CopperFox Metals Inc.

Schaft Creek Project

British Columbia, Canada

Schaft Creek Project 2006 Meteorology Baseline Report




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EXECUTIVE SUMMARY

Executive Summary

The Schaft Creek Project is located on the eastern edge of the Coastal Mountains in north central British Columbia. The climate of the project area is characterized by the transition between the coast and interior. The Coast Mountains, with peaks over 3,000 m in elevation lead to lifting of moist air masses moving inland from the Pacific Ocean. Annual precipitation in the Coast Mountains is often above 3,000 mm, while temperatures are mild due to the proximity of the Pacific. The climate of the interior sub-boreal plateau, on the other hand is continental with annual precipitations between 400 and 800 mm with very warm and short summers and cold winters.

Automated weather stations equipped with sensors for temperature, precipitation, solar radiation, snow depth, and wind speed and direction were installed at four sites within the proposed project area. Snow-water-equivalent was also measured at two snow survey locations onsite. To characterize the climate conditions in the wider region, data from four government weather stations within a 100 km radius of the project area were used.

Data is continuing to be collected at Schaft Creek Saddle and Mount LaCasse meteorological stations. Schaft Creek Saddle meteorological station was installed in October 2005 and continues to operate through 2007. Mount LaCasse meteorological station was installed in August 2006 and also continues to operate through 2007. The Schaft Creek and Mess Creek RainWise stations were installed in August 2006 and operated until early October 2006.

Estimates for annual values for on-site stations are taken from Schaft Creek Saddle station because it is the only station with a full calendar year of data. Air temperature at Saddle station averaged -0.2°C. The average annual wind speed was 2.5 m/s and the wind direction was primarily from the south. The average annual solar radiation was measured at 108 W/m^2. The annual precipitation observed at the station in 2006 was 1039 mm. The mean annual average precipitation estimated using climateBC software ranged from 669 to 859 mm depending on the location within the project area.

The snow surveys from 2007 show that the snow pack is greater in 2007 compared to 2006. Snow depths at all snow probing stations (SSP1 through SSP4) are approximately 1.5 to 2.5 times greater in 2007 than the same time in 2006. For snow courses, the maximum snow water equivalent (SWE) measured in 2006 occurred in March. At Schaft Creek Camp High Elevation (SSCW2, elevation 1436 masl) the SWE was 593 mm, and at Skeeter Lake Valley (SSCW1, elevation 854 masl) the SWE was 295 mm. The values measured at the same stations in March 2007 are 838 mm and 594 mm, respectively.

Acknowledgements

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1. INTRODUCTION

1. Introduction

The study of meteorology and climate is an important component of the environmental and socioeconomic baseline study and impact assessment for the Schaft Creek Project. Meteorological data will be used to describe the current conditions at the site and how they might influence the project, *e.g.* through site selection for mine infrastructure and water and waste management planning. Meteorological data will also be used for the modelling of the potential air quality impact of mine operations on the environment.

CopperFox Metals Inc. (CopperFox) has begun an initiative to develop a copper-gold-molybdenum-silver project within the Schaft Creek watershed approximately 140 km southwest of Dease Lake in north-western British Columbia. There is currently no access to the proposed development. The proposed access route follows Mess Creek from the transportation corridor associated with the Galore Creek project to the south.

Rescan began studying meteorology in October 2005 with the installation and commissioning of an automated meteorology station in the project area. Additional automated meteorology stations were added in 2006 in the project area. These measurements were augmented by manual snow surveys and snow probing at selected locations. Data collection is continuing on site through 2007. Below is a summary of the methods that were used for the baseline meteorological measurements. The results from the 2005 and 2006 field studies for meteorology are also summarized.

1.1 Objectives

The overall objective of this study was to collect baseline information with respect to meteorological conditions at the Schaft Creek project area. The specific objectives of this study were to:

- Use on-site meteorological data collected through 2006 to make estimates of
  - Annual and monthly precipitation
  - Annual and monthly air temperature
  - Wind speed and direction
  - Solar radiation; and,
  - Seasonal snow pack
- Use regional data to make estimates of mean annual precipitation; and
- Use regional data to compare snow pillow data.

2. METHODS

2. Methods

Meteorological data are required for a variety of purposes. Wind speed and direction data are usually needed to select sites for permanent camp and processing facilities in order to accommodate predominant wind patterns and mitigate the effects of fugitive dust. Wind speed and air temperature data are required for air dispersion modelling that would likely be conducted during the environmental impact assessment to determine the project's potential air quality effects. Solar radiation and precipitation data are required for design of water reservoir(s) and water balance calculations. Meteorological data was collected using a variety of automated and manual methods. The bulk of the meteorology data was collected from automated stations to allow for a more comprehensive data set.

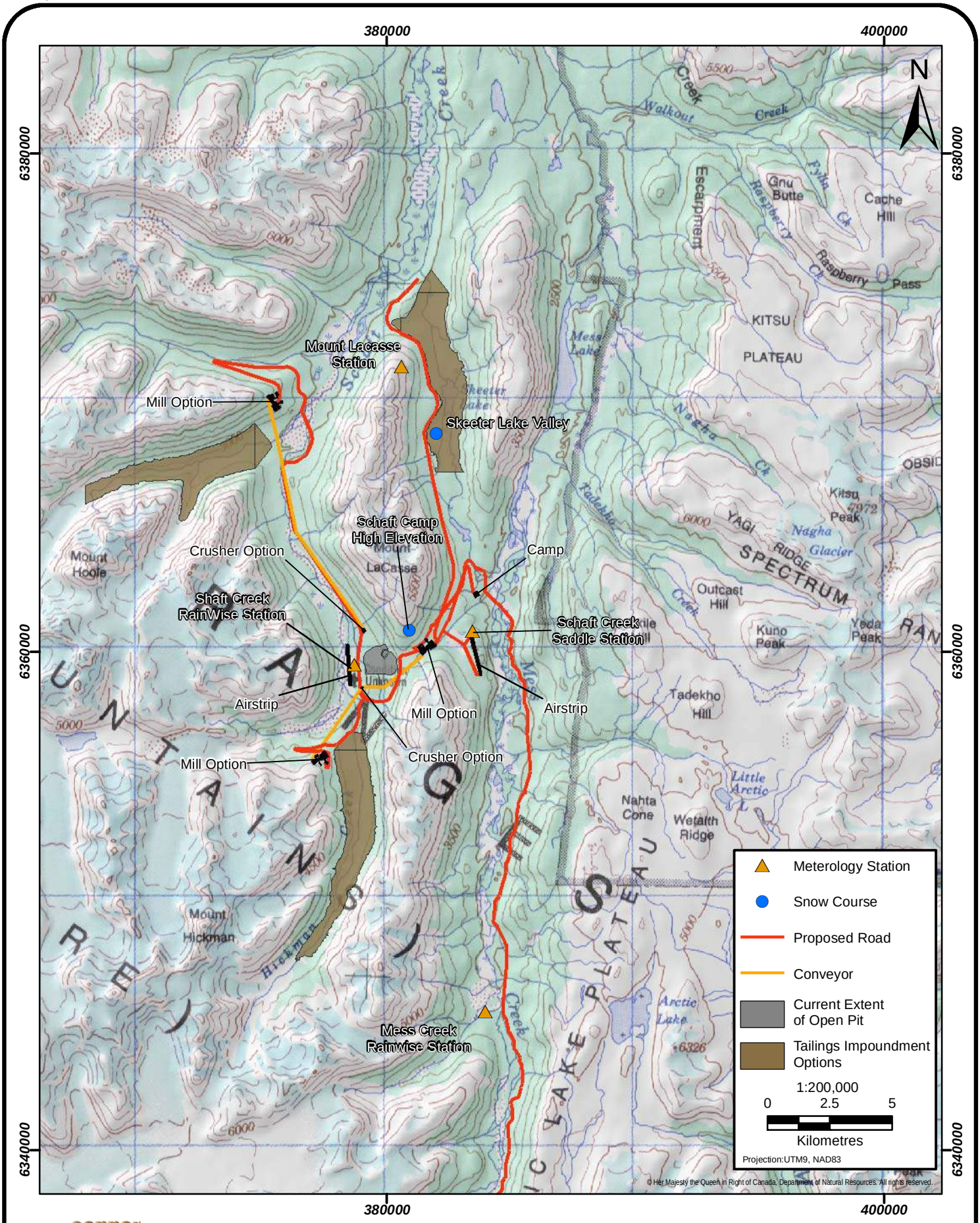
Apart from on-site measurements described below, regional meteorological data will be utilized to characterize climatic conditions in the project area. Data from four meteorological stations within a 100 km radius are available for this purpose (Environment Canada, 2002): Unuk River Eskay Creek, Bob Quinn, Iskut Ranch and Todagin Ranch. These stations all have over 10 years of climate data, unfortunately, the latter three were decommissioned in the early 1990's. The fourth meteorological station at Unuk River Eskay Creek is also within 100 km of the project area, has data from 1989 and it is the only station that is currently in operation.

2.1 Automated Meteorological Station

A total of four automated meteorological stations were installed and commissioned for the Schaft Creek project. The locations and characteristics of these stations are summarized below (Table 1.2-1) and shown in Figure 2.1-1.

- *Schaft Creek Saddle Station:* A meteorological station was installed on October 31, 2005 in the topographical "saddle" between Mount LaCasse and Mess Creek. The location was chosen because it is near the proposed camp and mill facilities.
- *Mount LaCasse Station:* A meteorological station was installed on August 10, 2006 near the proposed waste rock and tailings management facilities.
- *Schaft Creek RainWise Station:* A meteorological station was installed August 7, 2006 near the proposed pit location.
- *Mess Creek RainWise Station:* A meteorological station was installed August 7, 2006 along the proposed access route in the Mess Creek valley.

In order to ensure the stations collect representative data the sensors were located according to guidelines set by Environment Canada (*i.e.* Meteorological Services of Canada (MSC) Guidelines for Co-operative Climatological Autostations, MSC 2004). Environment Canada has adopted, and wherever possible, follows standards set by the World Meteorological Organization (WMO). The Environment Canada guidelines were established to promote standardization and describe practices, procedures and specifications for proper siting of instruments, precision and accuracy of measurements and archive formats.



