 cores – To	Empty Tube-SWE (cm) 38 39 stal Water Cont 39 39 39 39 39	Content- SWE (cm) 11 18 13 14 16 13	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Dust	Core Number  1 2 3 4  1 2 3 4 5 6 7 8 9	of snow (cm) 53 53 50 49 49 49	of Snow Core (cm) 29 51 44 Dust (Min. 43 44 46 45 44	Tube & Core- SWE (cm) 49 56 51 51 54 51 51	Empty Tube-SWE (cm) 38 39 stal Water Cons 39 39 39 39 39	Content- SWE (cm) 11 18 13 14 16 13	Present Yes/No N N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4  1 2 3 4 5 6 7 8	of snow (cm) 53 53 50 49 49 49	of Snow Core (cm) 29 51 44 Dust (Min. 43 44 46 45 44	Tube & Core- SWE (cm) 49 56 51 51 54 51 51	Empty Tube-SWE (cm) 38 39 stal Water Cons 39 39 39 39 39	Content- SWE (cm) 11 18 13 14 16 13	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow

Water Quality (Min. of 3 cores - Total Water Content SWE =/> 100)

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Area:

Task:

**Effective Date:** 

**Dust Sample Filters** 

Document #: ENVI-134-0112 R6

Effective Date: 01-January-2012

Filte	3.	ht of Filter F (mg)	ilter + F (m	Residue a)	Resid	due Weig (mg)	ght Comments
1	114.		7.5	9/	7.		
2	,,,,		no 1		1.0		M-18 82%
3							
4							
Tota	ds 114,4		22.1		7	7	
Vater	Quality B	Ottles Bottle Type	Triple Rinse	Sample Type*	Tota Sample Type *	Sample Type *	Sample Comments  Di Batch # for QAQC,  Location preserved if not in field, laber
1	Metals Total	60 mL Falcon Tube (x2)	Υ	Ø			
2	Metals Dissolved	60 mL Falcon Tube (x2)	Υ	9			
3	Total Mercury	40 mL clear glass (pre-preserved)	N	Ø			
4	Nutrients	120 mL plastic (pre- preserved)	N	V			
5	Ammonia	40 mL glass vial (pre-preserved)	N	Ø			
6	Routine	1000 mL plastic	Y				· · · · · · · · · · · · · · · · · · ·
7	T\$S/Turb/pH	1000 mL plastic	Y	<b>☑</b>		o.	
	Perehlurite	*Sample Type: GW		UPW2, FBV	V, TBW, E	BW, REP1/I	REP2, Filter Blank
tiona	al Informa				. 46		es during sampling event, follow-up action

**Snow Sampling Field Sheet** 

8000

26-Mar-2012

**Snow Sampling Field Sheet** 

No:

By:

Revision:

Total Volume of Melted Snow: 1185

ENVI-177-0312

R9

D. Dul

This is not a controlled document when printed 10.2 Forms-2012 Active Forms

Page: 2 of 3
Page 3 for Revision Tracking Only not for Print

			Snow	Sampling F	ield Sheet			
Are: Effe	ctive Dat	te: 26	000 i-Mar-2012				: <u>R9</u>	/I-177-0312 Oul
						Page:	1	of 3
GEN	ERAL							
LOC	ATION NAM	e: <u>552-</u>	2	DATE (yyyy-mi	mm-dd): <u>2 º2</u>	1-04-09	TIME (2	4:00): 1251
SAM	PLED BY: _	NGBP.	PL	TYPE OF SA	AMPLE: Dust	Water	r Quality	QAQC:
								2 W 2 &/or Lake
DES	CRIPTION: D	istance to E	Diavik <u>/</u>	_ km & Direction	4/	0	n: Land 🗌	&/or Lake
Air T		sible	Not Yisible 🗵		Cloud Cover: (	0% / 10% / 2	5% /50% /	75% / 100% ked
		Depth	Length	Weight of	Weight of	Water	Dust	Comments
	Core	of	of Snow	Tube	Empty	Content-		(core weighed, bag #,
Dus	Number	Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present Yes/No	changes in snow condition)
Dust Co	Number 1				Tube-SWE	SWE	Y (N)	changes in snow
Dust Cores		(cm)	(cm)	SWE (cm)	Tube-SWE (cm)	SWE (cm)	Y (N)	changes in snow
Dust Cores	1	(cm)	(cm) 34 26	SWE (cm) 49	Tube-SWE (cm)	SWE (cm)	Y (N)	changes in snow
Dust Cores	1 2	(cm) 3443	(cm)	SWE (cm) 49 46	Tube-SWE (cm)	SWE (cm)	Y (N)	changes in snow
Dust Cores	1 2 3	(cm) 3/40	(cm) 34 26 37	SWE (cm) 49 46	Tube-SWE (cm) 39 39 39	SWE (cm) /O 7	Y (N) Y (N) Y (N) Y (N) Y (N) Y (N)	changes in snow
Dust Cores	1 2 3	(cm) 3/40	(cm) 34 26 37 Dust (Min.	SWE (cm) 49 46 50 of 3 cores - To	Tube-SWE (cm) 39 39 39 otal Water Cont	SWE (cm) /O / 7	Y (N)	changes in snow
Dust Cores	1 2 3 4	(cm) 3/45 38 39	(cm) 34 26 37  Dust (Min.) 44 34	SWE (cm) 49 46 5 0  of 3 cores – To	Tube-SWE (cm) 39 39 39 stal Water Cont	SWE (cm)	Y (N)	changes in snow
Dust Cores	1 2 3 4	(cm) 3/45 38 39	(cm) 34 26 37  Dust (Min. 44 34	SWE (cm) 49 46 50 of 3 cores - To 58 48	Tube-SWE (cm) 39 39 39 stal Water Cont	SWE (cm)   /O	Y (N)	changes in snow
	1 2 3 4	(cm) 3/45 38 39	(cm) 34 26 37  Dust (Min. 44 34	SWE (cm) 49 46 50 of 3 cores - To 58 48	Tube-SWE (cm) 39 39 39 31  otal Water Cont 39 39	SWE (cm) /O / 7	Y (N)	changes in snow
	1 2 3 4	(cm) 3/45 38 39 39 30 37	(cm) 34 26 37 Dust (Min. 44 34 34	SWE (cm) 49 46 50 of 3 cores - To 58 48 48 48 50	Tube-SWE (cm) 39 39 39 31  otal Water Cont 39 39	SWE (cm)   /O	Y (N)	changes in snow
	1 2 3 4 1 2 3 4	(cm) 3/45 38 39 39 30 37 37	(cm) 34 26 37  Dust (Min. 44 34 34 35	SWE (cm) 49 46 50 of 3 cores - To 58 48 48 48 50	Tube-SWE (cm) 39 39 39 39 39 39 39 39 39	SWE (cm)   /O	Y (N)	changes in snow
	1 2 3 4 5 5	(cm) 3/45 38 39 39 30 37 37	(cm) 34 26 37  Dust (Min.) 44 34 34 35	SWE (cm) 49 46 50 of 3 cores - To 58 48 48 50 49	Tube-SWE (cm) 39 39 39 39 39 39 39 39 39	SWE (cm)   10   7   11   1   10   10   10   10	Y (N)	changes in snow
	1 2 3 4 5 6	(cm) 3/45 38 39 39 30 37 37	(cm) 34 26 37  Dust (Min.) 44 34 34 35	SWE (cm) 49 46 50 of 3 cores - To 58 48 48 48 50	Tube-SWE (cm) 39 39 39 39 39 39 39 39 39	SWE (cm) // // // // // // // // // // // // //	Y (N)	changes in snow
	1 2 3 4 5 6 7	(cm) 345 38 39 39 37 37 39 39	(cm) 34 26 37 Dust (Min. 44 34 34	SWE (cm) 49 46 50 of 3 cores - To 58 48 48 50 49 51	Tube-SWE (cm) 39 39 39 39 39 39 39 39 39	SWE (cm)   10   7   11   1   10   10   10   10	Y (N)	changes in snow
	1 2 3 4 5 6 7 8	(cm) 3/45 38 39 39 30 37 37	(cm) 34 26 37  Dust (Min. 44 34 34 35 37 38	SWE (cm) 49 46 50 of 3 cores - To 58 48 48 50 49	Tube-SWE (cm)  39  39  39  btal Water Conf  39  39  39  39  39	SWE (cm) //O // // // // // // // // // // // //	Y (N)	changes in snow
Dust Cores Water Quality Cores	1 2 3 4 1 2 3 4 5 6 7 8	(cm) 345 38 39 39 37 37 39 39	(cm) 34 26 37  Dust (Min. 44 34 34 35 37 38	SWE (cm) 49 46 50 of 3 cores - To 58 48 48 50 49 51	Tube-SWE (cm) 39 39 39 39 39 39 39 39 39	SWE (cm) //O // // // // // // // // // // // //	Y (N)	changes in snow

Area: Effecti Task:	tive Date:		2012 Impling Fie	eld She	et m	Ву:	vision: :	R9 D. Dul
iisi'			leve '			Pag Page	ge: e 3 for Rev	2 of 3 Islan Tracking Only not for Pr
Oust \$	Sample Fi	ilters			Tota	l Volume	of Melter	d Snow: 895 (
Filter	r# Weiç	ght of Filter (mg)	Filter + R		Resid	due We (mg)	ight	Comments
1	119		122.9	<i>&gt;</i>	9	1 .		
2	Posts							2
3 4							-	
Tota	als 119,8	× I	122.2		2	.4	ATTAIL E	
Nater	r Quality E	T	Tall	Sample	Sample	Sample		d Snow: 3140 1980 Sample Comments
Filling Order	Analysis	Bottle Type	Triple Rinse	Type *	Туре *	Type *		DI Batch # for QAQC, ion preserved if not in field, label changes
1	Metals Total	60 mL Falcon Tube (x2)	Y	Ø				
2	Metals Dissolved	60 mt. Falcon Tube (x2)	Y	Ø				
3	Total Mercury	40 mL clear glass (pre-preserved)	N	Ø				
4	Nutrients	120 mL plastic (p preserved)	pre- N	<b>3</b>				
5	Ammonia	40 mL glass via (pre-preserved)		0				
6	Routine	1000 mL plastic						- V
7	TSS/Turb/pH	1 1000 mL plastic	ic Y					4-76-87
		*Sample Type: G	SW, DUPW1/D	UPW2, FBV	N, TBW, E	BW, REP	1/REP2, Fill	er Blank
color, o		able: (equipment iss					iges during	sampling event, follow-up action
hlica 15 co	ollected.	into one pr	not to ola	cont 7	to bot	tlos		

		<del>-</del>	Snow S	Sampling F	ield Sheet			
						No:		I-177-0312
\rea		800				Revision:		1
	tive Date	e: <u>26-</u>	Mar-2012	E: 1101		Ву:	D. D	ul
ask	:	Sno	w Samplii	ng Field She		Danet	1	of 3
			<u> </u>			Page: Page 3 for Re		king Only not for Print
ENE	RAL	5(7.3	2 -		107	10429	TIME /0/	1234
								1:00): <i>1334</i>
								QAQC:
PS (	COORDINAT	ES (UTM): _	5384	82 <u> </u>	7153937	N (	zone)	8/or Lake X
ESC	RIPTION: Di	istance to Di	avik	km & Direction	_6/	Oi	n: Land	&/or Lake
LIM	ATE CONDIT	TONS		WW w		5		
ir Te	mp: <u>3</u>	_'C Wir	nd Direction:	// W V	/ind Speed:	kts	5.	(0
			lot V <u>isible</u>		Cloud Cover: 0			
reci	p <b>itation:</b> Rai	n / Mist / Sno	ow /(N/A)		Snow Conditio	n: Crystallize	ed XI Pack	ked Wet Dry
		Depth	Length	Weight of	Weight of	Water		Comments
	Core	of	of Snow	Tube	Empty	Content-	Dust Present	(core weighed, bag #,
0	Number	Snow	Core	& Core-	Tube-SWE	SWE	Yes/No	changes in snow condition)
ust		(cm)	(cm)	SWE (cm)	(cm)	(cm)	Y (N)	
Dust Cores	1	145	38	23	50	14	Y (0)	
res	2	45	39	53	38	114	Y (N)	
•	3	45	40	51	38	13		
	. · · 4	,					YN	
			Dust (Min.	of 3 cores - To		tent SWE =/		
		-						
	1	45	40	52	38	14	YW	<u> </u>
	2	45	45	55	38	17	YN	W
	2	45	45	55 55 50	38	17		1.50
_		45-45	45	55	39	17	YN	1.50
Wate	73	45	45 49 1	55 50 56	38	17	YN	1.50
Water Qu	73	45 46 50 50	45 33 49 48 44	55 50 56 53	39	17 11 18 17 111	Y N Y N Y N Y N	1.50
Water Quality	2 (3 4	45 46 50 50	45 33 49 48 44 51		39 39 39 39	17	Y N Y N Y N	J. 30 3
Water Quality Co	2 (3 4 5 6	45 46 50 50	45 45 49 49 49 50		39 39 39 39	17	Y N Y N Y N Y N	J. 50 30 3
Water Quality Cores	2 (3 4 5 6 7	50 50 50 50 53 53	45 33 44 48 44 51	53 55 56	38 39 39 39 39 39	17 *114	Y N Y N Y N Y N Y N Y N	1.50
Water Quality Cores	2 (3 4 5 6 7 8	45 46 50 50	45 45 48 44 51 50 46 49		39 39 39 39	17 州14 16 17	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	1.50
Water Quality Cores	2 (3 4 5 6 7 8 9	50 50 50 50 53 53	45 33 48 44 51 50 46	53 55 56 55	39 39 39 39 39 39	17 州14 16 17	Y N Y N Y N Y N Y N Y N Y N Y N	J. 50 30 1
Water Quality Cores	2 (3 4 5 6 7 8 9	50 50 50 50 53 53	45 33 48 44 51 50 46 49	53 55 56 55	38 39 39 39 39 39 39 39	17 16 17 16 15	Y N Y N Y N Y N Y N Y N Y N Y N	J. 50 30 30 30 30 30 30 30 30 30 30 30 30 30
Water Quality Cores	2 (3 4 5 6 7 8 9	50 50 50 50 53 53 54 54 52 48	45 33 48 44 51 50 46 49 49 49	53 55 56 55	39 39 39 39 39 39 39 39 39	17 16 17 16 15 16 19	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	1.50

Area: Effec Task	tive Date:	8000 26-Mar-2 Snow Sa		ield She	eet	Ву	vision:	ENVI-177-0312 R9 D. Dul
110	<u></u> _	_ 1				Pag Pag	ge: e 3 for Revi	2 of 3 sion Tracking Only not for
Dust	Sample F	ilters			Tota	ıl Volume	of Melted	Snow: 1210
Filte	er# Weig	ht of Filter (mg)	Filter + I		Resi	due We (mg)	ight	Comments
1	133		125.1	<u> </u>	2.			
2								
3								
4 Tota	als 122.	7	12:5.1	-N-0-24	2	.4		
Nate	r Quality E						of Melted	Snow: 3 8 70
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *		Sample Comments  DI Batch # for QAQC,  n preserved if not in field, lat
1	Metals Total	60 mL Falcon Tube (x2)	Y	□ □				changes
2 ~	Metals Dissolved	60 ml. Falcon Tube (x2)	Y	ď				
3	Total Mercury	40 mL clear glass (pre-preserved)	N	·				
4	Nutrients	120 mL plastic (pre preserved)	N	e e				
5	Ammonia	40 mL glass vial (pre-preserved)	N					
6	Routine	1000 mL plastic	Y	8				
7	TSS/Turb/pH	1000 mL plastic	Y	Q <sup>*</sup>				
		*Sample Type: GV	, DUPW1/DI	UPW2, FBW	/, TBW, EB	3W, REP1/	REP2, Filter	Blank
color, o							es during sa	mpling event, follow-up actio

			Snow	Sampling F	<u>Field Sheet</u>			
Are Eff∈ Tas	ective Dat	e: <u>26</u>	000 i-Mar-2012	2 ling Field Sh	eet	No: Revision By:	-	/I-177-0312 Oul
uo	•	<u> </u>	iou oampi	mig i loid on		Page:	1	of 3 cking Only not for Print
	ERAL		. \ \ \					- 10
OC.	ATION NAMI	≣: <u>S <i>S2</i>~</u>	4-4	DATE (yyyy-mi	mm-dd): <u>२०२</u>	1-04-04	TIME (2	4:00):
AM	PLED BY: _	Na BP	PL	TYPE OF S	AMPLE: Dust	Water	r Quality [	Z QAQC: DUPU
PS	COORDINA	res (utm):	53915	SO E	7154676	N	zone)	2 &/or Lake
ES	CRIPTION: D	istance to D	Diavik	km & Direction	SW		n: Land	&/or Lake
	IATE CONDI			_			المراب	
ir T	emp: -23	C M	nd Direction	: www v	Vind Speed:	, kt	s.	
								(
	in Area: Vis		Not Visible		Cloud Cover: (		~	75% / 100%   ked
rec	ipitation: Ra	IR / IVIIST / SI	low/ N/A	•	Snow Conditio	in: Crystallize	Pack	ked   Wet   Dry
		Depth	Length	Weight of	Weight of	Water	11	Comments
	Core	of	Length of Snow	Tube	Weight of Empty	Content-	Dust Present	Comments (core weighed, bag
	Core Number	of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	Content- SWE	Dust Present Yes/No	
		of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content-	Present	(core weighed, bag changes in snow
Dust Core	Number	of Snow	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE	Present Yes/No	(core weighed, bag changes in snow
Dust Cores	Number 1	of Snow (cm)	of Snow Core (cm) 57	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE	Present Yes/No	(core weighed, bag changes in snow
Dist Cores	Number 1 2	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE	Present Yes/No Y N	(core weighed, bag changes in snow
Dust Cores	Number  1 2 3	of Snow (cm)	of Snow Core (cm) 57 57	Tube & Core- SWE (cm)	Empty Tube-SWE (cm) 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N	(core weighed, bag changes in snow
Diist Cores	Number  1 2 3	of Snow (cm)	of Snow Core (cm) 57 57	Tube & Core- SWE (cm) 5 3 5 4 5 8	Empty Tube-SWE (cm) 38	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag changes in snow
Dust Cores	1 2 3 4	of Snow (cm)	of Snow Core (cm) 57 57	Tube & Core- SWE (cm) 5 3 5 4 5 8	Empty Tube-SWE (cm) 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N	(core weighed, bag changes in snow
Dust Cores	Number  1 2 3	of Snow (cm)	of Snow Core (cm) 57 57	Tube & Core- SWE (cm) 5 3 5 4 5 8	Empty Tube-SWE (cm) 38	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag changes in snow
	1 2 3 4	of Snow (cm)	of Snow Core (cm) 57 57	Tube & Core- SWE (cm) 5 3 5 4 5 8	Empty Tube-SWE (cm) 38	tent SWE =/	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag changes in snow
	1 2 3 4	of Snow (cm)	of Snow Core (cm) 57 57	Tube & Core- \$WE (cm)  53  54  57  of 3 cores - To	Empty Tube-SWE (cm) 38	tent SWE =/	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag changes in snow
	Number  1 2 3 4	of Snow (cm)	of Snow Core (cm) 57 57 57 Dust (Min. 58 57	Tube & Core- \$WE (cm)  53  54  58  of 3 cores - To	Empty Tube-SWE (cm) 38	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag changes in snow
	Number  1 2 3 4	of Snow (cm)	of Snow Core (cm) 57 57 57 Dust (Min. 58 57 56	Tube & Core- \$WE (cm)  53 54 58  of 3 cores - To 59 58 58	Empty Tube-SWE (cm) 38 39 otal Water Con 39 39 37	Content- SWE (cm) 15	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag changes in snow
	Number  1 2 3 4  1 2 5 7 4 8 5	of Snow (cm) 57 57 54	of Snow Core (cm) 57 57 57 Dust (Min. 58 37 -56 56	Tube & Core- \$WE (cm)  53  54  58  of 3 cores - To  59  58  58  58	Empty Tube-SWE (cm) 38 39 otal Water Con 39 39 37	Content- SWE (cm) 15	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag changes in snow
	Number  1 2 3 4  2 5 7 7 8 5 9 6	of Snow (cm) 57 57 54	of Snow Core (cm) 57 57 57 Dust (Min. 58 37 -56 56	Tube & Core- \$WE (cm)  53  54  58  of 3 cores - To  59  58  58  58	Empty Tube-SWE (cm) 38 39 otal Water Con 39 39 37	Content- SWE (cm) 15	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag changes in snow
	Number  1 2 3 4 4 5 5 7 7 8 5 9 10	of Snow (cm) 57 57 54 57 57 57 57	of Snow Core (cm) 57 57 57 Dust (Min. 58 37 -56 56	Tube & Core- \$WE (cm)  53  54  58  of 3 cores - To  59  58  58  58	Empty Tube-SWE (cm) 38 39 otal Water Con 39 39 37	Content- SWE (cm) 15	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag changes in snow
Dust Cores Water Quality Cores	Number  1 2 3 4  2 5 7 7 8 5 9 6	of Snow (cm) 57 57 54 57 57 57 57	of Snow Core (cm) 57 57 57 Dust (Min. 58 37 -56 56	Tube & Core- \$WE (cm)  53  54  58  of 3 cores - To  59  58  58  58	Empty Tube-SWE (cm) 38 39 otal Water Con 39 39 37	Content- SWE (cm) 15	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag changes in snow

	tive Date:	8000 26-Mar-20		11000		No: Revi By:	ision:	R9 D. D	/I-177-03 <sup>-</sup>	12
Task:		Snow Sam	pling ris	eld Sned	et	Pag	e: 3 for Rev	2 Islon Trac	Of cking Only no	3 ot for Prin
Dust :	Sample Fil	Iters			Total				1830	(n
Filte		ht of Filter F (mg)	Filter + R (mg			lue Weig (mg)	ght	C	omments	
1	174		33.5	2/	9.					
3										
4					<u> </u>		_			
Tota	als 124,3	3	33.5		9.1					
Water	r Quality B	iottles				l Volume	of Meltec		3405	05
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Location	DI Batch on preserv	e Comments h # for QAQC, ved if not in fie hanges	
1	Metals Total	60 mL Falcon Tube (x2)	Y	□ □						
2	Metals Dissolved	60 mL Falcon Tube (x2)	Υ	Q						
		-	-	-1						
3	Total Mercury	40 mL clear glass (pre-preserved)	N	. 🗹						
3		(pre-preserved)  120 mL plastic (pre-preserved)		Z Z						
	Mercury	(pre-preserved) 120 mL plastic (pre-			$\vdash$				7.00	
4	Mercury Nutrients	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial	- N	₩						
4 5	Mercury  Nutrients  Ammonia	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial (pre-preserved)  1000 mL plastic	N N							
4 5 6 7	Mercury Nutrients Ammonia Routine TSS/Turb/pH	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial (pre-preserved)  1000 mL plastic  1000 mL plastic  *Sample Type: GW	N N Y Y Y DUPW1/D	U U U U U U U U U U U U U U U U U U U	D D	BW, REP1/			event, follow-u	p actions

Document #: ENVI-134-0112 R6 Effective Date: 01-January-2012

		•	<u>Snow</u>	Sampling F	ield Sheet			
						No:	ENV	′I-177-0312
Area	a:	80	000			Revision	: R9	
Effe	ctive Dat		6-Mar-2012			By:	D. D	ul
Tas	k:	Sr	now Sampl	ing Field Sh	eet			
						Page:	1 evision Trad	of 3
SENE	ERAL							
.oc/	ATION NAME	≕ <u>279</u> -	4-7	DATE (yyyy-mi	mm-dd): <u>→0</u>	1-04-0°	TIME (24	4:00): 440
SAMI	PLED BY: 👃	JGBP F	L	TYPE OF S	AMPLE: Dust	<b>✓</b> Water	· Quality	QAQC: Durt Dup
							-	
GPS	COORDINA	res (utm):	72120	E 7	12408-1	N (	zone) <u></u>   라	- <del>-</del> -
ESC	CRIPTION: D	istance to [	Diavik_3	_ km & Direction	1 <u>2m</u>	0	n: Land	&/or Lake
		4.4.4.4.						
\ir To	2.6- ame	'C W	ind Direction:	· NW ·	Vind Speed:	5 kt	s.	
	in Area: Vis pitation: Ra		Not Visible Z		Cloud Cover: Snow Condition			75% 100% xed
Dust Cores	Core Number	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Weight of Empty Tube-SWE (cm)	Water Content- SWE (cm)	Dust Present Yes/No	Comments (core weighed, bag a changes in snow condition)
Č.	1	58	58	59	39	20	Y (N)	
ore	2	57	57	59	39	70	YNY	
Ü	3	57	56	58	39	19	YO	
	4						YN	
			Dust (Min.	of 3 cores – To	otal Water Con	tent SWE =/	> 25)	and the state of t
	1						YN	
			I.					

	1			Y	N	
	2			Y	N	
	3			Y	N	
8	4			Y	N	
Water	5		/	Y	N	
ည်	6			Y	N	
Quality	7			Y	N	
00	8			Y	, N	
Cores	9			Y	N	
	10			Y	N	
	11			Y	N	
	12			Y	N	

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

		5110	w Samp	<u>ming Fie</u>	<u>alu She</u>	eer No:		ENIV	/I-177-0:	212
Area:		8000					rision:	R9	/ I= 1 / / -U-	312
	ive Date:	26-Mar-20	12			By:		D. D	ul	
Task:		Snow San		eld She	et					
			TE I			Pag	je:	2	of	3
						Page	3 for Revi	sion Trac	cking Only	not for Pri
Dust S	Sample Fil	Iters			Total	l Volume	of Melted	Snow:	28 FI	(
Filte		ht of Filter (mg)	Filter + R (mg		Resid	due Wei (mg)	ight	С	omment	s
1	116.	7 1	15.4		9:	3		10.00		
2										
3										
4										
Tota	1s 116.7	Agr The	125.9	, 11	9	.3	30			White V
Water	Quality B	ottles			Tota	ıl Volume	of Melted	i Snow:	178	9(
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Locatio	DI Batch on presen	e Comments  1 # for QAQ  ved if not in	<u>C</u> ,
1	Metals Total	60 mL Falcon Tube (x2)	Υ					Cl	hanges	
2	Metals Dissolved	60 ml. Falcon Tube (x2)	Y							
3	Total Mercury	40 mL clear glass (pre-preserved)	N							
4	Nutrients	120 mL plastic (pre preserved)	- N					- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		
5	Ammonia	40 mL glass vial (pre-preserved)	N							
6	Routine	1000 mL plastic	Y							
7	TSS/Turb/pH	1000 mL plastic	Y							
		*Sample Type: GV	/, DUPW1/DI	UPW2, FBV	V, TBW, E	BW, REP1	/REP2, Filte	er Blank		
tions	ıl Informa	otion								
		atiOII ble: (equipment Issue	es, safety cor	ncems, wea	ther proble	ems, chanç	jes during s	ampling e	event, follow	-up actions
ole be	ع مودی اد	aked into 3r	d bag co	(trub						
	<b></b>		_							

			Spow '	Campling F	Sald Shoot				
			SHOW	Sampling F			END	" 477 O	
Area	•	80	000			No:		/i-1 / / -U.	312
1	a: ective Date		iuu i-Mar-2012			Revision By:	: <u>K9</u> D. D	hil	
Tasl				ng Field Sh		Бy.		'ui	
-			on carry	<u> </u>		Page:	1	of	3
						Page 3 for Re			
	ERAL	662	11					./ .	2
				DATE (yyyy-mn					
SAMI	PLED BY: _	3P PL		TYPE OF SA	AMPLE: Dust	<b>∀</b> Water	r Quality	DAQC	: NA_
							_	_	
GPS (	COORDINAT	'ES (UTM):	536 54	Km & Direction	CCCKI	N (	(zone) <u>/ _</u>	24	
DESC	CRIPTION: D	istance to D	)iavik	_km & Direction		0	n: Land	&/or La	ke 🚺
CLIM	ATE CONDIT	LIONS							
Air T	omn 2-0	.c Mi	ind Direction:	E W	find Speed:	4	_		
		_0	Nu pheoder	1/	diilu opeee.	, 10.15	Si .		
Dust							$\circ$		
			Not Visible.	) (	Cloud Cover: 0	0% / 10% / 25	5% / 50% /	75% / 100	%
	in Area: Visi Ipitation: Rai		Not Visible.	) (		0% / 10% / 25	5% / 50% /	75% / 100 ked 🔯 We	% t 🔲 Dry 🔲
			Not Visible.	) (	Cloud Cover: 0 Snow Conditio	0% / 10% / 25	5% / 50% /	75% / 100 ked 🏹 We	% t 🏻 Dry 🗖
	Ipitation: Rai	n / Mist / Sn Depth	Not Visible Downow / Not Visible Downow / Not Visible Downow / Not Visible Downow Down	Weight of	Cloud Cover: 0 Snow Conditio Weight of	0% / 10% / 25 n: Crystallize	5% / 50% / ed A Paci	ked 🗐 We	t Dry Dry mments
Preci	ipitation: Rai	n / Mist / Sn Depth of	Not Visible Down / INFA	Weight of Tube	Cloud Cover: 0 Snow Conditio Weight of Empty	0% / 10% / 25 n: Crystallize Water Content-	Dust Present	Ked 🔯 We	mments
Preci	Ipitation: Rai	Depth of Snow	Not Visible Dow / NA  Length of Snow Core	Weight of Tube & Core-	Cloud Cover: 0 Snow Conditio Weight of Empty Tube-SWE	Water Content- SWE	5% / 50% / ed A Pac	Core we chang	t Dry Dry mments
Preci	ipitation: Rai	Depth of Snow (cm)	Not Visible Down / INFA	Weight of Tube	Cloud Cover: 0 Snow Conditio Weight of Empty Tube-SWE (cm)	Water Content- SWE (cm)	Dust Present	Core we chang	mments eighed, bag # ges in snow
Preci	Core Number	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Weight of Empty Tube-SWE (cm)	Water Content- SWE (cm)	Dust Present Yes/No	Core we chang	mments eighed, bag # ges in snow
	Core Number	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Cloud Cover: 0 Snow Conditio  Weight of Empty Tube-SWE (cm)	Water Content- SWE (cm)	Dust Present Yes/No	Core we chang	mments eighed, bag # ges in snow
Preci	Core Number  1 2	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Weight of Empty Tube-SWE (cm)	Water Content- SWE (cm)	Dust Present Yes/No Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci	Core Number	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm) SS	Weight of Empty Tube-SWE (cm)	Water Content- SWE (cm)	Dust Present Yes/No Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci	Core Number  1 2 3 4	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm) SS SS SS of 3 cores – To	Weight of Empty Tube-SWE (cm) 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci	Core Number  1 2 3 4	Depth of Snow (cm) 44 47	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm) SS SS SS of 3 cores – To	Weight of Empty Tube-SWE (cm) 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci	Core Number  1 2 3 4	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm) SS SS SS of 3 cores – To	Weight of Empty Tube-SWE (cm) 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci	Core Number  1 2 3 4	Depth of Snow (cm) 44 47	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm) SS SS SS of 3 cores – To	Weight of Empty Tube-SWE (cm) 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci Dust Cores	Core Number  1 2 3 4	Depth of Snow (cm) 44 47	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm) SS SS SS of 3 cores – To	Weight of Empty Tube-SWE (cm) 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci Dust Cores	Core Number  1 2 3 4	Depth of Snow (cm) 44 47 47	Length of Snow Core (cm)  47  Use (Min. 47)  47  47	Weight of Tube & Core- SWE (cm) SS SS of 3 cores - To SS SS SS	Weight of Empty Tube-SWE (cm) 38 38  Stal Water Cont 38 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci Dust Cores	Core Number  1 2 3 4	Depth of Snow (cm) 44 49 49 49 49 48 44	Length of Snow Core (cm)  47  Use (Min. 47)  47  47  47  47	Weight of Tube & Core- SWE (cm) SSS SSS SSSSSSSSSSSSSSSSSSSSSSSSSSSS	Weight of Empty Tube-SWE (cm) 38 38  otal Water Cont 38 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci Dust Cores	Core Number  1 2 3 4  1 2 3 4  5 6	Depth of Snow (cm) 44 47 47	Length of Snow Core (cm)  47  Use (Min. 47)  47  47	Weight of Tube & Core- SWE (cm) SS SS of 3 cores - To SS SS SS	Weight of Empty Tube-SWE (cm) 38 38  Stal Water Cont 38 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci Dust Cores	Core Number  1 2 3 4 5 6 7	Depth of Snow (cm) 44 49 49 49 49 48 44	Length of Snow Core (cm)  47  Use (Min. 47)  47  47  47  47	Weight of Tube & Core- SWE (cm) SSS SSS SSSSSSSSSSSSSSSSSSSSSSSSSSSS	Weight of Empty Tube-SWE (cm) 38 38  otal Water Cont 38 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow
Preci Dust Cores	Core Number  1 2 3 4 5 6 7 8	Depth of Snow (cm) 44 49 49 49 49 48 44	Length of Snow Core (cm)  47  Use (Min. 47)  47  47  47  47	Weight of Tube & Core- SWE (cm) SSS SSS SSSSSSSSSSSSSSSSSSSSSSSSSSSS	Weight of Empty Tube-SWE (cm) 38 38  otal Water Cont 38 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments ighed, bag # jes in snow
Preci	Core Number  1 2 3 4  1 2 3 4  5 6 7 8 9	Depth of Snow (cm) 44 49 49 49 49 48 44	Length of Snow Core (cm)  47  Use (Min. 47)  47  47  47  47	Weight of Tube & Core- SWE (cm) SSS SSS SSSSSSSSSSSSSSSSSSSSSSSSSSSS	Weight of Empty Tube-SWE (cm) 38 38  otal Water Cont 38 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments ighed, bag # jes in snow
Preci Dust Cores	Core Number  1 2 3 4 5 6 7 8	Depth of Snow (cm) 44 49 49 49 49 48 44	Length of Snow Core (cm)  47  Use (Min. 47)  47  47  47  47	Weight of Tube & Core- SWE (cm) SSS SSS SSSSSSSSSSSSSSSSSSSSSSSSSSSS	Weight of Empty Tube-SWE (cm) 38 38  otal Water Cont 38 38	Water Content-SWE (cm)	Dust Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Core we chang	mments eighed, bag # ges in snow

Water Quality (Min. of 3 cores - Total Water Content SWE =/> 100)

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Area: Effect Task:	ive Date:	8000 26-Mar-20 Snow Sam		ld She	et	Ву:	hác"	R9 D. I	Oul of	3
						Page Page	ge: e 3 for Revi			_
		ters			Total	l Volume	of Melted	Snow	: <u>)480</u>	)
Filte		ht of Filter F (mg)	Filter + Re		Resid	due Wei (mg)	ight	(	Comme	nts
.1	123.		147.9			24.6	į,			
2				- 100						2010-1
3										
4 Tota	120									
Tota	is 123	.2	147.9			24.6				
Totals 123  Nater Quality B		ottles			Tota	l Volume	of Melted	l Snow		
Filling Order			Triple Rinse	Total Volume of Melte  Sample Sample Type* Type*			DI Bate on prese			
Oruei				GM		<del>                                     </del>			changes	
1	Metals Total	60 mL Falcon Tube (x2)	(¥)	□ □Z/						
2 ~	Metals Dissolved	60 mL Falcon Tube (x2)	Ŷ	Q						
3	Total Mercury	40 mL clear glass (pre-preserved)	N	☑						
4	Nutrients	120 mL plastic (pre- preserved)	N	□ ✓						
5	Ammonia	40 mL glass vial (pre-preserved)	N	Ø					350	N1484 P
6	Routine	1000 mL plastic	Ŷ							
7	TSS/Turb/pH	1000 mL plastic	Ŷ	□ ✓						
		*Sample Type: GW					MED2 Filts	Olank		
	5 Ammonia 40 mL (pre-p 6 Routine 1000 i 7 TSS/Turb/pH 1000 i									ow-up actio

			Snow	Sampling F				
A		9.0	.00					VI-177-0312
Are	a: ective Dat		00 -Mar-2012	1	**	Revision By:	i: <u>R9</u> D.	
Tas				ing Field Sh		Бy.	<u>D.</u>	Dui
"		<u> </u>	iow oumpi	ing riola on		Page:	1	of 3
						Page 3 for R		acking Only not for Print
GEN	ERAL	- < 7	_<			1		13/4
LOC	ATION NAME	<u> </u>		DATE (yyyy-mi	mm-dd): <u>202</u>	1-04-11	TIME (	24:00): 13/8
SAM	PLED BY: _	BP P		TYPE OF SA	AMPLE: Dust	Water	r Quality	QAQC:
GPS	COORDINAT	TES (UTM):	53762	- <u>5</u> <u>e 7</u>	150811	N (	zone)	2W &/or Lake 🔀
DESC	CRIPTION: D	istance to (	Diavik	_ km & Direction	<u> 55/</u>	0	n: Land [	&/or Lake
CLIM	ATE CONDI	TIONS						
			ind Direction:	SE V	Vind Speed:	<u> </u>	s.	
Dust	in Area: Vis	ible 🗌	Not Visible	1	Cloud Cover: (	0% / 10% / 2	5% / 50%	(75%)/ 100%
	ipitation: Rai				Snow Conditio	n: Crystallize	ed 🔀 Pa	cked Wet Dry D
								/
	,							1
		Depth	Length	Weight of	Weight of	Water	l	Comments
	Core	of	of Snow	Tube	Empty	Content-	Dust	Comments (core weighed, bag #,
Du	Core Number	of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	Content- SWE	Dust Presen Yes/No	(core weighed, bag #,
Dust (	1	of	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Presen	(core weighed, bag #, changes in snow
Dust Core	Number 1	of Snow (cm)	of Snow Core	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Presen Yes/No	(core weighed, bag #, changes in snow
Dust Cores	Number  1 2	of Snow (cm) 45	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Presen Yes/No Y N	(core weighed, bag #, changes in snow
Dust Cores	Number  1 2 3	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Presen Yes/No Y N Y N	(core weighed, bag #, changes in snow
Dust Cores	Number  1 2	of Snow (cm) 45	of Snow Core (cm) 38 45	Tube & Core- SWE (cm) S / S 4	Empty Tube-SWE (cm)	Content- SWE (cm)	Presen Yes/No Y N Y N Y N	(core weighed, bag #, changes in snow
Dust Cores	Number  1 2 3	of Snow (cm) 45	of Snow Core (cm) 38 45 47 Dust (Min.	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Presen Yes/No Y N Y N Y N	(core weighed, bag #, changes in snow
Dust Cores	Number  1 2 3 4	of Snow (cm) 45	of Snow Core (cm) 38 45 47  Dust (Min.	Tube & Core- SWE (cm) S / S 4 of 3 cores – To	Empty Tube-SWE (cm)	Content- SWE (cm)	Presen Yes/No Y N Y N Y N > 25)	(core weighed, bag #, changes in snow
Dust Cores	1 2 3 4 1 2 1 2 1 2	of Snow (cm) 45 46 47	of Snow Core (cm) 38 45 47 Dust (Min.	Tube & Core- SWE (cm) S/ S4 54 of 3 cores – To	Empty Tube-SWE (cm)	Content- SWE (cm)	Presen Yes/No Y N Y N Y N Y N > 25) Y N	(core weighed, bag #, changes in snow
Dust Cores	Number  1 2 3 4	of Snow (cm) 45 46	of Snow Core (cm) 38 45 47  Dust (Min.	Tube & Core- SWE (cm) 3 / 5 4 of 3 cores - To & 3 5 3	Empty Tube-SWE (cm) 36 38  otal Water Cont 38	Content- SWE (cm)	Presen Yes/No Y N Y N Y N > 25)	(core weighed, bag #, changes in snow
	1 2 3 4 1 2 1 2 1 2	of Snow (cm) 45 46 47	of Snow Core (cm) 38 45 47 Dust (Min.	Tube & Core- SWE (cm) S/ S4 54 of 3 cores – To	Empty Tube-SWE (cm) 36 38  otal Water Cont 38	Content- SWE (cm) 13 16 16 16 tent SWE =1	Presen Yes/No Y N Y N Y N Y N > 25) Y N	(core weighed, bag #, changes in snow
	1 2 3 4 1 2 3 3	of Snow (cm) 45 46 47 47	of Snow Core (cm) 38 45 47  Dust (Min.	Tube & Core- SWE (cm) 3 / 5 4 of 3 cores - To & 3 5 3	Empty Tube-SWE (cm) 36 38  otal Water Cont 38	Content- SWE (cm) 13 16 16 16 tent SWE =1	Presen Yes/No Y N Y N Y N Y N > 25) Y N	(core weighed, bag #, changes in snow
	Number  1 2 3 4	of Snow (cm) 45 46 47 47 50	of Snow Core (cm) 38 45 47  Dust (Min. 46 46 49 50	Tube & Core- \$WE (cm)  \$ /  \$ 4  of 3 cores - To  \$ 3  \$ 5 3  \$ 5 5  \$ 5 5	Empty Tube-SWE (cm) 38 38  otal Water Cont 38 38 38 38	Content- SWE (cm) 13 16 16 16 tent SWE =1	Presen Yes/No Y N Y N Y N > 25) Y N Y N Y N	(core weighed, bag #, changes in snow
	1 2 3 4 5 5	of Snow (cm) 45 46 47 47 50 50 49	of Snow Core (cm) 38 45 47 Dust (Min. 46 46 49 50	Tube & Core- \$WE (cm)  \$ /   \$ 4   of 3 cores - To  \$ 3   \$ 5    \$ 5    \$ 4   \$ 5    \$	Empty Tube-SWE (cm) 38 38  otal Water Con 38 38 38 38	Content- SWE (cm) 13 16 16 16 15 15 17 17	Presen Yes/No Y N Y N Y N > 25) Y N Y N Y N	(core weighed, bag #, changes in snow
	1 2 3 4 5 6 7	of Snow (cm) 45 46 47 47 50	of Snow Core (cm) 38 45 47  Dust (Min. 46 46 49 50	Tube & Core- \$WE (cm)  \$ /  \$ 4  of 3 cores - To  \$ 3  \$ 5 3  \$ 5 5  \$ 5 5	Empty Tube-SWE (cm) 38 38  otal Water Cont 38 38 38 38	Content- SWE (cm) 13 16 16 16 tent SWE =1	Presen Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N	(core weighed, bag #, changes in snow
	1 2 3 4 5 6 7 8	of Snow (cm) 45 46 47 47 50 50 49	of Snow Core (cm) 38 45 47 Dust (Min. 46 46 49 50	Tube & Core- \$WE (cm)  \$ /   \$ 4   of 3 cores - To  \$ 3   \$ 5    \$ 5    \$ 4   \$ 5    \$	Empty Tube-SWE (cm) 38 38  otal Water Con 38 38 38 38	Content- SWE (cm) 13 16 16 16 15 15 17 17	Presen Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N	(core weighed, bag #, changes in snow
Dust Cores Water Quality Cores	1 2 3 4 5 6 7 8 9	of Snow (cm) 45 46 47 47 50 50 49	of Snow Core (cm) 38 45 47 Dust (Min. 46 46 49 50	Tube & Core- \$WE (cm)  \$ /   \$ 4   of 3 cores - To  \$ 3   \$ 5    \$ 5    \$ 4   \$ 5    \$	Empty Tube-SWE (cm) 38 38  otal Water Con 38 38 38 38	Content- SWE (cm) 13 16 16 16 15 15 17 17	Presen Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N Y N	(core weighed, bag #, changes in snow
	1 2 3 4 5 6 7 8 9 10	of Snow (cm) 45 46 47 47 50 50 49	of Snow Core (cm) 38 45 47 Dust (Min. 46 46 49 50	Tube & Core- \$WE (cm)  \$ /   \$ 4   of 3 cores - To  \$ 3   \$ 5    \$ 5    \$ 4   \$ 5    \$	Empty Tube-SWE (cm) 38 38  otal Water Con 38 38 38 38	Content- SWE (cm) 13 16 16 16 15 15 15 17 17 16	Presen Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag #, changes in snow
	1 2 3 4 5 6 7 8 9	of Snow (cm) 45 46 47 47 50 50 49	of Snow Core (cm) 38 45 47 Dust (Min. 46 46 49 50	Tube & Core- \$WE (cm)  \$ /   \$ 4   of 3 cores - To  \$ 3   \$ 5    \$ 5    \$ 4   \$ 5    \$	Empty Tube-SWE (cm) 38 38  otal Water Con 38 38 38 38	Content- SWE (cm) 13 16 16 16 15 15 15 17 17 16	Presen Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N Y N	(core weighed, bag #, changes in snow