Schaft Creek Project Meterological Station and Snow Course Locations

FIGURE 2.1-1

The primary concern when selecting an appropriate location for each of the meteorological stations was to avoid obstructions that would bias the wind speeds and directions, and to avoid shaded areas that would bias solar radiation data as well as limit full exposure of the solar power panel to the sunlight. The wind sensors were, where possible, located over open and level terrain, at a distance of at least ten times the height of any nearby building, tree of other obstruction. Sensors were protected from thermal radiation, and adequately ventilated. Because these stations are located in remote regions and unattended for long periods of time, consideration was also given to accessibility. The stations are powered with 12 volt rechargeable batteries and solar panels.

2.1.1 Campbell Scientific Inc Stations

The Mount LaCasse and Saddle stations were constructed using Campbell Scientific Inc. gauges programmed to provide the following automatically logged meteorological data:

- Two minute wind speed, wind direction and standard deviation of wind direction;
- Hourly average wind speed, wind direction and standard deviation of wind direction;
- Hourly average air temperature;
- Hourly average relative humidity;
- Total precipitation for the last hour;
- Hourly average global solar radiation;
- Hourly average snow depth; and,
- Hourly average net radiation;

Each day at midnight, the following data was also automatically recorded:

- Daily maximum and minimum air temperature;
- Daily maximum wind speed, wind direction at maximum speed and time;
- Total daily precipitation; and,
- Diagnostic information.

The sensors were mounted on a 10 m high tower that was rock-anchored at its base and strengthened with guy wires (Plate 2.1-1). Ten metre towers are the standard for collection of wind speed and wind direction data when the data will be used for air dispersion modelling. A certified wind sensor was mounted at the top of the tower to provide data for future air dispersion modelling. Wind speed is measured in metres per second (m/s) and wind direction in degrees from true north by a RM Young Model 05305 Air Quality wind sensor.

The temperature and relative humidity sensors are combined into one unit (Campbell Scientific Model HMP45C212). The combination sensor was mounted on the tower protected from direct radiation by a multi plate solar radiation shield. Air temperature is measured in degrees Celsius and relative humidity in percent. The solar radiation sensor (*i.e.* silicon pyranometer) and net radiometer were also mounted on the tower. Solar radiation is measured in units of kilowatts per

square meter using a Kipp & Zonen SP LITE sensor. Net radiation is measured in units of watts per square meter using a Kipp & Zonen NR LITE sensor.

GEONOR Model T-200B all-season precipitation gauges are being used to measure rain and snow-water-equivalent (SWE) precipitation at each station. The GEONOR precipitation gauges are mounted on a 2.5 m pedestal to ensure the collection orifice is always above snow level. The GEONOR gauges are surrounded by Alter wind screens to increase the capture efficiency (Plate 2.1-1). Snow depths are monitored with a Campbell Scientific Model SR50 ultrasonic sensor that is mounted to the tower with a cross arm. The snow depth sensor was installed at least 0.5 m above the maximum expected snow depth. Tipping bucket rain gauges (Texas Electronics Model TE525M) were installed at the LaCasse and Saddle meteorological stations in 2006.

The sensors for the auto-station are connected to a Campbell Scientific CR10X datalogger that controls the operation of the station. The datalogger's program monitors the sensors every 5 seconds and generates hourly and daily averages. The hourly and daily averages are stored in an SM4M memory module connected to the CR10X datalogger. The modules are changed out on a regular basis and brought back to the office for downloading. The stations are powered with a 50 Watt solar panel and a 12 volt 93 Amp-hour deep cycle marine battery, with the entire station grounded to prevent lightning from damaging the electronics.

Plate 2.1-1. Campbell Scientific Meteorological Station

2.1.2 RainWise Inc Stations

The Schaft Creek and Shaft Mess Creek stations were constructed using RainWise Inc. gauges programmed to provide the following automatically logged meteorological data in ten minute intervals:

- Air temperature;
- Relative humidity;
- Dew temperature;
- Wind speed, wind direction and maximum wind direction;
- Solar radiation and daily accumulation of solar energy;
- Rainfall and snow depth; and,
- Diagnostic information.

The sensors were mounted on the RainWise Monopod Sensor Support System: a 3 m high tower that was anchored to 50 gallon drums at its base and strengthened with guy wires (Plate 2.1-2). Wind speed is measured in metres per second (m/s) and wind direction in degrees from true north by a RainWise AerVane wind sensor.

The temperature and relative humidity sensors are combined into one unit (RainWise RH/T). The sensor was mounted on the Monopod tower. Air temperature is measured in degrees Celsius and relative humidity in percent. The solar radiation sensor (*i.e.* silicon pyranometer) and net radiometer were also mounted on the tower. Solar radiation is measured in units of kilowatts per square meter using a RainWise Pyronometer, which features a PIN silicon photo diode.

The RainWise Raingauge precipitation gauge is being used to measure rain precipitation at these stations. The RainWise precipitation gauges are mounted directly onto the Monopod tower with no wind screens (Plate 2.1-2). Snow depths are monitored with a RainWise ultrasonic sensor that is mounted to the tower. The sensor is packaged in a NEMA 4X enclosure. The snow depth sensor was installed at least 0.5 m above the maximum expected snow depth.

The sensors for the auto-station are connected to a RainWise Electronic Datalogger (EDL) that controls the operation of the station. The datalogger is frame mounted in a 4X enclosure. The datalogger's program generates hourly and daily averages. The hourly and daily averages are stored in the EDL. Periodically, a laptop computer is brought to the station and used to download the data directly from the EDL using Weather Log Data Retrieval WL Com version 1.46 software. The RainWise stations are powered by a series of 6 volt batteries (8 Amp-hour) and a 20 Watt solar panel.

2.2 Snow Surveys

The baseline meteorology program also included manual snow surveys that were conducted during the winter of 2006. Snow surveys determine the depth and the water content of the snow pack and can be used to estimate the amount of runoff from the mountain watersheds. Two types

of traditional manual snow surveys were conducted in the study area: snow probing (to measure snowpack depth) and snow course surveys (to measure snowpack depth and snow-water-equivalent).

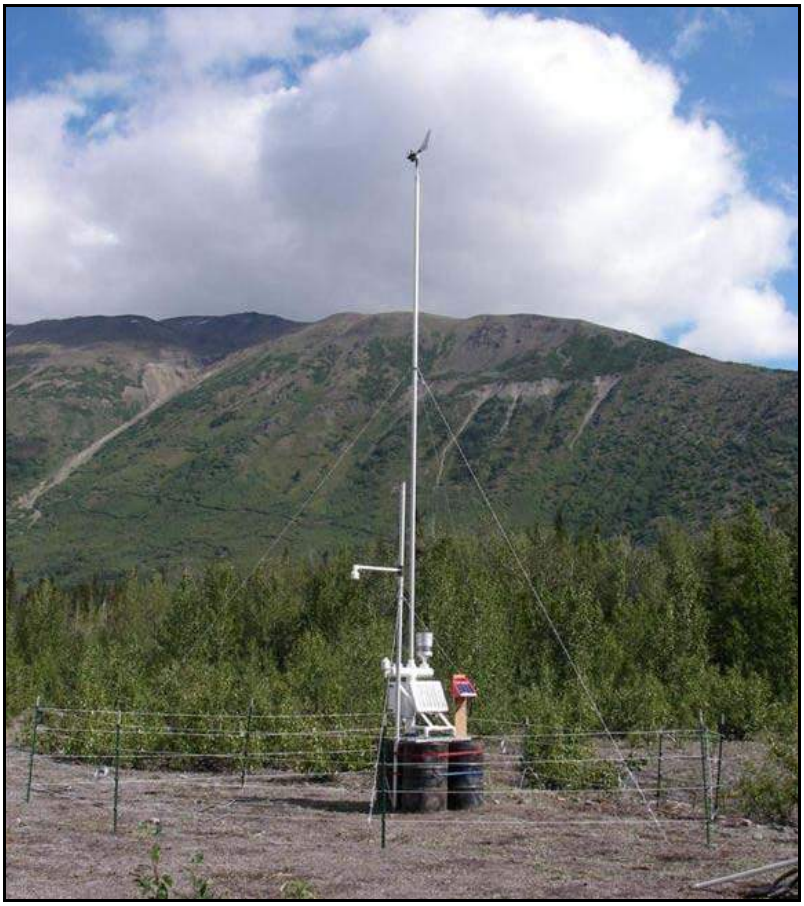


Plate 2.1-2. RainWise Meteorological Station

2.2.1 Snow Probing

Four snow probing surveys were conducted in the Schaft Creek study area (Figure 2.2-1). The standard procedure for snow probing surveys includes driving a metal bar through the snowpack to the ground surface and recording the depth of snow. A total of seven readings are taken at approximately 5 m intervals at each location. Surveys are generally conducted in small meadows that are reasonably protected from the wind. The surveys began in February 2006. The snow probing sites are summarized below.

- *Schaft Creek Met Station*: the snow probing site (SSP1) is located a few hundred metres west of the Schaft Creek meteorological station.
- *Skeeter Creek North*: the snow probing site (SSP2) is located at the north end of the Skeeter Lake Valley.
- *Skeeter Creek South*: the snow probing site (SSP3) is located at the south end of the Skeeter Lake Valley.

- *Schaft Creek Camp*: the snow probing site (SSP4) is located immediately north-east of the camp.

2.2.2 Snow Courses

Two snow courses were sampled four times during February to May, 2006. SSCW1 is located in the Skeeter Lake Valley, and SSCW2 is located north-east of the camp (Figure 2.2-1). The snow courses were installed using procedures in the British Columbia Ministry of Environment Procedure Manual for Snow Surveys (Volume 6, Section 9), December 1982. Standard snow sampling procedures were followed in accordance with the British Columbia Ministry of Environment (Water Management Branch, Surface Water Section) Snow Survey Sampling Guide (document no SS13-81).