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Area:		8000		=1			ision:	R9	/I-177-0	)312
Effect Task:	tive Date:	26-Mar-20 Snow Sam		old She	<u>~</u>	By:		<u>D. D</u>	)ul	
lask.		SHOW Sain	ipiniy r ic	HU Ones	કા	Pag	16;	2	of	3
						Page	3 for Rev			y not for Pris
Dust (	Sample Fil	Iters				ıl Volume	of Meltec	d Snow: 1330		
Filte		ht of Filter F (mg)	Filter + Ro		Resid	due Wei (mg)	ght	C	ommer	its
1	118.		146.2		27.9			33.	=550	
2					21.9					027
3				=					333	
4			en W							
Tota	als 118.	3	146.2			27.9				
Water	r Quality B				Tota	al Volume	of Melter			((
		Bottle	Bottle Triple Type			Sample Type *			le Commer h # for QA	
Filling Order	Analysis	Туре	Rinse	GW.	Type *	Туро	Locati	ion preser	rved If not i	in field, label
	Majala	Co -1 Eslan	a	/		+ - +			changes	
1	Metals Total	60 mL Falcon Tube (x2)	(4)							
2	Metals Dissolved	60 mL Falcon Tube (x2)	(2)	Ø						
3	Total Mercury	40 mL clear glass (pre-preserved)	N	Ð				77		
4	Nutrients	120 mL plastic (pre preserved)	e- N	Ø						0.18%
5	Ammonia	40 mL glass vial (pre-preserved)	N				W. 25			
6	Routine	1000 mL plastic	Ŷ	<b>⊿</b>						
7	TSS/Turb/pH	1000 mL plastic	(Ý)							
		*Sample Type: GW		UDAM ER	TRIAL F	TOWN DED1	webs Ell	Dlank		
	al Informa odor if applicab									w-up actions

Document #: ENVI-134-0112 R6 Effective Date: 01-January-2012

			Snow	Sampling F	ield Sheet				
						No:	ENV	/I-177-0312	
Are	a:	80	000			Revision			
Effe	ctive Dat		6-Mar-2012			Ву:	D. D	ul	
Γas	k:	S	now Sampl	ing Field Sh	eet				
						Page 3 for R	1 evision Trad	of cking Only not fo	3 r Print
SEN	ERAL							_	
.oc/	ATION NAME	<sub>E:</sub> _ 353	3-6	DATE (yyyy-mr	nm-dd):202	1-04-11	TIME (2	4:00): 1712	
A BAI	DI ED DV.	BP /	DZ	DATE (yyyy-mr	AMDIEL Dunk	- 18/ata	- O	71 0000 1	A
AIVII	PLED B1:	70//		ITPE UF 3/	AWIPLE: DUST	Water	Cuality \	J GAGC:	
SPS	COORDINA	TES (UTM)	: <u>53630</u>	77_ E_	715/560	N (	zone)	24	
)ES(	CRIPTION: D	istance to	Diavik	_ km & Direction		0	n: Land	&/or Lake	Z
	ATE CONDI							7	
			ind Direction:	E	Wind Speed:	4			
CH I	витр		ilia Direction.	12	villa Speea	, , , , , , , , , , , , , , , , , , ,	5.		
			Not Visible 🔯		Cloud Cover: (			and the second second	
Preci	pitation: Ra	in / Mist / S	now / (N/A)		Snow Conditio	n: Crystallize	ed 🔯 Pack	ked 🖾 Wet 🗌	Dry 🗌
			_						
		Depth	Length	Weight of		Water	Dust	Comme	
	Core	of	of Snow	Tube	Empty	Content-	Dust Present	(core weighe	d, bag #
Du	Core Number	of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	Content- SWE			d, bag # n snow
Dust C		of Snow (cm)	of Snow Core (cm)	Tube	Empty Tube-SWE (cm)	Content-	Present	(core weighe changes ir	d, bag # n snow
Dust Core	Number	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weighe changes ir	d, bag # n snow
Dust Cores	Number 1	of Snow (cm) 32	of Snow Core (cm) 3/	Tube & Core- SWE (cm) 50	Empty Tube-SWE (cm)	Content- SWE (cm) 12	Present Yes/No	(core weighe changes ir	d, bag # n snow
Dust Cores	Number 1 2	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y N	(core weighe changes ir	d, bag # n snow
Dust Cores	Number  1 2 3	of Snow (cm) 32	of Snow Core (cm) 3/ 3/	Tube & Core- SWE (cm) 50 50	Empty Tube-SWE (cm) 38	Content- SWE (cm) 12 12	Present Yes/No Y N Y N Y N	(core weighe changes ir	d, bag # n snow
Dust Cores	Number  1 2 3 4	of Snow (cm) 32 33	of Snow Core (cm) 3/ 3/	Tube & Core- SWE (cm)  50  50  50  of 3 cores - To	Empty Tube-SWE (cm) 38 38 38	Content- SWE (cm) 12 12 12 12	Present Yes/No Y N Y N Y N Y N	(core weighe changes ir	d, bag # n snow
Dust Cores	Number  1 2 3 4	of Snow (cm) 32 33 32	of Snow Core (cm) 3/ 3/ 30  Dust (Min.	Tube & Core- SWE (cm)  50  50  of 3 cores - To	Empty Tube-SWE (cm) 38 38 38 otal Water Con	Content- SWE (cm) 12 12 12 tent SWE =1	Present Yes/No Y N Y N Y N > 25)	(core weighe changes ir	d, bag # n snow
Dust Cores	1 2 3 4 1 2 2	of Snow (cm) 32 33 32 32	of Snow Core (cm) 3/ 3/ 30  Dust (Min.	Tube & Core- SWE (cm)  50  50  50  50  50  50  50  50	Empty Tube-SWE (cm) 38 38 38 otal Water Con 38	Content- SWE (cm) 12 12 12 12	Present Yes/No Y N Y N Y N > 25) Y N	(core weighe changes ir	d, bag # n snow
Dust Cores	1 2 3 4 1 2 3 3	of Snow (cm) 32 33 32 32	of Snow Core (cm) 3/3/30  Dust (Min. 31/34/34/34/	Tube & Core- SWE (cm)  50  50  of 3 cores - To	Empty Tube-SWE (cm) 38 38 38 otal Water Con 38	Content- SWE (cm) 12 12 12 tent SWE =1	Present Yes/No Y N Y N Y N > 25) Y N Y N	(core weighe changes ir	d, bag # n snow
	1 2 3 4 4	of Snow (cm) 32 33 32 32 35 35	of Snow Core (cm) 3/ 3/ 30  Dust (Min. 31/ 34/ 34/ 35	Tube & Core- SWE (cm)  50  50  50  50  49  49	Empty Tube-SWE (cm) 38 38 38 otal Water Con 38	Content- SWE (cm) 12 12 12 tent SWE =1	Present Yes/No Y N Y N Y N > 25) Y N Y N	(core weighe changes ir	d, bag # n snow
	1 2 3 4 5 5	of Snow (cm) 32 33 32 32 35 35 35	of Snow Core (cm) 3/3/30  Dust (Min. 31/34/35/35/30	Tube & Core- SWE (cm)  50  50  50  50  49  49  49	Empty Tube-SWE (cm) 38 38 38 otal Water Con 38 38 38 38	Content- SWE (cm) 12 12 12 tent SWE =1	Present Yes/No Y N Y N Y N > 25) Y N Y N Y N	(core weighe changes ir	d, bag # n snow
	1 2 3 4 4	of Snow (cm) 32 33 32 32 35 35	of Snow Core (cm) 3/ 3/ 30  Dust (Min. 31/ 34/ 34/ 35	Tube & Core- SWE (cm)  50  50  50  50  49  49	Empty Tube-SWE (cm) 38 38 38 38 38 38 38 38 38	Content- SWE (cm) 12 12 12 tent SWE =1	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighe changes ir	d, bag # n snow
	1 2 3 4 5 5	of Snow (cm) 32 33 32 32 35 35 35 35	of Snow Core (cm) 3/3/30  Dust (Min. 31/34/35/30/29	Tube & Core- SWE (cm)  50  50  50  50  49  49  49	Empty Tube-SWE (cm) 38 38 38 38 38 38 38 38 38 38 38	Content- SWE (cm) 12 12 12 tent SWE =1	Present Yes/No Y N Y N Y N > 25) Y N Y N Y N	(core weighe changes ir	d, bag # n snow
Dust Cores Water Quality Co	1 2 3 4 5 6	of Snow (cm) 32 33 32 32 35 35 35 35 37 37	of Snow Core (cm) 3/3/3/30  Dust (Min. 31/34/35/30/29/32_	Tube & Core- \$WE (cm)  50  50  50  of 3 cores - To  50  49  49  49  49	Empty Tube-SWE (cm) 38 38 38 38 38 38 38 38 38 38 38	Content- SWE (cm) 12 12 12 12 11 11 11 10	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighe changes ir	d, bag # n snow
	1 2 3 4 5 6 7	of Snow (cm) 32 33 32 32 35 35 35 37 32 32	of Snow Core (cm) 3/3/3/30  Dust (Min. 31/34/35/30/29/32/32/32/32/32/32/32/32/32/32/32/32/32/	Tube & Core- SWE (cm)  50  50  50  50  49  49  49  49  49  49	Empty Tube-SWE (cm) 38 38 38 38 38 38 38 38 38 38 38	Content- SWE (cm) 12 12 12 12 11 11 11 10 11	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighe changes ir	d, bag # n snow
Dust Cores Water Quality Cores	1 2 3 4 5 6 7 8	of Snow (cm) 32 33 32 32 35 35 35 35 37 37	of Snow Core (cm) 3/3/3/30  Dust (Min. 31/34/35/30/29/32_	Tube & Core- \$WE (cm)  50  50  50  0f 3 cores - To  50  49  49  49  49  49	Empty Tube-SWE (cm) 38 38 38 38 38 38 38 38 38	Content- SWE (cm) 12 12 12 12 11 11 11 10	Present Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N	(core weighe changes ir	d, bag # n snow

Water Quality (Min. of 3 cores - Total Water Content SWE =/> 100)

Task:		26-Mar-20 Snow San		eld She	et	By:	ge: 2 of 3	3
Dust :	Sample Fil	Iters			Tota		e 3 for Revision Tracking Only not for of Melted Snow: 050	
Filte	r# Weigh		Filter + R			due Wei (mg)		_
1	118.			179.0		60.5		
2	123.		185,0		-	61.2	Some veg on filter before a	ove
3					,			_
4 Tota	als 242	3	364.0	0		21.7		
Water	r Quality B						of Melted Snow:	
Filling	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Sample Comments <u>DI Batch # for QAQC</u> ,  Location preserved if not in field, la	
Order		, ,,,,		GW	<u> </u>	-	changes	_
1	Metals Total	60 mL Falcon Tube (x2)	(v)	M				
2	Metals Dissolved	60 mL Falcon Tube (x2)	Ŷ	Ø				
3	Total Mercury	40 mL clear glass (pre-preserved)	N	A				
4	Nutrients	120 mL plastic (pre preserved)	e- N	⋈				
5	Ammonia	40 mL glass vial (pre-preserved)	N	Ø				
6	Routine	1000 mL plastic	Ŷ	Ø				
7	TSS/Turb/pH	1000 mL plastic	0					
		*Sample Type: GV	N, DUPW1/DI	UPW2, FBV	V, TBW, E	BW, REP1	I/REP2, Filter Blank	
tions	al Informa	ation						
			es, safely cor	ncems, wea	ther proble	ems, chang	ges during sampling event, follow-up act	tio

			Snow	Sampling F	ield Sheet				
rea ffe	ctive Dat	e: <u>26</u>	000 i-Mar-2012	ing Field Sh		No: Revision By:	: ]		/I-177-0312 Oul
as	κ.	<u> </u>	iow campi	ing ricia on		Page:		1	of 3
ENIE	ERAL				· · · · · · · · · · · · · · · · · · ·	Page 3 for R	evisio	n Tra	cking Only not for Print
		- S53-	7-4	DATE (yyyy-mr	mm-dd)·202	1-04-11	TIR	/IF (2	4.001. 1638
N BJI I	el en ev.	RP PL		TYPE OF C	ABEDI E. Duct	ÌX1 144-4	- 0	124. F	QAQC: DUPU-
73413	PLED BY:_	DI I	(2) (1)	1175 UF 3/	AWPLE: DUST		r Qua	inty [	y uauc: 7 7
S	COORDINA	res (UTM):	336 340	E 7	15136-	N	zone		8/or Lake
SC	RIPTION: D	istance to [	Diavik_ <u>O</u>	_ km & Direction		c	n: La	nd _	&/or Lake
JM	ATE CONDI	TIONS							U
r To	emp: <u>-2.0</u>	_'c w	ind Direction:	E v	Vind Speed:	kt	s.		
ıst	in Area: Vis	ible 🗍 1	Not Visible 🖊	1 (	Cloud Cover: (	0% / 10% /6	5%/5	50% /	/ 75% / 100%
	pitation: Rai		470		Snow Conditio	n: Crystalliz		Pacl	ked 🖾 Wet 🗌 Dry 🔲
	0.000	Depth	Length	Weight of	Weight of	Water			Comments
1	Core Number	of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	Content- SWE	Pres Yes	sent	(core weighed, bag changes in snow condition)
		Snow (cm)	Core (cm)	& Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Pres	sent /No	(core weighed, bag changes in snow
	Number	Snow	Соге	& Core-	Empty Tube-SWE (cm)	Content- SWE	Pres Yes	No N	(core weighed, bag changes in snow
	Number 1	Snow (cm)	Core (cm)	& Core- SWE (cm) 5 > 5	Empty Tube-SWE (cm)	Content- SWE (cm)	Pres Yes	N N	(core weighed, bag changes in snow
	Number 1 2	Snow (cm) 33	Core (cm) 33	& Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Pres Yes Y	Sent /No N N	(core weighed, bag changes in snow
	Number  1 2 3	Snow (cm) 33	Core (cm) 33 49	& Core- SWE (cm) 5 > 5	Empty Tube-SWE (cm)	Content- SWE (cm)	Pres Yes Y Y Y	Sent /No N N	(core weighed, bag changes in snow
	Number  1 2 3	Snow (cm) 33	Core (cm) 33 49	& Core- SWE (cm) 5 3 5 5	Empty Tube-SWE (cm) 38 38 36 otal Water Cont	Content- SWE (cm)	Pres Yes Y Y Y	Sent /No N N	(core weighed, bag changes in snow
	Number  1 2 3 4	Snow (cm) 33 50 50	Core (cm)  33  49  S ~  Dust (Min.	& Core- SWE (cm) 5 5 5 5 5 5	Empty Tube-SWE (cm) 38 38 38  Otal Water Cont	Content- SWE (cm)	Pres Yes Y Y Y	N N N N	(core weighed, bag changes in snow
	Number  1 2 3 4	\$now (cm) 33 50 50	Core (cm) 33 49 5 ~  Dust (Min.	& Core- SWE (cm) 5 > 5 5 5 5 of 3 cores - To	Empty Tube-SWE (cm) 38 38 38 otal Water Conf	Content- SWE (cm)	Pres Yes Y Y Y Y Y > 25)	N N N N N	(core weighed, bag changes in snow
	1 2 3 4 1 2 2	\$now (cm) 33 50 50 50	Core (cm) 33 49 5 ~  Dust (Min. 49 49 49 49	& Core- SWE (cm) 5 = 5 5 5 5 5 5 of 3 cores - To	Empty Tube-SWE (cm) 38 38 38 38 38 38 38	Content- SWE (cm)	Pres Yes Y Y Y Y > 25) Y	sent /No	(core weighed, bag changes in snow
	1 2 3 4 5 5	\$now (cm) 33 50 50 50 51 50	Core (cm) 33 49 5 ~  Dust (Min. 49 49 49 49	& Core- SWE (cm) 5 = 5 5 5 5 5 5 of 3 cores - To	Empty Tube-SWE (cm) 38 38 38 otal Water Cont 38 38 38 38	Content- SWE (cm)	Pres Yes Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	No Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	(core weighed, bag changes in snow
	1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	\$now (cm) 33 50 50 50 50 50 50 50	Core (cm) 33 49 5 ~  Dust (Min.) 49 49 49 49 49 50	& Core- SWE (cm) 5 = 5 5 5 5 5 5 of 3 cores - To	Empty Tube-SWE (cm)  3 8  3 8  3 8  3 8  3 8  3 8	Content- SWE (cm)	Pres   Y   Y   Y   Y   Y   Y   Y   Y   Y	sent //No	(core weighed, bag changes in snow
	1 2 3 4 5 6 6 3 4	\$now (cm) 33 50 50 50 50 50 50 50	Core (cm) 33 49 5 ~  Dust (Min.) 49 49 49 49 49 50	& Core- SWE (cm) 5 = 5 5 5 5 5 5 of 3 cores - To	Empty Tube-SWE (cm)  3 8  3 8  3 8  3 8  3 8  3 8	Content- SWE (cm)  12  17  17  17  17  17	Pres Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	sent // 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(core weighed, bag changes in snow
	1 2 3 4 5 6 8 8	\$now (cm)  33  50  50  50  50  50  50  49	Core (cm) 33 49 50 Dust (Min. 49 49 49 49 48 50 51	& Core- SWE (cm) 5 = 5 5 5 5 5 5 of 3 cores - To 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Empty Tube-SWE (cm)  3 %  3 %  otal Water Con  3 %  3 %  3 %  3 %  3 %  3 %  3 %  3	Content- SWE (cm)  12  17  17  17  17  17	Pres Yes	sent //	(core weighed, bag changes in snow
	1 2 3 4 5 6 6 3 4	\$now (cm) 33 50 50 50 50 50 50 50 49 49	Core (cm) 33 49 50 Dust (Min. 49 49 49 49 48 50 51 47	& Core- SWE (cm) 5 = 5 5 5 5 5 5 of 3 cores - To 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Empty Tube-SWE (cm)  3 %  3 %  otal Water Con  3 %  3 %  3 %  3 %  3 %  3 %  3 %  3	Content- SWE (cm)  12  17  17  17  17  17  18  19	Pres Yes	sent // 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(core weighed, bag changes in snow
	1 2 3 4 5 6 8 8	\$now (cm)  33  50  50  50  50  50  50  49	Core (cm)  33  49  5 ~  Dust (Min.  49  49  49  49  49  48  50  51  47  48  53	& Core- SWE (cm) 5 = 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Empty Tube-SWE (cm)  3 %  3 %  otal Water Con  3 %  3 %  3 %  3 %  3 %  3 %  3 %  3	Content- SWE (cm)  12  17  17  17  17  17  18  19	Pres Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	sent	(core weighed, bag changes in snow
	1 2 3 4 5 6 6 8 9	\$now (cm) 33 50 50 50 50 50 50 50 49 49	Core (cm) 33 49 50 Dust (Min. 49 49 49 49 48 50 51 47	& Core- SWE (cm) 5 = 5 5 5 5 5 5 of 3 cores - To	Empty Tube-SWE (cm)  3 %  3 %  otal Water Con  3 %  3 %  3 %  3 %  3 %  3 %  3 %  3	Content- SWE (cm)  12  17  17  17  17  18  19  16  17	Pres Yes	sent // 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(core weighed, bag changes in snow

\*\* Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> - Wt. of Empty Tube<sub>SWE</sub> \*\*

Area: Effecti Task:	tive Date:	8000 26-Mar-20 Snow San		eld She	et	Revis By:		R9 D. Dul
14-	11/2					Page 3	for Revi	2 Of 3 sion Tracking Only not for P
Oust Sample File		iters			Tota	I Volume of	f Melted	Snow: 1380
Filter		ht of Filter (mg)	Filter + R (mg		Resid	due Weig! (mg)	ht	Comments
1	ווח.		146.			28.5		
2	117.	3	156.			39.4	Semi	n , more affel oven
3								
4 Total	0.71		7 47			4 0		
Tota	als 235	),	3 03.	0	-100-65	67.9		
Nater	r Quality B	ottles			Tota	il Volume o	f Melted	I Snow:
Filling Order	Analysis	Bottle Type	Triple Rinse	Triple Type * 1		Sample Sample Type * Type *		Sample Comments  DI Batch # for QAQC, on preserved if not in field, labe
	Metals	60 ml, Falcon		DUPI				changes
1	Total	Tube (x2)	Y	(E)				
2	Metals Dissolved	60 mL Falcon Tube (x2)	Υ	Q				173/2
3	Total Mercury	40 mL clear glass (pre-preserved)	N	N				
4	Nutrients	120 mL plastic (pre preserved)	e- N					
5	Ammonia	40 mL glass vial (pre-preserved)	N					
6	Routine	1000 mL plastic	Y	D				
7	TSS/Turb/pH	1000 mL plastic	Υ					¥1
-		*Sample Type: GW	4/ DLIDIA/1/D				CD? Fills	- Plank
	al Informa odor if applicab	ation						ampling event, follow-up action
			es, safety cor	ncems, wea	ther proble	ems, changes	s during sa	ampling event, follow-up

Area:  Effective Date:  Task:  Snow Sampling Fi  GENERAL  LOCATION NAME: 533-7-5  DATE ( SAMPLED BY: 30 PL  TYF  GPS COORDINATES (UTM): 536344  DESCRIPTION: Distance to Diavik 0 km &  CLIMATE CONDITIONS  Air Temp: -20 °C Wind Direction: E  Dust in Area: Visible Not Visible Precipitation: Rain / Mist / Snow / NA  Core of Snow Core & SW	/yyyy-mmm-dd): <u>200</u> PE OF SAMPLE: Dust E_7/5/36/5	No: Revision: By: Page: Page 3 for Revis  21-04-11 T  Water Qu	R9 D. Dul  1 Ion Trackli  IME (24:0	of 3 ng Only not for Print  0): 16:38  QAQC: DUP
Effective Date: 26-Mar-2012  Task: Snow Sampling Fi  GENERAL  LOCATION NAME: 553-7-5 DATE (  SAMPLED BY: 30 PL TYPE  GPS COORDINATES (UTM): 536344  DESCRIPTION: Distance to Diavik 0 km & CLIMATE CONDITIONS  Air Temp: -20 C Wind Direction: E  Dust in Area: Visible Not Visible Precipitation: Rain / Mist / Snow / NA  Core of Snow Core & SW	/yyyy-mmm-dd): <u>200</u> PE OF SAMPLE: Dust E_7/5/36/5	Revision: By: Page: Page 3 for Revis  21-04-11 T  Water QuN (zon	R9 D. Dul  1 Ion Trackli  IME (24:0	of 3 ng Only not for Print  0): 16:38  QAQC: DUP
Effective Date: 26-Mar-2012  Task: Snow Sampling Fi  GENERAL  LOCATION NAME: 553-7-5 DATE (  SAMPLED BY: 30 PL TYPE  GPS COORDINATES (UTM): 536344  DESCRIPTION: Distance to Diavik 0 km & CLIMATE CONDITIONS  Air Temp: -20 C Wind Direction: E  Dust in Area: Visible Not Visible Precipitation: Rain / Mist / Snow / NA  CORE Of Snow Core & Core SW	/yyyy-mmm-dd): <u>200</u> PE OF SAMPLE: Dust E_7/5/36/5	Page: Page 3 for Revis  21-04-11 T  Water QuN (zon	D. Dul	of 3 ng Only not for Print  0): 16:38  QAQC: DUP
Snow Sampling Fi  GENERAL  LOCATION NAME: 553-7-5 DATE (  SAMPLED BY: 60 PL TYF  GPS COORDINATES (UTM): 536344  DESCRIPTION: Distance to Diavik 0 km &  CLIMATE CONDITIONS  Air Temp: -20 'C Wind Direction: E  Dust in Area: Visible Not Visible Precipitation: Rain / Mist / Snow / NA  Core of Snow Core & Sw	/yyyy-mmm-dd): <u>200</u> PE OF SAMPLE: Dust E_7/5/36/5	Page:         Page 3 for Revis           21-04-11         T           Water Qu         N (zon	1 IME (24:0	of 3 ng Only not for Print  0): 16:38  QAQC: DUP
GENERAL  LOCATION NAME: 553-7-5 DATE (  SAMPLED BY: 30 PL TYPE  GPS COORDINATES (UTM): 536344  DESCRIPTION: Distance to Diavik 0 km & CLIMATE CONDITIONS  Air Temp: -20 C Wind Direction: E  Dust in Area: Visible Not Visible X  Precipitation: Rain / Mist / Snow / NA  Depth of Snow To Snow Core & SW  (cm) (cm) SW	/yyyy-mmm-dd): <u>200</u> PE OF SAMPLE: Dust E_7/5/36/5	Page 3 for Revis  21-0-1-1 T  Water Qu	IME (24:0	O): 16:38  QAQC: DUP
SAMPLED BY: SP PL TYPE  GPS COORDINATES (UTM): 536344  DESCRIPTION: Distance to Diavik O km & CLIMATE CONDITIONS  Air Temp: 20 'C Wind Direction: E  Dust in Area: Visible Not Visible Precipitation: Rain / Mist / Snow / NA  Depth Core of Snow To Snow Core & Core (cm) (cm) SW	PE OF SAMPLE: Dust	Page 3 for Revis  21-0-1-1 T  Water Qu	IME (24:0	O): 16:38  QAQC: DUP
SAMPLED BY: SP PL TYPE  GPS COORDINATES (UTM): 536344  DESCRIPTION: Distance to Diavik	PE OF SAMPLE: Dust	t Water Qu	ne) <u>12</u>	QAQC: DUP
SAMPLED BY: BO PL TYPE  GPS COORDINATES (UTM): 536344  DESCRIPTION: Distance to Diavik	PE OF SAMPLE: Dust	t Water Qu	ne) <u>12</u>	QAQC: DUP
SAMPLED BY: BO PL TYPE  GPS COORDINATES (UTM): 536344  DESCRIPTION: Distance to Diavik	PE OF SAMPLE: Dust	t Water Qu	ne) <u>12</u>	QAQC: DUP
GPS COORDINATES (UTM):536344  DESCRIPTION: Distance to Diavik0km & CLIMATE CONDITIONS  Air Temp:20 'C	_E_7151365	N (zon	1e) 12	Щ
DESCRIPTION: Distance to Diavik				
DESCRIPTION: Distance to Diavik				
CLIMATE CONDITIONS  Air Temp: -20 'C Wind Direction: E  Dust in Area: Visible Not Visible  Precipitation: Rain / Mist / Snow / NA  Depth Length of Snow Core Rough (cm) (cm) SW	Direction	On: L	and	&/or Lake 🔀
Air Temp:OC Wind Direction:E  Dust in Area: Visible				
Air Temp: -20 C Wind Direction: E  Dust in Area: Visible Not Visible Precipitation: Rain / Mist / Snow / NA  Depth Length of Snow Core Rome (cm) (cm) SW				
Precipitation: Rain / Mist / Snow / NA  Depth Core of of Snow To Snow (cm) (cm)  Dust in Area: Visible Not Visible X  Depth Length Wei of Snow Snow Core & Sw	Mind Coods	-И		
Precipitation: Rain / Mist / Snow / N/A  Depth Length Wei Of Snow Core (cm) (cm) SW	wing Speed; _	Kts.		
Depth Length Wei Core of of Snow To Number Snow Core & Come SW	Cloud Cover:	0% / 10% / 25% /	/ 50% / 75	i% / 100%
Core of of Snow To Number Snow Core & SW	Snow Condition	on: Crystallized	Packed	l ☑ Wet ☐ Dry ☐
Core of of Snow To Number Snow Core & SW				
Core of of Snow To Number Snow Core & SW	ght of Weight of	Water		Comments
ust (cm) (cm) sw	ube Empty	Content-	Oust (	core weighed, bag #
(cm) (cm) SW	Core- Tube-SWE		esent	-changes in snow
	E (cm) (cm)	(cm)		condition)
9		Y	N	
O 2		Y	N	0.1
3		Y	N	
4				

	4						Y	N	
			Dust (Min	. of 3 cores – T	otal Water Cont	ent SWE =	/> 25)		
	1	51	51	57	38	19	Υ	N	
l Here	2	49	47	54	38	16	Y	N	
	3 =	= 49 =	48	55	38	17	Y	N	
8	4	53	53	58	38	20	Y	N	
Water Quality Cores	5	51	પાલ	.55	38	17	Υ	N	7-
ق	6	50	48	54	38	16	Υ	Ŋ	
ality	7						Y	N	
ဂိ	8						Y	N	
гes	9		-				Y	N	annella mediti
	10						Y	N	
	11						Y	N	
	12						Y	N	*
		Wa	iter Quality (	Min. of 3 cores	– Total Water C	ontent SW	!E =/>	100)	

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Area: Effect Task:	tive Date:	8000 26-Mar-20 Snow Sam		eld She	 et	Ву:	vision:	R9 D. D		
						Pag Page	je: <u>a 3 for Rev</u>	2 vision Trad	Of icking Only	not for Pri
		Iters			Total Volume of Melted Snow:					
Filte		ht of Filter F (mg)	Filter + R (mg	200	Resid	due Wei (mg)	ight	С	commen	ts
1										
2										
3										
4 Tota	ala la									
10	IIS									
Water	r Quality B	ottles			Tota	ıl Volume	of Melter	d Snow:		(
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type •	Sample Type *	Locat	DI Batch tion presen	le Comment h # for QAQ rved if not in	<u>2C</u> ,
0,42.	22-4-1-			DUP2	<del></del>	<del>  _  </del>			changes	
1	Metals Total	60 mL Falcon Tube (x2)	<b>(Y</b> )							
2	Metals Dissolved	60 mL Falcon Tube (x2)	<b>(2)</b>	₩ W						
3	Total Mercury	40 mL clear glass (pre-preserved)	N							
4	Nutrients	120 mL plastic (pre- preserved)	N	□ □						
5	Ammonia	40 mL glass vial (pre-preserved)	N							
6	Routine	1000 mL plastic	Ŷ							
7	TSS/Turb/pH	1000 mL plastic	Y							
		*Sample Type: GW	J. DUPW1/D	UPW2, FBV	V. TBW, E	BW, REP1	/REP2, Fill	ter Blank		
	al Informa odor if applicab								event, follov	v-up action

			<u>Snow</u>	Sampling F	ield Sheet	أعبياها				
						No:	Е	NV	I-177-0	312
Are			000			Revision	ı: <u>F</u>	29		17.4
	ective Dat		-Mar-2012			Ву:		). D	ul	110111
Tas	k:	<u>Sr</u>	now Sampl	ing Field Sh	eet					
						Page:	1 evision	Trac	of	not for Print
GEN	ERAL					1 440 0 101 1	Q.VI31011	1140	KING OILLY	not ior Print
.OC	ATION NAME	: SS3-	8	DATE (yyyy-mr	nm-dd): 202	1-04-11	TIM	E (24	1:00): 18	47
AM	PLED BY: _	131-1		TYPE OF SA	AMPLE: Dust	Wate	r Quali	ty [	XI QAQ	C: 10/14
3PS	COORDINAT	res (UTM):	53669	0 E 7	150812	N	(zone)	1-	261	
DES	CRIPTION: D	istance to [	Diavik	_km & Direction	5		n: Land	3	8/or La	ake X
						_			_	
<u>ZLIIY</u>	MATE CONDI	IIONS		SE V	4					
AIF I	emp: <u> 2 /</u>	_'C W	ina Direction:	V	vina Speed: <u> </u>	kt	s.			
Dust	in Area: Vis	ible 🔲 🛚	Not Visible 🔽	7	Cloud Cover: (	0% / 10% / 2	5% / 50	1%	75% / 100	0%
Рес	i <mark>pitation:</mark> Rai	n / Mist / Sn	iow / (V/A)		Snow Conditio	n: Crystallize	ed 🔘 ī	Pack	ed 🔀 W	et 🗌 Dry 🔲
								_		
		Depth	Length	Weight of	Weight of	Water	Dus	,		mments
	Core	of	of Snow	Tube	Empty	Content-	Dus	ent	(core w	eighed, bag #
Dus	Core Number	of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	Content- SWE	4	ent	(core w	
Dust C		of	of Snow Core (cm)	Tube	Empty Tube-SWE	Content- SWE (cm)	Pres	ent No	(core w	eighed, bag #, ges in snow
Dust Core	Number	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Prese Yes/I	ent No	(core w	eighed, bag #, ges in snow
Dust Cores	Number 1	of Snow (cm) 40	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm) / <sup>1</sup> / <sub>1</sub>	Prese Yes/I	ent No	(core w	eighed, bag #, ges in snow
Dust Cores	Number  1 2	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Prese Yes/I	ent No	(core w	eighed, bag #, ges in snow
Dust Cores	Number  1 2 3	of Snow (cm) 40	of Snow Core (cm) 3 9 38	Tube & Core- SWE (cm) 52 52	Empty Tube-SWE (cm) 38 38 38	Content- SWE (cm) / <sup>1</sup> / <sub>4</sub>	Prese Yes/II Y Y	ent No	(core w	eighed, bag #, ges in snow
Dust Cores	Number  1 2 3 4	of Snow (cm) 40 40	of Snow Core (cm) 3 / 38 3 / Dust (Min.	Tube & Core- SWE (cm)  52  52  of 3 cores – To	Empty Tube-SWE (cm) 38 38 38	Content- SWE (cm) / 4 /4 /4 /4 tent SWE =/	Prese Yes/III	ent No	(core w	eighed, bag #, ges in snow
Dust Cores	1 2 3 4 1	of Snow (cm) 40 40 40	of Snow Core (cm) 3 1 38 3 9  Dust (Min.	Tube & Core- SWE (cm)  52  52  of 3 cores – To	Empty Tube-SWE (cm) 3% 3% 3%	Content- SWE (cm) / 4 / 14 / 14 tent SWE =/	Prese Yes/III	ent No	(core w	eighed, bag #, ges in snow
Dust Cores	1 2 3 4 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	of Snow (cm) 40 43 45 40	of Snow Core (cm) 3 / 3 / Dust (Min.	Tube & Core- SWE (cm) 52 52 of 3 cores - To	Empty Tube-SWE (cm) 3% 3% 3% otal Water Conf	Content- SWE (cm) / 4 /4 /4 /4 tent SWE =/	Prescription of the second sec	ent No No No No No	(core w	eighed, bag #, ges in snow
Dust Cores	1 2 3 4 1 2 3 3	of Snow (cm) 40 40 40	of Snow Core (cm) 3 1 38 3 9  Dust (Min. 3 7 3 8	Tube & Core- SWE (cm) 52 52 of 3 cores - To 52 52	Empty Tube-SWE (cm) 3% 3% 3% otal Water Conf	Content- SWE (cm) 14 14 14 tent SWE =1	Presc   Yes/il   Y	ent No No N	(core w	eighed, bag #, ges in snow
	1 2 3 4 4	of Snow (cm) 40 43 45 40	of Snow Core (cm) 3 1 38 3 9  Dust (Min. 3 7 3 8	Tube & Core- SWE (cm) 52 52 of 3 cores - To	Empty Tube-SWE (cm) 3% 3% 3%  Otal Water Constant 39 39 39	Content- SWE (cm) / 4 / 14 / 14 tent SWE =/	Pres( Yes/i)	ent No No No	(core w	eighed, bag #, ges in snow
	1 2 3 4 5 5	of Snow (cm) 40 40 40 40 40 40 39	of Snow Core (cm) 3 9 38 39 Dust (Min. 37 38 38 38	Tube & Core- SWE (cm)  52  52  of 3 cores - To  52  52  52  52  52  52	Empty Tube-SWE (cm) 38 38 38  Stal Water Cont 39 39 39 39 39	Content- SWE (cm) 14 14 14 tent SWE =1	Presc   Yes/il   Y	ent No No N	(core w	eighed, bag #, ges in snow
	1 2 3 4 4	of Snow (cm) 40 40 40 40 40	of Snow Core (cm) 3 9 38 39 Dust (Min. 37 38 38 38	Tube & Core- SWE (cm) 52 52 of 3 cores - To 52 52 52	Empty Tube-SWE (cm) 38 38 38  Stal Water Cont 39 39 39 39 39	Content- SWE (cm) 14 14 14 tent SWE = 1	Presc   Yes/il   Y	ent No No No	(core w	eighed, bag # ges in snow
	1 2 3 4 5 5	of Snow (cm) 40 40 40 40 40 40 40 40 40	of Snow Core (cm) 3 9 38 39 Dust (Min. 37 38 38 38	Tube & Core- SWE (cm) 52 52 52 of 3 cores - To 52 52 52 52 52	Empty Tube-SWE (cm) 3% 3% 3%  otal Water Conf 3 % 3 % 3 % 3 % 3 % 3 %	Content- SWE (cm) 14 14 14 tent SWE =1 13 13 14 14 14	Presc   Yes/il   Y	ent No	(core w	eighed, bag # ges in snow
	1 2 3 4 5 6	of Snow (cm) 40 40 40 40 40 40 40 40 40 40 40 40	of Snow Core (cm) 3 9 38 39  Dust (Min. 34 38 38 38 38 38 38	Tube & Core- SWE (cm)  52  52  of 3 cores - To  52  52  52  52  52  51  52	Empty Tube-SWE (cm) 38 38 38  otal Water Conf 39 38 38 38 38 38	Content- SWE (cm) 14 14 14 14 13 14 14 14 14	Presc   Yes/il   Y	ent No	(core w	eighed, bag # ges in snow
	1 2 3 4 5 6 7	of Snow (cm) 40 40 40 40 40 40 40 40 40	of Snow Core (cm) 3 9 38 39 Dust (Min. 37 38 38 38	Tube & Core- SWE (cm) 52 52 52 of 3 cores - To 52 52 52 52 52	Empty Tube-SWE (cm) 3% 3% 3%  otal Water Conf 3 % 3 % 3 % 3 % 3 % 3 %	Content- SWE (cm) 14 14 14 tent SWE =1 13 13 14 14 14	Presc Yes/il Y   Y   Y   Y   Y   Y   Y   Y   Y   Y	ent No	(core w	eighed, bag #, ges in snow
Dust Cores Water Quality Cores	1 2 3 4 5 6 7 8	of Snow (cm) 40 40 40 40 40 40 40 40 40 40 40 40	of Snow Core (cm) 3 9 38 39  Dust (Min. 34 38 38 38 38 38 38	Tube & Core- SWE (cm)  52  52  of 3 cores - To  52  52  52  52  52  51  52	Empty Tube-SWE (cm) 38 38 38  otal Water Conf 39 38 38 38 38 38	Content- SWE (cm) 14 14 14 14 13 14 14 14 14	Pres(Yes/il	ent No	(core w	eighed, bag #, ges in snow

\*\* Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> - Wt. of Empty Tube<sub>SWE</sub> \*\*

Water Quality (Min. of 3 cores - Total Water Content SWE =/> 100)