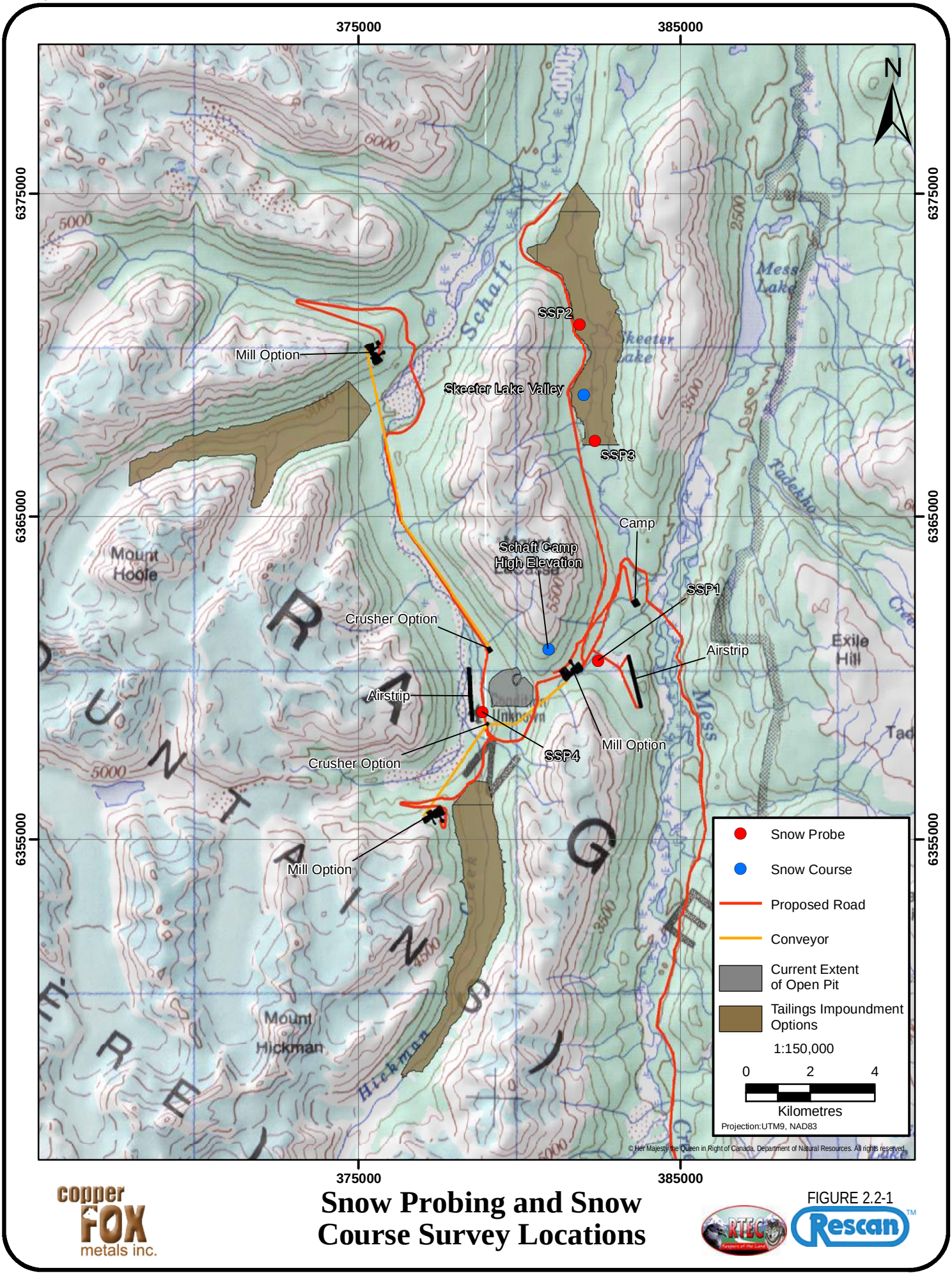
The standard snow sampling procedure is the one most often used to sample a snow course. Generally, the snow courses are about 300 m long and are situated in small meadows protected from the wind. The snow core sampler consists of a strong, light-weight, graduated aluminum tube and a weighing scale. Snow depth is measured by pushing the tube down through the snowpack to the ground surface and extracting a core. To obtain an accurate snow core sample, the surveyor must verify that the tube has reached ground level by examining the base of the tube and finding soil. After clearing out the soil from the bottom end of the tube, the surveyor determines the amount of water in the snowpack by weighing the tube with its snow core and subtracting the weight of the empty tube. An average of all the ten samples taken is calculated and used to represent the snow course.

Data collected from the snow courses includes snow depth and snow-water-equivalent (SWE) precipitation based on ten samples from each station. This data will be used for the prediction of runoff data for the design of diversion ditches and impoundment water balances. The snow surveys were conducted at the beginning of the month for February to May. The Schaft snow course data are compared with regional stations monitored by British Columbia Ministry of Environment (BCMOE) at: Kinaskan Lake and Wade Lake.

2.3 Historical On-Site Meteorological Data

As part of the preliminary feasibility studies that were undertaken by CopperFox Metals, some historical weather data was collected at the Schaft Creek Project site. These records are brief and not continuous, but they do provide some valuable on-site meteorological data. Data collected includes: daily maximum and minimum temperatures, precipitation, snow and snow on ground.

A weather station was established on the Schaft Creek site in the summer of 1969. The weather station equipment was provided by the Victoria Regional Climate Data Centre of the Department of Transport Canada. The Schaft Creek weather station was equipped with one Stevenson screen and stand, one rain gauge, one rainfall graduate, two minimum thermometers, two maximum thermometers, and one snow ruler. The period of record encompasses June to September 1969, and March 1970 to February 1972.



Snow Probing and Snow Course Survey Locations

FIGURE 2.2-1

2.4 Regional Meteorological Data

For the purposes of characterizing climatic conditions in the project area, PRISM (Parameter-elevation Regression on Independent Slopes Model) data available from Environment Canada was used. This data set incorporates climate data from meteorological stations throughout the Pacific and Yukon region and accounts for effects of elevation (PRISM Group, 2001). ClimateBC, a climate data interpolation software, was used to extract mean annual precipitation from the PRISM data set (Wang *et al*., 2006).

The PRISM data is used to construct 4x4 km grids (or tiles), and ClimateBC software interpolates within the tiles using bilinear interpolation (Wang *et al*. 2006). This creates a continuous surface of temperature and precipitation data. Temperature data can be adjusted for elevation; however, the relationship between precipitation and elevation is not as straightforward so precipitation data is not adjusted for elevation in the ClimateBC software (Wang *et al.* 2006).

In addition to PRISM data, regional meteorological data from four meteorological stations within a 100 km radius are available to further characterize climatic conditions on-site (Environment Canada, 2002): Unuk River Eskay Creek, Bob Quinn, Iskut Ranch and Todagin Ranch (Table 3.3-2). All of these stations have more than 10 years of data on record; unfortunately, the latter three were decommissioned in the early 1990's. Bob Quinn has since been re-commissioned; however, data was not available past 1994.

3. RESULTS

3. Results

The baseline data collected from November 2005 through December 2006 for air temperature, precipitation, wind speed and direction, solar radiation and snow depth measured at the on-site meteorological stations are described below. Where possible, the current baseline data are compared to historical records from the initial baseline work done from 1969 to 1972. As well, current data is compared to regional data sets and regional climate stations operated by Environment Canada – Meteorological Service of Canada (MSC).

3.1 Climatic Conditions

The Schaft Creek Project is located on the eastern edge of the Boundary Ranges in the Coast Mountains. This is a high rugged mountain range in north central British Columbia with the coastal mountains to the west and sub-boreal interior plateau to the east. The climate of the project area is characterized by this coast/interior transition. The Coast Mountains with peaks over 3,000 m in elevation lead to lifting of moist air masses moving inland from the Pacific Ocean. Annual precipitation in the Coast Mountains is often above 3,000 mm, while temperatures are mild due to the proximity of the Pacific. The climate of the interior sub-boreal plateau, on the other hand is continental with annual precipitations between 400 and 800 mm and very warm and short summers and cold winters.

Meteorological data that has been collected at the Schaft Creek Saddle Station is summarized in Table 3.1-1. Data from the Mount LaCasse Station is summarized in Table 3.1-2, and data from both the Schaft Creek RainWise, and the Mess Creek RainWise stations are summarized in Table 3.1-3. Table 3.1-4 lists the mean monthly data available for the historical Schaft Creek camp meteorological station. Monthly averages for the four MSC stations within 100 km of the project area are listed in Tables 3.1-5 to 3.1-8.

3.2 Air Temperature

At the Schaft Creek Saddle meteorological station, monthly average air temperatures ranged from -14.4ºC in November 2006 to 12.5ºC in July 2006 (Table 3.1-1 and Figure 3.2-1). There are two cold spells with mean daily air temperatures below -20ºC. One occurred in March 2006 and lasted for five days and one in November and lasted for one week. Meanwhile, mean daily air temperature in summer was above 20 °C for only one two-day period in 2006 (Figure 3.2-2). The hourly maximum air temperature recorded was 28.1ºC (11-Jun-06) and the minimum was -30.0ºC (15-Mar-06).

Annual average air temperature at the Schaft Creek Saddle station was -0.2ºC in 2006. The monthly averages for 2006 at the station do not follow the same seasonal trend as the four MSC weather stations at Unuk River Eskay Creek, Bob Quinn, Iskut Ranch and Todagin Ranch (Figure 3.2-1). The winter temperatures measured at Saddle station do not follow the regional stations. It would be useful to compare the on-site station data to 2006 regional data; however, Bob Quinn, Iskut Ranch and Todagin Ranch stations are no longer in operation. In addition,

Table 3.1-1
Monthly Data for the Rescan Schaft Creek Saddle Automated Meteorological Station

	Average Air Temperature (°C)	Extreme Maximum Air Temperature (°C)	Extreme Minimum Air Temperature (°C)	Mean Maximum Air Temperature (°C)	Mean Minimum Air Temperature (°C)	Snow Depth (Last Day) (cm)	Total Precipitation (mm)	Average Solar Radiation (W/m^2)	Average Wind Speed (m/s)
Nov-05	-3.5	8.1	-21.4	-0.9	-6.0	3	136	14.7	3.0
Dec	-4.7	4.1	-22.6	-2.0	-7.5	39	111	9.2	2.3
Jan-06	-7.5	1.4	-18.7	-4.5	-10.5	121	120	9.0	2.1
Feb	-7.4	3.6	-23.6	-4.0	-10.6	122	56.8	52.8	2.2
Mar	-8.1	6.7	-30	-3.9	-11.7	127	74.9	91.8	1.8
Apr	0.3	10.1	-7.0	4.2	-2.9	97	89.9	158.2	2.9
May	4.7	16.3	-5.2	9.0	1.1	0	62.9	199.1	2.5
Jun	10.6	28.1	2.7	15.7	6.0	0	57.5	242.8	2.8
Jul	12.5	23.7	5.2	17.2	8.4	0	41.4	207.5	2.7
Aug	9.8	21.2	3.8	14.1	6.5	0	75.3	165	2.9
Sep	7.2	21.3	-2.8	10.9	4.2	0	182	92.2	2.8
Oct	2.2	17.7	-11.2	5.6	-0.6	5	65.4	62.7	3.0
Nov	-14.4	0.5	-28.8	-11.2	-17	65	149	6.0	1.0
Dec	-4.3	2.3	-15.6	-2.1	-6.4	183	63.7	6.4	3.0
2006 Average	-0.2	13.8	-14.6	4	-3.9	n/a	n/a	107.8	2.5
2006 Total	n/a	n/a	n/a	n/a	n/a	n/a	1039	n/a	n/a

Table 3.1-2
Monthly Data for the Rescan Mount LaCasse Automated Meteorological Station

	Average Air Temperature (°C)	Extreme Maximum Air Temperature (°C)	Extreme Minimum Air Temperature (°C)	Mean Maximum Air Temperature (°C)	Mean Minimum Air Temperature (°C)	Snow Depth (Last Day) (cm)	Total Precipitation (mm)	Average Solar Radiation (W/m^2)	Average Wind Speed (m/s)
Aug* 2006	6.9	17.2	1.4	10.8	4.3	0	28.2	165.3	3.4
Sep	4.3	17.5	-3.9	7.2	2	0	99	100.1	4.3
Oct	-0.5	13.6	-12.7	2.2	-2.8	13	54.6	65.5	4.1
Nov	-15.3	-1.9	-31.2	-12.5	-18	82	78.5	17.6	3.7
Dec	-6.6	0.1	-13.1	-4.7	-8.7	139	77.6	12.1	7
Jan-07	-7.6	8.2	-27.3	-5.3	-10.3	168	36	20.1	3.1
Average	-3.1	9.1	-14.5	-0.4	-5.6	n/a	n/a	63.5	4.3
Total	n/a	n/a	n/a	n/a	n/a	n/a	374	n/a	n/a

*** Not a complete month: record starts August 10, 2006**

Table 3.1-3
Monthly Data for the Rescan Schaft Creek and Mess Creek RainWise Automated Meteorological Stations

	Average Air Temperature (°C)	Extreme Maximum Air Temperature (°C)	Extreme Minimum Air Temperature (°C)	Mean Maximum Air Temperature (°C)	Mean Minimum Air Temperature (°C)	Total Precipitation (mm)	Average Solar Radiation (W/m2)	Average Wind Speed (m/s)
Schaft Creek								
Aug* 2006	9	21.8	-3.8	14.7	2.9	11.7	96.9	1.9
Sep	5.6	21.6	-9.3	11.7	0.2	121	57	1.2
Mess Creek								
Aug* 2006	10.2	23.3	-0.7	15.3	4.7	39.4	89.5	2.1
Sep	7.1	22.7	-8.7	12.2	2.6	49.6	39.1	0.7

*** Record starts August 11, 2006 for Schaft Creek Station, and August 7, 2006 for Mess Creek Station**

Table 3.1-4
Average Monthly Data for the Historical Schaft Creek Camp Meteorological Station

	Mean Maximum Air Temperature (°C)	Mean Minimum Air Temperature (°C)	Total Precipitation (mm)		Mean Maximum Air Temperature (°C)	Mean Minimum Air Temperature (°C)	Total Precipitation (mm)
Jun* 1969	19.4	7.8	17.3	Jan-71	-14.7	-22.9	46.5
Jul	15.0	7.2	16.8	Feb*	0.6	-10.8	15.2
Aug	13.3	4.4	58.9	Mar	2.2	-12.2	129
Sep*	11.1	3.3	39.6	Apr	8.8	-7.9	45.2
Mar* 1970	4.4	-4.2	0	May	12.3	-2.0	12.4
Apr	5.4	-5.7	61.0	Jun	17.8	4.3	16.6
May	7.3	-0.2	19.1	Jul	20.7	7.2	28.2
Jun	11.1	3.1	55.9	Aug	17.4	6.7	56.4
Jul	11.4	5.3	21.1	Sep	11.6	2.8	42.9
Aug	15.3	5.1	54.4	Oct	4.1	-3.4	143
Sep	11.5	1.1	70.9	Nov	-1.9	-10.1	149
Oct	6.1	-2.9	124	Dec	-11.2	-20.2	51.3
Nov	-4.6	-13.8	49.5	Jan-72	-13.8	-23.3	37.6
Dec	-10.6	-18.4	92.2	Feb	-9.8	-18.8	74.2

*** Not a complete month**

Table 3.1-5
Average Monthly Data for Bob Quinn Meteorological Station (1977 to 1994)

Month	Mean Max Temp (°C)	Mean Temp (°C)	Mean Min Temp (°C)	Total Rain (mm)	Total Snow (cm)	Total Precip (mm)	Snow Depth Last Day (cm)
January	-5.2	-8.5	-11.7	18.9	41	60	46
February	-2.1	-6.4	-10.7	13.3	28	41	43
March	4.7	-0.3	-5.3	13.5	14	27	25
April	9.9	3.9	-2.2	18.4	7	25	1
May	14.8	8.2	1.5	28.1	1	29	0
June	18.5	11.9	5.3	33.5	0	34	0
July	20.4	14.1	7.8	56.7	0	57	0
August	19.7	13.4	7.1	49.7	0	50	0
September	14.4	9.3	4.2	86.1	0	86	0
October	7.5	4	0.4	93.9	8	102	1
November	-0.9	-3.7	-6.4	34.2	28	62	10
December	-5.3	-8.3	-11.3	17.7	53	71	34
Average	8.0	3.1	-1.8	n/a	n/a	n/a	n/a
Total	n/a	n/a	n/a	464.1	179	644	n/a

Note: n/a: this total or average is not required for this parameter

Table 3.1-6
Average Monthly Data for Iskut Ranch Meteorological Station (1976 to 1994)

Month	Mean Max Temp (°C)	Mean Temp (°C)	Mean Min Temp (°C)	Total Rain (mm)	Total Snow (cm)	Total Precip (mm)	Snow Depth Last Day (cm)
January	-6.2	-11.4	-16.6	7	29	37	41
February	-2.8	-8.7	-14.5	6	13	19	26
March	2.6	-3.4	-9.3	2	13	15	12
April	7.7	1.3	-5.1	2	4	6	0
May	13.2	6.3	-0.7	24	2	26	0
June	17.3	10.1	2.9	44	0	44	0
July	19.1	12.1	5.1	66	0	66	0
August	18.3	11.3	4.3	58	0	58	0
September	13.1	7.2	1.2	50	1	50	0
October	6.3	2	-2.4	35	6	41	1
November	-1.3	-6.1	-10.8	8	20	28	13
December	-6.5	-11.7	-16.8	4	37	41	26
Average	6.7	0.8	-5.2	n/a	n/a	n/a	n/a
Total	n/a	n/a	n/a	306	125	431	n/a

Note: n/a: this total or average is not required for this parameter

Source: Environment Canada Climate Normals 1971-2000 (Environment Canada 2002)

Table 3.1-7
Average Monthly Data for Todagin Ranch Meteorological Station (1976 to 1992)

Month	Mean Max Temp (°C)	Mean Temp (°C)	Mean Min Temp (°C)	Total Rain (mm)	Total Snow (cm)	Total Precip (mm)	Snow Depth Last Day (cm)
January	-8	-13.3	-18.6	1	31	32	56
February	-3.4	-9.9	-16.3	1	16	17	56
March	2	-4.9	-11.8	1	16	17	51
April	7.3	0.5	-6.2	3	8	11	4
May	12.6	5.4	-1.8	21	3	24	0
June	17	9.4	1.7	37	0	37	0
July	18.8	11.6	4.3	54	0	54	0
August	18.3	11.1	3.8	49	0	49	0
September	13	6.9	0.7	53	1	54	0
October	5.6	1.2	-3.2	33	15	47	4
November	-3.6	-8.4	-13.2	5	31	35	25
December	-7.9	-12.8	-17.6	1	42	43	46
Average	6	-0.3	-6.5	n/a	n/a	n/a	n/a
Total	n/a	n/a	n/a	258	161	419	n/a

Note: n/a: this total or average is not required for this parameter

Source: Environment Canada Climate Normals 1971-2000 (Environment Canada 2002)

data for 2006 from Unuk River Eskay Creek was not available at the time of writing of this baseline report.

The cold spells in March and November caused the monthly average temperature in these two months to be markedly lower than the average monthly temperatures seen at the regional stations. The temperatures measured at the Schaft Creek meteorological stations in 2006 coincide with data collected at 5 meteorological stations at Galore Creek monitored by NovaGold Canada Inc for the same time period. This suggests that the region experienced colder than average temperatures during 2006.

Table 3.1-8
Average Monthly Data for Unuk River Eskay Creek Meteorological Station (1989 to 2002)

Month	Mean Max Temp (°C)	Mean Temp (°C)	Mean Min Temp (°C)	Total Rain (mm)	Total Snow (cm)	Total Precipitation (mm)
January	-5.3	-8.6	-11.4	2.9	223	226
February	-1.8	-5.0	-8.4	7.1	214	221
March	0.2	-3.6	-7.3	3.0	159	162
April	5.1	1.0	-3.2	21.2	67.2	88.4
May	8.8	4.6	0.6	82.2	23.8	106
June	12.5	7.8	3.2	70.2	0.1	70.3
July	14.9	10.0	5.8	78.4	0.0	78.4
August	14.9	10.3	5.8	145	0.0	145
September	9.2	5.6	2.7	225	9.3	234
October	3.4	0.6	-2.1	145	110	254
November	-1.8	-4.6	-7.6	12.2	196	208
December	-3.9	-6.9	-9.4	0.0	281	281
Average	4.7	0.9	-2.6	n/a	n/a	n/a
Total	n/a	n/a	n/a	792	1283	2074

Note: n/a: this total or average is not required for this parameter
Source: Environment Canada Climate Normals 1971-2000 (Environment Canada 2002)

3.3 Precipitation

Annual precipitation was estimated using three methods. The first is the estimate of Mean Annual Precipitation using PRISM data and Climate BC interpolation software (PRISM Group 2001, Wang *et al*. 2006). The second method used to estimate annual precipitation is the on-site meteorological data. The PRISM value is then compared to the data collected from the on-site meteorological stations (Table 3.3-1). Finally, the third method of estimating Mean Annual Precipitation is to scale the precipitation from the near-by EC meteorological stations (Table 3.3-2).