		- 1	ow Samp	IIIIY I IS	<u>Hu one</u>	No:			/1-177-0	312
Area: Effect	tive Date:	8000 26-Mar-20	n12			Rev By:	vision:	R9	)ul	
Eneci Task:		_	mpling Fie	eld She	et	Uy.		٠. ١	/ui	
1 theres.			HPIIII 3	7.6.		Pag	ge: e 3 for Revi	2 Islon Tra	of cking Only	3 not for Prin
Dust	Sample Fil	Iters			Tota		of Melted		10110	(n
Filte		ht of Filter (mg)	Filter + Ro		Resid	due Wei (mg)	ight	C	ommen	ts
1		8.6	160.			41.5				
2	1 - 1	).0	100			11				
3										
4						13022				- MEES
Tota	als ) )	8.6	160.	1	E R	41.5				
Water	r Quality B	ottles			Tota	il Volume	of Melted	:won2 t		(
Filling	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Locati	DI Batc	le Comment h # for QAQ rved if not in	QC,
Order		***		<u> </u>	<b></b> '				hanges	110101
1	Metals Total	60 mL Falcon Tube (x2)	Y							
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y							
3	Total Mercury	40 mL clear glass (pre-preserved)	N							
4	Nutrients	120 mL plastic (pr preserved)	ore- N							
5	Ammonia	40 mL glass vial (pre-preserved)								
6	Routine	1000 mL plastic	40.00							
7	TSS/Turb/pH	1000 mL plastic	c Y						71645	
	= =	*Sample Type: G\	W, DUPW1/D	UPW2, FBV	N, TBW, F	BW, REP1	//REP2, Filt	er Blank		
	2.5									
	al Information of the last of	n <b>ation</b> ble: (equipment issu	wes safety cor	ncerns, wer	ather probl	ems. chang	nes during :	eampling	event, follov	eun actions
, 00,0	оог п ару	//C. (Cyapme	165, 54,	IUSTINE,	But p	Sitiol	Jes	Maripu.	Dtur., .	**************************************

						No:	EN\	/I-177-031	2			
Area: 8000						Revision	: R9					
Effe	ctive Dat		-Mar-2012			Ву:	D. C	Oul	100			
Task: Snow Sampling Field Sheet												
						Page:	1 evision Tra	of cking Only not	3			
GENI	ERAL											
LOCA	ATION NAME	254	/	DATE (yyyy-mr	nm-dd): <u>20:</u>	21-24-12	TIME (2	(4:00): <u>//</u> 2	3			
SAMI	PLED BY: _	BP P		TYPE OF SA	AMPLE: Dust	Water	Quality [	QAQC:	vA			
GPS	COORDINAT	ES (UTM):	5,31.44	0 E 7	152210	N (	zone)					
DESC	CRIPTION: D	istance to D	iavik	E 7		0	n: Land	&/or Lake				
	ATE CONDI						V					
			nd Direction:	v	Vind Speed:	kt	S.					
			_	_								
Dust Preci	in Area: Vis	ible ∐ I n / Mist / Sn	ow / N/A	- 20/	Cloud Cover: ( Snow Conditio	n: Crystallize	5% / 50% / ed A Paci	/ 75% / 100% ked	☐ Dry ☐			
							Comments					
		Depth	Length	Weight of	Weight of	Water		Comi	nents			
D	Core Number	Depth of Snow	Length of Snow Core	Weight of Tube & Core-	Weight of Empty Tube-SWE	Content- SWE	Dust Present Yes/No	(core weig changes	hed, bag #, in snow			
Dust	Number	of Snow (cm)	of Snow	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weig changes	hed, bag #,			
Dust Co.	Number 1	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weig changes cond	hed, bag #, in snow ition)			
Dust Cores	Number 1 2	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y N	(core weig changes	hed, bag #, in snow ition)			
Dust Cores	Number 1	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y N	(core weig changes cond	hed, bag #, in snow ition)			
Dust Cores	Number 1 2	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y N	(core weig changes cond	hed, bag #, in snow ition)			
Dust Cores	Number  1 2 3	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No Y N Y N Y N	(core weig changes cond	hed, bag #, in snow ition)			
Dust Cores	Number  1 2 3	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No Y N Y N Y N	(core weig changes cond	hed, bag #, in snow ition)			
Dust Cores	Number  1 2 3 4	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N	(core weig changes cond	hed, bag #, in snow ition)			
Dust Cores	Number  1 2 3 4	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  > 25)	(core weig changes cond	hed, bag #, in snow ition)			
	1 2 3 4 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  > 25)  Y N	(core weig changes cond	hed, bag #, in snow ition)			
	1 2 3 4 1 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weig changes cond	hed, bag #, in snow ition)			
	1 2 3 4 1 2 3 4 4	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  P N  P N  Y N  Y N	(core weig changes cond	hed, bag #, in snow ition)			
	1 2 3 4 5 5	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weig changes cond	hed, bag #, in snow ition)			
	1 2 3 4 5 6 6	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weig changes cond	hed, bag #, in snow ition)			
	1 2 3 4 5 6 7	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weig changes cond	hed, bag #, in snow ition)			
Dust Cores Water Quality Cores	1 2 3 4 5 6 7 8	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weig changes cond	hed, bag #, in snow ition)			
	1 2 3 4 5 6 7 8 9	of Snow (cm) GY	of Snow Core (cm)	Tube & Core- SWE (cm) S/ 46 34	Empty Tube-SWE (cm) 3 % 3 %	Content- SWE (cm)	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weig changes cond	hed, bag #, in snow ition)			

\*\* Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> – Wt. of Empty Tube<sub>SWE</sub> \*\*

Area: Effective Date: Task:		8000 26-Mar-20 Snow Sam		eld She	 et	No: Rev By:	/ision:	ENVI-177-0312 R9 D. Dul		
	1					Page Page	je: a 3 for Revi	2 Islon Tra	Of cking Only	3 not for Pr
Dust (	Sample Fil	iters			Tota	l Volume	of Melted	i Snow:	1165	(
Filte		ht of Filter F (mg)	Filter + Re		Resid	due Wei (mg)	ight	Comments		
1		4,1	172.7		48	S.b.				
2								75.5		
3										
4 Tota	ale In C	1 3	172.7		115	66		MA T		
10	als 124		716		40	110			- 114 47	-
Water	r Quality B	ottles			Tota	ıl Volume	of Meited	i Snow	-	(
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Location	<u>DI Bato</u> on prese	le Comment h # for QAQ rved if not in changes	C /
1	Metals Total	60 mL Falcon Tube (x2)	Υ	Υ				J. Language		
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y		0					
3	Total Mercury	40 mL clear glass (pre-preserved)	N							
4	Nutrients	120 mL plastic (pre- preserved)	N				000000			
5	Ammonia	40 mL glass vial (pre-preserved)	N							
6	Routine	1000 mL plastic	Ý							10,000
7	TSS/Turb/pH	1000 mL plastic	Y							
		*Sample Type: GW	J. DUPW1/DI	UPW2, FBV	W. TBW, E	BW. REP1	/REP2, Filte	er Blank		
	al Informa odor if applicab	,							event, follow	⊬up action

				Campallina E	"-1-I Ob4				
			Snow	Sampling F				<b></b>	
A		000		No:		ENVI-177-0312			
Area:			8 <u>000</u> 26-Mar-2012			Revision	_	K9 D. D	hed.
Effective Date: Task:			Snow Sampli			Ву:		ט. ט	ui
lask.		_	mow Gampii	ing rield on		Page:		1	of 3
						Page 3 for Re			cking Only not for Print
GENER	IAL				2.0	1 -1 10			1///0
			-2						//
									QAQC:
GPS CC	OORDINAT	ES (UTM	):_53 <i>1336</i>	, E	7152267	DN (	zone)	1	2W
DESCR	IPTION: D	istance to	Diavik/_	_km & Direction	_SE	o	n: Lar	nd 🔽	&/or Lake
	TE CONDIT							U	
Air Tem	ւթ։	_,c /	Wind Direction:	v	Vind Speed:	kt	s.		
Dust in	Area: Vis	ible 🔲	Not Visible	i	Cloud Cover: 0	0% / 10% 25	5% / 5	i0% /	75% / 100%
Precipi	tation: Rai	n / Mist / S	Snow / NA	"	Snow Conditio	n: Crystallize	ed 🗀	Pack	ked ☑ Wet ☐ Dry ☐
							P		V
		Depth	Length	Weight of	Weight of	Water			Comments
	Core	of	of Snow	Tube	Empty	Content-	Du Pres		(core weighed, bag #,
Dust	Number	Snow		& Core-	Tube-SWE	SWE	Yes		changes in snow condition)
ist	1	(cm)	(cm)	SWE (cm)	(cm) 39	(cm)	Υ	N	
Cores	2	63	59		39	16	Y	$\frac{1}{N}$	
es	3	64		55		15	Y	N	
		07	62	00	38			N	
	4							N _	
			Dust (Min.	of 3 cores - To	tal Water Cont	tent SWE =/>			
	1						Υ	$\overline{}$	
L	2						Υ	N	
L	3							N	
8	4						Y	N	
ater	5						Y	N	
Water Quality Cores	6						Υ	N	
ality	7				/		Υ	N	
S	8		1				Υ	N	
) res	9				ì		Υ	N	
<u> </u>	10						Y	N	
			-	-			Υ	N	
	11			·				1.4	
	11 12							N	

						No:		ΗNV	/I-1 / /-U	312		
Area:		8000	8000				Revision:			ENVI-177-0312 R9		
	ive Date:	26-Mar-2	012			Ву:		D. C	ul			
Task:		Snow Sa	mpling Fie	eld She	et		ini=m	OIL.				
						Pag	je: 3 for Revi	2	Of cking Only	not for Pri		
Dust S	Sample Fil	iters			Tota	l Volume	of Melted	Snow:	1440	(1		
Filter	_	ht of Filter (mg)	Filter + R (mg		Resid	due We (mg)	_	Comments				
1	123		149.9		2	ا <sub>ن</sub> .0.	3cm	e vg	eff with	Her before		
2	125	5.3	167.2		4	1.9		-				
3												
4												
Tota	is 249	.2	317.1		6	7.9						
Water	Quality B	ottles			Tota	l Volume	of Meltec	l Snow:		(		
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Locatio	<u>DI Batci</u> on preser	e Comment h # for QAC ved.if not in thanges	s <u>QC</u> , field, label		
1	Metals Total	60 mL Falcon Tube (x2)	Y				/					
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y		0	0						
3	Total Mercury	40 mL clear glass (pre-preserved)	N									
4	Nutrients	120 mL plastic (p	re- N									
5	Ammonia	40 mL glass vial (pre-preserved)										
6	Routine	1000 mL plastic	Y									
7	TSS/Turb/pH	1000 mL plastic	Y									
		*Sample Type: G	W, DUPW1/DI	JPW2, FBV	V, TBW, E	BW, REP1	/REP2, Filte	er Blank				
_												
	I Informa	<b>ation</b> ble: (equipment isso	ion anfahrasi	100me una	ther proble	ome chan	see during e	ampling	event follow	ıtıın actions		
COIOT, U	dor ii applicat	ne. (equipment issi	Jes, salety col	icems, wea	itrier probi	enis, chan	jes during s	amping	event, ionov	v-up actions		

1			Snow	Sampling F	ield Sheet		-		
						No:	EN	VI-177-03	312
Are			00			Revision			
	ective Date		-Mar-2012			By:	D. [	Dul	
Tas	k:	<u>Sn</u>	<u>ıow Sampli</u>	ing Field Sh	eet				
					_	Page:	1 evision Tra	of icking Only	3 not for Print
	ERAL	S C U .	.3			01/10			57
LOC	ATION NAME	. 057		DATE (yyyy-mr	nm-dd): <u>/</u>	-24-1-7	TIME (2	24:00): <u>/</u> /	1
				TYPE OF SA				<del></del>	
GPS	COORDINAT	res (UTM):	53/35	Z E 7 km & Direction	15-435	N (	(zone) <u>/</u>	2W	
DES	CRIPTION: D	istance to D	)iavik <u> </u>	_km & Direction	<u>St</u>	0	n: Land	√ &/or La	ke 🔲
CLIM	ATE CONDIT	<u> FIONS</u>							
Air T	emp:	'C Wi	ind Direction:	v	Vind Speed:	kt	S.		
	J	_ •				1-			
	in Area: Visipitation: Rai		Not Visible X		Cloud Cover: ( Snow Conditio	0% /(10%/) 29 on: Crystallize	5% / 50% ed 🗹 Pac	/ 75% / 100 ked/	% t □ Dry □
		Denth	Length	Weight of	Weight of	Water		Co	mmanta
	Core of		of Snow	Tube	Empty	Content-	Dust		mments eighed, bag #,
D	Number	Snow	Core	& Core-	Tube-SWE	SWE	Present Yes/No	chang	jes in snow ndition)
Dust (		Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present	chang	jes in snow
Dust Core	Number	Snow	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present Yes/No	chang	jes in snow
<b>Dust Cores</b>	Number 1	Snow (cm)	Core (cm) 45	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm) / 3	Y N	chang co	jes in snow ndition)
Dust Cores	Number  1 2	Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Y N	chang co	jes in snow ndition)
Dust Cores	Number  1 2 3	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Y N Y N Y N	chang co	jes in snow ndition)
Dust Cores	Number  1 2 3	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Y N Y N Y N	chang co	jes in snow
Dust Cores	Number  1 2 3 4	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Yes/No Y N Y N Y N Y N Y N	chang co	jes in snow ndition)
Dust Cores	1 2 3 4	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Yes/No Y N Y N Y N Y N Y N Y N Y N	chang co	jes in snow ndition)
	1 2 3 4 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Y N Y N Y N Y N Y N Y N Y N Y N N N N N	chang co	jes in snow ndition)
	1 2 3 4 1 2 3 3 3 4 1 2 3 3 1 4 1 2 1 2 1 3 3 1 1 1 1 2 1 1 1 1 1 1 1 1	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	chang co	jes in snow ndition)
	1 2 3 4 4	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	chang co	jes in snow ndition)
	1 2 3 4 5 5	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	chang co	jes in snow ndition)
	1 2 3 4 5 6 7 8	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	chang co	jes in snow ndition)
Dust Cores Water Quality Cores	1 2 3 4 5 6 7	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	chang co	jes in snow ndition)
	1 2 3 4 5 6 7 8	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	chang co	jes in snow ndition)
	1 2 3 4 5 6 7 8 9	Snow (cm)	Core (cm) 45 42 32	& Core- SWE (cm)	Tube-SWE (cm) 39 39	SWE (cm) / 3 //3 //0	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	chang co	jes in snow ndition)

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Area: Effect Task:	ive Date:	8000 26-Mar-2 Snow Sa	2012 Impling Fi	eld She	et	Ву:	/ision:	ENVI-177-0 R9 D, Dul	W
						Page Page		2 Of islon Tracking Only	not for Pri
Dust \$	Sample Fi	Iters			Tota	l Volume	of Meltec	Snow: 1150	(r
Filte	r# Weig	ht of Filter (mg)	Filter + F		Resid	due Wei		Commen	
1	= 110	0.2	143.6		2	17.4.	Sam	ic veg left on A	Her before
3									
4									
Tota	الع الع	2	143.6		2	7.4			
Water	Quality E	Sottles			Tota	l Volume	of Melter	d Snow;	(
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Locati	Sample Comments  DI Batch # for QAQ on preserved if not incomplete	<u>C</u> ,
1	Metals Total	60 mL Falcon Tube (x2)	Y						
2	Metals Dissolved	60 mL Falcon Tube (x2)	Υ			<u> </u>		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
3	Total Mercury	40 mL clear glass (pre-preserved)	N	-6					
4	Nutrients	120 mL plastic (p	ore- N						
5	Ammonia	40 mL glass via (pre-preserved					0.3-		
6	Routine	1000 mL plastic	c Y						
7	TSS/Turb/pH	1000 mL plasti	c Y					2.22	
		*Sample Type: G	SW, DUPW1/D	UPW2, FBV	V, TBW, E	BW, REP1	/REP2, Filt	er Blank	
	al Inform dor if applical		sues, safety co	ncems, wea	ther proble	ems, chang	jes during s	ampling event, follow	-up actions

			Snow	Sampling F	Gold Shoot				
			SHOW	Sampiniy r	leia Sileer			-515	" 477 0040
Are	3.	80	000			No: Revision		_	/I-177-0312
	a. ective Dat		6-Mar-2012	)				<u>D. D</u>	hi il
Tas				ing Field Sh	eet	Dy.		<u>, , , , , , , , , , , , , , , , , , , </u>	
						Page:		1	
						Page 3 for R	levisio	on Tra	cking Only not for Print
-	ERAL	- 554-	41	DATE (yyyy-mr	202	1-04-12	- TH	/a	17.09
SAM	PLED BY: _	55 1.		TYPE OF SA	AMPLE: Dust	Wate	r Qua	ility	QAQC: 1/A
									&/or Lake
DESC	CRIPTION: D	istance to (	Diavik	_km & Direction	1		n: La	nd [	&/or Lake
CLIM	ATE CONDI	TIONS							
			ind Direction:	: v	Vind Speed:	kt	s.		
			_			/ >			
	in Area: Vis		Not Visible		Cloud Cover: (	0% (10%/2	5% / :	50% / 1 เวลเ	75% / 100% ked 🗹 Wet 🔲 Dry 🔲
1166	pianon. No	III / IVIIJOC / OI	IOW INIT		SHOW COURING	III: Orystanizi	شارت 8	) Fau	(ed [ ] vvet [ ] bly [ ]
		Depth	Length	Weight of	Weight of	Water			Cammanta
	Core	of	of Snow	Tube	Empty	Content-	Do	ust	Comments (core weighed, bag #,
			i or orrorr	I doc	Empty	Content-			
Ď	Number	Snow	Core	& Core-	Tube-SWE	SWE	Рге	sent s/No	changes in snow
Dust		(cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	1	Pre: Yes	3/No	
Dust Cor	1	(cm) 5 S	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE	Pres Yes	i/No	changes in snow
Dust Cores	1 2	(cm) 55	Core (cm) 5 1	& Core- SWE (cm) S S	Tube-SWE (cm)	SWE (cm)	Pres Yes	NO N	changes in snow
Dust Cores	1 2 3	(cm) 5 S	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE	Pres Yes	NO N N	changes in snow
Dust Cores	1 2	(cm) 55	Core (cm) 5 1	& Core- SWE (cm) S S	Tube-SWE (cm)	SWE (cm)	Pres Yes	NO N	changes in snow
Dust Cores	1 2 3	(cm) 55	Core (cm) 51 49 44	& Core- SWE (cm) S S	Tube-SWE (cm) 38 37 38	SWE (cm)   17   19   14	Pre: Yes	NO N N	changes in snow
Dust Cores	1 2 3 4	(cm) 55 55 51	Core (cm) 51 49 44	& Core- SWE (cm) SS S7 S6 of 3 cores – To	Tube-SWE (cm) 3% 3% 3% 3% otal Water Con	SWE (cm)   17   19   14	Y Y Y Y > 25)	NO N	changes in snow
Dust Cores	1 2 3 4	(cm) 55	Core (cm) 51 49 44 Dust (Min.	& Core- SWE (cm) S S S 7 S G	Tube-SWE (cm) 3% 3% 3% 3% otal Water Con	SWE (cm)   17   14   14   14   14   14   14   15   16   16   16   16   16   16   16	Pre- Yes  Y  Y  Y  Y  Y  > 25)	NO N N N	changes in snow
Dust Cores	1 2 3 4	(cm) 55 55 51	Core (cm) 51 49 4   Dust (Min.	& Core- SWE (cm) SS S7 S6 of 3 cores – To	Tube-SWE (cm) 3% 3% 3% 3% otal Water Con	SWE (cm)   17   14   14   14   14   14   14   15   16   16   16   16   16   16   16	Y Y Y Y > 25)	NO N	changes in snow
	1 2 3 4	(cm) 55 55 51 53 50 50	Core (cm) 5   49 4   4  Dust (Min. 48	& Core- SWE (cm) 5 5 5 7 5 6	Tube-SWE (cm) 3% 3% 3% 3% otal Water Con	SWE (cm) 17 19 14 14 17 19 19	Pre: Yes Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	NO PHI NO	changes in snow
	1 2 3 4	(cm) 55 55 51 53 50 50 50	Core (cm) 51 49 44 Dust (Min. 48 50 48	& Core- SWE (cm) SS S7 S6 of 3 cores – To	Tube-SWE (cm) 3% 3% 3% 3% otal Water Con	SWE (cm) 17 19 14 17 17 19 17 19 17 19 18 20	Pre- Yes  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y	NO N N N N	changes in snow
	1 2 3 4	(cm) 55 55 51 53 50 50	Core (cm) 51 49 44 Dust (Min. 48 50 48 50	& Core- SWE (cm) 5 5 5 7 5 6 of 3 cores – To 5 5 5 7 5 6 5 8 5 6	Tube-SWE (cm) 38 38 38 38 38 38	SWE (cm) 17 19 14 14 17 19 19	Y Y Y Y Y Y Y Y Y Y Y	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	changes in snow
	1 2 3 4 1 2 3 4 5	(cm) 55 55 51 53 50 50 50	Core (cm) 51 49 44 Dust (Min. 48 50 48	& Core- SWE (cm) 5 5 5 7 5 6 of 3 cores – To	Tube-SWE (cm) 3% 3% 3% 3% otal Water Con	SWE (cm) 17 19 14 17 17 19 19 19 19 19 19 19 19	Pre-Yes  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y	20 21 21 21 22 22 22 22 22 22 22 22 22 22	changes in snow
	1 2 3 4 1 2 3 4 5 6	(cm) 55 55 51 53 50 50 50	Core (cm) 51 49 44 Dust (Min. 48 50 48 50	& Core- SWE (cm) 5 5 5 7 5 6 of 3 cores – To 5 5 5 7 5 6 5 8 5 6	Tube-SWE (cm) 38 38 38 38 38 38	SWE (cm) 17 19 14 17 17 19 19 19 19 19 19 19 19	Pre-	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	changes in snow
	1 2 3 4 5 6 7 8	(cm) 55 55 51 53 50 50 50	Core (cm) 51 49 44 Dust (Min. 48 50 48 50	& Core- SWE (cm) 5 5 5 7 5 6 of 3 cores – To 5 5 5 7 5 6 5 8 5 6	Tube-SWE (cm) 38 38 38 38 38 38	SWE (cm) 17 19 14 17 17 19 19 19 19 19 19 19 19	Y	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	changes in snow
Dust Cores Water Quality Cores	1 2 3 4 1 2 3 4 5 6 7 8	(cm) 55 55 51 53 50 50 50	Core (cm) 51 49 44 Dust (Min. 48 50 48 50	& Core- SWE (cm) 5 5 5 7 5 6 of 3 cores – To 5 5 5 7 5 6 5 8 5 6	Tube-SWE (cm) 38 38 38 38 38 38	SWE (cm) 17 19 14 17 17 19 19 19 19 19 19 19 19	Pre-   Yes   Y   Y   Y   Y   Y   Y   Y   Y   Y		changes in snow
	1 2 3 4 1 2 3 4 5 6 7 8 9	(cm) 55 55 51 53 50 50 50	Core (cm) 51 49 44 Dust (Min. 48 50 48 50	& Core- SWE (cm) 5 5 5 7 5 6 of 3 cores – To 5 5 5 7 5 6 5 8 5 6	Tube-SWE (cm) 38 38 38 38 38 38	SWE (cm) 17 19 14 17 17 19 19 19 19 19 19 19 19	Pre-Yes  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	changes in snow
	1 2 3 4 1 2 3 4 5 6 7 8	(cm) 55 55 51 53 50 50 50	Core (cm) 51 49 44 Dust (Min. 48 50 48 50	& Core- SWE (cm) 5 5 5 7 5 6 of 3 cores – To 5 5 5 7 5 6 5 8 5 6	Tube-SWE (cm) 38 38 38 38 38 38	SWE (cm) 17 19 14 17 17 19 19 19 19 19 19 19 19	Pre-   Yes   Y   Y   Y   Y   Y   Y   Y   Y   Y	20 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	changes in snow

<sup>\*\*</sup> Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> - Wt. of Empty Tube<sub>SWE</sub> \*\*

Area: Effect Task:	tive Date:	8000 26-Mar-20 Snow Sam	12	oling Fie		No:	rision:	R9 D. D		
	1 10		V			Pag Page	je: 3 for Revi	2 slon Tra	Of cking Only n	3 ot for Pri
Dust (	Sample Fil	ters			Tota	Total Volume of Melted Snow: 1645				
Filte		ht of Filter F (mg)	Filter + R (mg		Residue Weight (mg)		_		omments	
1	116		161.6.	3/	Ψ	5.5	Some	e vejr	लिक की	y <del>Uclo</del> re
2				De des			77			
3										
	als III		61.6		ys	5,5				
3 4 Totals ((Le,)) Water Quality Bo		ottles		Sample			of Melted		3285 1075 1075 10710	(
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Type *		DI Batcl on preser	h # for QAQC ved if not in fi hanges	2,
1	Metals Total	60 mL Falcon Tube (x2)	Y	IJ'						
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y	Ø					2000000	
3	Total Mercury	40 mL clear glass (pre-preserved)	N	Ø					0.0000	
4	Nutrients	120 mL plastic (pre preserved)	- N	<u> </u>						20.0
5_	Ammonia	40 mL glass vial (pre-preserved)	N	G.			3			
6	Routine	1000 mL plastic	Υ	P						
	TSS/Turb/pH	1000 mL plastic	Y	<u>u</u>						
7	6 Routine 1000 mL pl		/, DUPW1/D	UPW2, FBV	V, TBW, E	:BW, REP1/	/REP2, Filte	er Blank		
			(equipment issues, safety concerns, weath			ather problems, changes durin				
itiona e color, o		ation					es during s	ampling (	event, follow-	up action:

			Snow	Sampling F	ield Sheet			
			011011	<del>oumpining i</del>			EVI	VI-177-0312
Area	a:	80	00			Revision		VI-111-001Z
Effe	ctive Dat	e: 26	-Mar-2012			Ву:		Dul
Tas	k:	Sn	ow Sampl	ing Field Sh	eet			
							1 evision Tra	of 3 acking Only not for Print
GENI		- 41			0 -7	1-11 10		·- (^
								24:00): 12.52
								A DAOC:
GPS	COORDINAT	res (UTM):	53/404	e <u>_7</u>	154116	N (	zone)	/2 ( ∕ &/or Lake
DESC	CRIPTION: D	istance to D	iavik	_ km & Direction	<i>NW</i>	0	n: Land	&/or Lake
CLIM	ATE CONDI	<u>FIONS</u>						
Air To	emp:	_c wi	nd Direction:	v	Vind Speed: _	kt	s.	
Dust	in Area: Vis	ible 🔲 N	Not Visible		Cloud Cover: 0			
Preci	ipitation: Rai	n / Mist / Sn	ow/NA		Snow Conditio	n: Crystallize	Pac	ked 🚺 Wet 🗌 Dry 🔲
	Core	Depth	Length	Weight of	Weight of	Water	Dust	Comments
						I A 4 4	ı Dust	4
_	Number	of Snow	of Snow	Tube & Cores	Empty Tube-SWF	Content-	Present	(core weighed, bag #, changes in snow
Dus		Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Tube-SWE	Content- SWE (cm)		(core weighed, bag #, changes in snow condition)
Dust C		Snow	Core (cm)	& Core- SWE (cm)		SWE	Present	changes in snow
Dust Core	Number	Snow (cm)	Core (cm) ≤ ≰	& Core-	Tube-SWE (cm)	SWE (cm)	Present Yes/No	changes in snow
Dust Cores	Number 1	Snow (cm) 59 58	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)   / B   / C	Present Yes/No	changes in snow
Dust Cores	Number 1 2	Snow (cm)	Core (cm) 5 ≰ 5 7	& Core- SWE (cm) 5-6	Tube-SWE	SWE (cm)	Present Yes/No Y N	changes in snow
Dust Cores	Number  1 2 3	Snow (cm) 59 58	Core (cm)  5 4  5 7  6 0	& Core- SWE (cm) 5-6 5-5	Tube-SWE (cm)	SWE (cm) /8 /6 //	Present Yes/No Y N Y N Y N	changes in snow
Dust Cores	Number  1 2 3 4	Snow (cm) 59 58 60	Core (cm)  SA  S7  CD  Dust (Min.	& Core- SWE (cm) S-6 S-5 S-7	Tube-SWE (cm)	SWE (cm)  / B  / C  / f  tent SWE =/:	Present Yes/No Y N Y N Y N Y N	changes in snow
Dust Cores	Number  1 2 3 4	Snow (cm) 59 58 60	Core (cm)  5 4  5 7  6 0  Dust (Min.	& Core- SWE (cm) SS SS S7 of 3 cores – To	Tube-SWE (cm) 3 % 3 9 8 8	SWE (cm) /8 /6 //	Present Yes/No Y N Y N Y N > 25)	changes in snow
Dust Cores	1 2 3 4 1 2 2	Snow (cm) 59 58 60	Core (cm)  5 4  5 7  6 0  Dust (Min.	& Core- SWE (cm) 5-6 5-5 5-7 of 3 cores – To	Tube-SWE (cm) 3 % 3 9 3 8  otal Water Cont	SWE (cm) / B / G / 9  tent SWE =/:	Present Yes/No Y N Y N Y N Y N > 25) Y N	changes in snow
Cores	1 2 3 4 1 2 3 3	\$now (cm) 59 58 60	Core (cm)  5 4  5 7  6 0  Dust (Min. 59	& Core- SWE (cm) 55 57 of 3 cores - To 57	Tube-SWE (cm) 3 % 3 9 8 8	SWE (cm)   18   14   19   18   18   18   18   18   18   18	Present Yes/No Y N Y N Y N Y N > 25) Y N Y N	changes in snow
Cores	1 2 3 4 4	\$now (cm) 59 58 60 60 56 63	Core (cm)  5 4  5 7  6 0  Dust (Min. 59  5 5  6 2	& Core- SWE (cm) 56 53 57 of 3 cores - To 56 57 55	Tube-SWE (cm) 3 % 3 9 8 8	SWE (cm) 18 16 19 tent SWE =1: 14 18 18 2-0	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow
Cores	1 2 3 4 5 5	\$now (cm) 59 58 60 56 63 63	Core (cm)  5 4  5 7  6 0  Dust (Min. 59  5 5  6 2  6 3	& Core- SWE (cm) 5-6 5-3 57 of 3 cores - To 57 5-7 5-5 5-7	Tube-SWE (cm) 3 % 3 9 3 8  otal Water Cont 3 7 3 9 3 8 3 8 3 8	SWE (cm) 18 16 19 tent SWE =1: 18 18 18 19 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow
Cores	1 2 3 4 5 6	\$now (cm) 59 58 60 60 56 63	Core (cm)  5 4  5 7  6 0  Dust (Min. 59  5 5  6 2	& Core- SWE (cm) 56 53 57 of 3 cores - To 56 57 55	Tube-SWE (cm) 3 % 3 9 8 8	SWE (cm) 18 16 19 tent SWE =1: 14 18 18 2-0	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow
Cores	1 2 3 4 5 6 7	\$now (cm) 59 58 60 56 63 63	Core (cm)  5 4  5 7  6 0  Dust (Min. 59  5 5  6 2  6 3	& Core- SWE (cm) 5-6 5-3 57 of 3 cores - To 57 5-7 5-5 5-7	Tube-SWE (cm) 3 % 3 9 3 8  otal Water Cont 3 7 3 9 3 8 3 8 3 8	SWE (cm) 18 16 19 tent SWE =1: 18 18 18 19 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow
Cores	1 2 3 4 5 6 7 8	\$now (cm) 59 58 60 56 63 63	Core (cm)  5 4  5 7  6 0  Dust (Min. 59  5 5  6 2  6 3	& Core- SWE (cm) 5-6 5-3 57 of 3 cores - To 57 5-7 5-5 5-7	Tube-SWE (cm) 3 % 3 9 3 8  otal Water Cont 3 7 3 9 3 8 3 8 3 8	SWE (cm) 18 16 19 tent SWE =1: 18 18 18 19 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow
Dust Cores Water Quality Cores	1 2 3 4 5 6 7	\$now (cm) 59 58 60 56 63 63	Core (cm)  5 4  5 7  6 0  Dust (Min. 59  5 5  6 2  6 3	& Core- SWE (cm) 5-6 5-3 57 of 3 cores - To 57 5-7 5-5 5-7	Tube-SWE (cm) 3 % 3 9 3 8  otal Water Cont 3 7 3 9 3 8 3 8 3 8	SWE (cm) 18 16 19 tent SWE =1: 18 18 18 19 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow
Cores	1 2 3 4 5 6 7 8	\$now (cm) 59 58 60 56 63 63	Core (cm)  5 4  5 7  6 0  Dust (Min. 59  5 5  6 2  6 3	& Core- SWE (cm) 5-6 5-3 57 of 3 cores - To 57 5-7 5-5 5-7	Tube-SWE (cm) 3 % 3 9 3 8  otal Water Cont 3 7 3 9 3 8 3 8 3 8	SWE (cm) 18 16 19 tent SWE =1: 18 18 18 19 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow
Cores	1 2 3 4 5 6 7 8 9	\$now (cm) 59 58 60 56 63 63	Core (cm)  5 4  5 7  6 0  Dust (Min. 59  5 5  6 2  6 3	& Core- SWE (cm) 5-6 5-3 57 of 3 cores - To 57 5-7 5-5 5-7	Tube-SWE (cm) 3 % 3 9 3 8  otal Water Cont 3 7 3 9 3 8 3 8 3 8	SWE (cm) 18 16 19 tent SWE =1: 18 18 18 19 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow

<sup>\*\*</sup> Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> – Wt. of Empty Tube<sub>SWE</sub> \*\*

Area:		<u>Sno</u> 8000	w Samp	ling Fie	eld Sne	No:	EN sion: R9	NVI-177-0312	2
	tive Date:	26-Mar-20	12			By:		Dul	0 =
Task:		Snow Sam		eld She	et	<b>-</b> y .	<u></u>	Dui	
			<u> </u>	7100		Pag	e: 2	of	3
						Page	3 for Revision T	racking Only not	for Pri
Dust :	Sample Fil	iters			Tota	l Volume (	of Melted Snov	w: 1630	(
Filte		ht of Filter F	Filter + Residue (mg)		Residue Weight (mg)		jht	Comments	
1	_ [17]	_	200.0		8	2.8			
2									
3									
4									
Tota	fil sla	7	200.0	IST NO	87	2.8			77
		1 have					all or or		
Water	r Quality B	ottles			EV.		of Melted Snov	रावर	(
	a calcula	Bottle	Triple	Sample Type *	Sample Type *	Sample Type *		nple Comments tch # for QAQC,	
Filling Order	Analysis	Туре	Rinse	GW	.,,-	176-		served if not in field changes	I, label
	****	4 40 -4						cnanges	
1	Metals Total	60 mL Falcon Tube (x2)	Y						
<del></del>	Metals	Co. L. Felona							
2	Dissolved	60 mL Falcon Tube (x2)	Y						
1 .		J		1	<del></del>	<u> </u>			
		4		W.	١	'			
3	Total Mercury	40 mL clear glass (pre-preserved)	N	B					
	Mercury						20.50		
3		(pre-preserved)  120 mL plastic (pre- preserved)	- N						
	Mercury	(pre-preserved) 120 mL plastic (pre-							
4	Mercury Nutrients	(pre-preserved)  120 mL plastic (pre- preserved)  40 mL glass vial	- N	<b>D</b>					
4 5 6	Mercury  Nutrients  Ammonia	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial (pre-preserved)	- N	Ø					
4 5	Mercury  Nutrients  Ammonia  Routine	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial (pre-preserved)  1000 mL plastic	N N Y	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					
4 5 6	Mercury  Nutrients  Ammonia  Routine	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial (pre-preserved)  1000 mL plastic	N N Y	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			₹EP2, Filter Blan	ık	
4 5 6 7	Mercury  Nutrients  Ammonia  Routine	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial (pre-preserved)  1000 mL plastic  1000 mL plastic	N N Y	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			REP2, Filter Blan	ık	
4 5 6 7	Mercury Nutrients Ammonia Routine TSS/Turb/pH	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial (pre-preserved)  1000 mL plastic  1000 mL plastic	N N Y Y Y DUPW1/DL	□ □ UPW2, FBW	U U	BW, REP1/			actions
4 5 6 7	Mercury  Nutrients  Ammonia  Routine  TSS/Turb/pH  al Information of the policy of the	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial (pre-preserved)  1000 mL plastic  1000 mL plastic  *Sample Type: GW  ation  ble: (equipment issue	N N Y Y OUPW1/Dt	UPW2, FBW	U, TBW, Ed	BW, REP1/f			actions
4 5 6 7	Mercury  Nutrients  Ammonia  Routine  TSS/Turb/pH  al Information of the policy of the	(pre-preserved)  120 mL plastic (pre-preserved)  40 mL glass vial (pre-preserved)  1000 mL plastic  1000 mL plastic  *Sample Type: GW	N N Y Y OUPW1/Dt	UPW2, FBW	U, TBW, Ed	BW, REP1/f			actions

			Snow	Sampling F	ield Sheet					
						No:		= NI\/	'l-177 <b>-</b> 0	312
Are	a:	80	00			Revision	_		1-177-0	312
	ctive Dat		-Mar-2012						ul	
Гas				ing Field Sh		_,.	_			
						Page:		1	of	3
						Page 3 for R	evisio	Trac	king Only	not for Print
<u>EN</u>	ERAL		-1						101	16
				DATE (yyyy-mr						
AM	PLED BY: _	BP PL		TYPE OF SA	AMPLE: Dust	Water	r Qual	ity [	QAQ	C:
					•	_		_		
3PS	COORDINAT	res (UTM):	53310 5	E 7	1148926	N (	(zone)		12h	
ES	CRIPTION: D	istance to D	Diavik	_ km & Direction	ı	0	n: Lan	d X		ake 🔲
	ATE CONDI							0		
			ad Bi4i	SE	Mad Cared.	4				
AIP I	emp:	_C W	na Direction:							
)ust	in Area: Vis	ible 🔲 1	Not Visible 🔽	]	Cloud Cover: ( Snow Conditio	0% / 10% / 2	5%/5	0%/	75% / 100	0%
Prec	pitation: Rai	n / Mist / Sn	ow N/A		Snow Conditio	n: Crystallize	ed 🗘 🖹	Pack	ed 🕅 W	et 🔲 Dry 🔲
		Depth	Length	Weight of	Weight of	Water	Ì	П	Cc	mments
		oop		110.9.1.01	110.5.100	a a a ce i	D.,	- 4		millicitis
	Core	of	of Snow	Tube	Empty	Content-	Du: Pres		(core w	eighed, bag #
P	Core Number	of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	Content- SWE	Du: Pres Yes/	ent	(core w	
Dust		of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Pres	ent No	(core w	eighed, bag # ges in snow
Dust Cor	Number 1	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Pres Yes/	ent No N	(core w	eighed, bag # ges in snow
Dust Cores	Number 1 2	of Snow (cm) 45	of Snow Core (cm)	Tube & Core- SWE (cm) S S	Empty Tube-SWE (cm)	Content- SWE (cm)	Pres Yes/ Y	ent No N	(core w	eighed, bag # ges in snow
Dust Cores	Number  1 2 3	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Pres Yes/ Y Y	ent No N	(core w	eighed, bag # ges in snow
Dust Cores	Number 1 2	of Snow (cm) 45	of Snow Core (cm)	Tube & Core- SWE (cm) S S	Empty Tube-SWE (cm)	Content- SWE (cm)	Pres Yes/ Y Y	ent No N	(core w	eighed, bag # ges in snow
Dust Cores	Number  1 2 3	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) S S	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y	ent No N	(core w	eighed, bag # ges in snow
Dust Cores	Number  1 2 3	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y Y	ent No N	(core w	eighed, bag # ges in snow
Dust Cores	Number  1 2 3 4	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y Y Y > 25)	ent No N	(core w	eighed, bag # ges in snow
Dust Cores	1 2 3 4 1 2 2	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y Y > 25)	ent No N N N N	(core w	eighed, bag # ges in snow
Cores	1 2 3 4 1 2 3 3	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y Y > 25) Y	N N N N N N N N	(core w	eighed, bag # ges in snow
Cores	1 2 3 4 4	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y > 25) Y	ent No N N N N N N N	(core w	eighed, bag # ges in snow
Cores	1 2 3 4 5 5	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y Y > 25) Y Y	ent No N N N N N N N N N N N N N N N N N N	(core w	eighed, bag # ges in snow
Cores	1 2 3 4 4	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y Y > 25) Y Y Y	ent No N N N N N N N N N N N N N N N N N N	(core w	eighed, bag # ges in snow
Cores	1 2 3 4 5 5	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y Y > 25) Y Y Y	ent No N N N N N N N N N N N N N N N N N N	(core w	eighed, bag # ges in snow
Cores	1 2 3 4 5 6	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y > 25) Y Y Y Y	ent No N N N N N N N N N N N N N N N N N N	(core w	eighed, bag # ges in snow
Cores	1 2 3 4 5 6 7	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y > 25) Y Y Y Y Y	ent No N N N N N N N N N N N N N N N N N N	(core w	eighed, bag # ges in snow
Cores	1 2 3 4 5 6 7 8 9	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y Y Y Y Y Y	No N N N N N N N N N N N N N N N N N N	(core w	eighed, bag # ges in snow
Dust Cores Water Quality Cores	1 2 3 4 5 6 7 8	of Snow (cm) 45	of Snow Core (cm) 4/4 4/2 39	Tube & Core- SWE (cm) SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Empty Tube-SWE (cm) 34 38	Content- SWE (cm)	Pres Yes/ Y Y Y Y Y Y Y Y Y	ent No No No No No No No No No No No No No	(core w	eighed, bag # ges in snow

\*\* Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Water Quality (Min. of 3 cores - Total Water Content SWE =/> 100)