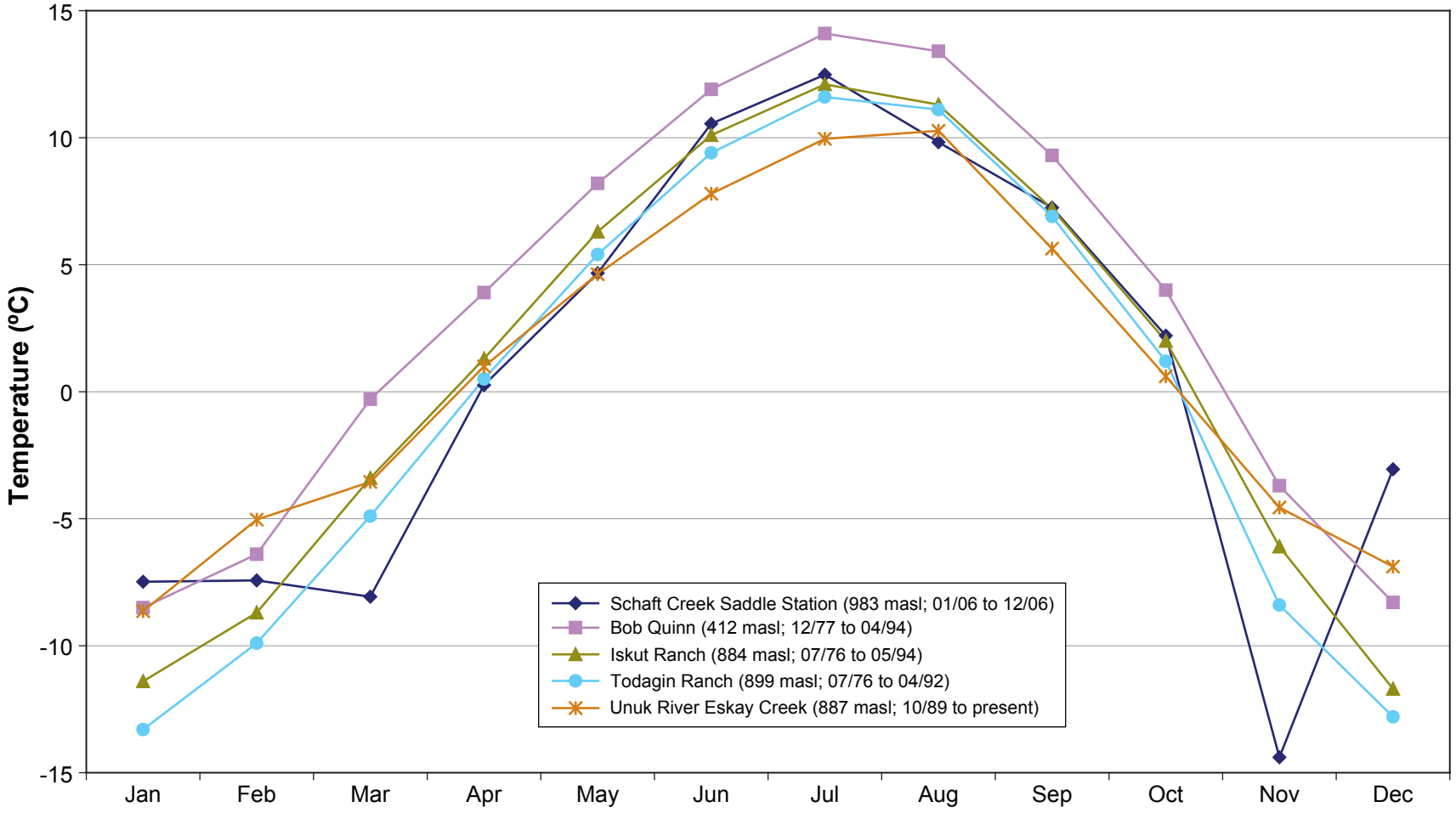


FIGURE 3.2-1

Monthly Average Air Temperature at Schaft Creek Saddle Station and Regional Meteorological Stations

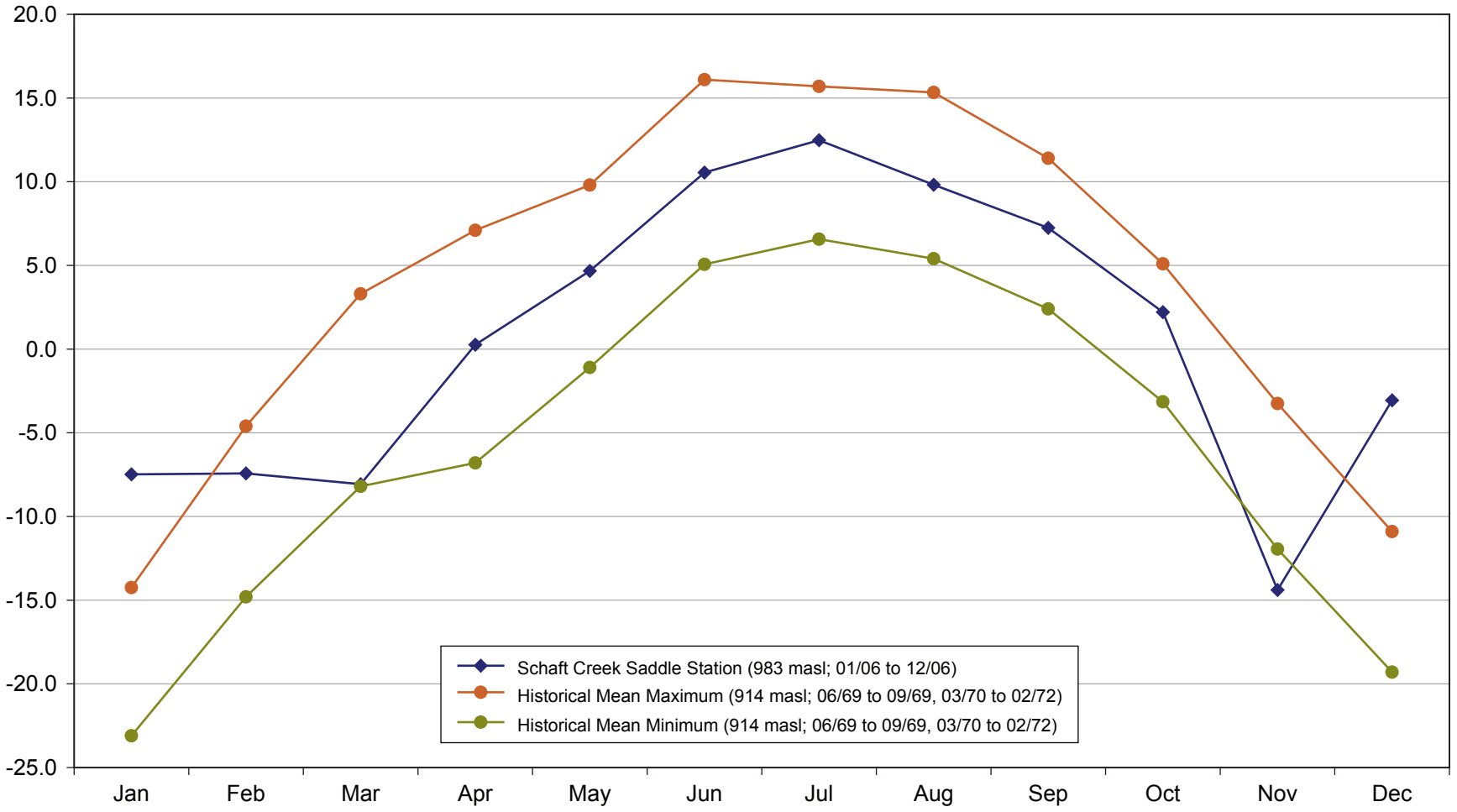


FIGURE 3.2-2

Monthly Average Air Temperature at Schaft Creek Saddle Station and Historical Schaft Creek Meteorological Stations