12

Area: Effect Task:	ive	Date:	8000 26-Mar- Snow S		l2 pling Fie	ld She	et	Ву:	/ision:	R9 D. D	
-								Pag Page	ge: e 3 for Revi	2 sion Trac	of 3 king Only not for
Dust \$	Filter # Weight of Filter (mg)  1 123, 2						Tota	l Volume	of Melted	Snow:_	1475
Filte	r#			F	ilter + Re		Resid	due We (mg)	ight	Co	omments
1	2				न0.3		Ч'	7.1	12.74		
2	120.4				121.6.		01	(.2			
3		123.	2	Ţ	94.6.		7	1.4.			
4		123.	ч		16.5		ا	13.1			
Totals	6	126.	9		74.3			47.4	W	No.	
4 123.4			13	377,3			160,2 1 Volume	of Melted	l Snow:_		
Filling Order	An	alysis	Bottle Type		Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Locatio	DI Batch on preserv	Comments # for QACC, ed If not in field, lab anges
1		letals Fotal	60 mL Falcon Tube (x2)		Y						
2	N Dis	letals solved	60 mL Falcon Tube (x2)		Y						
3		Fotal ercury	40 mL clear glas (pre-preserved)		N	6					1100000
4	Nu	trients	120 mL plastic preserved)		N						
5	Ап	nmonia	40 mL glass v (pre-preserve	rial	N						
6	Re	outine	1000 mL plas		Υ				374.05		
7	TSS	Turb/pH	1000 mL plas	tic	Y						
/			*Sample Type:	GW.	DUPW1/DU	PW2, FBV		BW, REP1	/REP2, Fille	er Blank	
		forma applicab		ssues	s, safety cond	cems, wea	ther proble	ems, chang	ges during s	ampling e	vent, follow-up action

				<u>Sampling F</u>	ielu Sileet			
						No:	EN\	/I-177-0312
Are:			000			Revision		
	ctive Dat		-Mar-2012			Ву:	<u>D. C</u>	Dul
as	k:	<u>Sr</u>	now Sampl	ing Field Sh	eet			
						Page: Page 3 for R	1 evision Tra	of 3
ENI OC/	ERAL ATION NAME	ړکۍ ₌	5-2	DATE (yyyy-mı	mm-dd): _2ರ೦	21-04-11	TIME (2	24:00) <u>: 1338</u>
								QAQC:NA
				<u>E_7</u>		*		
ESC	CRIPTION: D	istance to [	Diavik 🗢	km & Direction	- I		n: Land	8/or Lake
	ATE CONDI							_
			ind Direction:	_5E_ v	Vind Sneed:	4 64	e	
				•	-			
)ust	in Area: Vis	sible 🔲 🗆	Not Visible		Cloud Cover: (			
reci	ipitation: Rai	in / Mist / Sr	IOW / AI/A\		Snow Conditio	n: Crystallize	ed ৠ Pac	ked Wet Dry D
	1					18/040-		
	Core	Depth	Length	Weight of	Weight of	Water	Dust	Comments
	Core Number					Content-	Present	(core weighed, bag # changes in snow
		Depth of	Length of Snow Core (cm)	Weight of Tube	Weight of Empty	1	Present Yes/No	(core weighed, bag #
Diet C		Depth of Snow	Length of Snow Core	Weight of Tube & Core-	Weight of Empty Tube-SWE	Content- SWE	Present	(core weighed, bag # changes in snow
Dust Core	Number	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Weight of Empty Tube-SWE (cm)	Content- SWE	Present Yes/No	(core weighed, bag # changes in snow
Dust Cores	Number 1	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Weight of Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weighed, bag # changes in snow
Diret Cores	Number  1 2	Depth of Snow (cm)	Length of Snow Core (cm)	Weight of Tube & Core- SWE (cm)	Weight of Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y N	(core weighed, bag # changes in snow
Dust Cores	Number  1 2 3	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Number  1 2 3	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Number  1 2 3 4	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Number  1 2 3 4	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Cores	1 2 3 4 1 2 2	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N > 25)	(core weighed, bag # changes in snow
Cores	1 2 3 4 1 2 3 3	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N > 25) Y N Y N	(core weighed, bag # changes in snow
Cores	1 2 3 4 4 4	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Cores	1 2 3 4 5 5	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N > 25) Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores Water Quality Co	1 2 3 4 5 6	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Cores	1 2 3 4 5 6 7	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores Water Quality Cores	1 2 3 4 5 6 7 8	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Cores	1 2 3 4 5 6 7 8 9	Depth of Snow (cm) 25 27	Length of Snow Core (cm) 25	Weight of Tube & Core- SWE (cm) 47 45 46	Weight of Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Area: Effect	tive Date:	8000 26-Mar-20	ow Samp 012			No:	vision:	ENVI-177-0312 R9 D. Dul	2
Task:		Snow Sar	npling Fie	eld She	et	11		8	
						Pag Pag	ge: e 3 for Rev	2 of	3 for Prin
Dust \$	Sample Fil	ters			Total	l Volume	of Melter	d Snow: 910	(m
Filte		ht of Filter (mg)	Filter + Ro		Resid	due We (mg)	ight	Comments	
1	12	4.3	290,2		11	05,9.			
2		7.0.	120,7			3.7			
3									
4	3 4				-		2354 I I =		
Tota		1.3	410.9		16	9.6.			XIII S
	Quality B	Bottle	Triple	Sample Type *	Tota Sample Type *	Sample		Sample Comments  DI Batch # for QAQC,	(17
Filling Order	Miarysis	Туре	Rinse		•		Locati	ion preserved if not in field changes	, label
1	Metals Total	60 mL Falcon Tube (x2)	Υ						
2	Metals Dissolved	60 mL Falcon Tube (x2)	Υ						
3	Total Mercury	40 mL clear glass (pre-preserved)	N						
4	Nutrients	120 mL plastic (pr preserved)	re- N			-			
5	Ammonia	40 mL glass vial (pre-preserved)						****	
6	Routine	1000 mL plastic					_		
7	TSS/Turb/pH	1000 mL plastic	Y						
		*Sample Type: G\	N, DUPW1/DL	JPW2, FBV	V, TBW, E	BW, REP1	/REP2, Fill	ter Blank	
	al Informa dor if applicab		ies, safety con	icems, wea	ther proble	ems, chan	ges during :	sampling event, follow-up	actions

			Snow	Sampling F	ield Sheet			
Area Effe Tas	ctive Date		00 -Mar-2012			No: Revision By:	: R9	/I-177-0312 Oul
							1 evision Tra	of 3 cking Only not for Print
GEN	ERAL		_		·			
				DATE (yyyy-mn				
SAMI	PLED BY: _	BP PL		TYPE OF SA	AMPLE: Dust	Water	Quality	X QAQC:
		//	577147	, _ 7	148698			124
GPS DEC	COORDINA	ES (UIM):	ر داد دد د داد دد	) E /	1/	N (	zone)	12 W  8/or Lake   7
			iavik	_ Km & Direction			n; Lano [_	☐ gvor rake [Å]
CLIM	ATE CONDIT	<u>rions</u>				4		
Air T	emp: <u>-2-1</u>	c Wi	nd Direction:	SE N	/ind Speed:	kt	S.	
Dust	in Area: Vis	ible 🔲 N	Not Visible 🔀	1 (	Cloud Cover: (	)% / 10% / 2!	5% / <del>5</del> 0% /	75% / 100%
	pitation: Rai							ked 🔲 Wet 🔲 Dry 🔲
	•							
		Depth	Length	Weight of	Weight of	Water	Dust	Comments
	Core Number		Length of Snow Core	Weight of Tube & Core-	Weight of Empty Tube-SWE	Water Content- SWE	Present	(core weighed, bag # changes in snow
Dust	Core Number	Depth of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weighed, bag #
Dust Co	Core Number	Depth of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weighed, bag # changes in snow
Dust Cores	Core Number	Depth of Snow (cm)	of Snow Core (cm) SO	Tube & Core- SWE (cm) SS	Empty Tube-SWE (cm) 38	Content- SWE (cm)	Present Yes/No Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number	Depth of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number	Depth of Snow (cm)	of Snow Core (cm) SO	Tube & Core- SWE (cm) SS	Empty Tube-SWE (cm) 38	Content- SWE (cm)	Present Yes/No Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number	Depth of Snow (cm)	of Snow Core (cm) SO 447	Tube & Core- SWE (cm) SS	Empty Tube-SWE (cm) 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4	Depth of Snow (cm) 52 51	of Snow Core (cm) 50 248 47 Dust (Min.	Tube & Core- SWE (cm) SS SY	Empty Tube-SWE (cm) 38 38 38	Content- SWE (cm)	Present Yes/No Y N Y N Y N > 25)	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4	Depth of Snow (cm) 52 51	of Snow Core (cm) SO 445 47 Dust (Min.	Tube & Core- SWE (cm) SS SY SU of 3 cores – To	Empty Tube-SWE (cm) 38 38 38 stal Water Con	Content- SWE (cm)	Present Yes/No Y N Y N Y N > 25) Y N	(core weighed, bag # changes in snow
Dust Cores	Core Number  1 2 3 4	Depth of Snow (cm) 52 51	of Snow Core (cm) 50 248 47 Dust (Min.	Tube & Core- SWE (cm) SS SY SU of 3 cores – To	Empty Tube-SWE (cm) 38 38 38 stal Water Con	Content- SWE (cm)	Present Yes/No Y N Y N Y N > 25) Y N	(core weighed, bag # changes in snow
Cores	Core Number  1 2 3 4	Depth of Snow (cm) 52 51 50	of Snow Core (cm) SO 447 Dust (Min.	Tube & Core- \$WE (cm)  \$5  54  54  of 3 cores - To  \$2  53  53  52	Empty Tube-SWE (cm) 38 38 38 stal Water Con	Content- SWE (cm) 17 /6 /6 tent SWE =1:	Present Yes/No  Y N  Y N  Y N  Y N  Y S  25)  Y N  Y N  Y N	(core weighed, bag # changes in snow
Cores	Core Number  1 2 3 4  1 2 3 4 5	Depth of Snow (cm) 52 51 50	of Snow Core (cm) SO 448 47 Dust (Min. 47 49 48	Tube & Core- \$WE (cm)  \$5  54  54  of 3 cores - To  \$2  53  53  52	Empty Tube-SWE (cm)  38  38  38  stal Water Con  38  38  38  38	Content- SWE (cm) 17 16 16 tent SWE =1	Present Yes/No  Y N  Y N  Y N  Y N  P S  P S  Y N  Y N  Y N  Y N  Y N  Y N	(core weighed, bag # changes in snow
Cores	Core Number  1 2 3 4  1 2 3 4 5 6	Depth of Snow (cm) 52 51 50	of Snow Core (cm) 50 48 47 Dust (Min. 47 49 48 49 48	Tube & Core- SWE (cm)  SS  S4  SL  of 3 cores - To	Empty Tube-SWE (cm)  38  38  38  34  35  35  37  38	Content- SWE (cm) 17 16 16 tent SWE =1	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Cores	Core Number  1 2 3 4  1 2 3 4 5	Depth of Snow (cm) 52 51 50 49 49 49 49 49 49	of Snow Core (cm) 50 447 Dust (Min. 47 49 48 48	Tube & Core- SWE (cm)  55 54 54 54 55 53 53 52 52 49 53	Empty Tube-SWE (cm) 38 38 38 34 35 38 38 38 38 38	Content- SWE (cm) 17 16 16 tent SWE =1	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Cores	Core Number  1 2 3 4  1 2 3 4 5 6	Depth of Snow (cm) 52 51 50	of Snow Core (cm) 50 48 47 Dust (Min. 47 49 48 49 48	Tube & Core- \$WE (cm)  \$5  54  54  of 3 cores - To  \$2  53  53  52	Empty Tube-SWE (cm)  38  38  38  stal Water Con  38  38  38  38	Content- SWE (cm) 17 16 16 tent SWE =1:	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag # changes in snow
Dust Cores Water Quality Cores	Core Number  1 2 3 4  1 2 3 4 5 6 7	Depth of Snow (cm) 52 51 50 49 49 49 49 49 49	of Snow Core (cm) 50 48 47 Dust (Min. 47 49 48 49 48	Tube & Core- SWE (cm)  55 54 54 54 55 53 53 52 52 49 53	Empty Tube-SWE (cm) 38 38 38 34 35 38 38 38 38 38	Content- SWE (cm) 17 16 16 tent SWE =1:	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow
Cores	Core Number  1 2 3 4  1 2 3 4 5 6 7 8	Depth of Snow (cm) 52 51 50 49 49 49 49 49 49	of Snow Core (cm) 50 48 47 Dust (Min. 47 49 48 49 48	Tube & Core- SWE (cm)  55 54 54 54 55 53 53 52 52 49 53	Empty Tube-SWE (cm) 38 38 38 34 35 38 38 38 38 38	Content- SWE (cm) 17 16 16 tent SWE =1:	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag # changes in snow

12

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Task:	ā	Snow San	npling Fie	Id She	et	Pag	qe:	2	of	3
	F:					Page	e 3 for Revi		•	
	Sample Fil							ted Snow: 1440 (		
Filte		ht of Filter (mg)	Filter + Ro (mg		Resid	due Wei (mg)	ight		Commer	nts 
1		5.5	234.5		118	3,0.				
2	12	4.4	330.6.			6.2				
3	123	5,7	125.7		7	2,0.				
	3 12 3 4	4.6.	690.8		3	26.2			N =	
Water	r Quality B				Tota	ıl Volume	of Melted	d Snow:		
Filling	Analysis	Bottle	Triple	Sample Type *	Sample Type *	Sample Type *		DI Batc	le Commer	QC,
Order		Туре	Rinse				Location		rved if not i changes	n field, labe
1	Metals Total	60 mL Falcon Tube (x2)	Y					***		
2	Metals Dissolved	60 ml, Falcon Tube (x2)	Y							
3	Total Mercury	40 mL clear glass (pre-preserved)	N							
4	Nutrients	120 mL plastic (pre preserved)	e- N							
5	Ammonia	40 mL glass vial (pre-preserved)								
6	Routine	1000 mL plastic	Y							
7	TSS/Turb/pH	1000 mL plastic	Y							
		*Sample Type: GV	N, DUPW1/DL	JPW2, FBV	V, TBW, E	BW, REP1	/REP2, Filte	er Blank		
itiona	al Informa	ation								
		ole: (equipment issue	es, safety con	icems, wea	ther proble	ems, chanç	jes during s	ampling	event, follo	w-up action

			Snow	Sampling F	ield Sheet			
						No:	ENV	/I-177-0312
Area		_	000			Revision		
	ctive Date		6-Mar-2012			Ву:	D. D	ul
Tas	k:	<u>s</u>	now Sampli	ing Field Sh				
						Page 3 for Re	1 evision Trac	of 3
GEN	ERAL							
LOC	ATION NAME	<u> 55 5</u>	-4	DATE (yyyy-mr	nm-dd): 202/	-04-11	TIME (2	4:00): 1242
SAMI	PLED BY:	RP /	2	TYPE OF S/	AMPLE: Dust	Water	· Ouality 「	M QAQC:
WF 11-1-					-14 - 006	,	- Canalina	7)
GPS	COORDINAT	res (UTM)	: <u>533147</u>	E	114/950	<u></u> N (	zone)	2
DESC	RIPTION: D	istance to	Diavik	_km & Direction		0	n: Land	&/or Lake 📈
CLIM	ATE CONDI	<u> TIONS</u>				2		
Air T	emp:22	_ C V	/ind Direction:	SE W	Vind Speed:	<u>kt</u>	S.	
				,			6	
	in Area: Visipitation: Rai		Not Visible		Cloud Cover: 0			75% / 100% ked [[] Wet [] Dry []
rieu.	риации. по	II / IVIISC / O	III WITH	•	Sliow Collding	II. Olystamet	:u 1 av	(eq th wer in più in
		Depth	Length	Weight of	Weight of	Water		Commonto
		Doper.		TTGIMING	TTGIMILE OF	TYULU:	l –	Comments
	Core	of	of Snow	Tube	Empty	Content-	Dust	(core weighed, bag #,
₽	Core Number	of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	SWE	Dust Present Yes/No	changes in snow
Dust	Number	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	SWE (cm)	Present Yes/No	
Dust Co	Number 1	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE	SWE	Present Yes/No	changes in snow
Dust Cores	Number 1 2	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm) 52- 51	Empty Tube-SWE (cm)	SWE (cm) /4	Present Yes/No Y N	changes in snow
Dust Cores	Number  1 2 3	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	SWE (cm)	Present Yes/No Y N Y N	changes in snow
Dust Cores	Number 1 2	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm) 52- 51	Empty Tube-SWE (cm)	SWE (cm) /4	Present Yes/No Y N	changes in snow
Dust Cores	Number  1 2 3	of Snow (cm) 54	of Snow Core (cm) 3 4 4 3 9 4 5	Tube & Core- SWE (cm) 52- 51 52- of 3 cores - To	Empty Tube-SWE (cm) 38 38 38	SWE (cm) //4 //3 //4 tent SWE =/:	Present Yes/No  Y N  Y N  Y N  Y N  Y N	changes in snow
Dust Cores	1 2 3 4	of Snow (cm) 54 51	of Snow Core (cm) 3 4 4 3 9 4 5	Tube & Core- SWE (cm) 52- 51 52- of 3 cores - To	Empty Tube-SWE (cm) 38 38 38	SWE (cm) //4 //3 //4 tent SWE =/:	Present Yes/No  Y N  Y N  Y N  Y N  Y N	changes in snow
Dust Cores	Number  1 2 3 4	of Snow (cm) 54	of Snow Core (cm) 3 4 4 3 9 4 5	Tube & Core- SWE (cm) 52- 51	Empty Tube-SWE (cm) 38 38 38	SWE (cm) //4 //3 //4 tent SWE =/:	Present Yes/No Y N Y N Y N Y N > 25)	changes in snow
Dust Cores	1 2 3 4	of Snow (cm) 54 51	of Snow Core (cm) 3 4 4 3 9 4 5	Tube & Core- SWE (cm) 52- 51 52- of 3 cores - To	Empty Tube-SWE (cm) 38 38 38	SWE (cm) //4 //3 //4 tent SWE =/:	Present Yes/No  Y N  Y N  Y N  Y N  Y N	changes in snow
D D	1 2 3 4 1 2 2	of Snow (cm) 554 51	of Snow Core (cm)  3 9  45  Dust (Min. 52  54	Tube & Core- \$WE (cm)  52  51  52  of 3 cores - To  57  57	Empty Tube-SWE (cm) 38 38  Stal Water Cont 38 38	SWE (cm) /4 /3 /4 tent SWE =1:	Present Yes/No Y N Y N Y N Y N > 25)	changes in snow
D D	1 2 3 4 1 2 3 3 3 4 1 2 3 3 1 3 3 1 4 1 2 1 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	of Snow (cm) 54 51 53 54 55 54 55 54	of Snow Core (cm) 3 4 4 3 9 4 5  Dust (Min.	Tube & Core- SWE (cm)  52  51  52  of 3 cores - To  57  57  53	Empty Tube-SWE (cm) 38 38  Stal Water Cont 38 38	SWE (cm)  14  13  14  tent SWE =1:	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	changes in snow
D D	1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	of Snow (cm) 5 5 4 5 1 5 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 5 4 5 5 5 4 5	of Snow Core (cm) 3 4 4 5  Dust (Min. 52 54 45 52	Tube & Core- \$WE (cm)  52  51  52  of 3 cores - To  57  57  53  56  53	Empty Tube-SWE (cm) 38 38 38 38 38 38 38	SWE (cm)  14  13  14  19  19  17  18  18  15	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	changes in snow
D	1 2 3 4 5 5	of Snow (cm) 54 51 53 54 55 54 55 54	of Snow Core (cm) 3 4 4 5  Dust (Min. 52 54 45 52	Tube & Core- SWE (cm)  52  51  52  of 3 cores - To  57  57  53	Empty Tube-SWE (cm) 38 38  Stal Water Cont 38 38	SWE (cm)  14  13  14  tent SWE =1:	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	changes in snow
D D	1 2 3 4 5 6	of Snow (cm) 5 5 4 5 1 5 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 5 4 5 5 5 4 5	of Snow Core (cm) 3 4 4 5  Dust (Min. 52 54 45 52	Tube & Core- \$WE (cm)  52  51  52  of 3 cores - To  57  57  53  56  53	Empty Tube-SWE (cm) 38 38 38 38 38 38 38	SWE (cm)  14  13  14  19  19  17  18  18  15	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	changes in snow
Dust Cores Water Quality Cores	1 2 3 4 5 6 7	of Snow (cm) 5 5 4 5 1 5 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 5 4 5 5 5 4 5	of Snow Core (cm) 3 4 4 5  Dust (Min. 52 54 45 52	Tube & Core- \$WE (cm)  52  51  52  of 3 cores - To  57  57  53  56  53	Empty Tube-SWE (cm) 38 38 38 38 38 38 38	SWE (cm)  14  13  14  19  19  17  18  18  15	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	changes in snow
Þ	1 2 3 4 5 6 7 8 9	of Snow (cm) 5 5 4 5 1 5 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 5 4 5 5 5 4 5	of Snow Core (cm) 3 4 4 5  Dust (Min. 52 54 45 52	Tube & Core- \$WE (cm)  52  51  52  of 3 cores - To  57  57  53  56  53	Empty Tube-SWE (cm) 38 38 38 38 38 38 38	SWE (cm)  14  13  14  19  19  17  18  18  15	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	changes in snow
D	1 2 3 4 5 6 7 8 9 10	of Snow (cm) 5 5 4 5 1 5 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 5 4 5 5 5 4 5	of Snow Core (cm) 3 4 4 5  Dust (Min. 52 54 45 52	Tube & Core- \$WE (cm)  52  51  52  of 3 cores - To  57  57  53  56  53	Empty Tube-SWE (cm) 38 38 38 38 38 38 38	SWE (cm)  14  13  14  19  19  17  18  18  15	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	changes in snow
Þ	1 2 3 4 5 6 7 8 9	of Snow (cm) 5 5 4 5 1 5 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 4 5 5 5 4 5 5 5 4 5	of Snow Core (cm) 3 4 4 5  Dust (Min. 52 54 45 52	Tube & Core- \$WE (cm)  52  51  52  of 3 cores - To  57  57  53  56  53	Empty Tube-SWE (cm) 38 38 38 38 38 38 38	SWE (cm)  14  13  14  19  19  17  18  18  15	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	changes in snow

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Area: Effect Task:	tive Date:	8000 26-Mar-20 Snow Sam		ield She	et	No: Rev By:	vision:	R9 D. E		
	= - 1					Page Page	ge: e 3 for Revi	2 rision Tra	Of acking Only	3 y not for Pri
Dust (	Oust Sample Filters Filter # Weight of Filter		rs			l Volume	e of Melted	: Snow	: <u>123</u>	0(
		ht of Filter F (mg)	Filter + R (mg		Resid	due We (mg)	- 1		Commen	
1			143.3	L	2	26.3	Som	ic veg le	ett on fil	iter before
2										
3										
4										
Tota	if   sla	.0	143.3		2	26.3		8		
Water	· Quality B	ottles			Tota	ıl Volume	e of Meltec	d Snow:	:	(
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	ŀ	DI Batc ion preser		
	Motele	60 mL Falcon							changes	
1	Metals Total	60 mL Falcon Tube (x2)	Y							
2	Metals Dissolved	60 mL Falcon Tube (x2)	Υ							
3	Total Mercury	40 mL clear glass (pre-preserved)	N							
4	Nutrients	120 mL plastic (pre- preserved)	N				Ä			
5	Ammonia	40 mL glass vial (pre-preserved)	N							
6	Analysis  Metals Total  Metals Dissolved  Total Mercury  Nutrients  Ammonia	1000 mL plastic	Y							
7	TSS/Turb/pH	1000 mL plastic	Y							
	Metals Total  Metals Dissolved  Total Mercury  Nutrients  Ammonia  Routine  TSS/Turb/pH	*Sample Type: GW	· DI IPW1/D				1/DEP2, Filt	or Blank		
	al Informa odor if applicab									w-up action

			Snow	Sampling F	ield Sheet			
\rea	a: ctive Dat	e: <u>26</u>	)00 6-Mar-2012	•		No: Revision By:		/I-177-0312 Oul
as	k:	Sr	now Sampl	ing Field Sh	eet			
						Page: Page 3 for R	1 evision Trac	of 3 cking Only not for Print
	ERAL		- 41					
		_		DATE (yyyy-mi				
AMF	PLED BY: _	BP PL		TYPE OF SA	AMPLE: Dust	Water	r Quality-[	DAQC: DUPW-J
PS (	COORDINAT	TES (UTM):	533/4	17_E_	7146 + 62	N (	zone)	24/
ESC	RIPTION: D	istance to I	Diavik	_ km & Direction	<u> </u>		n Land	7~1. / ] &/or Lake ☑
_IM	ATE CONDI	TIONS						,
r Te	emp: <u>-2</u> 2	≟·c w	ind Direction:	SE V	Vind Speed:	<u>5k</u> t	s.	
ust	in Area: Vis	ible 🗍	Not Visible	7	Cloud Cover: (	0% / 10% / 2	5% / 50% /	75% / 100%
	pitation: Rai							ked ₩et □ Dry □
		Danth	Lameth	Marinha of	101-1-1-4-6	101-4		D
		Depth	Length	Weight of	Weight of	Water	p	Comments
,	Core Number	of Snow	of Snow Core	Tube & Core-	Empty Tube-SWE	Content- SWE	Dust Present Yes/No	(core weighed, bag # changes in snow condition)
		of Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present	
	Number	of Snow	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present Yes/No	changes in snow
	Number 1	of Snow (cm) 46	Core (cm) 35	& Core- SWE (cm) 3 Z	Tube-SWE (cm)	SWE (cm)	Present Yes/No Y W	changes in snow
	Number 1 2	of Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present Yes/No	changes in snow
	Number  1 2 3	of Snow (cm) 46	Core (cm) 35 47 49 Dust (Min.	& Core- SWE (cm) 5 Z 56 56	Tube-SWE (cm) 38 38 38	SWE (cm) 14 14 18 18 18 18 18 18 18 18 18 18 18 18 18	Present Yes/No Y N Y N Y N	changes in snow condition)
	1 2 3 4	of Snow (cm) 46	Core (cm) 35 47 49 Dust (Min.	& Core- SWE (cm) 5 Z SS SS of 3 cores – To	Tube-SWE (cm) 38 38 38 38 otal Water Con	SWE (cm) 14 14 18 18 18 18 18 18 18 18 18 18 18 18 18	Present Yes/No Y N Y N Y N	changes in snow condition)
	1 2 3 4 / 1/\(\frac{1}{2}\)	of Snow (cm) 46 48	Core (cm) 35 47 49 Dust (Min.	& Core- SWE (cm) 5 Z 56 56	Tube-SWE (cm) 38 38 38	SWE (cm) 14 14 18 18 18 18 18 18 18 18 18 18 18 18 18	Present Yes/No Y W Y N Y N Y N	changes in snow
	1 2 3 4 4 / 1/1 / 2 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3	of Snow (cm) 48 49	Core (cm) 35 47 49  Dust (Min.	& Core- SWE (cm) 5 Z SS SS of 3 cores – To	Tube-SWE (cm) 38 38 38 38 otal Water Con	SWE (cm) 14 14 18 18 18 18 18 18 18 18 18 18 18 18 18	Present Yes/No Y W Y N Y N > 25)	changes in snow condition)
	1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	of Snow (cm) 48 49	Core (cm) 35 47 49  Dust (Min.	& Core- SWE (cm) 5 Z SS SS of 3 cores – To	Tube-SWE (cm) 38 38 38 otal Water Con	SWE (cm) 14 18 18 tent SWE = 1	Present Yes/No Y N Y N Y N > 25)	changes in snow condition)
	1 2 3 4 4 5 5	of Snow (cm) 48 49	Core (cm) 35 47 49  Dust (Min.	& Core- SWE (cm) 52 56 56 of 3 cores - To	Tube-SWE (cm) 38 38 38 38 38 38 38 38 38 38 38 38 38	SWE (cm) 14 14 18 18 18 18 18 18 18 18 18 18 18 18 18	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)
	1 2 3 4 4 5 6	of Snow (cm) 48 49	Core (cm) 35 47 49  Dust (Min. 87 87 47 54 43	& Core- SWE (cm) 52 56 56 of 3 cores - To	Tube-SWE (cm) 38 38 38 38 38 38 38 38 38 38 38 38 38	SWE (cm) 14 18 18 tent SWE = 1	Present Yes/No Y W Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)
4	1 2 3 4 4 5 6 7	of Snow (cm) 48 49 49 55 56 46 55	Core (cm) 35 47 49  Dust (Min. 57 57 47 54 43 49	& Core- SWE (cm) 52 56 56 of 3 cores - To	Tube-SWE (cm) 38 38 38  otal Water Con 38 37 37 38 38 38	SWE (cm) 14 18 18 20 19 19 19	Present Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N	changes in snow condition)
4	1 2 3 4 4 5 6 6 7 8	of Snow (cm) 46 48 49 55 56 46	Core (cm) 35 47 49  Dust (Min. 57 57 47 54 43 49 50	& Core- SWE (cm) 5 Z 56 56 0f 3 cores - To 76 90 57 56 57 56 57	Tube-SWE (cm) 38 38 38 38 38 38 38 38 38 38 38 38	SWE (cm) 14 18 18 20 19 19 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)
	1 2 3 4 4 5 6 7 8 9	of Snow (cm) 48 49 49 55 56 46 55	Core (cm) 35 47 49  Dust (Min. 57 57 47 54 43 49	& Core- SWE (cm) 52 56 56 of 3 cores - To	Tube-SWE (cm) 38 38 38  otal Water Con 38 37 37 38 38 38	SWE (cm) 14 18 18 18 20 19 19 18 20 16 18	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)
	1 2 3 4 4 5 6 7 8 9 10	of Snow (cm) 48 48 49 55 55 55 55 55	Core (cm) 35 47 49  Dust (Min. 57 57 47 54 43 49 50	& Core- SWE (cm) 5 Z 56 56 0f 3 cores - To 76 90 57 56 57 56 57	Tube-SWE (cm) 38 38 38  otal Water Con 38 37 37 38 38 38	SWE (cm) 14 18 18 18 20 19 19 18 20 16 18	Present Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)
	1 2 3 4 4 5 6 7 8 9	of Snow (cm) 48 48 49 55 55 55 55 55	Core (cm) 35 47 49  Dust (Min. 57 57 47 54 43 49 50	& Core- SWE (cm) 5 Z 56 56 0f 3 cores - To 76 90 57 56 57 56 57	Tube-SWE (cm) 38 38 38  otal Water Con 38 37 37 38 38 38	SWE (cm) 14 18 18 18 20 19 19 18 20 16 18	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)

<sup>\*\*</sup> Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> - Wt. of Empty Tube<sub>SWE</sub> \*\*

Task:		Snow Sam	pinig i i	CIG OTIC	<u> </u>	Pag	1e:	2	of	3
						Page	3 for Revi		king Only	not for Pri
Dust :						l Volume	of Melted	Snow:	1505	(DVP2)
Filte	(mg)		1		Residue Weight (mg)			С	omment	s
1	1 116.6		124.4		91	7.8				
2	2									
3								-		
Tota	ils		1244			C/				The ATTACA
	ils lib	.0	1244		-4	8				
Water	· Quality B	ottles			Tota	l Volume	of Melter	l Snow:		(
Filling	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Location	DI Batch	Comments # for QAQ yed if not in	<u>C</u> ,
Order								cl	nanges	
1	Metals Total	60 mL Falcon Tube (x2)	Y							
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y							
3	.Total Mercury	40 mL clear glass (pre-preserved)	N							
4	Nutrients	120 mL plastic (pre- preserved)	N							
5	Ammonia	40 mL glass vial (pre-preserved)	N							5/15/6
6	Routine	1000 mL plastic	Υ							
7	TSS/Turb/pH	1000 mL plastic	Υ							
	1	*Sample Type: GW	DUPW1/D	UPW2, FBV	V, TBW, E	BW, REP1	/REP2, Filte	er Blank		
	al Inform									
e color, o	dor if applicat	le: (equipment issue	s, safety co	ncerns, wea	ther proble	ems, chang	ges during s	ampling e	event, follow	-up actions

1			Snow	Sampling F	ield Sheet	ELL DIC			
						No:		EΝV	/I-177-0312
Are	a:		00			Revision	:	R9	
Effe	ctive Dat		-Mar-2012			Ву:	13	D. D	)ul
Tas	k:	Sn	ow Sampli	ing Field Sh	eet	THE BE			
						Page:			of 3 cking Only not for Print
	ERAL								
OC.	ATION NAME	<u> 555</u>	-5-5	DATE (yyyy-mi	nm-dd): <u>207</u>	21-04-11	TI	ME (2	4:00): 1155
SAM	PLED BY:	BPA		TYPE OF SA	AMPLE: Dust	Water	r Qua	lity [	QAQC: DUP
3PS	COORDINAT	res (UTM):	533147	E	1146162	N	zone	e)	12
DES	CRIPTION: D	istance to C	Diavik <u> </u>	_km & Direction	5	0	n: La	ınd 🗌	&/or Lake X
CLIM	IATE CONDI	TIONS							
			nd Direction:	SEv	Vind Speed:	5 kt	s.		
								3	
					Cloud Cover: (	0% / 10% / 2	5% (	50%/	75% / 100%
Preci	ipitation: Rai	in / Mist / Sn	ow /(N/A)		Snow Conditio	n: Crystallize	ed L	Pacl	ked Wet Dry D
		D 41							
	Core	Depth of	Length of Snow	Weight of Tube	Weight of Empty	Water Content-	D	ust	Comments (core weighed, bag #
	Number	Snow	Core	& Core-	Tube-SWE	SWE		sent	changes in snow
Dust		(cm)	(cm)	SWE (cm)		(cm)	Yes	s/No	condition)
C	1	57	57	60	38	22	Y	N	
Cores	2	57	57	59	38	21	Y	N	
VI	3	56	50	57	38	19	Y	N	
	4						Y	N	
			Dust (Min.	of 3 cores – To	otal Water Con	tent SWE =/	> 25)		
	1						Υ	N	
	2						Y	N	
	3		1	,			Y	N	
S	4						Y	N	
ate	- 5				30-251 382		Y	N	
٥	6						Y	N	7
ality	7			-			Υ	N	
Water Quality Cores	8						Y	N	
res	9						Υ	N	was some county
	10					= 41	Υ	N	
	11						Υ	N	
	12		i —			<del></del>	Y	N	

<sup>\*\*</sup> Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> - Wt. of Empty Tube<sub>SWE</sub> \*\*

Area: Effective Date: Task:					eld She	No:	vision:	R9 D. Dul	
l'ask:		SNOW Sai	mpling Fie	<u>et</u>	Pag Page	ge: e 3 for Rev	2 of 3		
Dust Sample Filters  Filter # Weight of Filter		s			l Volume	of Melted	Snow: 1880		
(1		ht of Filter (mg)	Filter + R (mg		Resid	due We (mg)	ight	Comments	
1 124.			131.3.		6	,8			
3									
4									
Tota	als (24)	5	131.3.		6 8	5			
Water	r Quality B	<b>Jottles</b>			Tota	il Volume	of Melter	d Snow:	
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *		Sample Comments <u>DI Batch # for QAQC</u> , ion preserved if not in field, label changes	
1	Metals Total	60 mL Falcon Tube (x2)	Y						
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y				0.00		
3	Total Mercury	40 mL clear glass (pre-preserved)	N						
4	Nutrients	120 mL plastic (pr preserved)	ore- N						
5	Ammonia	40 mL glass vial (pre-preserved)							
6	Routine	1000 mL plastic							
7	TSS/Turb/pH	1000 ml. plastic	Y						
	al Informa							sampling event, follow-up action	

•									
			Snow	Sampling F	ield Sheet				
						No:	EN\	/I-177-0312	
Are	a:	800	00			Revision			
Effe	ctive Dat		-Mar-2012			Ву:	D. [	Oul	
Tas	k:	Sn	ow Sampl	ing Field Sh	eet				
						Page: Page 3 for Re	1 evision Tra	of 3 cking Only not for Print	
GEN	ERAL							. wild	
LOC	IMAN NOITA	<u>:: 55</u>	(-1	DATE (yyyy-mr	mm-dd): <u>20</u> 2	4-04-11	TIME (2	4:00):	
								4:00): 1044 QAQC: 104	
GPS	COORDINA	res (UTM): ,	53447	8_E_/	1144267	N (	zone)/2	4/	
DESC	CRIPTION: D	istance to D	iavik <u> </u>	_ km & Direction		0	n: Land	&/or Lake	
CLIM	ATE CONDI	TIONS				_	·		
Air T	emp: <u>- 2</u>	7'c Wii	nd Direction:	E_ v	Vind Speed:	kt	s.		
Dust	in Area: Vis	ible 🔲 N	lot Visible		Cloud Cover: (	0% / 10% / 2	5% / 50% /	75% / 100%	
Preci	pitation: Ra	n / Mist / Sno	ow N/A					ked 🖾 Wet 🔲 Dry 🔲	
		Depth	Length	Weight of	Weight of	Water		Comments	-
	_	, - 1					Dust		
	Core	of	of Snow	Tube	Empty	Content-		(core weighed, bag #,	
ס	Core Number	Snow	Core	& Core-	Tube-SWE	Content- SWE	Present Yes/No	changes in snow	
Dust	Number	Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE	SWE (cm)	Present Yes/No	changes in snow condition)	
Dust Co	Number 1	Snow (cm) があらが	Core (cm) 5 5	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present Yes/No	changes in snow	
<b>Dust Cores</b>	Number 1 2	Snow (cm) がり 5分 4の	Core (cm) 55	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm) 14	Present Yes/No Y N	changes in snow condition)	
<b>Dust Cores</b>	Number 1	Snow (cm) があらが	Core (cm) 55	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Present Yes/No Y N Y N	changes in snow condition)	
<b>Dust Cores</b>	Number 1 2	Snow (cm) がり 5分 4の	Core (cm) 55	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm) 14	Present Yes/No Y N	changes in snow condition)	
<b>Dust Cores</b>	Number  1 2 3	Snow (cm) がり 5分 4の	Core (cm) 55 34 37	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm) 18 12 13	Present Yes/No Y (V) Y (V) Y (N) Y N	changes in snow condition)	
Dust Cores	Number  1 2 3	Snow (cm) 589 58 40 B8640	Core (cm) 55 34 37	& Core- SWE (cm) S6 50	Tube-SWE (cm) 38 38 39 otal Water Con	SWE (cm) 18 12 13	Present Yes/No Y (V) Y (V) Y (N) Y N	changes in snow condition)	
Dust Cores	Number  1 2 3 4	Snow (cm) \$358 40 8840	Core (cm) 55 34 37 Dust (Min.	& Core- SWE (cm) S6 S7 51	Tube-SWE (cm) 38 38 38 otal Water Con	SWE (cm) 14 17 13 tent SWE =1	Present Yes/No Y N Y N Y N	changes in snow condition)	
Dust Cores	1 2 3 4	Snow (cm) \$39.58 40 8840	Core (cm) 55 34 37 Dust (Min. 47 38	& Core- SWE (cm) S6 S7 of 3 cores – To	Tube-SWE (cm) 38 38 38 otal Water Con	SWE (cm)   14   12   13   13   17   17   17   17   17   17	Present Yes/No Y N Y N Y N > 25)	changes in snow condition)	
Cores	1 2 3 4 1 2 2	Snow (cm) \$358 40 8840	Core (cm) 55 34 37 Dust (Min. 47 38 48	& Core- SWE (cm) S6 S7 of 3 cores – To	Tube-SWE (cm)  3 \( \)  3 \( \)  Stal Water Con  3 \( \)  3 \( \)  3 \( \)	SWE (cm)   14   13   13   17   17   18   18	Present Yes/No Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)	
Cores	1 2 3 4 1 2 3 3	Snow (cm) \$358 40 8840 57 41 84	Core (cm) 55 34 37 Dust (Min. 47 34 48 34	& Core- SWE (cm) S6 S7 of 3 cores – To	Tube-SWE (cm)  3 \( \)  3 \( \)  Stal Water Con  3 \( \)  3 \( \)  3 \( \)	SWE (cm)   14   12   13   13   17   17   17   17   17   17	Present   Yes/No   Y	changes in snow condition)	
Cores	1 2 3 4 4 4	\$now (cm) \$158 40 \$15 4	Core (cm) 55 34 37 Dust (Min. 47 36 48 49	& Core- SWE (cm)    S     S     S     S     S     S     S	Tube-SWE (cm)  38  38  38  otal Water Con  38  38  38  38	SWE (cm) 18 17 18 13	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)	
Cores	1 2 3 4 5 5	\$now (cm) \$\$3.58 40 88.46 57 41 54 59 59	Core (cm) 55 34 37 Dust (Min. 47 38 44 44 47	& Core- SWE (cm) \$6 \$7 of 3 cores - To \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5	Tube-SWE (cm)  38  38  38  otal Water Con  38  38  38  38	SWE (cm) 14 12 13 tent SWE =1: 17 18 13 17 14	Present Yes/No  Y (S)  Y (N)	changes in snow condition)	
Cores	1 2 3 4 5 6	\$now (cm) \$158 40 81840 57 41 54 59	Core (cm) 55 34 37 Dust (Min. 47 36 48 49	& Core- SWE (cm)    S     S     S     S     S     S     S	Tube-SWE (cm)  3 \( \)  3 \( \)  Stal Water Con  3 \( \)  3 \( \)  3 \( \)	SWE (cm) 18 17 18 13	Present Yes/No  Y (S)  Y (S)  Y (N)	changes in snow condition)	
Dust Cores Water Quality Cores	1 2 3 4 5 6 7	\$now (cm) \$\$3.58 40 88.46 57 41 54 59 59	Core (cm) 55 34 37 Dust (Min. 47 38 44 44 47	& Core- SWE (cm) \$6 \$7 of 3 cores - To \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5	Tube-SWE (cm)  38  38  38  otal Water Con  38  38  38  38	SWE (cm) 14 12 13 tent SWE =1: 17 18 13 17 14	Present Yes/No  Y (N)	changes in snow condition)	
Cores	1 2 3 4 5 6 7 8	\$now (cm) \$\$3.58 40 88.46 57 41 54 59 59	Core (cm) 55 34 37 Dust (Min. 47 38 44 44 47	& Core- SWE (cm) \$6 \$7 of 3 cores - To \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5	Tube-SWE (cm)  38  38  38  otal Water Con  38  38  38  38	SWE (cm) 14 12 13 tent SWE =1: 17 18 13 17 14	Present Yes/No Y (S) Y (S) Y (N)	changes in snow condition)	
Cores	1 2 3 4 5 6 7 8 9	\$now (cm) \$\$3.58 40 88.46 57 41 54 59 59	Core (cm) 55 34 37 Dust (Min. 47 38 44 44 47	& Core- SWE (cm) \$6 \$7 of 3 cores - To \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5 \$5	Tube-SWE (cm)  38  38  38  otal Water Con  38  38  38  38	SWE (cm) 14 12 13 tent SWE =1: 17 18 13 17 14	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	changes in snow condition)	

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

	tive Date:	8000 26-Mar-20		iold Cho		No: Revision By:	ENVI-177-0312 R9 D. Dul
Task:		Show San	ampling Field Sheet			Page:	2 of 3 r Revision Tracking Only not for Print
Dust :	Sample Fi	lters			Tota	l Volume of M	lelted Snow: 1280(mL
Filte	(mg)		Filter + Residue (mg)			due Weight (mg)	
_1	122.0		26.7		4	.7	Lots of veg on sample before over some sample spilled over funct, appr
2		3 41	4.0		l	ما.	Lots of veg on sample before
3					ų.		
j:.4			11	-			
Tota	11s 244.4		280.	7	6	.3	
<b>Nate</b> r	Is ટ્યુમ ન Quality Bottles			I commis		I Volume of M	lelted Snow: 3440 (mL
Filling	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	DI Batch # for QAQC, ocation preserved if not in field, label
Order		.,,,,		GW			changes
1	Metals Total	60 mL Falcon Tube (x2)	Y				
2	Metals Dissolved	60 ml. Falcon Tube (x2)	Y	<b>⊡</b>			
3	Total Mercury	40 mL clear glass (pre-preserved)	N	Ø			
4	Nutrients	120 mL plastic (pre- preserved)	N	Ú			
5	Ammonia	40 mL glass vial (pre-preserved)	N	Ø			2000
6	Routine	1000 mL plastic	Υ	□ v			
7	TSS/Turb/pH	1000 mL plastic	Y				
		*Sample Type: GW	, DUPW1/D	UPW2, FBV	V, TBW, E	BW, REP1/REP	2, Filter Blank
color, o	• • • • • • • • • • • • • • • • • • • •	ble: (equipment issue					uring sampling event, follow-up actions etc
invecti	ooth leags	into one pri	or to d	ecant a	nto bo	Hles.	

			Snow	Sampling F	ield Sheet			
						No:	EΝ\	/I-177-0312
Are	a:	80	000			Revision		71-177-0312
	a. ective Dat	_	6-Mar-2012			By:		)::I
Tas				ing Field Sh		Ly.	<u> </u>	7di
160	κ.	<u> </u>	10tt Garrips	ing r lota on	GCI	Page:	1	of 3
								cking Only not for Print
	ERAL	- 550	-2	5 4 TF 4	t.n. 207	1 24-12-	71585 (0	4:00): 1045
SAM	PLED BY:	BP PL		TYPE OF SA	AMPLE: Dust	Water	r Quality	QAQC:
						-		
DESC	CRIPTION: D	istance to I	Diavik U	km & Direction	E		n: Land	2// &/or Lake
			)				in cand ja	C avoi care
	ATE CONDI							
Air T	emp:	c w	ind Direction:	v	Vind Speed: _	kt	s.	
Duet	in Area: Vic	ible 🗆	Not Visible	1 .	Cloud Cover: (	304 (100/12)	5% / 50%	175% / 100%
	in Area. Vis ipitation: Rai		/ -		Snow Conditio	n: Coetallize	3% / 3U% /	ked Wet Dry
160	phation. (tal	III 7 IVIISC7 OI	1044 1 (4175)	`	Show Conditio	iii. Giyatanize	eu 🔛 Pac	wed the vest the big
_		Donath	Lanath	18/alah4 a5	18/almb4 of	Makes		
	Core	Depth of	Length of Snow	Weight of Tube	Weight of Empty	Water Content-	Dust	Comments (core weighed, bag #,
_	Number						Present	
•		Snow	Lore	K Core-	Tithe-SWF	I SWF		changes in snow
Ĕ		Snow (cm)	Core (cm)	& Core- SWE (cm)	Tube-SWE (cm)	SWE (cm)	Yes/No	cnanges in snow condition)
ust C	1		(cm)	SWE (cm)		SWE (cm)		
ust Core		(cm)	(cm)	SWE (cm)	(cm) 39	(cm)	Yes/No	
Dust Cores	1	(cm)	(cm)	SWE (cm) 55	(cm) 39 38	(cm)	Yes/No	
ust Cores	1 2	(cm) 60	(cm) 49 47	SWE (cm)	(cm) 39	(cm)	Yes/No Y N Y N	
ust Cores	1 2 3	(cm) 60	(cm) 49 47 43	SWE (cm) 55	(cm) 39 38 38	(cm) -/ \( \)	Yes/No Y N Y N Y N Y N	
ust Cores	1 2 3	(cm) 50 58 53	(cm) 49 47 43	\$\text{SWE (cm)} \\ 55 \\ 54 \\ \ 54 \\ \ of 3 cores - To	(cm) 39 38 38 38	(cm) -/ \( \)	Yes/No Y N Y N Y N Y N	
ust Cores	1 2 3 4	(cm) 60 58 53	(cm) 49 47 45 Dust (Min.	\$\text{SWE (cm)} \\ 55 \\ 54 \\ \ 54 \\ \ \ \ \ \ \ \ \	(cm) 39 38 38 otal Water Con	(cm) -/ \( \)	Yes/No	
ust Cores	1 2 3 4	(cm) 50 58 53	(cm) 49 47 45 Dust (Min. 43	\$\text{SWE (cm)} \\ 55 \\ 54 \\ \ 54 \\ \ \ \ \ \ \ \ \	(cm) 39 38 38 otal Water Con	(cm) -/ \( \)	Yes/No Y N Y N Y N Y N > 25)	
	1 2 3 4	(cm) 50 58 53 55 55 55	(cm) 49 47 45 Dust (Min. 43 52	\$\text{SWE (cm)} \\ 55 \\ 54 \\ \ 54 \\ \ of 3 cores - To	(cm) 39 38 38 otal Water Con 38 39 39	(cm) /6 /6 tent SWE =/:	Yes/No Y N Y N Y N Y N > 25) Y N	
	1 2 3 4	(cm) 50 58 53	(cm) 49 47 43 Dust (Min. 43 52 80 43	\$\text{SWE (cm)} \\ 53 \\ 54 \\ 54 \\ of 3 cores - To \\ 52 \\ 56 \\ 53	(cm) 39 38 38 38	(cm) -/ \( \)	Yes/No Y N Y N Y N Y N > 25) Y N Y N	
	1 2 3 4 4	(cm) 50 58 53 55 55 51 45	(cm) 49 47 45 Dust (Min. 43 52	SWE (cm)  53  54  54  of 3 cores - To  52  56  53  52	(cm) 39 38 38 38 otal Water Con 38 39 39 39	(cm) /6 /6 tent SWE =/:	Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N	
	1 2 3 4 5 5	(cm) 50 58 53 55 55 51 45 57	(cm) 49 47 45 Dust (Min. 43 52 80 43 42	SWE (cm)  53  54  54  of 3 cores - To  52  56  53  52  56	(cm) 39 38 38  stal Water Con 38 39 38 39 39	(cm) /6 /6 tent SWE =/:	Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N	
	1 2 3 4 5 6	(cm) 50 58 53 55 55 51 45	(cm) 49 47 45 Dust (Min. 43 52 50 43 42	SWE (cm)  53  54  54  of 3 cores - To  52  56  53  52	(cm) 39 38 38 38 otal Water Con 38 39 39 39	(cm) /6 /6 tent SWE =/:	Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N Y N	
ust Cores Water Quality Cores	1 2 3 4 5 6 7	(cm) 50 58 53 55 55 51 45 57	(cm) 49 47 45 Dust (Min. 43 52 50 43 42	SWE (cm)  53  54  54  of 3 cores - To  52  56  53  52  56	(cm) 39 38 38  stal Water Con 38 39 38 39 39	(cm) /6 /6 tent SWE =/:	Yes/No Y N Y N Y N > 25) Y N Y N Y N Y N Y N Y N Y N Y N	
	1 2 3 4 5 6 7 8	(cm) 50 58 53 55 55 51 45 57	(cm) 49 47 45 Dust (Min. 43 52 50 43 42	SWE (cm)  53  54  54  of 3 cores - To  52  56  53  52  56	(cm) 39 38 38  stal Water Con 38 39 38 39 39	(cm) / 6 / 6 / 6 tent SWE =/:	Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	
	1 2 3 4 5 6 7 8 9	(cm) 50 58 53 55 55 51 45 57	(cm) 49 47 45 Dust (Min. 43 52 50 43 42	SWE (cm)  53  54  54  of 3 cores - To  52  56  53  52  56	(cm) 39 38 38  stal Water Con 38 39 38 39 39	(cm) / 6 / 6 / 6 tent SWE =/:	Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Area: Effect Task:	tive Date:	8000 26-Mar-20 Snow San		eld She	et	Ву:		D. D		
					N	Page Page		2 vision Trac	of cking Only r	3 not for Pr
Dust :	Sample Fil	Iters			Tota	l Volume	of Melte	d Snow:	1460	0(
Filte		ht of Filter (mg)	Filter + R		Resid	due Wei (mg)	_	_	omment	
1	123.7		140,4		11	6.7	30	me veg -	en filler b	21013
2										
3							-			
4 Tota	ils 123.7-		140.4		16	73.				
	100		140.7	-	Scale 2			20 00 000		
Water	r Quality B	ottles			Tota	al Volume	of Melte	d Snow:	3300	
		Bottle	Triple	Sample Type *	Sample Type *	Sample Type *			e Comments h # for QAQ	
Filling Order	Analysis	Type	Rinse	Gw	Туре	Туро	Locat	tion preserv	ved if not in t hanges	
	Metals	60 mL Falcon	Y	2					Migel	
1	Total	Tube (x2)								
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y	g						
3	Total Mercury	40 mL clear glass (pre-preserved)	N	ď					W 81	
4	Nutrients	120 mL plastic (pre preserved)	re- N				T V			
5	Ammonia	40 mL glass vial (pre-preserved)	14	2						
6	Routine	1000 mL plastic	Y	<b>3</b>						
7	TSS/Turb/pH	1000 mL plastic	Y	Q						
		*Sample Type: GV	W, DUPW1/D	DUPW2, FBV	N, TBW, E	BW, REP1	I/REP2, FII	lter Blank		
	al Informa	ation								
4ions		<b>ation</b> ble: (equipment issu	ues, safety co	ncems, wea						-up action
color, o		200 * * *	-							
color, o		ined bags in						•		

			<u>Snow</u>	Sampling F	ield Sheet			
Area	a: ctive Dat		00 i-Mar-2012			No: Revision		/I-177-0312
Tas				ing Field Sh	eet	Ву:	<u>D. D</u>	rui
. uo		<u> </u>	iow campi	ing ricid off		Page:	1	of 3
						Page 3 for R	evision Trac	cking Only not for Print
<u>SENI</u>	RAL	. <<	1-3-4	DATE /	- 10 0 -	2601-11	T104E (0	4:00): 0 F3 S
LUC	ATION NAME	ار <u>د</u> ::		DATE (yyyy-mr	nm-aa): <u>201</u>	21-04-11	IIME (5	4:00): 0732
SAMI	PLED BY: _	Br PL		TYPE OF SA	AMPLE: Dust	Water	r Quality [	DAGC: JUP-
3PS	COORDINAT	ES (UTM):	S3864	18 E 7	148749	N (	zone)	12W
DESC	RIPTION: D	istance to C	Diavik_ 나	_ km & Direction	SE		n: Land	/2W
	ATE CONDI						1	
			ind Direction:	E v	Vind Speed:	7 6	e	
								10
					Cloud Cover: (			
Preci	pitation: Rai	n / Mist / Sn	low / N/A		Snow Conditio	n: Crystallize	ed 🔲 Pack	xed ₩et ☐ Dry ☐
					415-1			
		DomAlo	Lamath	Malada A	187-1-64 -6	187-A		
Þ	Core Number	Depth of Snow	Length of Snow Core	Weight of Tube & Core-	Weight of Empty Tube-SWE	Water Content- SWE	Dust Present Yes/No	Comments (core weighed, bag # changes in snow
Dust	Number	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty	Content- SWE (cm)	Present Yes/No	(core weighed, bag #
Dust Con	Number 1	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No	(core weighed, bag # changes in snow
Dust Cores	Number 1 2	of Snow (cm)	of Snow Core (cm) 59	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y (N)	(core weighed, bag # changes in snow
Dust Cores	Number  1 2 3	of Snow (cm)	of Snow Core (cm)	Tube & Core- SWE (cm)	Empty Tube-SWE (cm)	Content- SWE (cm)	Present Yes/No Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Number 1 2	of Snow (cm)	of Snow Core (cm) \$ 9 58	Tube & Core- SWE (cm) 57	Empty Tube-SWE (cm)	Content- SWE (cm) 20	Present Yes/No Y N Y N Y N	(core weighed, bag # changes in snow
Dust Cores	Number  1 2 3 4	of Snow (cm)	of Snow Core (cm) S9 58 57 Dust (Min.	Tube & Core- SWE (cm)  S 7  S 7  of 3 cores – To	Empty Tube-SWE (cm) 38 38 38	Content- SWE (cm)  19 19 tent SWE =	Present Yes/No Y N Y N Y N	(core weighed, bag # changes in snow condition)
Dust Cores	Number  1 2 3 4	of Snow (cm)	of Snow Core (cm) S9 58 S7  Dust (Min.	Tube & Core- SWE (cm)  57  57  of 3 cores – To	Empty Tube-SWE (cm) 38 38  Stal Water Con	Content- SWE (cm)  19  19  tent SWE = 1	Present Yes/No Y N Y N Y N Y N	(core weighed, bag # changes in snow condition)
Dust Cores	1 2 3 4 1 2 2	of Snow (cm) 62 59 59	of Snow Core (cm) S9 58 S7  Dust (Min.	Tube & Core- SWE (cm)  57  57  of 3 cores – To  57	Empty Tube-SWE (cm) 38 38 38	Content- SWE (cm)  19 19 tent SWE =	Present Yes/No Y N Y N Y N Y N > 25)	(core weighed, bag # changes in snow condition)
	1 2 3 4 1 2 3 3	of Snow (cm) 62 59 59	of Snow Core (cm) S9 58 S7 Dust (Min.	Tube & Core- \$WE (cm)  58  57  57  of 3 cores - To  56	Empty Tube-SWE (cm) 38 38  Otal Water Con 39 39	Content- SWE (cm)  19  19  tent SWE = 1	Present Yes/No Y N Y N Y N Y N P N P S P N Y N	(core weighed, bag # changes in snow condition)
	1 2 3 4 1 2 3 4	of Snow (cm) 62 59 59	of Snow Core (cm) \$9 58 \$7  Dust (Min. \$56 \$7 \$55 60	Tube & Core- SWE (cm)  57  57  of 3 cores – To  56  57	Empty Tube-SWE (cm) 38 38  Stal Water Convention 39 39 39 38	Content- SWE (cm) 20 19 19 19 tent SWE =/:	Present Yes/No  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	(core weighed, bag # changes in snow condition)
	1 2 3 4 5 5	of Snow (cm) 62 59 59 58 60 58	of Snow Core (cm)  \$ 9  58  \$ 7  Dust (Min.)  \$ 6  \$ 7  \$ 5 \$  \$ 6 0  \$ 5 %	Tube & Core- SWE (cm)  58  57  57  of 3 cores - To  56  57  58	Empty Tube-SWE (cm)  3 8  38  otal Water Con  3 9  3 9  3 8  3 9	Content- SWE (cm) 20 19 19 19 19 19 18 18 18 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow condition)
	1 2 3 4 5 6	of Snow (cm) 62 59 58 60 56	of Snow Core (cm) \$9 58 \$7  Dust (Min. \$56 \$7 \$55 60	Tube & Core- SWE (cm)  57  57  of 3 cores – To  56  57	Empty Tube-SWE (cm) 38 38  Stal Water Convention 39 39 39 38	Content- SWE (cm) 20 19 19 19 tent SWE =/:	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow condition)
	1 2 3 4 5 6 7	of Snow (cm) 62 59 59 58 60 58	of Snow Core (cm)  \$ 9  58  \$ 7  Dust (Min.)  \$ 6  \$ 7  \$ 5 \$  \$ 6 0  \$ 5 %	Tube & Core- SWE (cm)  58  57  57  of 3 cores - To  56  57  58	Empty Tube-SWE (cm)  3 8  38  otal Water Con  3 9  3 9  3 8  3 9	Content- SWE (cm) 20 19 19 19 19 19 18 18 18 19	Present Yes/No  Y & Y Y N Y N Y N Y N Y N Y N Y N Y N Y N Y	(core weighed, bag # changes in snow condition)
	1 2 3 4 5 6 7 8	of Snow (cm) 62 59 59 58 60 58	of Snow Core (cm)  \$ 9  58  \$ 7  Dust (Min.)  \$ 6  \$ 7  \$ 5 \$  \$ 6 0  \$ 5 %	Tube & Core- SWE (cm)  58  57  57  of 3 cores - To  56  57  58	Empty Tube-SWE (cm)  3 8  38  otal Water Con  3 9  3 9  3 8  3 9	Content- SWE (cm) 20 19 19 19 19 19 18 18 18 19	Present Yes/No  Y & Y Y N Y N Y N Y N Y N Y N Y N Y N Y N Y	(core weighed, bag # changes in snow condition)
Dust Cores Water Quality Cores	1 2 3 4 5 6 7 8 9	of Snow (cm) 62 59 59 58 60 58	of Snow Core (cm)  \$ 9  58  \$ 7  Dust (Min.)  \$ 6  \$ 7  \$ 5 \$  \$ 6 0  \$ 5 %	Tube & Core- SWE (cm)  58  57  57  of 3 cores - To  56  57  58	Empty Tube-SWE (cm)  3 8  38  otal Water Con  3 9  3 9  3 8  3 9	Content- SWE (cm) 20 19 19 19 19 19 18 18 18 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow condition)
	1 2 3 4 5 6 7 8 9 10	of Snow (cm) 62 59 59 58 60 58	of Snow Core (cm)  \$ 9  58  \$ 7  Dust (Min.)  \$ 6  \$ 7  \$ 5 \$  \$ 6 0  \$ 5 %	Tube & Core- SWE (cm)  58  57  57  of 3 cores - To  56  57  58	Empty Tube-SWE (cm)  3 8  38  otal Water Con  3 9  3 9  3 8  3 9	Content- SWE (cm) 20 19 19 19 19 19 18 18 18 19	Present Yes/No  Y & Y N  Y N  Y N  Y N  Y N  Y N  Y N	(core weighed, bag # changes in snow condition)
	1 2 3 4 5 6 7 8 9	of Snow (cm) 62 59 59 58 60 58	of Snow Core (cm)  \$ 9  58  \$ 7  Dust (Min.)  \$ 6  \$ 7  \$ 5 \$  \$ 6 0  \$ 5 %	Tube & Core- SWE (cm)  58  57  57  of 3 cores - To  56  57  58	Empty Tube-SWE (cm)  3 8  38  otal Water Con  3 9  3 9  3 8  3 9	Content- SWE (cm) 20 19 19 19 19 19 18 18 18 19	Present Yes/No Y N Y N Y N Y N Y N Y N Y N Y N Y N	(core weighed, bag # changes in snow condition)

\*\* Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> - Wt. of Empty Tube<sub>SWE</sub> \*\*

Task:		Snow San	eld She	et	Pag	ge: 2 of 3 a 3 for Revision Tracking Only not for P	
Dust :	Sample Fil	ters			Tota		of Melted Snow: 1755
Filter # Weigl		nt of Filter (mg)	Filter + Residue (mg)		Resid	due Wei (mg)	
1	116		126.2		(1	0.1	Pouble bugged, leaked in a
2							
- 3 4			- 20				
Tota	als III		126.2		10	al .	
Water	r Quality B	ottles			N.		of Melted Snow:
Filling Order	Analysis	Bottle Type	Triple Type		Sample Type *	Sample Type *	Sample Comments <u>DI Batch # for QAQC</u> ,  Location preserved if not in field, labe changes
1	Metals Total	60 mL Falcon Tube (x2)	Υ				
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y				
3	Total Mercury	40 mL clear glass (pre-preserved)	N				
4_	Nutrients	120 mL plastic (propreserved)	re- N				
5	Ammonia	40 mL glass vial (pre-preserved)					
6	Routine	1000 mL plastic	Υ				WHA.
7	TSS/Turb/pH	1000 mL plastic	Y				
_		*Sample Type: GV	N, DUPW1/DL	JPW2, FBV	V, TBW, E	BW, REP1	/REP2, Filter Blank
tiona	al Informa				thes proble	eme chanc	ges during sampling event, follow-up action

_						_		
			Snow :	Sampling F	<u>ield Sheet</u>			
١.			00			No:		/I-177-0312
Area		80				Revision		11
	ctive Dat		-Mar-2012	ing Field Sh		Ву:	<u>D. D</u>	<u>'ul</u>
Tas	K:	311	ow Sampii	ing Fleid Sin	eel	Page	1	of 3
						Page: Page 3 for Re		cking Only not for Print
GEN	ERAL	C = 1	2.5		20	21 01/11		4:00): 0954
SAMI	PLED BY: _	BP PL		TYPE OF SA	AMPLE: Dust	Water	Quality [	DAQC: DUPZ
GPS	COORDINAT	res (UTM): ,	53864	14 E 7	148749	N (	zone)	&/or Lake
DESC	CRIPTION: D	istance to D	liavik	km & Direction		0	n: Land 🔎	&/or Lake
CLIM	ATE CONDI	<u> TIONS</u>						
Air T	emp:	2°c wi	nd Direction:	E W	Vind Speed: _	kt	5.	
Dust	in Area: Vis	ible 🔲 N	Not Visible- ow /⟨N/A	1 (	Cloud Cover: (	0% / 10% / 25	5% / 50% /	15%/ 100%
Preci	pitation: Rai	n / Mist / Sn	ow /(N/A)	•				(ed. ☐ Wet ☐ Dry ☐
								<i>V</i>
		Depth	Length	Weight of	Weight of	Water		Comments
	Core	1 - /						
		of	of Snow	Tube	Empty	Content-	Dust Present	(core weighed, bag #,
P	Number	Snow	Core	& Core-	Empty Tube-SWE	SWE	Present Yes/No	(core weighed, bag #, changes in snow condition)
Dust (		Snow (cm)	Core (cm)	& Core- SWE (cm)	Empty Tube-SWE (cm)		Present	changes in snow
Dust Cor	Number 1	Snow (cm) S 7	Core (cm)	& Core- SWE (cm)	Empty Tube-SWE (cm)	SWE (cm)	Present Yes/No	changes in snow
Dust Cores	Number  1 2	Snow (cm) 57	Core (cm) 54 54	& Core- SWE (cm) 36	Empty Tube-SWE (cm)	SWE (cm)   1 %     / 2	Present Yes/No Y (V) Y N	changes in snow
Dust Cores	Number  1 2 3	Snow (cm) S 7	Core (cm)	& Core- SWE (cm)	Empty Tube-SWE (cm)	SWE (cm)	Present Yes/No Y (Q) Y (N) Y (N)	changes in snow
Dust Cores	Number  1 2	Snow (cm) 57	Core (cm) 54 54	& Core- SWE (cm) 36	Empty Tube-SWE (cm)	SWE (cm)   1 %     / 2	Present Yes/No Y (V) Y N	changes in snow
Dust Cores	Number  1 2 3	Snow (cm) 57	Core (cm) 54 54 54	& Core- SWE (cm) 36	Empty Tube-SWE (cm) 38 38	SWE (cm)   1 %   / 2   / 2   / 2	Present Yes/No Y (V) Y (N) Y (N') Y N	changes in snow
Dust Cores	Number  1 2 3	Snow (cm) 57	Core (cm) 54 54 54	& Core- SWE (cm) 36 56 56 of 3 cores – To	Empty Tube-SWE (cm) 38 38 otal Water Con	SWE (cm)   1 %   / 2   / 2   / 2	Present Yes/No Y (V) Y (N) Y (N') Y N	changes in snow
Dust Cores	Number  1 2 3 4	\$now (cm) \$7 \$6 \$7	Core (cm)  54  54  54  54  Dust (Min.	& Core- SWE (cm) 36 36 36 36 of 3 cores – To	Empty Tube-SWE (cm) 38 38 38 otal Water Con	SWE (cm)   1 %   / 2   / 2   / 2	Present Yes/No  Y (V)  Y (N)  Y (N)  Y (N)  Y N	changes in snow
Dust Cores	Number  1 2 3 4	\$now (cm) \$7 \$6 \$7	Core (cm)  54  54  54  54  Dust (Min. 51  59  52	& Core- SWE (cm) 36 36 36 36 of 3 cores – To	Empty Tube-SWE (cm) 38 38 38 otal Water Con	SWE (cm)   1 %   / 2   / 2   / 2	Present Yes/No  Y (V)  Y (N)	changes in snow
Cores	1 2 3 4 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Snow (cm) 57 56 57	Core (cm)  54  54  54  54  Dust (Min. 51  59  52	& Core- SWE (cm) 36 36 36 36 of 3 cores – To	Empty Tube-SWE (cm) 38 38 otal Water Con 38 39	SWE (cm)   1 %   / 2   / 2   / 2	Present Yes/No  Y (V)  Y (N)	changes in snow
Cores	1 2 3 4 1 2 3 3	Snow (cm) 57 56 57 51 54 54	Core (cm)  54  54  54  54  Dust (Min. 51  59  52  53	& Core- SWE (cm) 36 36 36 36 of 3 cores – To	Empty Tube-SWE (cm) 38 38 otal Water Con 38 39	SWE (cm)   1 %   / 2   / 2   / 2	Present Yes/No  Y (V)  Y (N)	changes in snow
Cores	1 2 3 4 1 2 3 4 4	\$now (cm) 57 56 \$7 \$1 54 \$5 \$5	Core (cm) 54 54 54 54 54 55 55 55	& Core- SWE (cm) 36 36 56 56 of 3 cores - To	Empty Tube-SWE (cm) 38 38 otal Water Con 38 39	SWE (cm) 18 12 12 117 17 17	Present Yes/No  Y (V)  Y (N)	changes in snow
Cores	1 2 3 4 5 5	Snow (cm) 57 56 57 51 54 54	Core (cm)  54  54  54  54  Dust (Min. 51  59  52  53	& Core- SWE (cm) 36 36 36 36 of 3 cores – To	Empty Tube-SWE (cm) 38 38 38 otal Water Con	SWE (cm)   1 %   / 2   / 2   / 2	Y (V) Y (N)	changes in snow
Cores	1 2 3 4 5 6	\$now (cm) 57 56 \$7 \$1 54 \$5 \$5	Core (cm) 54 54 54 54 54 55 55 55	& Core- SWE (cm) 36 36 56 56 of 3 cores - To	Empty Tube-SWE (cm) 38 38 otal Water Con 38 39	SWE (cm) 18 12 12 117 17 17	Present Yes/No  Y (V)  Y (N)	changes in snow
Dust Cores Water Quality Cores	1 2 3 4 5 6 7	\$now (cm) 57 56 \$7 \$1 54 \$5 \$5	Core (cm) 54 54 54 54 54 55 55 55	& Core- SWE (cm) 36 36 56 56 of 3 cores - To	Empty Tube-SWE (cm) 38 38 otal Water Con 38	SWE (cm) 18 12 12 117 17 17	Present Yes/No  Y (V)  Y (N)	changes in snow
Cores	1 2 3 4 5 6 7 8	\$now (cm) 57 56 \$7 \$1 54 \$5 \$5	Core (cm) 54 54 54 54 54 55 55 55	& Core- SWE (cm) 36 36 56 56 of 3 cores - To	Empty Tube-SWE (cm) 38 38 otal Water Con 38	SWE (cm) 18 12 12 117 17 17	Present Yes/No  Y (V)  Y (N)	changes in snow
Cores	1 2 3 4 5 6 7 8 9	\$now (cm) 57 56 \$7 \$1 54 \$5 \$5	Core (cm) 54 54 54 54 54 55 55 55	& Core- SWE (cm) 36 36 56 56 of 3 cores - To	Empty Tube-SWE (cm) 38 38 otal Water Con 38	SWE (cm) 18 12 12 117 17 17	Present Yes/No  Y (V)  Y (N)   changes in snow	

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Area: Effective Date: Task:	8000 26-Mar-20 Snow San		-Id Cho		No: Rev By:	vision:	R9 D. Dul		
Task:  Dust Sample Fil		SHOW Gain	ubing i ic	au one	<u>عد</u>	Page Page	ge: le 3 for Rev	2 of 3 Islon Tracking Only not for Pr	
Dust (	Sample Fil	Iters			Tota			snow: 1575	
Filte		ht of Filter (mg)	Filter + Re		Resid	due We (mg)	ight	Comments	
1	118.		127.2		9	1.0.			
3			0.1				7 7 7		
4									
Tota	als 1/8.7	2	127.2		9.	0.			
Nater	r Quality B	ottles			Total Volume of Melted Snow:				
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *		Sample Comments  DI Batch # for QAQC, ion preserved if not in field, labe  changes	
1	Metals Total	60 mL Falcon Tube (x2)	Υ						
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y					_	
3	Total Mercury	40 mL clear glass (pre-preserved)	N						
4	Nutrients	120 mL plastic (pre preserved)	re- N					10-30-111-22	
5	Ammonia	40 mL glass vial (pre-preserved)							
6	Routine	1000 mL plastic	Y						
7	TSS/Turb/pH	1000 mL plastic	Y						
	al Informa odor if applicab							er Blank sampling event, follow-up action	

			<u>Snow</u>	Sampling F	<u>ield Sheet</u>			
						No:	EΝ\	<u>/I-17</u> 7-0312
Are			00			Revision		T III
	ective Date		-Mar-2012			Ву:	D. D	ol man cana
Гas	ik:	Sn	ow Sampli	ng Field Sh	eet	6.5		
			781 1				1 evision Tra	of 3
	ERAL	66	0	in the control of	0-0		,	1/-30
								4:00): 1630
								QAQC: EBW
PS	COORDINAT	ES (UTM):		E	_	N (	zone)	
ES	CRIPTION: D	istance to D	iavik	km & Direction	- 1-	0	n: Land	&/or Lake
				-			_	
	ATE CONDIT			7000				
.ir T	emp:	c wi	nd Direction:	W	/ind Speed:	kt	s.	
met	in Area: Visi	ble 🗔 A	lot Visible		Cloud Cover: 0	10/ / 100/ / 24	50/ / 500/	75% / 100%
	ini Alea. Visi							ked Wet Dry
100	ipitation, Kai	II / IVIISL / SIII	UW / IN/A		snow Condido	in: Crystallize	eu 🗀 Pac	ked   vvet   bry
				*** * * * * * * * * * * * * * * * * * *	***			
	Core	Depth of	Length of Snow	Weight of Tube	Weight of	Water Content-	Dust	Comments
_	Number	Snow	Core	& Core-	Empty Tube-SWE	SWE	Present	(core weighed, bag # changes in snow
		(cm)	(cm)	SWE (cm)	(cm)	(cm)	Yes/No	condition)
+	1	(5111)				(5)	YN	
							YN	
	2							
ores	3						YN	
OFPS							Y N Y N	
Orac			Dust (Min.	of 3 cores - To	tal Water Con	tent SWE =/a	Y N	
Orac			Dust (Min.	of 3 cores - To	tal Water Con	tent SWE =/>	Y N	
Ores	3		Dust (Min.	of 3 cores – To	tal Water Con	tent SWE =/>	Y N > 25)	
Oras	3		Dust (Min.	of 3 cores – To	tal Water Con	tent SWE =/2	Y N > 25) Y N	
	1 2		Dust (Min.	of 3 cores – To	tal Water Con	tent SWE =/:	Y N > 25) Y N Y N	
	1 2 3		Dust (Min.	of 3 cores - To	tal Water Con	tent SWE =/:	Y N  25)  Y N  Y N  Y N	
	1 2 3 4		Dust (Min.	of 3 cores - To	tal Water Con	tent SWE =/	Y N  25)  Y N  Y N  Y N  Y N	
	1 2 3 4 5		Dust (Min.	of 3 cores - To	tal Water Con	tent SWE =/:	Y N  25)  Y N  Y N  Y N  Y N  Y N	
	3 1 2 3 4 5 6		Dust (Min.	of 3 cores - To	tal Water Con	tent SWE =/:	Y N  25)  Y N  Y N  Y N  Y N  Y N  Y N	
Cores Water Quality Cores	3 1 2 3 4 5 6 7		Dust (Min.	of 3 cores – To	tal Water Con	tent SWE =/	Y N  25)  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	
	3 4 2 3 4 5 6 7 8		Dust (Min.	of 3 cores – To	tal Water Con	tent SWE =/	Y N  25)  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	
	3 4 2 3 4 5 6 7 8		Dust (Min.	of 3 cores - To	tal Water Con	tent SWE =/	Y N  25)  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	
	3 4 2 3 4 5 6 7 8 9		Dust (Min.	of 3 cores – To	tal Water Con	tent SWE =/	Y N  25)  Y N  Y N  Y N  Y N  Y N  Y N  Y N  Y	

<sup>\*\*</sup> Water Content<sub>SWE</sub> = Wt. of Tube & Core<sub>SWE</sub> – Wt. of Empty Tube<sub>SWE</sub> \*\*

Area: Effecti Task:	ive Date:	8000 26-Mar-20 Snow Sam		ald She		No: Revi By:	ision:	R9 D. Dul
lask.		SHOW Gail	ihiiiid i k	Blu Ollec	31	Page Page	e: 3 for Revis	2 of 3 sion Tracking Only not for P
Dust S	Sample Fil	ters			Tota	l Volume (	of Melted	Snow: 1335
		ht of Filter I	Filter + R (mg		Resid	due Weig (mg)		Comments
1 2	124.		124.3			0	Actn	al readily 124.1 mg
3			- 3300				1000	
4 Tota	ils 121	1.3	124.	3		0		
Water	Quality B				Tota		of Melted	Snow: 2486
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	•	Sample Comments  DI Batch # for QAQC,  n preserved if not in field, labe changes
1	Metals Total	60 mL Falcon Tube (x2)	Y	Q		0		
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y					
3	Total Mercury	40 mL clear glass (pre-preserved)	N	Ø				
4	Nutrients	120 mL plastic (pre preserved)	e- N	v				
5	Ammonia	40 mL glass vial (pre-preserved)	N					
6	Routine	1000 mL plastic	Y	D/				0,8 900 0
7	TSS/Turb/pH		f					
color, o		*Sample Type: GW ation	V, DUPW1/DU					r Btank ampling event, follow-up action

			Snow :	<u>Sampling F</u>	<u>ieia Sneet</u>			
								/I-177-0312
Are			00			Revision		
	ective Date		-Mar-2012			Ву:	<u>D. D</u>	<u>oul</u>
Γas	K:	Sn	ow Sampii	ng Field She		Danes	1	of 3
							•	OT 3 cking Only not for Print
	ERAL		<b>=</b> 01.1		0.00	2		1/
.OC	ATION NAME	:_55	FDW I	DATE (yyyy-mn	nm-dd): <u>20</u>	21-04-18	TIME (2	4:00): 16:15
SAM	PLED BY:	552 A	.Н	TYPE OF SA	MPLE: Dust	X Water	Quality	QAQC: EBW
3PS	COORDINAT	ES (UTM):		E	_	N (	zone)	
ES	CRIPTION: D	istance to D	iavik	km & Direction	_	0	n: Land	&/or Lake
LIN	ATE CONDIT	TIONS						
			nd Direction:	w	lind Speed:	let	e.	
		_	na Direction.	·	a opcou		••	
			Not Visible 🔲		Cloud Cover: 0			
<sup>2</sup> rec	ipitation: Rai	n / Mist / Sn	ow / N/A	8	Snow Conditio	n: Crystallize	ed 🔲 Paci	ked 🗌 Wet 🔲 Dry 🔲
			-					
		Depth	Length	Weight of	Weight of	Water	Dust	Comments
	Core Number	of	of Snow	Tube	Empty	Content-	Present	_(core weighed, bag # changes in snow
Dust	Number	Snow (cm)	Core (cm)	& Core-	Tube-SWE	SWE (cm)	Yes/No	condition)
St	1	(CIII)	(CIII)	SWE (cm)	(cm)	(CIII)	ΥÑ	
Cores	2						YN	
es	3						YN	
	) )						YN	
	4	- man		1			1 T IN I	
	4	and the second s						
	4		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/		
	1		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	> 25) Y N	
			Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/	> 25)	
	1		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	> 25) Y N	
5	1 2		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	> 25) Y N Y N	
Wate	1 2 3		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	> 25) Y N Y N Y N	
Water Qu	1 2 3 4		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	> 25) Y N Y N Y N Y N	
Water Qualit	1 2 3 4 5 5		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	25) Y N Y N Y N Y N	
Water Quality Co	1 2 3 4 5 6		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	Y N Y N Y N Y N Y N	
Water Quality Cores	1 2 3 4 5 6 7		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	Y N Y N Y N Y N Y N Y N Y N Y N	
Water Quality Cores	1 2 3 4 5 6 7 8		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	
Water Quality Cores	1 2 3 4 5 6 7 8 9		Dust (Min.	of 3 cores - To	tal Water Con	ent SWE =/:	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	
Water Quality Cores	1 2 3 4 5 6 7 8 9 10		Dust (Min.	of 3 cores – To	tal Water Con	ent SWE =/:	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N	

<sup>\*\*</sup> Water Contentswe = Wt. of Tube & Coreswe - Wt. of Empty Tubeswe \*\*

Task:		Snow San	npling Fie	eld She	et	Page:	2 of 3
							r Revision Tracking Only not for F
Dust S	Sample Fi	Iters			Tota	l Volume of N	lelted Snow: 2075
Filte	r# Weig	ht of Filter (mg)	Filter + R (mg		Resid	due Weight (mg)	Comments
1 125			125.			0	Actual reading 124.5 mg
				-			
3							
Tota	ls los	. 2	125.3		94020	0	
	12.	5.3	145,2			U	
Water	Quality B	ottles			Tota	l Volume of N	fielted Snow: 2235
Filling Order	Analysis	Bottle Type	Triple Rinse	Sample Type *	Sample Type *	Sample Type *	Sample Comments <u>Di Batch # for QAQC</u> ,  Location preserved if not in field, lab  changes
1	Metals Total	60 mL Falcon Tube (x2)	Υ	d			
2	Metals Dissolved	60 mL Falcon Tube (x2)	Y	Ø			
3	Total Mercury	40 mL clear glass (pre-preserved)	N	☑	0		- 4 -
4	Nutrients	120 mL plastic (pre	N	Ø			
5	Ammonia	40 mL glass vial (pre-preserved)	N	Q'			
6	Routine	1000 mL plastic	Υ	Ø			
7	TSS/Turb/pH	1000 mL plastic	Υ	d			
	Perchloret	CO at Plastic *Sample Type: GV		IDIAM EDIA			2 Filter Blank
		1	, DOFWINDO	)FVVZ, FBV	v, 1644, C	BVV, NEF IIREF	2, Filter Dialik
	i inform		e eafety con	iceme wea	ther proble	ems channes di	uring sampling event, follow-up actio
0.3%		01 from Bl	1024	1100	probit	, Linanges di	and annihing arent renor up dotto

DIAVIK DIAMOND MINE 2021 Dust Deposition Report	
APPENDIX D	SNOW WATER CHEMISTRY ANALYTICAL RESULTS