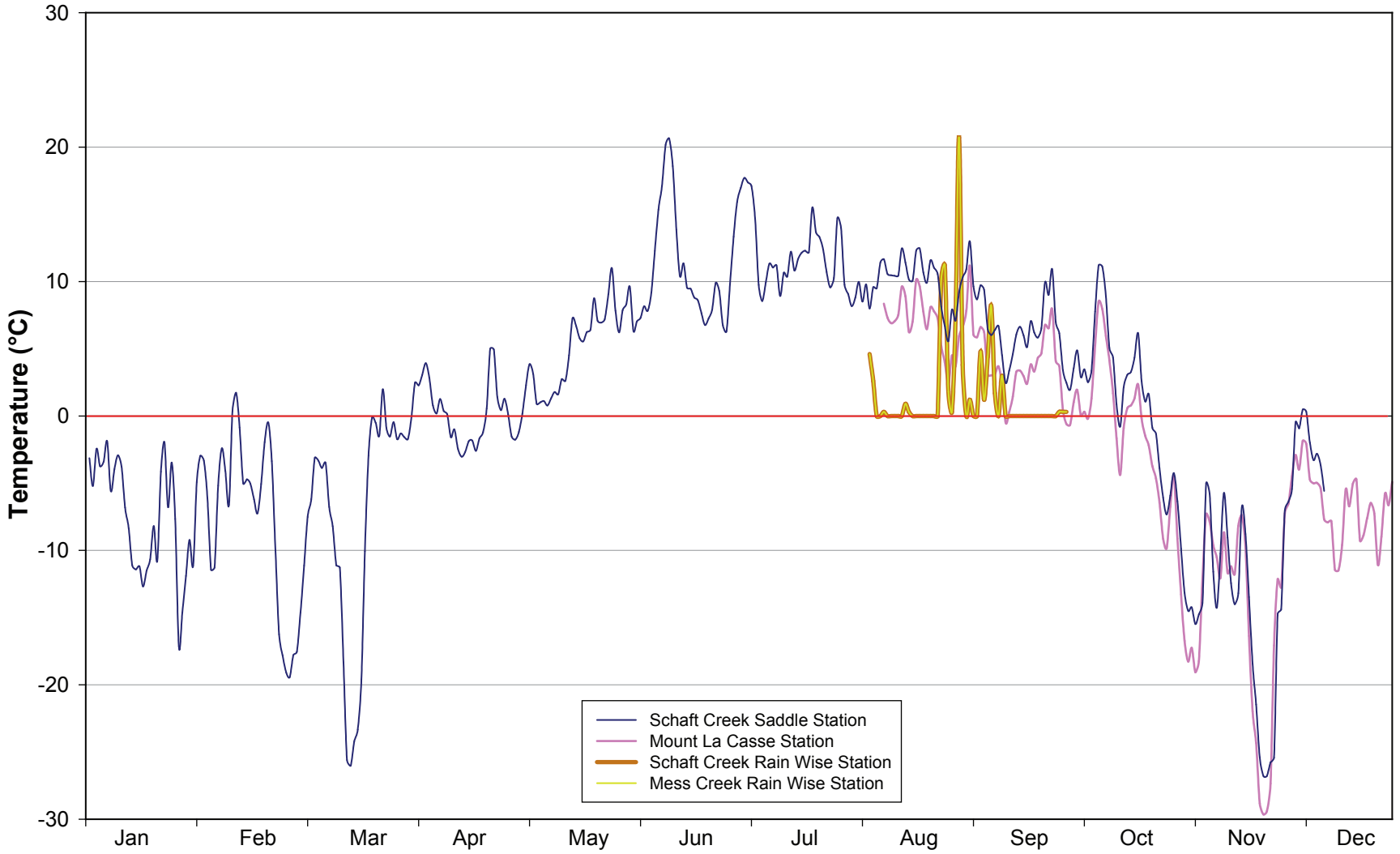


FIGURE 3.2-3

Daily Average Air Temperature at Schaft Creek Project Meteorological Stations (2006 Data)

3.3.1 PRISM Data

Using ClimateBC software and PRISM data from British Columbia and Yukon, the mean annual precipitation at stations on-site is estimated to range from 665 mm to 859 mm (Table 3.3-1). This estimate is based on the location of the monitoring station, and does not take into account the difference in elevation between the stations.

Table 3.3-1
Estimated Mean Annual Precipitation for
Schaft Creek Project Meteorological Stations

Station Name	Elevation (masl)	PRISM Mean Annual Precipitation (mm)	[1]Extrapolated On-site Data (mm)
Mess Creek Rainwise Station	789	859	359
Shaft Creek RainWise Station	855	785	535
Mount LaCasse Station	1436	719	656
Shaft Creek Saddle Station[2]	983	665	1205 (2005 data) 1039 (2006 data)

1: Calculated using the sum of the available data for the station and comparing it to the observed 2006 data at Schaft Creek Saddle Station. This calculation assumes the percentage of the annual precipitation observed at each station is similar for each month
2: At Schaft Creek Saddle station: 2006 data observed, 2005 data extrapolated

3.3.2 On-Site Data

The monthly precipitation data collected at the on-site meteorological stations shows that all stations have similar monthly trends (Figure 3.3-1). Total precipitation for 2006 measured at the Schaft Creek Saddle meteorological station was 1039 mm (Table 3.3-1). September was the wettest month with 182 mm of precipitation, with July as the driest month with just over 41 mm of precipitation (Figure 3.3-1). The period of record is very short for other on-site stations. This makes it difficult to discuss seasonal trends at these stations.

The daily precipitation record shows that the timing of precipitation events is similar at all stations across the study area (Figure 3.3-2). The amount of precipitation that falls during a given precipitation event; however, does vary within the study area. From the daily record, it appears as though the Schaft Creek Saddle station is "wetter" than the other on-site stations. In addition, there are fewer zero precipitation days recorded at this station. This may be due to the station's location (Figure 2.1-1) or elevation.

The annual precipitation for meteorological stations that do not have a complete year of data is estimated by comparing the percentage of precipitation that fell at Saddle station for the period of record at the other stations. The estimated annual precipitation values for the meteorological stations on-site are compared in Table 3.3-1. The 2006 annual precipitation measured at the on-site meteorological stations ranges from 359 mm at Mess Creek station to 1039 mm at Saddle station (Table 3.3-1).

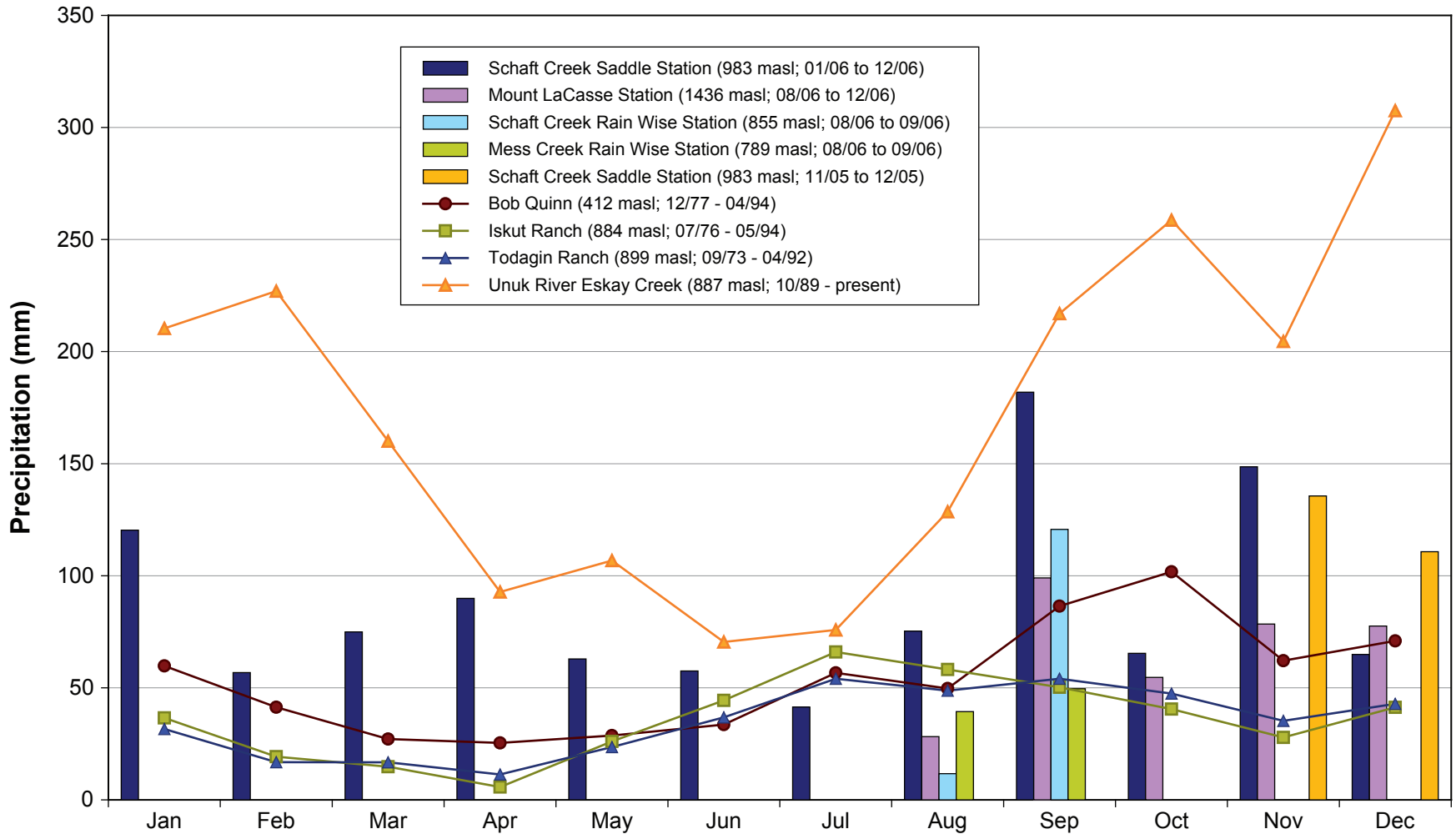


FIGURE 3.3-1

Monthly Average Precipitation at Regional and Schaft Creek Project Meteorological Stations