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Acidity (pH 4.5)	mg/L	CONTROL 1	4/11/2021	<1.0	0.5	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	<1.0	0.5	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<1.0	0.5	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<1.0	0.5	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	<1.0	0.5	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<1.0	0.5	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<1.0	0.5	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	<1.0	0.5	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<1.0	0.5	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<1.0	0.5	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<1.0	0.5	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	<1.0	0.5	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<1.0	0.5	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<1.0	0.5	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<1.0	0.5	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	<1.0	0.5	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<1.0	0.5	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	<1.0	0.5	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	<1.0	0.5	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	<1.0	0.5	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<1.0	0.5	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	<1.0	0.5	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	<1.0	0.5	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<1.0	0.5	ZQ8671	GW
Acidity (pH 8.3)	mg/L	CONTROL 1	4/11/2021	1.4	1.4	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	1	1	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	1.3	1.3	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	1.2	1.2	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	1.2	1.2	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<1.0	0.5	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	1.4	1.4	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	1.4	1.4	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	1.5	1.5	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	1.1	1.1	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	1.2	1.2	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	1.6	1.6	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	1.2	1.2	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	1.4	1.4	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	1.3	1.3	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	1.4	1.4	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	1.5	1.5	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	1.4	1.4	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	1.3	1.3	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	1.2	1.2	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	1.4	1.4	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	1	1	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	1.3	1.3	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	1.2	1.2	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Alkalinity (PP as CaCO <sub>3</sub> )	mg/L	CONTROL 1	4/11/2021	<0.50	0.25	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	<0.50	0.25	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<0.50	0.25	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.50	0.25	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<0.50	0.25	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	<0.50	0.25	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<0.50	0.25	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<0.50	0.25	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<0.50	0.25	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	<0.50	0.25	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	<0.50	0.25	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	<0.50	0.25	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<0.50	0.25	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	<0.50	0.25	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	<0.50	0.25	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.50	0.25	ZQ8671	GW
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	CONTROL 1	4/11/2021	0.53	0.53	ZQ8672	GW
- Total	mg/L	CONTROL 2	4/12/2021	1.28	1.28	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.56	0.56	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	0.87	0.87	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	0.85	0.85	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.63	0.63	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.82	0.82	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.50	0.25	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.86	0.86	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.87	0.87	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.56	0.56	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<0.50	0.25	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<0.50	0.25	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	2.75	2.75	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	1.12	1.12	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	2.12	2.12	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	1.65	1.65	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.91	0.91	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	1.69	1.69	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.67	0.67	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	1.64	1.64	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.85	0.85	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Aluminum (AI) - Dissolved	ug/L	CONTROL 1	4/11/2021	35	35	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	109	109	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	1.96	1.96	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	79.1	79.1	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.20	0.1	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	1.7	1.7	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	147	147	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	150	150	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	29.8	29.8	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	1.8	1.8	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	1.64	1.64	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	37.2	37.2	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	2.35	2.35	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	222	222	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	91.1	91.1	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	1500	1500	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	7.73	7.73	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	301	301	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	2.88	2.88	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	11.2	11.2	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	5.7	5.7	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	20.2	20.2	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	4.14	4.14	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	1.96	1.96	ZQ8671	GW
Aluminum (Al) - Total	ug/L	CONTROL 1	4/11/2021	93.4	93.4	ZQ8672	GW
, ,	ug/L	CONTROL 2	4/12/2021	461	461	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	234	234	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	232	232	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.20	0.1	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	2.78	2.78	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	143	143	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	176	176	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	101	101	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	336	336	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	144	144	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	136	136	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	81	81	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	280	280	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	116	116	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	3360	3360	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	809	809	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	952	952	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	771	771	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	580	580	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	660	660	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	1550	1550	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	460	460	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	130	130	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Ammonia (N)	mg/L	CONTROL 1	4/11/2021	0.022	0.022	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.029	0.029	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.018	0.018	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.017	0.017	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	<0.0050	0.00025	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	0.0082	0.0082	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.021	0.021	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.021	0.021	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.021	0.021	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.03	0.03	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.021	0.021	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.02	0.02	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.021	0.021	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.022	0.022	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.021	0.021	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.07	0.07	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.038	0.038	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.034	0.034	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.033	0.033	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.035	0.035	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.032	0.032	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.028	0.028	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.021	0.021	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.014	0.014	ZQ8671	GW
Antimony (Sb) - Dissolved	ug/L	CONTROL 1	4/11/2021	<0.020	0.01	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<0.020	0.01	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.020	0.01	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.020	0.01	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.020	0.01	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	<0.020	0.01	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.020	0.01	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.020	0.01	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.020	0.01	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.020	0.01	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.020	0.01	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	<0.020	0.01	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.020	0.01	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.026	0.026	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.020	0.01	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	<0.020	0.01	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.020	0.01	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.020	0.01	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.020	0.01	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.020	0.01	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.020	0.01	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.020	0.01	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Antimony (Sb) - Total	ug/L	CONTROL 1	4/11/2021	<0.020	0.01	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<0.020	0.01	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.020	0.01	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.020	0.01	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.020	0.01	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.023	0.023	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.020	0.01	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.020	0.01	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.020	0.01	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.020	0.01	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.020	0.01	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	<0.020	0.01	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.020	0.01	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.045	0.045	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.020	0.01	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.023	0.023	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.020	0.01	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.020	0.01	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.020	0.01	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.020	0.01	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.020	0.01	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.020	0.01	ZQ8671	GW
Arsenic (As) - Dissolved	ug/L	CONTROL 1	4/11/2021	<0.020	0.01	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.052	0.052	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.022	0.022	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.033	0.033	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.023	0.023	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.039	0.039	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.025	0.025	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.034	0.034	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.03	0.03	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.029	0.029	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.044	0.044	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.047	0.047	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.053	0.053	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.225	0.225	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.033	0.033	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.067	0.067	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.044	0.044	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.025	0.025	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.03	0.03	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.068	0.068	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.038	0.038	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.020	0.01	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Arsenic (As) - Total	ug/L	CONTROL 1	4/11/2021	0.028	0.028	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.102	0.102	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.024	0.024	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.025	0.025	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.047	0.047	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.051	0.051	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.029	0.029	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.061	0.061	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.020	0.01	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.041	0.041	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.024	0.024	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.059	0.059	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.020	0.01	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.282	0.282	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.094	0.094	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.117	0.117	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.021	0.021	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.167	0.167	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.152	0.152	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.169	0.169	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.055	0.055	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.02	0.02	ZQ8671	GW
Barium (Ba) - Dissolved	ug/L	CONTROL 1	4/11/2021	0.593	0.593	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	4.27	4.27	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.666	0.666	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	1.66	1.66	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.032	0.032	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	2.12	2.12	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	2.09	2.09	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.552	0.552	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.792	0.792	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.351	0.351	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.744	0.744	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.766	0.766	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	3.08	3.08	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	2.83	2.83	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	40.9	40.9	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	4.41	4.41	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	7.77	7.77	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	1.99	1.99	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	3.94	3.94	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	1.58	1.58	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	1.98	1.98	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	2.36	2.36	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.4	0.4	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Barium (Ba) - Total	ug/L	CONTROL 1	4/11/2021	1.23	1.23	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	10.7	10.7	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	3.4	3.4	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	3.01	3.01	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.05	0.05	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	3.31	3.31	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	3.96	3.96	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	1.47	1.47	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	4.85	4.85	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	1.92	1.92	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	2.33	2.33	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	1.73	1.73	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	5.49	5.49	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	3.46	3.46	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	63.9	63.9	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	16.1	16.1	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	15.9	15.9	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	13.3	13.3	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	17.7	17.7	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	16.5	16.5	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	21.9	21.9	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	9.75	9.75	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	1.71	1.71	ZQ8671	GW
Beryllium (Be) - Dissolved	ug/L	CONTROL 1	4/11/2021	<0.010	0.005	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<0.010	0.005	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.010	0.005	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.010	0.005	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.010	0.005	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	<0.010	0.005	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.010	0.005	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.010	0.005	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.010	0.005	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.010	0.005	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.010	0.005	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.015	0.015	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.010	0.005	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.081	0.081	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.010	0.005	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.015	0.015	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.010	0.005	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.010	0.005	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.010	0.005	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.015	0.015	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.010	0.005	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.010	0.005	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Beryllium (Be) - Total	ug/L	CONTROL 1	4/11/2021	<0.010	0.005	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.035	0.035	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.010	0.005	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.01	0.01	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.013	0.013	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.011	0.011	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.01	0.01	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.010	0.005	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.010	0.005	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.010	0.005	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.010	0.005	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.016	0.016	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.010	0.005	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.163	0.163	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.063	0.063	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.046	0.046	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.021	0.021	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.04	0.04	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.057	0.057	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.108	0.108	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.015	0.015	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.01	0.01	ZQ8671	GW
Bicarbonate (HCO <sub>3</sub> )	mg/L	CONTROL 1	4/11/2021	0.65	0.65	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	1.56	1.56	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.68	0.68	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	1.06	1.06	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	1.04	1.04	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	1.31	1.31	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.77	0.77	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	1	1	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.50	0.25	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	1.04	1.04	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	1.06	1.06	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.68	0.68	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	2.08	2.08	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	2.14	2.14	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	4.97	4.97	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	2.39	2.39	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	2.59	2.59	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	2.01	2.01	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	2.38	2.38	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	2.06	2.06	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	2.09	2.09	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	2	2	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	1.04	1.04	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Bismuth (Bi) - Dissolved	ug/L	CONTROL 1	4/11/2021	<0.0050	0.0025	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.0065	0.0065	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.0050	0.0025	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.0050	0.0025	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.0050	0.0025	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.0079	0.0079	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.0050	0.0025	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.0050	0.0025	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.0050	0.0025	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.0050	0.0025	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.0050	0.0025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.0059	0.0059	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.0050	0.0025	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.189	0.189	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.0050	0.0025	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.0106	0.0106	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.0050	0.0025	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.0050	0.0025	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.0050	0.0025	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.0050	0.0025	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.0050	0.0025	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.0050	0.0025	ZQ8671	GW
Bismuth (Bi) - Total	ug/L	CONTROL 1	4/11/2021	<0.0050	0.0025	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.0131	0.0131	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.0069	0.0069	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.0053	0.0053	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.0081	0.0081	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.0119	0.0119	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.0050	0.0025	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.0099	0.0099	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.0056	0.0056	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.0050	0.0025	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.0050	0.0025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.0112	0.0112	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.0050	0.0025	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.14	0.14	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.0238	0.0238	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.0246	0.0246	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.0297	0.0297	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.0274	0.0274	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.0323	0.0323	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.076	0.076	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.0163	0.0163	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.0050	0.0025	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Boron (B) - Dissolved	ug/L	CONTROL 1	4/11/2021	<5.0	2.5	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<5.0	2.5	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<5.0	2.5	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<5.0	2.5	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<5.0	2.5	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<5.0	2.5	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<5.0	2.5	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	<5.0	2.5	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<5.0	2.5	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<5.0	2.5	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<5.0	2.5	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<5.0	2.5	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<5.0	2.5	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	<5.0	2.5	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<5.0	2.5	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	<5.0	2.5	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<5.0	2.5	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	<5.0	2.5	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<5.0	2.5	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<5.0	2.5	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<5.0	2.5	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<5.0	2.5	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<5.0	2.5	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<5.0	2.5	ZQ8671	GW
Boron (B) - Total	ug/L	CONTROL 1	4/11/2021	<5.0	2.5	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<5.0	2.5	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<5.0	2.5	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<5.0	2.5	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<5.0	2.5	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<5.0	2.5	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<5.0	2.5	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	<5.0	2.5	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<5.0	2.5	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<5.0	2.5	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<5.0	2.5	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<5.0	2.5	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<5.0	2.5	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	<5.0	2.5	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<5.0	2.5	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	<5.0	2.5	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<5.0	2.5	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	<5.0	2.5	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<5.0	2.5	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<5.0	2.5	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<5.0	2.5	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<5.0	2.5	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<5.0	2.5	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<5.0	2.5	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Cadmium (Cd) - Dissolved	ug/L	CONTROL 1	4/11/2021	<0.0050	0.0025	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<0.0050	0.0025	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.0050	0.0025	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.0050	0.0025	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.0050	0.0025	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	<0.0050	0.0025	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.0050	0.0025	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.0050	0.0025	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.0050	0.0025	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.0050	0.0025	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.0050	0.0025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	<0.0050	0.0025	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.0050	0.0025	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.0196	0.0196	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.0050	0.0025	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.0054	0.0054	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.0050	0.0025	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.0050	0.0025	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.0050	0.0025	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.0050	0.0025	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.0050	0.0025	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.0050	0.0025	ZQ8671	GW
Cadmium (Cd) - Total	ug/L	CONTROL 1	4/11/2021	<0.0050	0.0025	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.0104	0.0104	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.0050	0.0025	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.0050	0.0025	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.0050	0.0025	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.009	0.009	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.0050	0.0025	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.0055	0.0055	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.0050	0.0025	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.0050	0.0025	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.0050	0.0025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.0079	0.0079	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.0050	0.0025	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.041	0.041	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.0126	0.0126	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.0097	0.0097	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.0145	0.0145	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.0099	0.0099	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.0187	0.0187	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.0164	0.0164	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.0093	0.0093	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.0055	0.0055	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Calcium (Ca) - Dissolved	mg/L	CONTROL 1	4/11/2021	0.076	0.076	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.277	0.277	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.09	0.09	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.116	0.116	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	0.017	0.017	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	0.011	0.011	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.168	0.168	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.231	0.231	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.095	0.095	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.125	0.125	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.081	0.081	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.095	0.095	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.118	0.118	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.281	0.281	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.204	0.204	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	3.1	3.1	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.55	0.55	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.719	0.719	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.252	0.252	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.346	0.346	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.231	0.231	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.184	0.184	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.221	0.221	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.079	0.079	ZQ8671	GW
Calcium (Ca) - Total	mg/L	CONTROL 1	4/11/2021	0.068	0.068	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.403	0.403	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.158	0.158	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.143	0.143	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.193	0.193	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.256	0.256	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.083	0.083	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.261	0.261	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.115	0.115	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.095	0.095	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.134	0.134	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.436	0.436	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.167	0.167	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	3.85	3.85	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	1.31	1.31	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.846	0.846	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.588	0.588	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.662	0.662	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.712	0.712	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.854	0.854	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.513	0.513	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.099	0.099	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Carbonate (CO <sub>3</sub> )	mg/L	CONTROL 1	4/11/2021	<0.50	0.25	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	<0.50	0.25	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<0.50	0.25	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.50	0.25	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<0.50	0.25	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	<0.50	0.25	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<0.50	0.25	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<0.50	0.25	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<0.50	0.25	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	<0.50	0.25	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	<0.50	0.25	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	<0.50	0.25	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<0.50	0.25	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	<0.50	0.25	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	<0.50	0.25	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.50	0.25	ZQ8671	GW
Chloride (Cl) - Dissolved	mg/L	CONTROL 1	4/11/2021	0.74	0.74	ZQ8672	GW
, ,	mg/L	CONTROL 2	4/12/2021	0.73	0.73	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.52	0.52	ZQ8679	Dup 2
	mg/L	SS BAG	4/18/2021	0.72	0.72	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	0.7	0.7	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.89	0.89	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<0.50	0.25	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.69	0.69	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.59	0.59	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.68	0.68	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.72	0.72	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<0.50	0.25	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<0.50	0.25	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	1.2	1.2	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.8	0.8	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.79	0.79	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.95	0.95	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.97	0.97	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.91	0.91	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.50	0.25	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Chromium (Cr) - Dissolved	ug/L	CONTROL 1	4/11/2021	0.484	0.484	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	1.26	1.26	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.050	0.25	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.599	0.599	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.088	0.088	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.874	0.874	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.908	0.908	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.287	0.287	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.076	0.076	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.050	0.025	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.303	0.303	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.050	0.025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	1.12	1.12	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	1.15	1.15	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	12.5	12.5	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.106	0.106	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	2.51	2.51	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.074	0.074	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.091	0.091	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.067	0.067	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.098	0.098	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.054	0.054	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.050	0.025	ZQ8671	GW
Chromium (Cr) - Total	ug/L	CONTROL 1	4/11/2021	1.14	1.14	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	5.39	5.39	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	1.77	1.77	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	1.79	1.79	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.2	0.2	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	1.55	1.55	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	1.28	1.28	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.942	0.942	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	2.34	2.34	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.869	0.869	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.972	0.972	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.57	0.57	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	2.2	2.2	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	1.24	1.24	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	28.9	28.9	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	6.13	6.13	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	7.23	7.23	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	5.14	5.14	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	5.16	5.16	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	5.74	5.74	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	6.36	6.36	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	3.44	3.44	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	1.04	1.04	ZQ8671	GW

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Cobalt (Co) - Dissolved	ug/L	CONTROL 1	4/11/2021	0.037	0.037	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.221	0.221	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.0202	0.0202	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.101	0.101	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.0052	0.0052	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.155	0.155	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.144	0.144	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.036	0.036	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.0285	0.0285	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.011	0.011	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.0406	0.0406	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.0159	0.0159	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.261	0.261	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.16	0.16	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	2.82	2.82	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.0705	0.0705	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.42	0.42	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.063	0.063	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.0903	0.0903	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.0577	0.0577	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.0784	0.0784	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.0739	0.0739	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.014	0.014	ZQ8671	GW
Cobalt (Co) - Total	ug/L	CONTROL 1	4/11/2021	0.0952	0.0952	ZQ8672	GW
( )	ug/L	CONTROL 2	4/12/2021	0.74	0.74	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.215	0.215	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.194	0.194	ZQ8679	Dup 2
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.0084	0.0084	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.213	0.213	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.174	0.174	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.0883	0.0883	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.317	0.317	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.129	0.129	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.131	0.131	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.0925	0.0925	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.356	0.356	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.178	0.178	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	5.2	5.2	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	1.16	1.16	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	1.23	1.23	ZQ8677	Dup 1
	ug/L	SS3-8	4/11/2021	0.842	0.842	ZQ8666	GW
	ug/L	SS4-4	4/11/2021	0.985	0.985	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	1.09	1.09	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	1.42	1.42	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.624	0.624	ZQ8670	GW
	ug/L	1 555-4	7/11/2021	0.024	0.024	20010	300

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Conductivity	uS/cm	CONTROL 1	4/11/2021	2.1	2.1	ZQ8672	GW
	uS/cm	CONTROL 2	4/12/2021	2.6	2.6	ZQ8673	GW
	uS/cm	CONTROL 3	4/11/2021	2.1	2.1	ZQ8674	Dup 1
	uS/cm	CONTROL 3	4/11/2021	1.9	1.9	ZQ8679	Dup 2
	uS/cm	SS BAG	4/18/2021	1.1	1.1	ZQ8675	BAG
	uS/cm	SS BAG	4/18/2021	1.5	1.5	ZQ8676	EBW
	uS/cm	SS1-4	4/10/2021	2.4	2.4	ZQ8656	Dup 1
	uS/cm	SS1-4	4/10/2021	2.3	2.3	ZQ8678	Dup 2
	uS/cm	SS1-5	4/10/2021	2.1	2.1	ZQ8657	GW
	uS/cm	SS2-1	4/9/2021	2.6	2.6	ZQ8658	GW
	uS/cm	SS2-2	4/9/2021	2	2	ZQ8659	GW
	uS/cm	SS2-3	4/9/2021	2.2	2.2	ZQ8660	GW
	uS/cm	SS2-4	4/9/2021	2.3	2.3	ZQ8661	GW
	uS/cm	SS3-4	4/11/2021	2.6	2.6	ZQ8662	GW
	uS/cm	SS3-5	4/11/2021	2.5	2.5	ZQ8663	GW
	uS/cm	SS3-6	4/11/2021	9.3	9.3	ZQ8664	GW
	uS/cm	SS3-7	4/11/2021	4.3	4.3	ZQ8665	Dup 1
	uS/cm	SS3-7	4/11/2021	4.1	4.1	ZQ8677	Dup 2
	uS/cm	SS3-8	4/11/2021	3.2	3.2	ZQ8666	GW
	uS/cm	SS4-4	4/12/2021	4.1	4.1	ZQ8667	GW
	uS/cm	SS4-5	4/12/2021	3	3	ZQ8668	GW
	uS/cm	SS5-3	4/11/2021	3.1	3.1	ZQ8669	GW
	uS/cm	SS5-4	4/11/2021	2.9	2.9	ZQ8670	GW
	uS/cm	SS5-5	4/11/2021	2.2	2.2	ZQ8671	GW
Copper (Cu) - Dissolved	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.053	0.053	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.307	0.307	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.394	0.394	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.171	0.171	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.098	0.098	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.08	0.08	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.156	0.156	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.104	0.104	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.174	0.174	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.143	0.143	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	2.44	2.44	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.081	0.081	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.431	0.431	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.066	0.066	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.07	0.07	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.085	0.085	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.136	0.136	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.069	0.069	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.065	0.065	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.171	0.171	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.341	0.341	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.050	0.025	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.151	0.151	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Copper (Cu) - Total	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.072	0.072	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.45	0.45	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.361	0.361	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.318	0.318	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.626	0.626	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.255	0.255	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.211	0.211	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.145	0.145	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.292	0.292	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.151	0.151	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	4.66	4.66	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.988	0.988	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	1.17	1.17	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.995	0.995	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	1.2	1.2	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	1.25	1.25	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	2.99	2.99	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.555	0.555	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.192	0.192	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.241	0.241	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.777	0.777	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.252	0.252	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.224	0.224	ZQ8679	Dup 2
Fluoride (F)	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.010	0.005	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	<0.010	0.005	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<0.010	0.005	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.015	0.015	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<0.010	0.005	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	<0.010	0.005	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<0.010	0.005	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<0.010	0.005	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<0.010	0.005	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	<0.010	0.005	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<0.010	0.005	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	<0.010	0.005	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	<0.010	0.005	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	<0.010	0.005	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<0.010	0.005	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	<0.010	0.005	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	<0.010	0.005	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.010	0.005	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	<0.010	0.005	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	<0.010	0.005	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.010	0.005	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<0.010	0.005	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Hardness (as CaCO <sub>3</sub> )	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
- Dissolved	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	1.04	1.04	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	1.74	1.74	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<0.50	0.25	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.50	0.25	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<0.50	0.25	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.54	0.54	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<0.50	0.25	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	3.25	3.25	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	2.28	2.28	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	27.9	27.9	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	1.85	1.85	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	6.91	6.91	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.89	0.89	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	1.38	1.38	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	8.0	0.8	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.72	0.72	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.85	0.85	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.50	0.25	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	<0.50	0.25	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	2.56	2.56	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	1.01	1.01	ZQ8679	Dup 2
Hardness (as CACO <sub>3</sub> ) - Total	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	1.93	1.93	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	2.44	2.44	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.93	0.93	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	3.81	3.81	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	1.37	1.37	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	1.29	1.29	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	1.12	1.12	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	7.94	7.94	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	2.38	2.38	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	53.4	53.4	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	19.1	19.1	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	13.8	13.8	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	9.39	9.39	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	16.2	16.2	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	9.4	9.4	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	9.88	9.88	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	10.8	10.8	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	1.37	1.37	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.95	0.95	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	9.58	9.58	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	2.72	2.72	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	2.57	2.57	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Hydroxide (OH)	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<0.50	0.25	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.50	0.25	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<0.50	0.25	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	<0.50	0.25	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<0.50	0.25	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<0.50	0.25	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<0.50	0.25	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	<0.50	0.25	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	<0.50	0.25	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	<0.50	0.25	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<0.50	0.25	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	<0.50	0.25	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	<0.50	0.25	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.50	0.25	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	<0.50	0.25	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	<0.50	0.25	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8679	Dup 2
Iron (Fe) - Dissolved	ug/L	SS BAG	4/18/2021	<1.0	0.5	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	21.7	21.7	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	278	278	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	330	330	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	68.4	68.4	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	5	5	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	3.2	3.2	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	70.6	70.6	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	3.5	3.5	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	267	267	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	219	219	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	2910	2910	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	13.7	13.7	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	556	556	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	4.7	4.7	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	15.8	15.8	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	9.9	9.9	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	30.2	30.2	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	5.8	5.8	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	3.6	3.6	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	80.1	80.1	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	246	246	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	3.5	3.5	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	164	164	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Iron (Fe) - Total	ug/L	SS BAG	4/18/2021	<1.0	0.5	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	60	60	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	485	485	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	387	387	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	244	244	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	582	582	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	264	264	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	251	251	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	143	143	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	516	516	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	237	237	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	6470	6470	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	1470	1470	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	1740	1740	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	1320	1320	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	1830	1830	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	1860	1860	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	2340	2340	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	788	788	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	248	248	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	245	245	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	919	919	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	409	409	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	406	406	ZQ8679	Dup 2
Lead (Pb) - Dissolved	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.0173	0.0173	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.126	0.126	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.136	0.136	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.0571	0.0571	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.0084	0.0084	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.0072	0.0072	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.0842	0.0842	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.0081	0.0081	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.11	0.11	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.112	0.112	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	1.37	1.37	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.0175	0.0175	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.201	0.201	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.014	0.014	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.0164	0.0164	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.0088	0.0088	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.0515	0.0515	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.0184	0.0184	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.0096	0.0096	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.0601	0.0601	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.144	0.144	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.0192	0.0192	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.111	0.111	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Lead (Pb) - Total	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.0257	0.0257	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.664	0.664	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.286	0.286	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.17	0.17	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.274	0.274	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.233	0.233	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.16	0.16	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.0886	0.0886	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.306	0.306	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.107	0.107	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	4.75	4.75	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.591	0.591	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.643	0.643	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.64	0.64	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.4	0.4	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.503	0.503	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	1.39	1.39	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.473	0.473	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.169	0.169	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.115	0.115	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.427	0.427	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.237	0.237	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.235	0.235	ZQ8679	Dup 2
Lithium (Li) - Dissolved	ug/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.62	0.62	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	1.24	1.24	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.50	0.25	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.50	0.25	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.50	0.25	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.50	0.25	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.50	0.25	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	1.18	1.18	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.50	0.25	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	10.1	10.1	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	1.5	1.5	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.50	0.25	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.50	0.25	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.50	0.25	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.50	0.25	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.50	0.25	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.50	0.25	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.50	0.25	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<0.50	0.25	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Lithium (Li) - Total	ug/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	1.3	1.3	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	1.68	1.68	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.50	0.25	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	1.62	1.62	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.67	0.67	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.50	0.25	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.50	0.25	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	1.29	1.29	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.50	0.25	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	15.4	15.4	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	3.88	3.88	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	4.16	4.16	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	3.93	3.93	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	3.94	3.94	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	3.5	3.5	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	7.61	7.61	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	2.06	2.06	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.54	0.54	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.50	0.25	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	1.6	1.6	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.94	0.94	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.89	0.89	ZQ8679	Dup 2
Magnesium (Mg) - Dissolved	mg/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
3 ( 3)	mg/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.151	0.151	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.283	0.283	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.0539	0.0539	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.0314	0.0314	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.0158	0.0158	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.0725	0.0725	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.0278	0.0278	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.617	0.617	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.429	0.429	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	4.9	4.9	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.115	0.115	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	1.24	1.24	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.0637	0.0637	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.125	0.125	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.0533	0.0533	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.0643	0.0643	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.0717	0.0717	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.0179	0.0179	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.0602	0.0602	ZQ8672	GW
	mg/L	CONTROL 2	4/11/2021	0.453	0.453	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.433	0.433	ZQ8674	Dup 1
	-	CONTROL 3	4/11/2021	0.0211	0.0211	ZQ8674 ZQ8679	Dup 1
	mg/L	CONTROLS	4/11/2021	0.170	0.170	ZQ0019	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Magnesium (Mg) - Total	mg/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	0.0139	0.0139	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.351	0.351	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.438	0.438	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.175	0.175	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.766	0.766	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.264	0.264	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.256	0.256	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.19	0.19	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	1.66	1.66	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.476	0.476	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	10.6	10.6	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	3.84	3.84	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	2.85	2.85	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	1.92	1.92	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	3.53	3.53	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	1.85	1.85	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	1.88	1.88	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	2.31	2.31	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.273	0.273	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.19	0.19	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	2.08	2.08	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.564	0.564	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.538	0.538	ZQ8679	Dup 2
Manganese (Mn) - Dissolved	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.124	0.124	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	5.19	5.19	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	6.33	6.33	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	1.04	1.04	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.941	0.941	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.498	0.498	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	1.5	1.5	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.768	0.768	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	7.93	7.93	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	3.29	3.29	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	80.5	80.5	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	2.54	2.54	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	12.4	12.4	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	1.74	1.74	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	2.62	2.62	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	1.91	1.91	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	3.9	3.9	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	1.78	1.78	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.479	0.479	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	1.71	1.71	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	5.3	5.3	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.561	0.561	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	3.13	3.13	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Manganese (Mn) - Total	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.696	0.696	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	7.73	7.73	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	6.46	6.46	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	2.94	2.94	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	10.9	10.9	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	4.3	4.3	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	3.53	3.53	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	2.99	2.99	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	9.65	9.65	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	3.98	3.98	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	131	131	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	31.6	31.6	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	34.6	34.6	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	26.1	26.1	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	32.5	32.5	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	35.7	35.7	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	48.6	48.6	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	15	15	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	3.76	3.76	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	3.76	3.76	ZQ8672	GW
	ug/L	CONTROL 2	4/11/2021	15.1	15.1	ZQ8673	GW
		CONTROL 3	4/11/2021	7	7	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	6.15	6.15	ZQ8679	Dup 1
Mercury (Hg) - Total	ug/L	SS BAG			0.00095	ZQ8679 ZQ8675	BAG
nercury (ng) - rotal	ug/L	SS BAG	4/18/2021 4/18/2021	<0.0019	0.00095	ZQ8675 ZQ8676	EBW
	ug/L			<0.0019 <0.0019			
	ug/L	SS1-4 SS1-4	4/10/2021	<0.0019	0.00095	ZQ8656	Dup 1
	ug/L	SS1-4 SS1-5	4/10/2021		0.00095	ZQ8678	Dup 2 GW
	ug/L		4/10/2021	<0.0019	0.00095	ZQ8657	
	ug/L	SS2-1	4/9/2021	<0.0019	0.00095	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.0019	0.00095	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.0019	0.00095	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.0019	0.00095	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.0034	0.0034	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.0019	0.00095	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.0055	0.0055	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.0029	0.0029	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	<0.0019	0.00095	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.0019	0.00095	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.0024	0.0024	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.0019	0.00095	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.0024	0.0024	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.002	0.002	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.0019		ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.0026	0.0026	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<0.0019	0.00095	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.0019	0.00095	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.0019	0.00095	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Molybdenum (Mo) - Dissolved	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.064	0.064	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.153	0.153	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.064	0.064	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.144	0.144	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.064	0.064	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.06	0.06	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.050	0.025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.055	0.055	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.051	0.051	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.289	0.289	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.052	0.052	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.091	0.091	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.050	0.025	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.071	0.071	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.050	0.025	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.050	0.025	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.050	0.025	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.050	0.025	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.062	0.062	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.084	0.084	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.050	0.025	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.050	0.025	ZQ8679	Dup 2
Molybdenum (Mo) - Total	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
, , ,	ug/L	SS BAG	4/18/2021	0.08	0.08	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.172	0.172	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.288	0.288	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.146	0.146	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.097	0.097	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.061	0.061	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.052	0.052	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.050	0.025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.115	0.115	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.05	0.05	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.473	0.473	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.167	0.167	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.12	0.12	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.159	0.159	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.161	0.161	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.119	0.119	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.136	0.136	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.121	0.121	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.082	0.082	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.201	0.201	ZQ8672	GW
	ug/L	CONTROL 2	4/11/2021	0.201	0.201	ZQ8673	GW
	ug/L ug/L	CONTROL 3	4/11/2021	0.066	0.066	ZQ8674	Dup 1
		CONTROL 3	4/11/2021	0.082	0.082	ZQ8674 ZQ8679	Dup 1
	ug/L	CONTROLS	4/11/2021	0.002	0.002	ZQ0019	<b>ս</b> սի ∠

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Nickel (Ni) - Dissolved	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.763	0.763	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.719	0.719	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.218	0.218	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.334	0.334	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.101	0.101	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.339	0.339	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.22	0.22	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	2.37	2.37	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	2.07	2.07	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	30	30	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	1.83	1.83	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	4.55	4.55	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	1.04	1.04	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	2.08	2.08	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.75	0.75	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.621	0.621	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	1.28	1.28	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.159	0.159	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.224	0.224	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	2.81	2.81	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.231	0.231	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.754	0.754	ZQ8679	Dup 2
Nickel (Ni) - Total	ug/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
, ,	ug/L	SS BAG	4/18/2021	0.096	0.096	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	1.15	1.15	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	1.01	1.01	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.675	0.675	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	2.94	2.94	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.861	0.861	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.841	0.841	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.821	0.821	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	3.73	3.73	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	2.45	2.45	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	60.2	60.2	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	11	11	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	11.7	11.7	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	7.28	7.28	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	10.8	10.8	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	6.45	6.45	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	6.41	6.41	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	5.97	5.97	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.899	0.899	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.661	0.661	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	8.6	8.6	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	1.9	1.9	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	1.68	1.68	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Nitrate (N)	mg/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8675	BAG
,	mg/L	SS BAG	4/18/2021	0.0065	0.0065	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.039	0.039	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.043	0.043	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.053	0.053	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.057	0.057	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.039	0.039	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.056	0.056	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.047	0.047	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.042	0.042	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.033	0.033	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.086	0.086	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.06	0.06	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.06	0.06	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.046	0.046	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.043	0.043	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.056	0.056	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.048	0.048	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.052	0.052	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.036	0.036	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.042	0.042	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.062	0.062	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.04	0.04	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.041	0.041	ZQ8679	Dup 2
Nitrate plus Nitrite (N)	mg/L	SS BAG	4/18/2021	<0.0022	0.0011	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	0.0078	0.0078	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.039	0.039	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.043	0.043	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.054	0.054	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.057	0.057	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.039	0.039	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.056	0.056	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.047	0.047	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.042	0.042	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.033	0.033	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.086	0.086	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.06	0.06	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.06	0.06	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.046	0.046	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.045	0.045	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.056	0.056	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.049	0.049	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.052	0.052	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.036	0.036	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.042	0.042	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.062	0.062	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.04	0.04	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.041	0.041	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Nitrite (N)	mg/L	SS BAG	4/18/2021	<0.0010	0.0005	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	0.0013	0.0013	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.0010	0.0005	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	<0.0010	0.0005	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<0.0010	0.0005	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.0010	0.0005	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<0.0010	0.0005	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	<0.0010	0.0005	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<0.0010	0.0005	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<0.0010	0.0005	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<0.0010	0.0005	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	<0.0010	0.0005	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<0.0010	0.0005	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	<0.0010	0.0005	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	<0.0010	0.0005	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.0012	0.0012	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<0.0010	0.0005	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.0018	0.0018	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	<0.0010	0.0005	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.0010	0.0005	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	<0.0010	0.0005	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	<0.0010	0.0005	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.0010	0.0005	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<0.0010	0.0005	ZQ8679	Dup 2
Nitrogen (N) - Total	mg/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.085	0.085	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.065	0.065	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.11	0.11	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.11	0.11	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.07	0.07	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.1	0.1	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.087	0.087	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.068	0.068	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.06	0.06	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.19	0.19	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.098	0.098	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.11	0.11	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.094	0.094	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.098	0.098	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.09	0.09	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.077	0.077	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.092	0.092	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.08	0.08	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.075	0.075	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.099	0.099	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.079	0.079	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.06	0.06	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Orthophosphate (PO <sub>4</sub> -P)	mg/L	SS BAG	4/18/2021	0.0011	0.0011	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	0.0012	0.0012	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.002	0.002	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.0017	0.0017	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.0039	0.0039	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.0010	0.0005	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.0015	0.0015	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.0023	0.0023	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.0035	0.0035	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.0024	0.0024	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.0034	0.0034	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.0043	0.0043	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.0035	0.0035	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.0036	0.0036	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.0045	0.0045	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.006	0.006	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.0044	0.0044	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.0026	0.0026	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.0013	0.0013	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.0010	0.0005	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.0023	0.0023	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.0039	0.0039	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.0031	0.0031	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.0026	0.0026	ZQ8679	Dup 2
ьН	pН	SS BAG	4/18/2021	4.97	4.97	ZQ8675	BAG
	рН	SS BAG	4/18/2021	5.1	5.1	ZQ8676	EBW
	рН	SS1-4	4/10/2021	5.54	5.54	ZQ8656	Dup 1
	pН	SS1-4	4/10/2021	5.05	5.05	ZQ8678	Dup 2
	pН	SS1-5	4/10/2021	5.34	5.34	ZQ8657	GW
	рН	SS2-1	4/9/2021	4.84	4.84	ZQ8658	GW
	рН	SS2-2	4/9/2021	4.83	4.83	ZQ8659	GW
	pН	SS2-3	4/9/2021	5.45	5.45	ZQ8660	GW
	рН	SS2-4	4/9/2021	4.9	4.9	ZQ8661	GW
	рН	SS3-4	4/11/2021	5.72	5.72	ZQ8662	GW
	pН	SS3-5	4/11/2021	5.68	5.68	ZQ8663	GW
	рН	SS3-6	4/11/2021	6.1	6.1	ZQ8664	GW
	рН	SS3-7	4/11/2021	5.88	5.88	ZQ8665	Dup 1
	pН	SS3-7	4/11/2021	5.85	5.85	ZQ8677	Dup 2
	рН	SS3-8	4/11/2021	5.23	5.23	ZQ8666	GW
	рН	SS4-4	4/12/2021	5.86	5.86	ZQ8667	GW
	pН	SS4-5	4/12/2021	5.21	5.21	ZQ8668	GW
	рН	SS5-3	4/11/2021	5.66	5.66	ZQ8669	GW
	рН	SS5-4	4/11/2021	5.23	5.23	ZQ8670	GW
	pH	SS5-5	4/11/2021	5.44	5.44	ZQ8671	GW
	pH	CONTROL 1	4/11/2021	5.03	5.03	ZQ8672	GW
	pH	CONTROL 2	4/12/2021	5.35	5.35	ZQ8673	GW
	pH	CONTROL 3	4/11/2021	4.86	4.86	ZQ8674	Dup 1
	pH	CONTROL 3	4/11/2021	5.04	5.04	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Phosphorus (P) - Dissolved	mg/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8675	BAG
(TDP)	mg/L	SS BAG	4/18/2021	0.0121	0.0121	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.0020	0.001	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	<0.0020	0.001	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<0.0020	0.001	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.0020	0.001	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<0.0020	0.001	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.0028	0.0028	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<0.0020	0.001	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<0.0020	0.001	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.0021	0.0021	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	<0.0020	0.001	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<0.0020	0.001	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.0028	0.0028	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.0023	0.0023	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.0042	0.0042	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.0023	0.0023	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	<0.0020	0.001	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.0025	0.0025	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.0020	0.001	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	<0.0020	0.001	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.0024	0.0024	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.0020	0.001	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<0.0020	0.001	ZQ8679	Dup 2
Phosphorus (P) - Total	mg/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8675	BAG
, ,	mg/L	SS BAG	4/18/2021	0.0026	0.0026	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.0071	0.0071	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.0085	0.0085	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.0036	0.0036	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.0068	0.0068	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.0037	0.0037	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	<0.0020	0.001	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.0062	0.0062	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.0228	0.0228	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.0071	0.0071	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.158	0.158	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.05	0.05	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.042	0.042	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.0345	0.0345	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.0392	0.0392	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.0365	0.0365	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.0385	0.0385	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.0358	0.0358	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.0046	0.0046	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	<0.0020	0.001	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.0088	0.0088	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.0066	0.0066	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.0061	0.0061	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Potassium (K) - Dissolved	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.123	0.123	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.209	0.209	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.042	0.042	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.02	0.02	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.012	0.012	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.053	0.053	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.018	0.018	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.172	0.172	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.088	0.088	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	1.83	1.83	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.066	0.066	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.367	0.367	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.04	0.04	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.082	0.082	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.047	0.047	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.065	0.065	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.046	0.046	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.011	0.011	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.034	0.034	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.151	0.151	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.015	0.015	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.102	0.102	ZQ8679	Dup 2
Potassium (K) - Total	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
( )	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.152	0.152	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.197	0.197	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.059	0.059	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.205	0.205	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.086	0.086	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.085	0.085	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.064	0.064	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.304	0.304	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.067	0.067	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	1.73	1.73	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.767	0.767	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.475	0.475	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.477	0.477	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.571	0.571	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.77	0.77	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.949	0.949	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.429	0.429	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.074	0.074	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.065	0.065	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.003	0.003	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.118	0.118	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.110	0.113	ZQ8679	Dup 1

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Selenium (Se) - Dissolved	ug/L	SS BAG	4/18/2021	<0.040	0.02	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.040	0.02	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.040	0.02	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	<0.040	0.02	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.040	0.02	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.040	0.02	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.040	0.02	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.040	0.02	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.040	0.02	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	<0.040	0.02	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.040	0.02	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	<0.040	0.02	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.040	0.02	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	<0.040	0.02	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.040	0.02	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.040	0.02	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.040	0.02	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.040	0.02	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.040	0.02	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.040	0.02	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.040	0.02	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<0.040	0.02	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.040	0.02	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.040	0.02	ZQ8679	Dup 2
Selenium (Se) - Total	ug/L	SS BAG	4/18/2021	<0.040	0.02	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.040	0.02	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.040	0.02	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	<0.040	0.02	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.040	0.02	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.040	0.02	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.040	0.02	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.040	0.02	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.040	0.02	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	<0.040	0.02	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.040	0.02	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.046	0.046	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.040	0.02	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	<0.040	0.02	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.040	0.02	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.040	0.02	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.040	0.02	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.040	0.02	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.040	0.02	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.040	0.02	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.040	0.02	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<0.040	0.02	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.040	0.02	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.040	0.02	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Silicon (Si) - Dissolved	ug/L	SS BAG	4/18/2021	<50	25	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<50	25	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	249	249	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	278	278	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	59	59	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<50	25	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<50	25	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	64	64	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<50	25	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	348	348	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	240	240	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	3670	3670	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	108	108	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	798	798	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<50	25	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	54	54	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<50	25	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	61	61	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<50	25	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<50	25	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	53	53	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	237	237	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<50	25	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	155	155	ZQ8679	Dup 2
Silicon (Si) - Total	ug/L	SS BAG	4/18/2021	<50	25	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<50	25	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	456	456	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	371	371	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	192	192	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	691	691	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	277	277	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	281	281	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	209	209	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	838	838	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	427	427	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	6640	6640	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	2240	2240	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	2310	2310	ZQ8677	Dup 1
	ug/L	SS3-8	4/11/2021	1550	1550	ZQ8666	GW
	ug/L	SS4-4	4/11/2021	2230	2230	ZQ8667	GW
	<u> </u>	SS4-5			2130		GW
	ug/L	SS5-3	4/12/2021	2130 2840	2840	ZQ8668 ZQ8669	GW
	ug/L		4/11/2021				
	ug/L	SS5-4	4/11/2021	1260	1260	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	278	278	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	182	182	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	1140	1140	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	524	524	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	533	533	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Silver (Ag) - Dissolved	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.0050	0.0025	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	<0.0050	0.0025	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.0050	0.0025	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.0050	0.0025	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.0050	0.0025	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.0050	0.0025	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.0050	0.0025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	<0.0050	0.0025	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.0050	0.0025	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.012	0.012	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.0050	0.0025	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	<0.0050	0.0025	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.0050	0.0025	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.0050	0.0025	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.0050	0.0025	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.0050	0.0025	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.0050	0.0025	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.0050	0.0025	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.0050	0.0025	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	<0.0050	0.0025	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.0050	0.0025	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.0050	0.0025	ZQ8679	Dup 2
Silver (Ag) - Total	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8675	BAG
( 3)	ug/L	SS BAG	4/18/2021	<0.0050	0.0025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.0050	0.0025	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	<0.0050	0.0025	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.0050	0.0025	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.0050	0.0025	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.0050	0.0025	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.0050	0.0025	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.0050	0.0025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.0064	0.0064	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.0050	0.0025	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.047	0.047	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.0064	0.0064	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.0076	0.0076	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.0050	0.0025	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.0051	0.0051	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.0051	0.0051	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.01	0.01	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.0050	0.0025	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.0050	0.0025	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.0050	0.0025	ZQ8672	GW
	ug/L	CONTROL 2	4/11/2021	<0.0050	0.0025	ZQ8673	GW
	ug/L ug/L	CONTROL 2	4/11/2021	<0.0050	0.0025	ZQ8674	Dup 1
	ug/L	CONTINUES	7/11/2021	<0.0050	0.0023	ZQ0014	Dup i

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Sodium (Na) - Dissolved	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.089	0.089	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.1	0.1	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.046	0.046	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.044	0.044	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.031	0.031	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.037	0.037	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.057	0.057	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.043	0.043	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.034	0.034	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.21	0.21	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.069	0.069	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.074	0.074	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.059	0.059	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.074	0.074	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.049	0.049	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.046	0.046	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.064	0.064	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.038	0.038	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.037	0.037	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.076	0.076	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.027	0.027	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.026	0.026	ZQ8679	Dup 2
Sodium (Na) - Total	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
(ru) rota:	mg/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.099	0.099	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.103	0.103	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.043	0.043	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.06	0.06	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.035	0.035	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.033	0.033	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.067	0.04	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.06	0.06	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.037	0.007	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.037	0.037	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.125	0.125	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.123	0.123	ZQ8677	Dup 1
	mg/L	SS3-8	4/11/2021	0.084	0.084	ZQ8666	GW
	mg/L	SS4-4	4/11/2021	0.004	0.108	ZQ8667	GW
		SS4-5			0.100		GW
	mg/L	SS5-3	4/12/2021 4/11/2021	0.11	0.11	ZQ8668 ZQ8669	GW
	mg/L			0.167			
	mg/L	SS5-4	4/11/2021	0.09	0.09	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.042	0.042	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.045	0.045	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.088	0.088	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.041	0.041	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	0.035	0.035	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Strontium (Sr) - Dissolved	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.659	0.659	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.724	0.724	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.258	0.258	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.568	0.568	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.325	0.325	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.317	0.317	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.468	0.468	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	1.38	1.38	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	1.38	1.38	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	16.2	16.2	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	3.16	3.16	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	3.51	3.51	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	1.65	1.65	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	3.31	3.31	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	1.25	1.25	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	1.33	1.33	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	1.86	1.86	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.32	0.32	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.339	0.339	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	2.46	2.46	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.484	0.484	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.604	0.604	ZQ8679	Dup 2
Strontium (Sr) - Total	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.062	0.062	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.87	0.87	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.906	0.906	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.447	0.447	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	1.21	1.21	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.424	0.424	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.568	0.568	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.895	0.895	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	2	2	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	1.64	1.64	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	20.3	20.3	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	6.15	6.15	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	5.06	5.06	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	3.49	3.49	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	5.62	5.62	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	3.7	3.7	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	4.92	4.92	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	3.83	3.83	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.512	0.512	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.423	0.423	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	3.57	3.57	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	1.1	1.1	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.999	0.999	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Sulphate (SO <sub>4</sub> ) - Dissolved	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<0.50	0.25	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	<0.50	0.25	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<0.50	0.25	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	<0.50	0.25	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<0.50	0.25	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	<0.50	0.25	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<0.50	0.25	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	<0.50	0.25	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	<0.50	0.25	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	<0.50	0.25	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<0.50	0.25	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	<0.50	0.25	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	<0.50	0.25	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<0.50	0.25	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	<0.50	0.25	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	<0.50	0.25	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8679	Dup 2
Sulphur (S) - Dissolved	mg/L	SS BAG	4/18/2021	0.69	0.69	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	1.14	1.14	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	1.55	1.55	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	1.67	1.67	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.97	0.97	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	1.83	1.83	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	1.04	1.04	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.54	0.54	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.51	0.51	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	<0.50	0.25	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	2.14	2.14	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	1.03	1.03	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	1.12	1.12	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	1.52	1.52	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<0.50	0.25	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	1.93	1.93	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.88	0.88	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	1.33	1.33	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	1.22	1.22	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	1.69	1.69	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.93	0.93	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Sulphur (S) - Total	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	<0.50	0.25	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	2.25	2.25	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.74	0.74	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	1.86	1.86	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<0.50	0.25	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	<0.50	0.25	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	2.6	2.6	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	1.35	1.35	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	1.12	1.12	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.75	0.75	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<0.50	0.25	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.7	0.7	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.66	0.66	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.91	0.91	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<0.50	0.25	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	<0.50	0.25	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	<0.50	0.25	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	1.87	1.87	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	<0.50	0.25	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	1.15	1.15	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	1.14	1.14	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	1.32	1.32	ZQ8679	Dup 2
Thallium (TI) - Dissolved	ug/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8675	BAG
( )	ug/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	<0.0020	0.001	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.0045	0.0045	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.0020	0.001	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.0020	0.001	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.0020	0.001	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.0020	0.001	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.0020	0.001	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.0036	0.0036	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.0020	0.001	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.0564	0.0564	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.0020	0.001	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.0065	0.0065	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.0020	0.001	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.0020	0.001	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.0020	0.001	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.0020	0.001	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.0020	0.001	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.0020	0.001	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.0020	0.001	ZQ8671 ZQ8672	GW
		CONTROL 1	4/11/2021	<0.0020	0.001	ZQ8673	GW
	ug/L	CONTROL 2	4/12/2021	<0.0020	0.001	ZQ8673 ZQ8674	
	ug/L	CONTROL 3	4/11/2021				Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.0020	0.001	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Thallium (TI) - Total	ug/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.0066	0.0066	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.0079	0.0079	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.0032	0.0032	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.0074	0.0074	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.0047	0.0047	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.0028	0.0028	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.002	0.002	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.0073	0.0073	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.0036	0.0036	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.0683	0.0683	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.0195	0.0195	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.0172	0.0172	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.0182	0.0182	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.0151	0.0151	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.0166	0.0166	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.035	0.035	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.0111	0.0111	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.0037	0.0037	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.0020	0.001	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.0096	0.0096	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.0052	0.0052	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.0051	0.0051	ZQ8679	Dup 2
Tin (Sn) - Dissolved	ug/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.023	0.023	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.035	0.035	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.055	0.055	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.010	0.005	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.010	0.005	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.010	0.005	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.01	0.01	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.032	0.032	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	<0.010	0.005	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.122	0.122	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.010	0.005	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.031	0.031	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.010	0.005	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.010	0.005	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.010	0.005	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.010	0.005	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.010	0.005	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.010	0.005	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.010	0.005	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.013	0.013	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.010	0.005	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.011	0.011	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Tin (Sn) - Total	ug/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.010	0.005	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.049	0.049	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.059	0.059	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.106	0.106	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.036	0.036	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.021	0.021	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.016	0.016	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.010	0.005	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.015	0.015	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.01	0.01	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	0.226	0.226	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.108	0.108	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.097	0.097	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.09	0.09	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.049	0.049	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.069	0.069	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.145	0.145	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.052	0.052	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.018	0.018	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.023	0.023	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.036	0.036	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.026	0.026	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.024	0.024	ZQ8679	Dup 2
Titanium (Ti) - Dissolved	ug/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	13.8	13.8	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	15.3	15.3	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	3.68	3.68	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.50	0.25	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.50	0.25	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	3.59	3.59	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.50	0.25	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	13.1	13.1	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	10.1	10.1	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	154	154	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.89	0.89	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	29.2	29.2	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.57	0.57	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.77	0.77	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.50	0.25	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	1.74	1.74	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.52	0.52	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.50	0.25	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	4.06	4.06	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	11.2	11.2	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	8.29	8.29	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Titanium (Ti) - Total	ug/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.50	0.25	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	23.8	23.8	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	19.4	19.4	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	9.66	9.66	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	30.2	30.2	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	15	15	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	14.1	14.1	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	7.06	7.06	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	26.6	26.6	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	9.85	9.85	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	247	247	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	76.5	76.5	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	86.2	86.2	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	63.1	63.1	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	62.3	62.3	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	67.8	67.8	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	127	127	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	43.1	43.1	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	13.3	13.3	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	8.19	8.19	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	39.3	39.3	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	20.7	20.7	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	19.4	19.4	ZQ8679	Dup 2
Total Dissolved Solids (TDS)	mg/L	SS BAG	4/18/2021	3.6	3.6	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<1.0	0.5	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	1.6	1.6	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	3.2	3.2	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	<1.0	0.5	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	1.6	1.6	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	<1.0	0.5	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	1.2	1.2	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	<1.0	0.5	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	1.2	1.2	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	<1.0	0.5	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	2.8	2.8	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	<1.0	0.5	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	1.6	1.6	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	3.6	3.6	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	4	4	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	<1.1	0.55	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	1.2	1.2	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	<1.0	0.5	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	<1.0	0.5	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	<1.0	0.5	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	<1.0	0.5	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	2	2	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	1.2	1.2	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Total Dissolved Solids (TDS)	mg/L	SS BAG	4/18/2021	1.3	1.3	ZQ8675	BAG
- Calculated	mg/L	SS BAG	4/18/2021	1.3	1.3	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	1	1	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	2.7	2.7	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	1.1	1.1	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	1.2	1.2	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	1.4	1.4	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	1.8	1.8	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	1.5	1.5	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	1.6	1.6	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	1.2	1.2	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	16.4	16.4	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	1.8	1.8	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	4.6	4.6	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	2.5	2.5	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	2.2	2.2	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	2.7	2.7	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	2	2	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	2.6	2.6	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.8	0.8	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	1.6	1.6	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	3	3	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	<0.50	0.25	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	1.7	1.7	ZQ8679	Dup 2
Total Kjeldahl Nitrogen	mg/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8675	BAG
,	mg/L	SS BAG	4/18/2021	<0.020	0.01	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	0.046	0.046	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	0.022	0.022	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	0.059	0.059	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	0.052	0.052	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	0.031	0.031	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	0.047	0.047	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	0.04	0.04	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	0.027	0.027	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	0.027	0.027	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	0.1	0.1	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	0.038	0.038	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	0.05	0.05	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	0.049	0.049	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	0.053	0.053	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	0.034	0.034	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	0.028	0.028	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	0.04	0.04	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	0.044	0.044	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	0.033	0.033	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	0.037	0.037	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	0.039	0.039	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	<0.020	0.039	ZQ8679	Dup 1

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Total Suspended Solids (TSS)	mg/L	SS BAG	4/18/2021	<1.0	0.5	ZQ8675	BAG
	mg/L	SS BAG	4/18/2021	<1.0	0.5	ZQ8676	EBW
	mg/L	SS1-4	4/10/2021	5.5	5.5	ZQ8656	Dup 1
	mg/L	SS1-4	4/10/2021	7.6	7.6	ZQ8678	Dup 2
	mg/L	SS1-5	4/10/2021	3.6	3.6	ZQ8657	GW
	mg/L	SS2-1	4/9/2021	8.6	8.6	ZQ8658	GW
	mg/L	SS2-2	4/9/2021	4	4	ZQ8659	GW
	mg/L	SS2-3	4/9/2021	3.1	3.1	ZQ8660	GW
	mg/L	SS2-4	4/9/2021	5.5	5.5	ZQ8661	GW
	mg/L	SS3-4	4/11/2021	11	11	ZQ8662	GW
	mg/L	SS3-5	4/11/2021	7.2	7.2	ZQ8663	GW
	mg/L	SS3-6	4/11/2021	88	88	ZQ8664	GW
	mg/L	SS3-7	4/11/2021	33	33	ZQ8665	Dup 1
	mg/L	SS3-7	4/11/2021	33	33	ZQ8677	Dup 2
	mg/L	SS3-8	4/11/2021	28	28	ZQ8666	GW
	mg/L	SS4-4	4/12/2021	28	28	ZQ8667	GW
	mg/L	SS4-5	4/12/2021	32	32	ZQ8668	GW
	mg/L	SS5-3	4/11/2021	36	36	ZQ8669	GW
	mg/L	SS5-4	4/11/2021	24	24	ZQ8670	GW
	mg/L	SS5-5	4/11/2021	4.1	4.1	ZQ8671	GW
	mg/L	CONTROL 1	4/11/2021	1.5	1.5	ZQ8672	GW
	mg/L	CONTROL 2	4/12/2021	8.3	8.3	ZQ8673	GW
	mg/L	CONTROL 3	4/11/2021	5.3	5.3	ZQ8674	Dup 1
	mg/L	CONTROL 3	4/11/2021	4.7	4.7	ZQ8679	Dup 2
Turbidity	NTU	SS BAG	4/18/2021	0.63	0.63	ZQ8675	BAG
	NTU	SS BAG	4/18/2021	0.92	0.92	ZQ8676	EBW
	NTU	SS1-4	4/10/2021	2.8	2.8	ZQ8656	Dup 1
	NTU	SS1-4	4/10/2021	2.5	2.5	ZQ8678	Dup 2
	NTU	SS1-5	4/10/2021	2.3	2.3	ZQ8657	GW
	NTU	SS2-1	4/9/2021	3.6	3.6	ZQ8658	GW
	NTU	SS2-2	4/9/2021	1.3	1.3	ZQ8659	GW
	NTU	SS2-3	4/9/2021	1.6	1.6	ZQ8660	GW
	NTU	SS2-4	4/9/2021	2.4	2.4	ZQ8661	GW
	NTU	SS3-4	4/11/2021	3.3	3.3	ZQ8662	GW
	NTU	SS3-5	4/11/2021	2	2	ZQ8663	GW
	NTU	SS3-6	4/11/2021	14	14	ZQ8664	GW
	NTU	SS3-7	4/11/2021	7.3	7.3	ZQ8665	Dup 1
	NTU	SS3-7	4/11/2021	6.6	6.6	ZQ8677	Dup 2
	NTU	SS3-8	4/11/2021	6.1	6.1	ZQ8666	GW
	NTU	SS4-4	4/12/2021	6	6	ZQ8667	GW
	NTU	SS4-5	4/12/2021	8.4	8.4	ZQ8668	GW
	NTU	SS5-3	4/11/2021	12	12	ZQ8669	GW
	NTU	SS5-4	4/11/2021	4.8	4.8	ZQ8670	GW
	NTU	SS5-5	4/11/2021	2.2	2.2	ZQ8671	GW
	NTU	CONTROL 1	4/11/2021	1.8	1.8	ZQ8672	GW
	NTU	CONTROL 2	4/12/2021	3.2	3.2	ZQ8673	GW
	NTU	CONTROL 3	4/11/2021	2.8	2.8	ZQ8674	Dup 1
	NTU	CONTROL 3	4/11/2021	2.3	2.3	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Uranium (U) - Dissolved	ug/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.0883	0.0883	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.0937	0.0937	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.0211	0.0211	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.0135	0.0135	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.0076	0.0076	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.0665	0.0665	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.0138	0.0138	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.121	0.121	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.071	0.071	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	1.54	1.54	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.0641	0.0641	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.241	0.241	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.0411	0.0411	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.0456	0.0456	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.0427	0.0427	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.103	0.103	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.0266	0.0266	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.0075	0.0075	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.0153	0.0153	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.0891	0.0891	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.0127	0.0127	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.0557	0.0557	ZQ8679	Dup 2
Uranium (U) - Total	ug/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.0020	0.001	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.276	0.276	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.243	0.243	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.0726	0.0726	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.275	0.275	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.0831	0.0831	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.0609	0.0609	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.0543	0.0543	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.223	0.223	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.0608	0.0608	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	3.78	3.78	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.653	0.653	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.783	0.783	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.552	0.552	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.586	0.586	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.513	0.513	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	1.99	1.99	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.362	0.362	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.0693	0.0693	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.034	0.034	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.258	0.258	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.137	0.137	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.113	0.113	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Vanadium (V) - Dissolved	ug/L	SS BAG	4/18/2021	0.141	0.141	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	0.148	0.148	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.57	0.57	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.548	0.548	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.145	0.145	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.166	0.166	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.06	0.06	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.201	0.201	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.144	0.144	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.48	0.48	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.394	0.394	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	5.47	5.47	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.232	0.232	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	1.09	1.09	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.169	0.169	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.127	0.127	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.136	0.136	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.276	0.276	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.154	0.154	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.096	0.096	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.146	0.146	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.459	0.459	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.124	0.124	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.416	0.416	ZQ8679	Dup 2
Vanadium (V) - Total	ug/L	SS BAG	4/18/2021	<0.10	0.05	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.10	0.05	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	1	1	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	1.08	1.08	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.28	0.28	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.34	0.34	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.26	0.26	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.37	0.37	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.4	0.4	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.99	0.99	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.92	0.92	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	11.4	11.4	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.2	0.2	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	2.17	2.17	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.34	0.34	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.22	0.22	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.35	0.35	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.52	0.52	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.25	0.25	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.25	0.25	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.39	0.39	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.99	0.99	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.21	0.21	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.62	0.62	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Zinc (Zn) - Dissolved	ug/L	SS BAG	4/18/2021	<0.10	0.05	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.10	0.05	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	1	1	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	1.08	1.08	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.28	0.28	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.34	0.34	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	0.26	0.26	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.37	0.37	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.4	0.4	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.99	0.99	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.92	0.92	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	11.4	11.4	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.2	0.2	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	2.17	2.17	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.34	0.34	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.22	0.22	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.35	0.35	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.52	0.52	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.25	0.25	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.25	0.25	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.39	0.39	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.99	0.99	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.21	0.21	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.62	0.62	ZQ8679	Dup 2
inc (Zn) - Total	ug/L	SS BAG	4/18/2021	<0.10	0.05	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.10	0.05	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	1.36	1.36	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	1.02	1.02	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	0.77	0.77	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	1.98	1.98	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	1.06	1.06	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	0.71	0.71	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	0.51	0.51	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	1.42	1.42	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.6	0.6	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	18.6	18.6	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	4.67	4.67	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	5.37	5.37	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	5.31	5.31	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	2.88	2.88	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	3.56	3.56	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	7.45	7.45	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	2.28	2.28	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.79	0.79	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	0.77	0.77	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	2.99	2.99	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	1.03	1.03	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	1.05	1.05	ZQ8679	Dup 2

**Appendix D: Snow Water Chemistry Analytical Results** 

Parameter	Unit	Sample Point	Date	Data Point	Graphable Value	Lab Ref	Sample Type
Zirconium (Zr) - Dissolved	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.095	0.095	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.085	0.085	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.050	0.025	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	<0.050	0.025	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.050	0.025	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.050	0.025	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.050	0.025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.072	0.072	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.052	0.052	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	1.13	1.13	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	<0.050	0.025	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.237	0.237	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	<0.050	0.025	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	<0.050	0.025	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	<0.050	0.025	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	<0.050	0.025	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	<0.050	0.025	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	<0.050	0.025	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.050	0.025	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.089	0.089	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	<0.050	0.025	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	<0.050	0.025	ZQ8679	Dup 2
Zirconium (Zr) - Total	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8675	BAG
, ,	ug/L	SS BAG	4/18/2021	<0.050	0.025	ZQ8676	EBW
	ug/L	SS1-4	4/10/2021	0.094	0.094	ZQ8656	Dup 1
	ug/L	SS1-4	4/10/2021	0.118	0.118	ZQ8678	Dup 2
	ug/L	SS1-5	4/10/2021	<0.050	0.025	ZQ8657	GW
	ug/L	SS2-1	4/9/2021	0.115	0.115	ZQ8658	GW
	ug/L	SS2-2	4/9/2021	<0.050	0.025	ZQ8659	GW
	ug/L	SS2-3	4/9/2021	<0.050	0.025	ZQ8660	GW
	ug/L	SS2-4	4/9/2021	<0.050	0.025	ZQ8661	GW
	ug/L	SS3-4	4/11/2021	0.201	0.201	ZQ8662	GW
	ug/L	SS3-5	4/11/2021	0.064	0.064	ZQ8663	GW
	ug/L	SS3-6	4/11/2021	1.52	1.52	ZQ8664	GW
	ug/L	SS3-7	4/11/2021	0.495	0.495	ZQ8665	Dup 1
	ug/L	SS3-7	4/11/2021	0.507	0.507	ZQ8677	Dup 2
	ug/L	SS3-8	4/11/2021	0.271	0.271	ZQ8666	GW
	ug/L	SS4-4	4/12/2021	0.396	0.396	ZQ8667	GW
	ug/L	SS4-5	4/12/2021	0.403	0.403	ZQ8668	GW
	ug/L	SS5-3	4/11/2021	0.904	0.904	ZQ8669	GW
	ug/L	SS5-4	4/11/2021	0.223	0.223	ZQ8670	GW
	ug/L	SS5-5	4/11/2021	0.105	0.105	ZQ8671	GW
	ug/L	CONTROL 1	4/11/2021	<0.050	0.025	ZQ8672	GW
	ug/L	CONTROL 2	4/12/2021	0.099	0.099	ZQ8673	GW
	ug/L	CONTROL 3	4/11/2021	0.074	0.074	ZQ8674	Dup 1
	ug/L	CONTROL 3	4/11/2021	0.06	0.06	ZQ8679	Dup 2

DIAVIK	DIAMOND	MINE
2021 Di	ust Depositi	on Report

APPENDIX E DUST GAUGE COLLECTION STANDARD OPERATING PROCEDURE (ENVI-908-0119)

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022



#### 

#### 1 REFERENCES/RELATED DOCUMENTS

- **1.1 ENVI-904-0119 SOP Total Suspended Solids** Located in: Diavik Intranet SOPs Environment Folder
- **1.2 ENVI-901-0119 SOP General Laboratory Safety** Located in: Diavik Intranet SOPs Environment Folder
- **1.3 ENVI-919-0119 SOP Snowmobiles** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.4 ENVI-917-0119 SOP Watercraft** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.5 ENVI907-0119 SOP Remote Field Safety** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.6 ENVI-895-0119 SOP Lightning Response –** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.7 ENVI-916-0119 SOP Helicopter Usage -** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.8 ENVI-135-0112 Remote Field Safety Permit Form** Located in: P:\DDMI Environment\10.0 Operational Control\10.2 Forms\Current Forms\Approved\Remote Field Safety Plans
- **1.9 ENVI-178-0312 Dust Gauge Collection Field Sheet –** Located in: P:\DDMI Environment\10.0 Operational Control\10.2 Forms\Current Forms\Approved

#### STANDARD OPERATING PROCEDURE

#### **Dust Gauge Collection**

	Revision Histo	ry	
Revision	Revision Description	Date of Revision	Author
0	Initial Release	11-Jan-12	D. Meredith
1	New SOP format, clarify procedures, adds photos.	23-Nov-14	D. Dul/ D. Bourassa
2	Format update	19-Jul-15	D. Birch
3	Annual Update	10-Feb-16	S. Sinclair
4	New Template, clarification of representative sampling, decrease in oven temperature to be consistent with Standard Methods	04-Nov-16/10- Nov-16	S. Martin-Elson/N. Goodman
5	Template and area manager updated	20-Oct-17	S. Skinner
6	Superintendent update	10-Mar-18	S. Skinner
7	Annual review	27-Feb-19	M. Nelson
			N. Goodman
			S. Skinner
8	Added section 6.4.4. (lab QAQC), annual review/Superintendent update	Nov 2020	N. Goodman

Authorized Electronically in Documentum By:					
Area Superintendent:	Kofi Boa-Antwi				
Area Manager:	D. Patterson				

Document #:ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### STANDARD OPERATING PROCEDURE

#### **Dust Gauge Collection**

#### **CRITICAL RISKS**









#### Other potential critical risks not currently assessed as part of this SOP

	à	
	A	

Document #:ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



#### **Dust Gauge Collection**





Figure 1: Dust Gauge Site 5 in the Summer

Figure 2: Dust Gauge Site 7 in the Winter



Figure 3: Dust Gauge Tubes prepared for storage

#### **Description**

This Standard Operating Procedure (SOP) provides guidelines on procedures to follow when carrying out Dust Gauge Collections.

Document #: ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



#### STANDARD OPERATING PROCEDURE

#### **Dust Gauge Collection**

#### 2 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to outline the methodology for collecting dust gauge samples. This program is aimed at understanding dust deposition rates associated with project activities. Results collected from this program are compiled and included in the Appendix of the annual AEMP report.

#### 3 SCOPE

#### 3.1 Scope of Procedure

This SOP describes the responsibilities and processes for the deployment, collection and analysis of dust gauge samples. These procedures apply to all Diavik Mine personnel and contractor personnel authorized for sample collection activities.

#### 3.2 Scope of Activities

Fourteen-dust gauges (12 sample sites, plus 2 control sites) are established on and around East Island for monitoring airborne dust particles. The dust gauges are collected quarterly throughout the year.

#### 4 DEFINITIONS

Definitions								
ACTS		Groundwater		PROVE		SOP	<b>√</b>	
AEMP	✓	JHA	<b>√</b>	QA		TSS	<b>√</b>	
сос		NTU		QC		TSP		
DI water	<b>√</b>	PAL		Remote work	✓	WHMIS		
DO		PFD	<b>√</b>	SDS		WLWB		

Document #:ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



# Environment STANDARD OPERATING PROCEDURE Dust Gauge Collection

ELT		PPE	<b>√</b>	Seepage		
GPS	<b>✓</b>	Problem bear		SNP		

See: ENVI-443-0415 - Environment Term Definitions - Located in: Diavik Intranet - SOPs - Environment Folder

#### 5 RESPONSIBILITIES

See: ENVI-444-0415 - Environment Roles and Responsibilities - Located in: Diavik Intranet – SOPs – Environment Folder

#### 6 PROCEDURE

#### 6.1 Key HSEQ Aspects

Task Hazards										
Aircraft	<b>✓</b>	Extreme Weather	<b>√</b>	Line of Fire		Snowmobile Operation	<b>✓</b>			
Burns	<b>\</b>	Fall into Water	<b>✓</b>	Manual Labour		Spills				
Chemical Contact		Falling		Noise	>	Sprain / Strain	>			
Confined Space		Fire		Overhead Objects		Stored Energy				
Cuts Scrapes	<b>✓</b>	Firearms / Deterrents		Perception		Uneven Terrain / Ground	<b>&gt;</b>			
Dehydration		Fumes / Gases		Pinch Points	<b>√</b>	Unfamiliar Area	<b>√</b>			
Electrical		Glass		Risk to Wildlife		Visibility	<b>&gt;</b>			

Document #:ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



# Environment STANDARD OPERATING PROCEDURE Dust Gauge Collection

Entanglement		Heavy Equipment	Rotating Parts	<b>✓</b>	Watercraft Operation	<b>✓</b>
Equipment Loss or Damage		Lifting	Sample Loss or Damage	<b>✓</b>	Wildlife	<b>^</b>
Ergonomics	<b>√</b>	Light Vehicle	Slip, Trip, Fall	<b>√</b>	Working Remotely	<b>✓</b>

See: ENVI-445-0415 - Environment Hazard Definitions - Located in: Diavik Intranet - SOPs - Environment Folder

#### 6.2 CRM Critical Risks

Critical Risk	Critical Control
Drowning	PFD
Vehicle collision or rollover	Seat Belt, Defensive driving, Segregation
Vehicle impact on person	Seat Belt, Defensive driving/walking, Segregation
Wildlife	Scans, Vehicles as means of safety
Thermal extremes	Weather checks, Remote field permit
Aircraft transport	PPE, Follow pilot's directions

It is the responsibility of all personnel to adhere to the high health and safety standards used at Diavik. Personnel are required to complete all pre-task planning and safety checks. Queries about the appropriate permits and checks should be brought to the attention of the Supervisor or their delegate. Tasks should be executed to plan using the identified controls. Any deviations from plan should be assessed prior to proceeding with the remainder of the task. All incidents will be reported to the Supervisor or their delegate as soon as possible.

Document #:ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### <u>Environment</u>

#### STANDARD OPERATING PROCEDURE

#### **Dust Gauge Collection**

#### 6.3 Tools Required

#### **Supplies, Tools and Equipment Tool / Equipment** Quantity **Tool / Equipment** Quantity Winter/Summer/Boat Survival Gear 1 Snowmobile (2), Boat or Helicopter (Set) **GPS/ Loaded Coordinates** 2 **Spare Batteries** 4 Satellite Phone 1 Personal Gear (per person) 1 Wildlife Deterrents (air horn/banger 1 1 InReach per person Camera (per person) 1 Field Permit and Map 1 1 Adjustable Wrench's 1 Radio with spare battery (per person) 1 Forceps, Pliers, Tweezers Field Sheets 14 2 Clean Replacement Sample Tubes 6 Pencils, Pens or Markers Large/Clear/Heavy-duty Plastic Bags 6 6 Glass Beakers (1000 mL) or Gloves 1 TSS Filters High Temp Oven 12 - 36 1 12 - 36 Fire Proof Gloves/Tongs **Duct Tape** Snowshoes (seasonal) (pair per Vice Grips 1 1 person) and cam straps

#### 6.4 Procedural Steps

Document #: ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### STANDARD OPERATING PROCEDURE

#### **Dust Gauge Collection**

#### 6.4.1 Pre-Deployment

Spare tubes are stored in the Environment field lab Shelf B3 with two XL nitrile gloves and plastic bag duct taped closed to prevent dust deposition. **Tubes needs to be cleaned and checked for leaks prior to storage**. To clean and check for leaks, fill spare tubes with water and leave overnight on counter in Environment Lab. If leaks are discovered tag out and make arrangements with truck shop to have them fixed.

#### 6.4.2 Sample Collection and Deployment

Depending on location and season, samples are collected using various methods of transportation; you can walk, drive, boat, snowmobile or use a helicopter to access the various sites.

When using a Helicopter, a Hot Loading Variance is permitted (a JHA must be completed and signed off by HSE Manager). When accessing near-site stations on foot in the winter, snowshoes should be taken to provide safer access. If necessary, snowshoes can be strapped to the back of the snowmobile. The map in Figure 4 provides the Dust Gauge locations and coordinates.

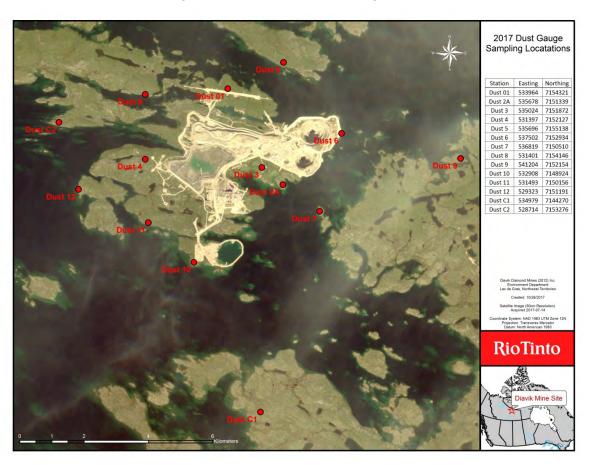


Figure 4: Dust Gauge Sites

Document #: ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### STANDARD OPERATING PROCEDURE

#### **Dust Gauge Collection**

When you arrive at the sample location, first inspect the station for damage (fiberglass tube on ground, station on angle etc.) and document anything noted on the Dust Gauge Collection Field Sheet - ENVI-178-0312.

Carefully remove the copper tube out from the center of the fiberglass shield, keeping it upright. If the tube is stuck or frozen, try wiggling it, or tapping it near the bottom. If the tube is still stuck, you may need extra leverage to free the tube and may, if absolutely necessary, use vice grips to grab the top and wiggle while pulling up. If it will not come free, you may have to remove the shield and pop the tube out. Be sure to replace the shield and insert a new tube afterwards. See Plates 1 & 2 below.



Plate 1: Tube Retrieval

#### **Dust Gauge Collection**



Plate 2: Fiberglass Shield Removed

Once retrieved, keep the tube upright, place an extra-large latex glove over top of tube and seal with clean plastic bag and duct tape (Plate 3). Ensure tube is labelled with the station number, date and time collected. Always keep the tube upright and secure during transport.

Place a clean, leak tested tube into the fiberglass shield (the tube should be labelled with the Dust Gauge Site, deployment date and time). Note that tubes need to be *upright and secure in the base rims* in order for the sample to be considered representative. Some of the base rims are bent and the tubes will not sit in them properly. When this is the case, place rocks around the tube within the fiberglass shell to ensure that tube will stay upright. Caution should be exercised to avoid pinch points when placing rocks between the tube and shell.



**Dust Gauge Collection** 



Plate 3: Sealing the Tube

#### 6.4.3 Sample Analysis

Once back in the Environment Lab, if snow is present, stand up the sample tube in a clean plastic bag (prevents sample loss if there is a leak) and allow samples to melt. Carefully transfer sample into a triple-rinsed 1000 ml glass beaker and record the total volume of water (before rinsing) on the Dust Gauge Collection Field Sheet- ENVI-178-0312. Extract all debris including bugs and twigs and be sure to triple rinse them into the beaker to capture all the dust particles. Rinse the copper tube with DI water until all dust particles are removed.

Document #: ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### STANDARD OPERATING PROCEDURE

#### **Dust Gauge Collection**

Cover the 1000 ml beaker with parafilm and store the sample in the fridge until samples can be analysed for Total Suspended Solids (ENVI-904-0119). This should be conducted as soon as possible because some solids may dissolve in water, especially after snow melt. Note that it may take multiple filters to complete one sample, and number of filters varies by season. Please refer to table 2 and use your best judgement when looking at the sample.

Table 2. Average number of filters required by season

Dust Gauge	Winter (Jan)	Spring (March)	Summer (Jun)	Fall (Sept)
1	1	2	4	2
2A	1	2	2	2
3	2	3	4	3
4	1	1	2	1
5	1	1	2	1
6	1	2	2	2
7	1	3	2	2
8	1	1	2	3
9	1	1	2	1
10	2	2	4	2
11	1	3	6	2
12	1	1	3	2
C1	1	1	1	1
C2	1	1	1	1

The resulting filter(s) with the dust particles are put into ceramic crucibles; ensure that you record the sample ID on the crucibles **in pencil** before putting them into the oven (1 filter per crucible, Plate 4). Ensure that you record the same information on the aluminium tins so that sample filters do not get mixed up.

Document #:ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

**Dust Gauge Collection** 



Plate 4: Ceramic crucibles with filter

The high temperature oven is set up in the fume hood with the fan running. To avoid burns, heavy-duty fire-proof gloves and long tongs are used when placing or removing the crucibles from the oven. Filters are processed in the oven at 550 degrees Celsius for one hour. Allow oven to heat up to temperature before use. See Plates 5 & 6 below.



Plate 5: High Heat Oven

Document #: ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### **Dust Gauge Collection**



Plate 6: Fire Proof Glove and Long Tongs

When samples are removed from the oven, place the crucibles into their original labeled tin tray. Let the sample cool for at least 10 minutes before handling the tins and crucibles without heat resistant gloves. Place the tin tray into the desiccator and allow the sample to cool further for a minimum of one hour. Carefully remove the filters from their ceramic crucible using tweezers. Add any dust that has fallen off into the crucible to the top of the filter.

Weigh the filter according to the procedure outlined in the Total Suspended Solids SOP

Record the results on the Dust Gauge Data Form and in 13.14 Annual Dust Gauge Collection excel file for the given year on the P-Drive.

The dust fall deposition rate is determined using the equation below:

Daily Dust fall Deposition  $(mg/dm_2/d) = (TP (mg) / SA (dm_2)) / TDD (d)$ 

Where:

**TP** (mg) = Total Particulate

**SA (dm<sub>2</sub>)** = Surface Area of Dust Gauge Collection Tube = (3.14\*(6.25\*6.25)\*100)

**TDD** = Total Days Gauge was Deployed

Document #: ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



#### STANDARD OPERATING PROCEDURE

#### **Dust Gauge Collection**

Calculations are setup in the excel file. If you have any questions about entering this data contact your supervisor.

#### 6.4.4 Quality Assurance (QA) / Quality Control (QC)

6.4.4.1 Lab Blank Samples

Anytime that dust samples are collected and subsequently analyzed, a lab blank sample must be analyzed following the same procedure.

6.4.4.2 Equipment Blank

Before dust gauge collection occurs, an equipment blank must be collected and analyzed following the procedure outlined below:

- 1. Remove the nitrile gloves from the copper tube and fill the tube with DI water (the amount of water not important, however, DO NOT PRE-RINSE THE TUBE)
- 2. Transfer the liquid into a beaker and analyze the sample as per the procedure outlined in section 6.4.3.

#### 7 QUALITY OUTCOMES AND EXPECTATIONS

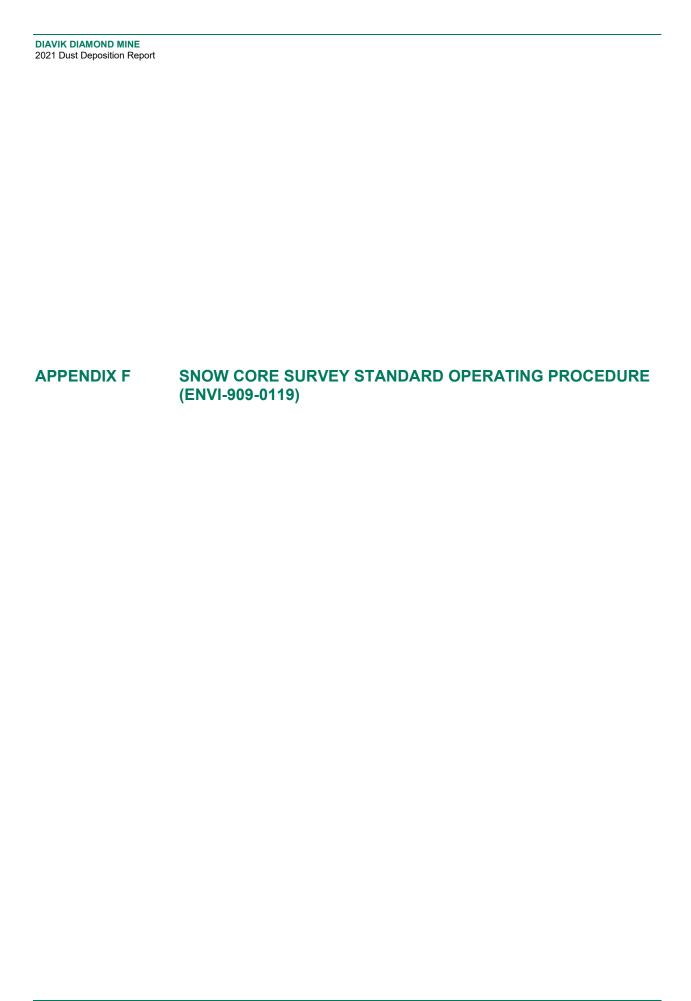
The primary objectives for implementing this SOP are:

- To safety complete the tasks outlined in this SOP, without incident.
- To produce quality, accurate and repeatable results.