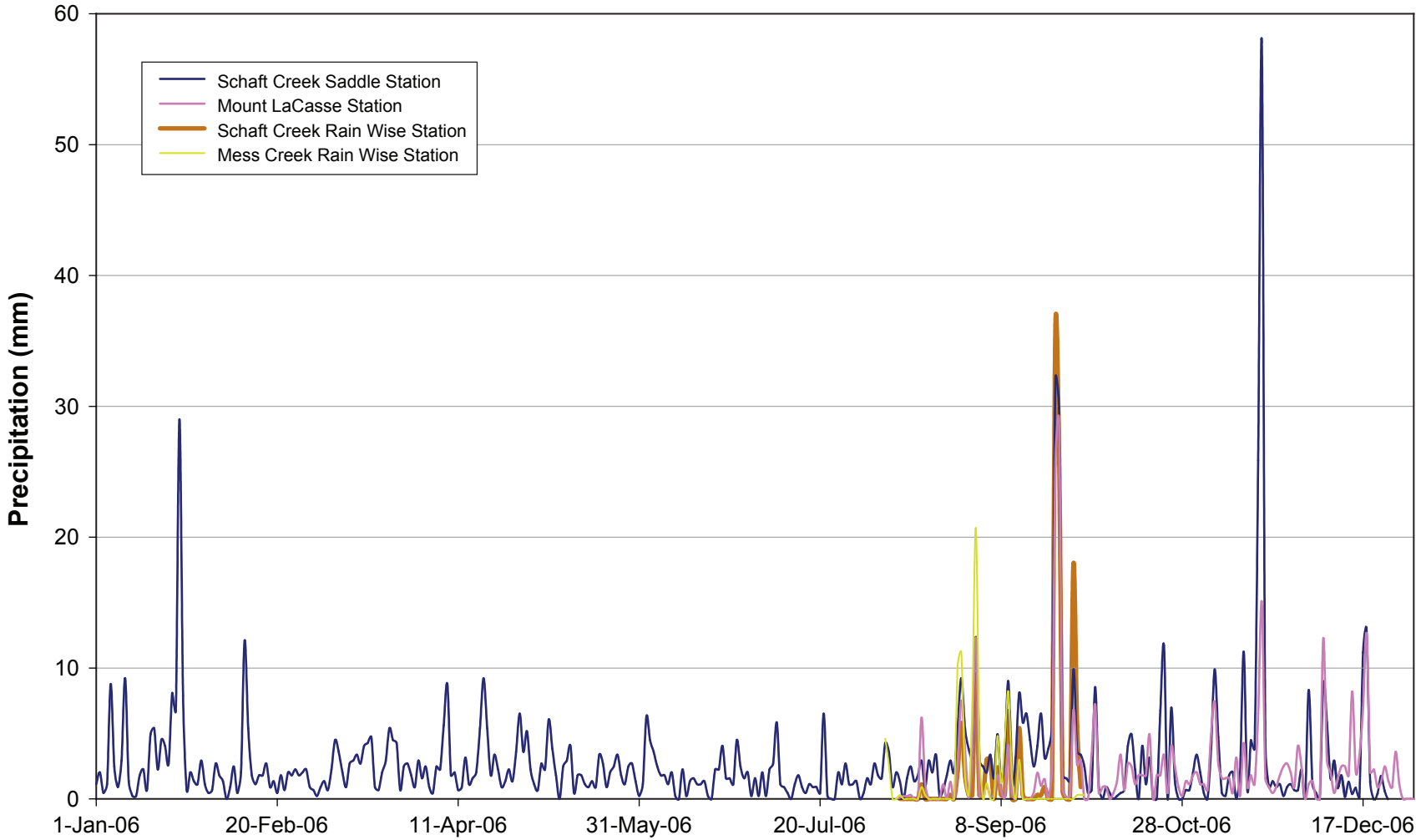


FIGURE 3.3-2

Daily Precipitation at Schaft Creek Project Meteorological Stations

Table 3.3-2
Environment Canada Meteorological Stations
Near the Schaft Creek Project

Station	Period of Record	Location	[a] Approx. distance to Project [km]	Elevation [masl]	Observed average annual precipitation [mm]	[b] Average annual precipitation scaled to Project site elevation (1484 m) [mm]
Iskut Ranch	1976-1994	57° 52' N; 131° 10' W	57	854	435	706
Todagin Ranch	1973-1992	57° 36' N; 130 ° 04' W	62	899	419	655
Telegraph Creek	1979-present	57° 54' N; 130° 20' W	63	250	369	945
Bob Quinn	1977-1994	56° 58' N; 130° 15' W	65	610	642	931
Iskut River	1976-1994	56°43'58.80"N; 131°40'1.20"W	82	884	431	684
Unuk River-Eskay Creek	1989-present	56°39'10.74"N; 130° 26'45.54"W	87	887	2074	3284[c]
Dease Lake	1944-present	58° 25' N; 130° 00' W	130	807	426	716

a: As calculated with Google Earth;
b: Scaled using orographic factor of 8 % increase per 100 m rise in elevation (Coulson, 1991). Values scaled to median elevation of Schaft Creek catchment
c: This likely over-predicts the annual precipitation

3.3.3 Regional Data

The monthly trends from the on-site data collected from Schaft Creek Saddle station in 2006 do not agree well with the average monthly precipitation from the regional stations (Figure 3.3-1). The precipitation at the three inactive regional stations shows a steady decrease in precipitation through the winter months, with the lowest average monthly precipitation occurring in April. From April, the precipitation increases through the late spring/early summer such that the peak precipitation occurs in July at Iskut and Todagin Ranch, and in October at Bob Quinn. The data collected at Schaft Creek Saddle station does not show this same seasonal trend. The wettest month occurs in September, and the driest month occurs in July. There is no steady decline in precipitation through the spring; rather, there is an increase in precipitation from February to April, and then a decrease from April to July.

The seasonal trends at Unuk River Eskay Creek station is somewhat in the middle between the stations in the project area, and the decommissioned regional stations. Like the Schaft Creek Saddle station, the driest months at Unuk River are in June and July. The wettest month is in December, unlike either the other regional stations or the on-site stations. The variations in the seasonal trends of the regional stations within a 100 km radius of the project indicate that the area is complex with climatic conditions being influenced by large-scale regional factors such as mountain ranges and the Pacific Ocean, as well as smaller-scale factors such as local topography.

The estimated precipitation at the Project site based on scaling the precipitation observed at the regional stations is summarized in Table 3.3-2. The discrepancy between on-site and regional

precipitation data suggests that the estimation of precipitation based on scaling regional data, may not be a good method to estimate the on-site mean annual precipitation.

The estimates provided by regional data range from 684 mm to 945 mm. The estimate from scaling the precipitation data from Unuk River-Eskay Creek to the project elevation is much higher than the other regional estimates (3284 mm) and is discarded. Unuk River Eskay Creek station is considerably wetter than other regional stations near the project and does not adequately describe conditions at Schaft Creek.

3.3.4 Best Precipitation Estimate

It is difficult to estimate mean annual precipitation based on one year of precipitation data. As a result, the PRISM estimate is probably the best for mean annual precipitation on-site. The estimated PRISM value under predicts the precipitation at Saddle station, but over predicts the precipitation at Mess Creek RainWise station, and provides an averaged representation. The PRISM estimate also agrees well with regional scaled data. However, for a conservative estimate of mean annual precipitation, the onsite value of 1039 mm (Saddle station, 2006 data) is more appropriate.

3.4 Wind Speed and Direction

The average annual wind speed measured at Schaft Creek Saddle meteorological station in 2006 is 2.5 m/s, with monthly averages ranging from 1.0 to 3.0 m/s (Table 3.4-1). The station recorded calm wind conditions (*i.e.* hourly average wind speed less than 1 m/s) 23% and 34% of the time in 2005 and 2006 respectively. The dominant wind direction at Schaft Creek Saddle station in 2005 and 2006 was from the south (Figure 3.4-1 and Figure 3.4-2, all wind directions are measured from true north).

The monthly average wind speed measured at Mount LaCasse meteorological station ranged from 3.4 to 7.0 m/s (Table 3.4-1). The station recorded calm wind conditions 8% of the time, and the dominant wind direction was from the south and south southeast. The wind blew from these directions 35% and 30% of the time, respectively (Figure 3.4-3).

The wind speed and direction was only measured in August and September at Schaft Creek and Mess Creek RainWise meteorological stations. The stations recorded calm conditions 46% and 52% of the time, respectively. The wind blew from the south southeast to south southwest for Schaft Creek station, and from the south to southeast for Mess Creek station (Figure 3.4-4 and Figure 3.4-5).

3.5 Solar Radiation

The average annual solar radiation measured at Schaft Creek Saddle meteorological station in 2006 is 108 W/m^2, with monthly averages ranging from 6.0 to 242.8 W/m^2 (Table 3.5-1). For 2006, the peak monthly average solar radiation occurs in June and the lowest monthly average solar radiation occurs in the November. Observed solar radiation at all sites are summarized in Table 3.5-1.

Table 3.4-1
Average Monthly Wind Speed (m/s)

Month	Schaft Creek Saddle Station	Mount LaCasse Station	Schaft Creek RainWise Station	Schaft Creek Mess Creek RainWise Station
2005				
Nov	3.0	-	-	-
Dec	2.3	-	-	-
2006				
Jan	2.1	-	-	-
Feb	2.2	-	-	-
Mar	1.8	-	-	-
Apr	2.9	-	-	-
May	2.5	-	-	-
Jun	2.8	-	-	-
Jul	2.7	-	-	-
Aug	2.9	3.4	1.9	2.1
Sep	2.8	4.3	1.2	0.7
Oct	3.0	4.1	-	-
Nov	1.0	3.7	-	-
Dec	3.0	7.0	-	-

Table 3.5-1
Average Monthly Solar Radiation (W/m^2)

Month	Schaft Creek Saddle Station	Mount LaCasse Station	Schaft Creek RainWise Station	Schaft Creek Mess Creek RainWise Station
2005				
Nov	14.7	-	-	-
Dec	9.2	-	-	-
2006				
Jan	9.0	-	-	-
Feb	52.8	-	-	-
Mar	91.8	-	-	-
Apr	158	-	-	-
May	199	-	-	-
Jun	243	-	-	-
Jul	208	-	-	-
Aug	165	165	96.9	89.5
Sep	92.2	100	57.0	39.1
Oct	62.7	65.5	-	-
Nov	6.0	17.6	-	-
Dec	6.4	12.1	-	-
Maximum	975	1007	607	533
Date of Max	June 17, 2006 2:00pm	August 13, 2006 14:00pm	August 13, 2006 1:40pm	August 14, 2006 1:50pm