Document #: ENVI-908-0119 R8

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022

	Environment STANDARD OPERATING PROCEDURE								
Area No.:	8000	Document #: - Revision:	ENVI-909-0119						
Task Title:	Snow Core Survey	-							
	1 Year from Final Approva  Date on approved stamp in								

#### 1 REFERENCES/RELATED DOCUMENTS

- **1.1 ENVI-907-0119 SOP Remote Field Safety -** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.2 ENVI-919-0119 SOP Snowmobile -** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.3 ENVI-901-0119 SOP General Laboratory Safety -** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.4 ENVI-902-0119 SOP Quality Assurance and Quality Control -** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.5 ENVI-900-0119 SOP Chain of Custody -** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.6 ENVI-904-0119 SOP Total Suspended Solids Analysis -** Located in: P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs
- **1.7 ENVI-601-0916- Snowmobile Pre-Op Inspection -** Located in: P:\DDMI Environment\10.0 Operational Control\10.2 Forms\Current Forms\Approved\Check Sheets
- **1.8 ENVI-135-0112 Remote Field Safety Permit -** Located in: P:\DDMI Environment\10.0 Operational Control\10.2 Forms\Current Forms\Approved\Remote Field Safety Plans
- **1.9 ENVI-177-0312 Snow Sampling Field Sheet -** Located in: P:\DDMI Environment\10.0 Operational Control\10.2 Forms\Current Forms\Approved\Water Quality Forms

#### STANDARD OPERATING PROCEDURE

#### **Snow Core Survey**

	Revision Histo	ory	
Revision	Revision Description	Date of Revision	Author
0	Original Issue	08-Feb-12	D. Grabke
1	Updated Map for 2014, added SS3-6, SS3-7, SS3-8 sample points, updated to new environment SOP format	8-Apr-14	D. Grabke
2	Format update	19-Jul-15	D. Birch
3	Format update	06-Dec-15	G.Reid
4	Format update	06-Nov-16	S. Martin-Elson
5	Format and area manager updated	20-Oct-17	S. Skinner
6	Superintendent update	10-Mar-18	S. Skinner
7	QAQC update	04-Apr-18	S. Skinner
8	Format update throughout, tables in section 4 and 6.1 updated, table 2 preservative for metals removed	25-Nov-18	S. Skinner
9	Dissolved metals added to water quality bottles to Table 2	15-Mar-18	S. Skinner
10	Annual update	18-Jan-20	M. Nelson
	Changes to bottle requirements	25-Oct-20	A. Hehn

Authorized Electronically in Documentum By:				
Area Superintendent:	K. Boa-Antwi			
Area Manager:	D. Patterson			

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### STANDARD OPERATING PROCEDURE

#### **Snow Core Survey**

#### **CRITICAL RISKS**





#### Other potential critical risks not currently assessed as part of this SOP

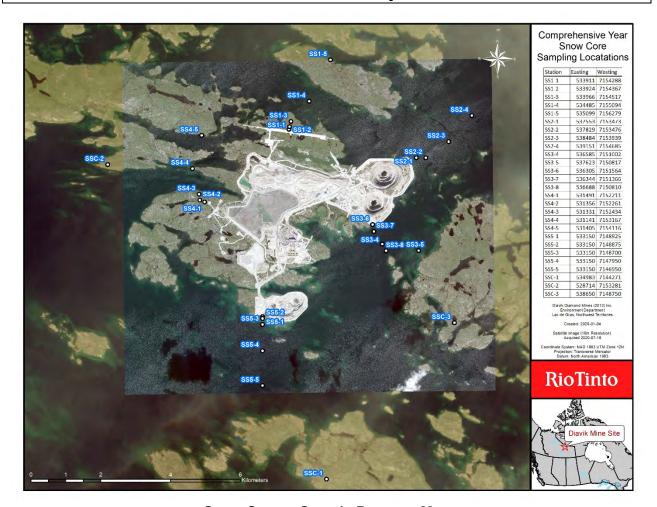
	( A		
		A STATE OF THE STA	

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

**Snow Core Survey** 



**Snow Survey Sample Program Map** 

#### **Description**

Snow sampling at the Diavik Diamond Mine consists of snow core sampling to monitor dust deposition rates relative to predictions outlined in the DDMI Environmental Effects Report (1998), and snow water quality sampling in support of the DDMI Aquatic Effects Monitoring Program (AEMP).

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### STANDARD OPERATING PROCEDURE

#### **Snow Core Survey**

#### 2 PURPOSE

The purpose of this guide is to promote efficient and accurate snow surveying and to establish uniform sampling procedures.

#### 3 SCOPE

#### 3.1 Scope of Procedure

This standard operating procedure (SOP) describes the responsibilities and processes for collecting, documenting, and processing snow samples at the Diavik mine site and the surrounding Lac de Gras area (during ice cover). This procedure applies to all Diavik Diamond Mines personnel and contractor personnel authorized to collect samples under the current year's Aurora Research Institute – Aquatic Effects Monitoring Program (AEMP) Research Permit.

#### 3.2 Scope of Activities

This procedure has been developed to be consistent with the requirements of the AEMP design document and Environmental Effects Monitoring.

#### 4 DEFINITIONS

Definitions									
ACTS		Groundwater		PROVE		SOP	<b>✓</b>		
AEMP	✓	JHA		QA	✓	TSS			
coc		NTU		QC	<b>√</b>	TSP			
DI water	<b>√</b>	PAL		Remote work		WHMIS			
DO		PFD		SDS		WLWB			
ELT		PPE		Seepage		SWE	<b>√</b>		

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



**Snow Core Survey** 

	GPS	✓	Problem bear		SNP				
--	-----	---	--------------	--	-----	--	--	--	--

See: ENVI-443-0415 - Environment Term Definitions - Located in: Diavik Intranet - SOPs -

**Environment Folder** 

SWE: Snow Water Equivalent

#### 5 RESPONSIBILITIES

See: **ENVI-444-0415 - Environment Roles and Responsibilities -** Located in: Diavik Intranet – SOPs – Environment Folder

#### 6 PROCEDURE

#### 6.1 Key HSEQ Aspects

Task Hazards										
Aircraft		Extreme Weather	<b>√</b>	Line of Fire		Snowmobile Operation	<b>✓</b>			
Burns		Fall into Water		Manual Labour	<b>&gt;</b>	Spills				
Chemical Contact		Falling		Noise		Sprain / Strain	<b>✓</b>			
Confined Space		Fire		Overhead Objects		Stored Energy				
Cuts Scrapes		Firearms / Deterrents		Perception		Uneven Terrain / Ground	<b>✓</b>			
Dehydration		Fumes / Gases		Pinch Points		Unfamiliar Area				
Electrical		Glass		Risk to Wildlife		Visibility	<b>✓</b>			

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



#### **Snow Core Survey**

Entanglement		Heavy Equipment	Rotating Parts		Watercraft Operation	
Equipment Loss or Damage	<b>✓</b>	Lifting	Sample Loss or Damage	<b>✓</b>	Wildlife	<b>✓</b>
Ergonomics	<b>√</b>	Light Vehicle	Slip, Trip, Fall	✓	Working Remotely	<b>✓</b>

See: ENVI-445-0415 - Environment Hazard Definitions - Located in: Diavik Intranet - SOPs - Environment Folder

#### 6.2 CRM Critical Risks

Critical Risk	Critical Control
Temperature extremes (cold)	Multiple layers, Buddy check, Remote field safety plan
Wildlife	Scans

It is the responsibility of all personnel to adhere to the high health and safety standards used at Diavik. Personnel are required to complete all pre-task planning and safety checks. Queries about the appropriate permits and checks should be brought to the attention of the Supervisor or their delegate. Tasks should be executed to plan using the identified controls. Any deviations from plan should be assessed prior to proceeding with the remainder of the task. All incidents will be reported to the Supervisor or their delegate as soon as possible.

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



#### <u>Environment</u>

#### STANDARD OPERATING PROCEDURE

#### **Snow Core Survey**

#### 6.3 Tools Required

#### **Supplies, Tools and Equipment Tool / Equipment** Quantity **Supplies** Quantity **Snow Corer & Handles** 1 **Snow Survey Map** 2 per **Transport Case** 1 **GPS & Waypoints** person Weighing Scale & Cradle 1 **Satellite Phone** 1 Per Sample Collection Bags & Zip Ties 20 **Garmin Inreach** person **Black Permanent Marker** 2 **Survival Kit** 1 **Field Data Sheets** 10 Ice Rescue Kit 2 per per **Snowmobile Radio and Spare Battery** person person **Toboggan** 1 Coolers 5 Camera 1

#### 6.4 Procedural Steps

#### 6.4.1 Planning

#### 6.4.1.1 Program Management:

The sampling snow survey will be completed annually in April. The survey design consists of 27 sample stations, including three control areas established along five transect lines originating from East Island and extending onto Lac de Gras (Table 1 - Snow core Sampling Locations).

#### <u>Table 1 – Snow Core Sampling Locations</u>

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



Snow	Core	Survey
------	------	--------

Transect Line	Station	UTM E (NAD 83)	UTM N (NAD 83)	Description
	SS1-1	533911	7154288	Land
	SS1-2	533924	7154367	Land
1	SS1-3	533966	7154517	Land
	SS1-4	534485	7155094	Ice
	SS1-5	535099	7156279	Ice
	SS2-1	537553	7153473	Ice
2	SS2-2	537829	7153476	Ice
2	SS2-3	538484	7153939	Ice
	SS2-4	539151	7154685	Ice
	SS3-4	536585	7151002	Ice
	SS3-5	537623	7150817	Ice
3	SS3-6	536305	7151564	Ice
	SS3-7	536344	7151366	Ice
	SS3-8	536688	7150810	Ice
	SS4-1	531491	7152211	Land
4	SS4-2	531356	7152261	Land
	SS4-3	531331	7152434	Land
	SS4-4	531141	7153167	Ice
	SS4-5	531405	7154116	Ice
5	SS5-1	533150	7148925	Land
	SS5-2	533150	7148875	Land

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### STANDARD OPERATING PROCEDURE

#### **Snow Core Survey**

Transect Line	Station	UTM E (NAD 83)	UTM N (NAD 83)	Description
	SS5-3	533150	7148700	Ice
	SS5-4	533150	7147950	Ice
	SS5-5	533150	7146950	Ice
	SSC-1	534983	7144271	Land
Controls	SSC-2	528714	7153281	Land
	SSC-3	538650	7148750	Land

#### 6.4.1.2 Sampling Requirements – Dust Deposition

Dust deposition will be measured in-house using standard DDMI Total Suspended Solids (TSS) laboratory procedures ENVI-904-0119. To facilitate this analysis, a composite sample comprised of a minimum of three snow cores will be collected at **ALL** (land and ice) snow sampling stations. Water content must add up to a minimum 25cm SWE for there to be sufficient water for analysis.

**Snow Water Equivalent (SWE)** is a measure of the water content in a snowpack. It is defined as the depth of a snowpack multiplied by the density of the snow. It represents the depth of a theoretical pool of water created from melting a known depth of snowpack. We determine SWE in the field using a snow coring tube in conjunction with a graduated scale that weighs the snow in the tube. The scale is measured in cm of water, as weight is directly contributable to water content. The scale markings are how we measure SWE. The length of core is not necessary for determining SWE when using a scale and a known tube diameter.

#### 6.4.1.3 Sampling Requirements – Snow Water Quality

Snow water quality samples are required for all sample stations on Lac de Gras identified as **onice** locations, as well as at the **three control** areas (Table 1 - Snow core Sampling Locations). Snow chemistry analysis will be conducted by Bureau Veritas (BV). To facilitate the required analysis outlined in Table 2, a composite sample comprised of a minimum of three snow cores with an equivalent water depth (SWE) of at least 100 cm will be collected at all of the snow water quality stations.

#### Table 2- Snow Water Quality Sample Requirements

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



#### **Snow Core Survey**

Bottle Filling Sequence	BV Bottle	Analysis	Minimum Volume of Sample Required (ml)	Preservative
1	Metals	Total ICP Metals (Ultra Low)	2x60 mL Falcon Tube	None Required
2	Metals	Dissolved ICP Metals (Ultra Low)	2x60 mL Falcon Tube	None Required
3	Mercury	Total	40 mL Glass Vial	1 ml Hydrochloric Acid - HCL
4	Nutrients	Ammonia	120 mL HDPE	1 ml Sulfuric Acid
5	Routine	Sulfates, Nitrates, and Nitrites	1000 mL HDPE	None Required
6	Ultra Low TSS, Turbidity & pH (Routine, 2 <sup>nd</sup> Bottle)	TSS, Turbidity & pH	500 mL HDPE	None Required
Total Sample Volume Required		1900 ml + 25% for Triple Rinsing	3000 ml = 100SWE	

#### **Determining anticipated sample volume from Snow Water Equivalent (SWE)**

Sample Water (ml)

=

**SWE (cm** representing the depth of water in the snow core tube measured by the weight of snow in the tube)

X

30(cm² representing the surface area of the snow core tube entrance)

#### Therefore:

 $3000 \text{ml} / 30 \text{cm}^2 = \text{SWE} = 100 \text{cm} \text{SWE}$ 

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



#### STANDARD OPERATING PROCEDURE

#### **Snow Core Survey**

Therefore, the aggregate Water Content SWE collected at a sample site must add up to at least 100 cm measured from the graduated scale to ensure sufficient volume for water quality analysis.

#### 6.4.1.4 Quality Assurance and Quality Control

Quality Control (QC) will be achieved through the use of duplicate and blank samples.

Duplicate samples will be collected for a minimum 10% of the total samples (both dust and water quality samples):

- At least **three** duplicate samples for the **dust** deposition samples
- At least three duplicate samples for the water quality samples

One **equipment blank** will be collected and processed by BV for water quality chemical analysis and internally for Total Suspended Solids (TSS). BV DI water batch number will be recorded on the field sheet. Equipment blanks will be completed from a single batch of DI water. Ensure that information from the DI water is recorded on the field sheet (Batch ID and Expiry date).

Quality Assurance (QA) will be achieved via the following processes:

- Field data sheets will be utilized to document any and all observations or occurrences that
  may impact the integrity of the samples, as well as corrective actions implemented to
  address those occurrences.
- If a sample is compromised, the information will be recorded on the field data sheet, the sample will be discarded, and a new sample collected.
- Individuals collecting the samples will take precautions to eliminate sample contamination during handling. Avoid touching insides of sample bags and avoid contacting the snow samples with anything other than the sampling corer.
- Steps will be taken prior to, during, and after sampling to ensure all samples are correctly labeled with the sample date, ID, and type.

#### 6.4.1.5 Equipment Inspection & Preparation

Prior to commencing the sampling program, inspect all sampling equipment for contamination or damage. All polyacrylic snow coring tubes that will be utilized during sampling will be rinsed with a 10% nitric acid solution to ensure they are clean prior to the initiation of the program.

**Snow Corer** – Inspect the core tube to ensure measurement etchings are legible. Check the cutting edge to ensure blade is not deformed or damaged. Inspect the handles and threads to ensure they will assemble and disassemble without binding. Ensure the corer has been de-contaminated (acid rinsed) prior to commencing the program.

Weighing Scale and Cradle – Inspect the scale and cradle for deformity or damage.

**Snowmobiles** – Inspection and use of snowmobiles will be in accordance with ENVI-919-0119.

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### **Environment**

#### STANDARD OPERATING PROCEDURE

#### **Snow Core Survey**

**Communication** – Inspect all communication equipment (radios/sat phones, Garmin Inreach) to ensure they are operational and functional. Ensure batteries (including spares) are fully charged. Ensure check-in times and procedures are clearly identified on the Remote Field Safety Permit.

**Navigation** – Inspect GPS and spare batteries to ensure equipment is functioning correctly. Verify that all sample locations are present and correct, and that the GPS essentials file is loaded. Ensure an appropriate map is present to allow navigation back to site should the GPS fail.

**Personal Gear** – In addition to winter survival equipment, each individual participating in off-site activities is expected to carry appropriate personal gear and equipment as is deemed necessary for the individual's well-being in an emergency situation.

**Survival Kit** – Inspect survival kit and ice rescue kits to ensure that they are complete and all items are functional and ready for use.

**Miscellaneous** – Individual core samples will be placed into plastic bags (soil sampling bags) and sealed with zip-ties until they are ready for processing. Prior to sampling, ensure bags are new, clean, and leak-proof.

#### 6.4.2 Sample Collection

The person handling the acrylic snow core tube should always wear thick, insulated gloves to minimize the heat transferred from their hands to the tube. A warmer tube will increase the likelihood that snow will melt in the tube causing sticking and making it difficult to get all snow out of the tube.

- Navigate to the sampling locations If the sample point falls on or immediately adjacent to the winter road, adjust your location to the nearest area with natural snow coverage (i.e. not impacted by the road or snow clearing).
- Assemble the corer by threading the handles onto the tube and re-inspect the snow corer for fouling and/or damage that may have occurred during transportation.
- Fill in station location and weather information on the field data sheet. Identify snow conditions and dust observations in the comments section.
- Prior to collecting a sample, re-inspect the tube for cleanliness.
- Take the weight of the empty snow corer at each station prior to collecting any samples.
- For all stations requiring snow water chemistry, collect the dust sample first this will effectively rinse the corer with ambient snow minimizing cross contamination from locations.
- Hold the corer vertically (cutter end down) and drive it through the snow to the ground/ice surface below. Be sure the cutter contacts the ground/ice as compacted snow/ice may feel like the ground and result in an incomplete core.
- Before raising the corer, read the depth of the snow (nearest cm) and record on the field datasheet. Turn the corer at least one full turn to cut the core loose from the ground/ice surface. Carefully raise the corer and record the length of the core extracted.

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

#### **Environment**

#### STANDARD OPERATING PROCEDURE

#### **Snow Core Survey**

- As the length of core extracted could potentially be different from the depth of snow, inspect
  the cutter end of the tube for dirt or litter. With gloves on, carefully remove soil and litter
  from the core. If required, correct the length of the core extracted by subtracting the depth
  of the soil or litter (plug). Record adjusted core length and litter/soil observations on the field
  data sheet.
- Carefully balance the corer containing the core on the weighing cradle. Suspend the corer
  (like a pendulum) and do not hold the corer tube or handles. To ensure an accurate reading,
  gently tap the scale to be sure it is not sticking or binding. Read the weight of the tube and
  core from the graduations on the scale. The scale is marked in cm of water. Record the
  weight of the corer and the core to the nearest one-half cm.
- To transfer the core into the sample bag, lift the tube from the cradle and turn cutter end up. Gently tap the corer and the extracted core will slide out the top end. Be sure to use a clean/new sample bag to catch the core sample.
- Ensure all sample bags are clearly labelled with the station ID, sample type, date, and number of cores included in the composite.
- Ensure all bags are sealed using a clean zip-tie.
- Weigh the empty sampling tube following the first and at least every fourth sample as the
  weight will change as small particles of water or snow accumulate/cling to the inside and
  outside of the tube. Record the weight of the empty corer on the field data sheet.
- Subtract the weight of the empty tube from the weight of the tube and core to obtain the water content of the sample.
- Prior to moving to the next sampling location ensure the field datasheet is complete.

Density calculations can be completed back in the lab following the completion of the program.

Density (g/cm<sup>3</sup>) = Total SWE Collected (g/cm<sup>2\*</sup>) / Total Snow Core Length Collected (cm)

\*assumes pure water density 1g/cm³

#### 6.4.3 Sample Processing

Prior to processing, all samples must be kept in a frozen state to minimize sample degradation.

When preparing the samples for decanting and analysis, remove the sample bags from the freezer. Check to ensure that the top of the bag is well twisted and the zip-tie is tight. Place the sample bag into a new (clean) sample bag and affix a zip-tie to seal the second bag. This double bagging will help to ensure no sample is lost during the melting process. To process samples, they will require 12-48 hours to thaw at room temperature.

Place the sealed sample bags upright in clean coolers in the lab to thaw overnight.

Once a sample is completely melted, it is ready for processing.

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer



#### **Environment**

#### STANDARD OPERATING PROCEDURE

#### **Snow Core Survey**

Sample volume can be determined using a scale accurate to 1g. Set up the scale by taring the sampling basin with two bags and 2 zip-ties. Place sample bags in the basin and record the weight of each of the bags on the field sheet.

Snow water quality samples will be decanted to fill the appropriate (pre-labelled) BV sample bottles as per standard water sampling procedures. Any excess sample water can be discarded.

Dust deposition samples will be processed in the DDMI Lab as per Total Suspended Solids SOP (ENVI-904-0119).

The entire volume of sample must be processed – this may require the use of multiple filters.

For samples with large quantities of organics (twigs/leaves etc.), it may be necessary to sieve the sample through a course filter prior to processing.

Given the possibility of the samples containing organic matter, sample filters will be dried in the high temperature oven (550°F) for 1hr to burn off any organics on the filter.

Allow Samples to cool in the desiccator prior to weighing the filters.

#### 6.4.4 Sample Chain of Custody

Samples will be shipped to BV as per the Chain of Custody SOP (ENVI-900-0119) and accompanied by Chain of Custody (COC) documentation.

#### 7 QUALITY OUTCOMES AND EXPECTATIONS

The primary objectives for implementing this SOP are:

- To safety complete the tasks outlined in this SOP, without incident.
- To produce quality, accurate and repeatable results.

Document #:ENVI-909-0119-R10

This is not a controlled document when printed

Effective Date: See date next to Approved stamp in footer

DIAVIK DIAMOND MINE 2021 Dust Deposition Report	
APPENDIX G	QUALITY ASSURANCE/QUALITY CONTROL STANDARD OPERATING PROCEDURE (ENVI-902-0119)

 www.erm.com
 Version: C.1
 Project No.: 0630556-0001
 Client: Rio Tinto
 March 2022

ENVIRONMENT STANDARD OPERATING PROCEDURE							
Area No.:	8000	Document #:	ENVI-902-0119				
		Revision:	8				
Task Title:	Quality Assurance/Quality Control						
	Supersedes: ENV SOP 303						
FOR DOCUMENT CONTROL USE ONLY:							
Next Review:	1 year from Area Manager Authorized Signature Date below						
Effective Date:	e: See Area Manager Authorized Signature Date below						

#### 1 REFERENCES/RELATED DOCUMENTS

- 1.1 ENVI-656-0117 DDMI Environment Lab Training Located in: P:\DDMI Environment\10.0 Operational Control\10.13 CALA Certification\Approved Quality Manual Documents\5.2 Training
- **1.2 ENVI-901-0119 SOP- General Laboratory Safety Located in:** Diavik Intranet SOPs Environment Folder
- **1.3 ENVI-900-0119 SOP- Chain of Custody & Sample Shipping -** Located in: Diavik Intranet SOPs Environment Folder
- **1.4 ENVI-133-0112 Aquatic Effects Field Sheet Located in:** P:\DDMI Environment\10.0 Operational Control\10.2 Forms\Current Forms\Approved\Water Quality Forms
- **1.5 ENVI-134-0112 1645-19 SNP Monitoring Field Sheet –** Located in: P:\DDMI Environment\10.0 Operational Control\10.2 Forms\Current Forms\Approved\Water Quality Forms
- 1.6 ENVI-668-0117 DDMI Environment Lab Equipment Management Located in: P:\DDMI Environment\10.0 Operational Control\10.13 CALA Certification\Approved Quality Manual Documents\5.5 Equipment
- 1.7 ENVI-669-0117 DDMI Environment Lab Measurement Traceability Located in: P:\DDMI Environment\10.0 Operational Control\10.13 CALA Certification\Approved Quality Manual Documents\5.6 Measurement Traceability

#### STANDARD OPERATING PROCEDURE

#### **Quality Control/Quality Assurance**

- **1.8 ENVI-653-0117 DDMI Environment Lab Record Control Located in:** P:\DDMI Environment\10.0 Operational Control\10.13 CALA Certification\Approved Quality Manual Documents\4.13 Record Control
- 1.9 ENVI-650-0117 DDMI Environment Lab Document Control Located in: P:\DDMI Environment\10.0 Operational Control\10.13 CALA Certification\Approved Quality Manual Documents\4.3 Document Control
- **1.10 ENVI-904-0119 SOP Total Suspended Solids Analysis Located in:** Diavik Intranet SOPs Environment Folder
- 1.11 ENVI-905-0119 SOP pH Analysis Located in: Diavik Intranet SOPs Environment Folder
- **1.12 ENVI-906-0119 SOP Turbidity Analysis Located in:** Diavik Intranet SOPs Environment Folder
- **1.13 ENVI-918-0119 SOP Field Meter Located in:** P:\DDMI Environment\10.0 Operational Control\10.1 SOPs\Working SOPs

	Revision History							
Revision	Revision Description	Date of Revision	Author					
0	Initial Release	01-Jan-12	D. Grabke					
1	Formatting	08-Dec-15	D. Birch					
2	Revision of QC schedule and measures	29-May-16	N. Goodman					
3	CALA Updates	15-Dec-16	N. Goodman					
4	Update to template, area manager and CRM	21-Oct-17	A. Hehn					
5	Superintendent update	10-Mar-18	S. Skinner					
6	Annual review	27-Feb-19	M. Nelson					
			N. Goodman					
			L. Case					
7	Clarification on TSS LBW frequency	22-Nov-2019	N. Goodman					

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



# ENVIRONMENT STANDARD OPERATING PROCEDURE Quality Control/Quality Assurance

8	Update to QC Frequency (Section 6.3.6)	14-Jun-2020	A. Hehn
	Decrease LBW and LDUP frequency to every 6 days, remove various outdated CALA policies	13-Oct-2020	N. Goodman

Authorized Electronically in Documentum By:				
Area Superintendent: K. Boa-Antwi				
Area Manager:	D. Patterson			

(Document owners will be prompted annually to update content; however, changes may or may not result.)

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

#### **CRITICAL RISKS**

#### There are no critical risks associated with this SOP

Other potential critical risks not currently assessed as part of this SOP

	( A	
	A	

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1



### ENVIRONMENT STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

Internal QA/QC
LBW
LDUPW1/ LDUPW2

External QA/QC KEY							
-1	=	EBW					
-2	=	FBW					
-3	=	TBW					
-4	=	DUPW1					
-5	=	DUPW2					
-6	=	DLS					

#### **Description**

This SOP reviews the quality assurance and quality control measures used to ensure best practices are being utilized while collecting and analysing samples.

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

#### 2 PURPOSE

The objective of this Standard Operating Procedure (SOP) is to establish consistent and uniform criteria and procedures to be implemented for laboratory activities undertaken during water quality analysis to ensure environmental data generated and processed is scientifically valid.

This SOP is intended to define Environmental Quality Assurance (QA) and Quality Control (QC) measures in place to ensure all data generated in the DDMI Environment Laboratory shall be of known precision and accuracy, complete, representative, and comparable.

#### 3 SCOPE

#### 3.1 Scope of Procedure

This procedure applies to all Diavik Diamond Mines personnel and contract personnel authorized by the Environment Superintendent to collect, analyse and ship samples. All persons conducting analyses in the DDMI laboratory are required to read, understand, and fully comply with the methods outlined in the SOP for each analytical test conducted, respectively.

This procedure has been developed to be consistent with the requirements of the Rio Tinto HS & E standards.

#### 4 DEFINITIONS

	Definitions						
ACTS		Groundwater		PROVE		SOP	<b>✓</b>
AEMP		JHA		QA	✓	TSS	
сос	<b>√</b>	NTU		QC	<b>√</b>	TSP	
DI water		PAL		Remote work		WHMIS	

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



### ENVIRONMENT STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

DO	PFD	SDS	WLWB	
ELT	PPE	Seepage		
GPS	Problem bear	SNP		

See: ENVI-443-0415 - Environment Term Definitions - Located in: Diavik Intranet - SOPs - Environment Folder

#### 5 RESPONSIBILITIES

See ENVI-444-0415 - Environment Roles and Responsibilities - Located in: Diavik Intranet – SOPs – Environment Folder

#### 6 PROCEDURE

#### 6.1 Key Safety Aspects

Task Hazards							
Aircraft		Extreme Weather		Line of Fire		Snowmobile Operation	
Burns		Fall into Water		Manual Labour		Spills	
Chemical Contact		Falling		Noise		Sprain / Strain	
Confined Space		Fire		Overhead Objects		Stored Energy	

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### <u>ENVIRONMENT</u>

#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

Cuts Scrapes	Firearms / Deterrents	Perception	Uneven Terrain / Ground
Dehydration	Fumes / Gases	Pinch Points	Unfamiliar Area
Electrical	Glass	Risk to Wildlife	Visibility
Entanglement	Heavy Equipment	Rotating Parts	Watercraft Operation
Equipment Loss or Damage	Lifting	Sample Loss or Damage	Wildlife
Ergonomics	Light Vehicle	Slip, Trip, Fall	Working Remotely

See: ENVI-445-0415 - Environment Hazard Definitions - Located in: Diavik Intranet - SOPs - Environment Folder

#### 6.2 CRM Critical Risks

Critical Risk	Critical Control	
N/A	N/A	

It is the responsibility of all personnel to adhere to the high health and safety standards used at Diavik. Personnel are required to complete all pre-task planning and safety checks. Queries about the appropriate permits and checks should be brought to the attention of the Supervisor or their delegate. Tasks should be executed to plan using the identified controls. Any deviations from plan should be assessed prior to proceeding with the remainder of the task. All incidents will be reported to the Supervisor or their delegate as soon as possible.

#### 6.3 Procedural Steps

#### 6.3.1 Quality Assurance (QA)

Quality assurance for the environmental laboratory encompasses all quality-related activities that ensure the validity of aquatics testing and analysis and all relevant technical support. All DDMI

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

environment personnel, from management to field laboratory technicians, are required to follow applicable quality control measures and standard operating procedures. Adherence to these documents, combined with staff vigilance, can help ensure that the analytical data and other test results collected will be acceptable as the bases for making decisions.

The DDMI laboratory ("the lab") encompasses a broad range of activities including preparation of samples for internal analytical processing, calibration and maintenance of equipment, data management, and sample handling for external analysis.

Our approach to quality assurance places an emphasis on four aspects:

- Infrastructure (instruments, testing capabilities, calibrations, SOP's)
- Control Measures (internal/external)
- Personnel (competence, ethics, and integrity)
- Data Management/Control of Non-Conforming Work

The quality of the outputs is at risk if any of these four aspects are deficient.

#### 6.3.2 Infrastructure

#### 6.3.2.1 Equipment

All equipment is to be maintained and operated in accordance with manufacturer instructions and SOPs. Any issues with equipment should be immediately reported to the Environment supervisor.

#### 6.3.2.2 Calibrations

Lab equipment with the potential to impact test results are calibrated regularly. Calibrations follow a predefined schedule, and International Standard (Metric) units are used wherever possible. When performed internally, calibrations are always done in accordance with method SOPs. Reference checks are performed after calibration with secondary standards that have a different lot number from the calibration standards. All observations and maintenance actions must be reported in the QA/QC Lab Performance logbook.

The logbook must also keep record of the instrument calibration history. Calibration records for fixed and portable laboratory measuring equipment, and individual monitoring devices, shall be maintained and include dates, personnel, and specifics of calibration standards and reference solutions, such as the lot numbers for the standards used. Instrument calibration procedures and schedules are clearly outlined in individual SOP's.

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

#### 6.3.3 Internal Quality Control (QC) Measures

Laboratory quality control consists of both internal and external checks on precision and accuracy of analytical results. Employees are trained in quality control and good lab practices by an experienced technician through the lab analyst certification process (ENVI-560-0616, ENVI-561-0616, ENVI-562-0616). This training is documented and saved in the Lab Analysis Competency Checklists folder (6.0) on the Environment network drive.

Best practices in water quality monitoring dictate that QC samples will comprise at least 10% of all samples analyzed, and more as required to maintain assurance of quality across homogenous sampling matrices and conditions. Due to fluctuating sample volumes the DDMI Environment department often performs more than 10% internal QC in order to ensure that any errors or sources of contamination in procedures or equipment are caught immediately.

Internal Quality Control sample types (descriptions below) consist of: Lab Blanks (LBW), Lab Duplicates (LDUPW1/LDUPW2), and Laboratory Splits (DLS). Results of Internal Quality Control samples are recorded in the current year's Internal QAQC excel document in the SNP folder of 13.3 on the Environment network drive.

#### 6.3.3.1 Lab Blanks (LBW)

A laboratory blank is a sample comprised of deionised (DI) water, prepared in the lab, which remains in the lab for analysis. This blank is exposed to any and all reagents that are used in the analytical process and is carried through the entire analytical processes including any filtration required. Lab blanks may identify unsuspected contaminates associated with DI water purity, improper cleaning procedures, filters or air contaminants in the lab. LBWs occur every 6 days along with 6-day sampling. Lab blanks for Total Suspended Solids are performed biweekly (along with the Total Suspended Solids standard check), but can be required more frequently at supervisor discretion.

#### 6.3.3.2 Lab Duplicates (LDUPW1/LDUPW2)

A laboratory duplicate consists of a single sample to be analyzed twice internally (using the same techniques) as though it is two separate samples. The entire lab procedure is repeated twice, using two separate aliquots of water poured from the same sample bottle. Lab duplicates evaluate analytical precision and sample homogeneity, as well as consistency of lab and operator procedures. LDUPW1/LDUPW2s occur every 6 days along with 6-day sampling.

\*in Monitor Pro 5 (MP5), under regular sample data entry, the sample that is to be the LDUP is assigned a sample type of "LDUPW1". Then, in the data entry section for that day's LDUP QAQC, the corresponding sample site is to be assigned a sample type of "LDUPW2".

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

#### 6.3.3.3 Allowable Discrepancy Limits between LDUPWs

If the relative percent difference (RPD) exceeds 20% when analyte concentrations are ≥ 5 times the detection limit (DL), the environment supervisor must be informed so that the data can be flagged and sampling/analytical methods and instrumentation performance can be reviewed. Relevant DLs for DDMI laboratory analysis are:

- TSS 2.0mg/L
- Turbidity 0.15 NTU
- Conductivity 1.1uS/cm
- pH has no applicable detection limit.

#### 6.3.3.4 Laboratory Splits (DLS)

A laboratory split consists of a single sample divided into two aliquots, one to be analyzed internally, and the other to be sent to an external lab using the same techniques to analyze their aliquot so that the two results would be compared. Variability of results must be considered carefully in light of analyte hold times. RPD between duplicate samples will be assessed by environment supervisor.

#### 6.3.3.5 Equipment Blanks,

An aliquot of DI water is subjugated, in the DDMI Environmental Laboratory, to all aspects of sample collection and analysis, using the same procedures that are utilized in the field, including contact with all sampling devices and apparatus (e.g. tubing, jars, samplers, filters). The purpose of the equipment blank is to determine if the sampling devices and apparatus for sample collection have been adequately cleaned before they are utilized at the field sampling location

#### 6.3.4 Internal QC Scheduling

DDMI Environment internal QC falls under two schedules: Station-Dependent Internal QC. Station-Dependent Internal QC is tied to different sample matrices and is included in regular sampling schedules in MP5 (ex. samplers will be required to complete one DLS every four PKC sampling events, i.e., quarterly).

### Station-Dependent Internal QC

## QC Frequency per sampling event

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

Sample Matrix	Sampling Event Frequency*	DLS	LDUP/LBW	
Ponds	Monthly	none	none	
Diffuser	Monthly	none	none	
PKC	Monthly	1 in 4	none	
UG /clarifiers	Biweekly	none	none	
NIWTP Influent/Effluent	6 days	none	Every event	

<sup>\*</sup>Note that sampling frequency refers to the frequency with which the entire set of samples is taken, and not the number of sites sampled (ex. the monthly pond sampling includes **10** sample sites but comprises **1** sampling event).

As of November 2019 all Internal QC is station dependent since LBWs and LDUPs are only completed on 6-day samples. All QC sampling is scheduled along with a specific station sampling event from now on.

#### 6.3.5 External Quality Control (QC) Measures

External QC samples comprise ~ 10% of all samples analyzed and are spaced across sampling matrices and sample events to capture as much process homogeneity as possible. With the exception of Trip Blanks (TBW, below), external quality control samples are prepared by DDMI Environment staff, who subject them to the relevant procedures. All external QC samples are then shipped off-site to a qualified external laboratory, where all analysis is conducted.

External QC sample types consist of Trip Blanks (TBW), Equipment Blanks (EBW), Field Blanks (FBW), and Duplicates (DUPW1/DUPW2). Results of external Quality Control samples are reported in monthly SNP reports and reviewed by Environment supervisors.

#### 6.3.5.1 Trip Blanks (TBW)

A Trip Blank is an aliquot of laboratory grade distilled water, which is received from an external lab, in the same type of container that is required for the analytical test. The trip blank is sealed and

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

labelled in the external lab from which it originates. Upon our receipt of the trip blanks they are to be stored, sealed, at  $\sim$  4°C until such a time as they are to be utilized (no longer than 1 month). When utilized, trip blanks travel with the sampling cooler from the laboratory to the sampling site and back to the laboratory without being opened. The trip blank is then packaged and shipped to the originating laboratory to be analyzed. The purpose of the trip blank is to verify that no sample contamination occurred during transportation or sampling operations. Trip blanks are ordered from BV every month by Environment Supervisor.

#### 6.3.5.2 Equipment Blanks (EBW)

An aliquot of DI water is subjected, in the Environment laboratory, to all aspects of sample collection and analysis, using the same procedures that are utilized in the field, including contact with all sampling devices and apparatus (e.g. tubing, jars, samplers, filters). The purpose of the equipment blank is to determine if the sampling devices and apparatus for sample collection are a source of contamination in the samples.

#### 6.3.5.3 Field Blanks (FBW)

An aliquot of DI water is subjected, in the field, to all aspects of sample collection and analysis, using the same procedures that are utilized in the field, including contact with all sampling devices and apparatus (e.g. tubing, jars, samplers, filters). The purpose of the field blank is to demonstrate that sample contamination has not occurred during field sample collection and processing.

#### 6.3.5.4 Duplicates (DUPW1/DUPW2)

Duplicate samples are independent samples collected as close as possible to the same point in space and time and are intended to assess precision of the entire program (field and laboratory components). The use of replicates for this purpose assumes that the variability between DUPW1 and DUPW2 is affected by the sampling method or technician. In most cases natural variability between samples collected in close succession will be low. When performing duplicate samples, the second sample will consist of each bottle that is regularly collected for that station, including the DDMI internal routine bottle.

\*in MP5, under regular sample data entry, the sample that is to be the DUPW is assigned a sample type of "DUPW1." Then, in the data entry section for that day's DUPW QC, the corresponding sample site is to be assigned a sample type of "DUPW2."

#### 6.3.6 External QC Scheduling

DDMI Environment external QC is entirely station-dependent, and QC types have different frequencies for each sample matrix that are programmed into MP5.

External QC	QC Frequency per sampling event	
-------------	---------------------------------	--

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### <u>ENVIRONMENT</u>

#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

Sample Matrix*	Sampling Frequency	DUPW	FBW	TBW	EBW	Total % External QC (all types)
Ponds	Monthly	1 in 2	1 in 6	1 in 6	1 in 3	12.7
Reference Lakes	Biannual	None	None	None	1 in 2	12.5
Diffuser	Monthly	1 in 1	1 in 6	1 in 6	1 in 3	11.5
PKC	Monthly	1 in 4	1 in 12	1 in 12	n/a	10.4
UG /clarifiers	Biweekly	1 in 6*	1 in 6	1 in 12	n/a	10.4
A21 Dewatering	Biweekly	1 in 24	1 in 24	1 in 24	n/a	11.5
NIWTP Influent/Effluent	6 days	1 in 6	1 in 12	1 in 12	n/a	10.9
Total QC type per month**		2.75	2.25	1.0	0.58	6.58 QC/month

<sup>\*</sup>Every other DUPW event is assigned to a clarifier sample in MP5 QAQC Schedule

#### 6.4 Data Management

#### 6.4.1 External Sample Tracking – Chain of Custody

All samples collected, packaged and shipped to external laboratories are tracked via Chain of Custody (CoC) documentation. The CoC record is used to document change in possession from sampling to delivery to receipt by the external analytical laboratory. CoC procedures are clearly outlined in ENVI-900-0119 – SOP - Chain of Custody.

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.

<sup>\*\*</sup>Again, note that sampling frequency refers to the frequency with which the entire set of samples is taken, and not the number of sites sampled (e.g., the monthly pond sampling includes **10** sample sites but comprises **1** sampling event.)



#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

#### 6.4.2 Internal Sample Tracking

All samples collected are documented in Monitor Pro 5 on the Environment iPads as per the regular sampling schedule.

#### 6.4.3 Data Recording/Record Keeping

Internal QAQC data is uploaded to MP5 and recorded in the current year's internal QAQC excel document in the SNP folder of 13.3 on the Environment network drive. External QAQC data is uploaded to MP5 upon receipt from BV Labs.

#### 6.4.4 Data Reporting

Immediately following laboratory analyses, all records are transferred from the applicable field sheets, to their respective electronic databases.

Laboratory supervisors will regularly review the electronic databases to ensure that laboratory recordkeeping meets the aforementioned elements. Results can then be queried and exported as required from MP5 for reporting purposes.

#### 6.5 Control of Nonconforming Testing and/or Calibration Work

Environment supervisors are responsible for management of nonconforming work, evaluation of non-conformance significance, and prescribing of corrective actions. Nonconforming testing and/or calibration work should be shared with all Environment lab staff.

#### 6.5.1 Continual Improvement

The laboratory shall continually improve the effectiveness of its QAQC system and produced data through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

#### 6.6 Personnel

#### 6.6.1 Competency – Certification of Analyst Proficiency

Certification of Analyst Proficiency is the process for assessing and recognizing the technical competence and the effective quality processes of the DDMI Environment Laboratory and staff.

Staff proficiency means that an individual is capable of performing specified test methods and procedures correctly, and familiar with all related policies and procedures pertaining to lab quality.

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.



#### STANDARD OPERATING PROCEDURE

#### **Quality Assurance/Quality Control**

Staff will be trained and tested so as to document their competence for the range of activities they will be expected to perform in the lab, in accordance with all method SOPs. This documentation is saved in the lab analysis competency checklists folder of 6.0 in the Environment network drive.

#### **6.6.2** Ethics

Ethics is a set of moral principles, code for right and wrong, or behaviour which conforms to acceptable professional practices.

#### All employees at all times shall conduct themselves in an honest and ethical manner.

Examples of unethical behaviour include but are not limited to the following:

- Improper manipulation of data or software
- Improper handling of data errors, non-compliant data, or QC outliers
- Lack of reporting unethical behaviour of others
- Artificially fabricating results
- Misrepresenting data such as peak integration, calibration, tuning, or system suitability
- Improper clock setting to meet holding times
- Intentional deletion of non-compliant data

An employee must report any suspected unethical behaviour or fraudulent activities to the Environment Supervisor.

#### 7 QUALITY OUTCOMES AND EXPECTATIONS

The primary objectives for implementing this SOP are:

- To safety complete the tasks outlined in this SOP, without incident.
- To produce quality, accurate and repeatable results.

Document #: ENVI-902-0119 R8

This is not a controlled document when printed

Effective Date: See Area Manager Authorized Signature Date on Page 1

Only documents located on the Diavik Intranet are deemed 'official'.

### ERM has over 160 offices across the following countries and territories worldwide

Argentina The Netherlands Australia New Zealand

Belgium Peru Brazil Poland Canada Portugal China Puerto Rico Colombia Romania France Russia Germany Senegal Ghana Singapore Guyana South Africa Hong Kong South Korea India Spain

Indonesia Switzerland Ireland Taiwan Tanzania Italy Japan Thailand UAE Kazakhstan Kenya UK Malaysia US Mexico Vietnam

Mozambique

#### **ERM's Vancouver Office**

1100 Melville Street #1000, Vancouver, BC Canada V6E 4A6

T: +1 604 689 9460 F: +1 604 687 4277

www.erm.com