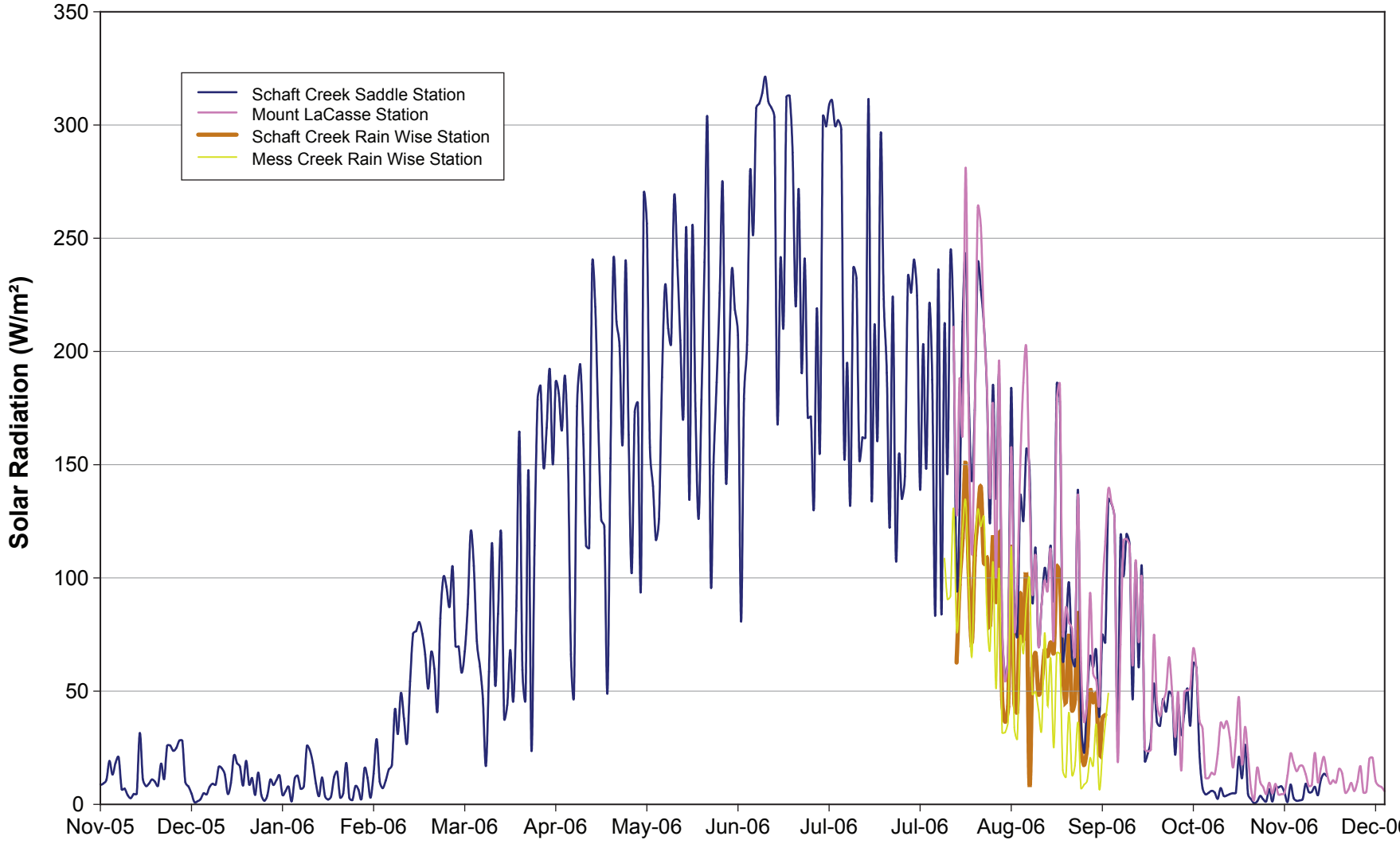
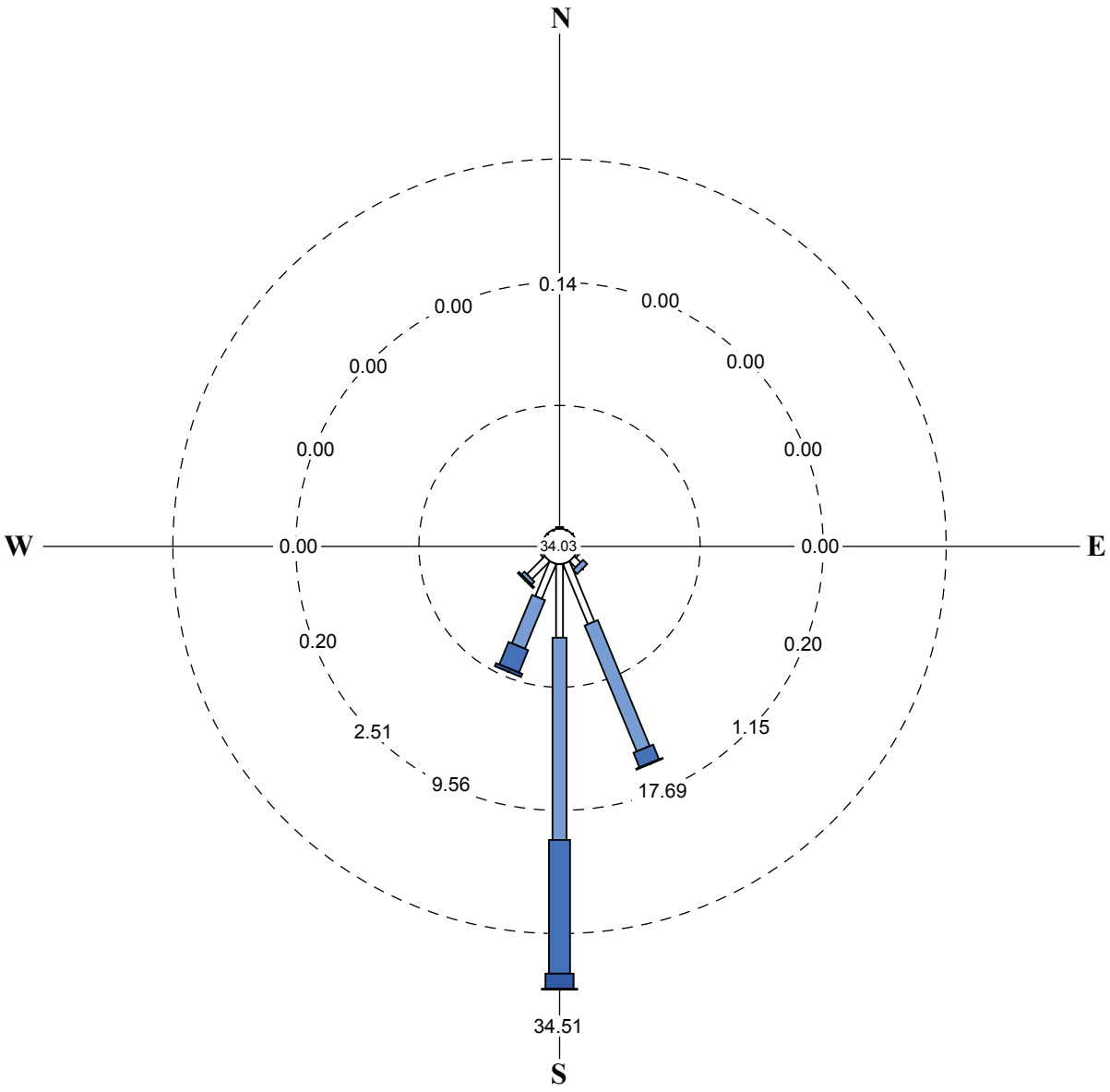
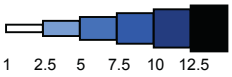


FIGURE 3.5-1

Daily Average Solar Radiation at Schaft Creek Project Meteorological Stations



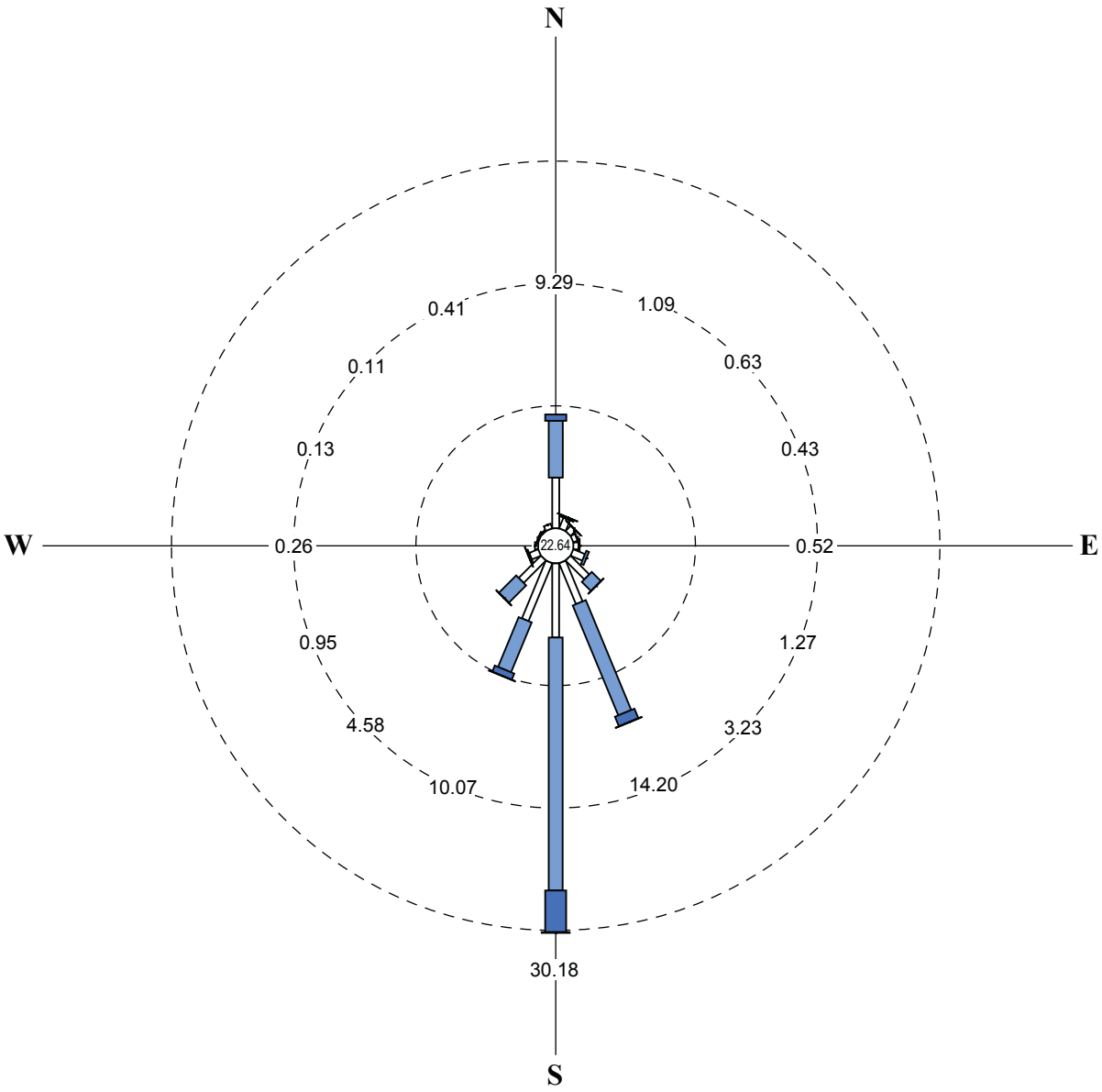


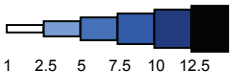
Wind Speed (Meters Per Second)

Calms included at center.
Rings drawn at 10% intervals.
Wind flow is FROM the directions shown.
No observations were missing.

FIGURE 3.4-1

Wind Rose for Schaft Creek Saddle Meteorological Station (Nov 2005 to Dec 2005)



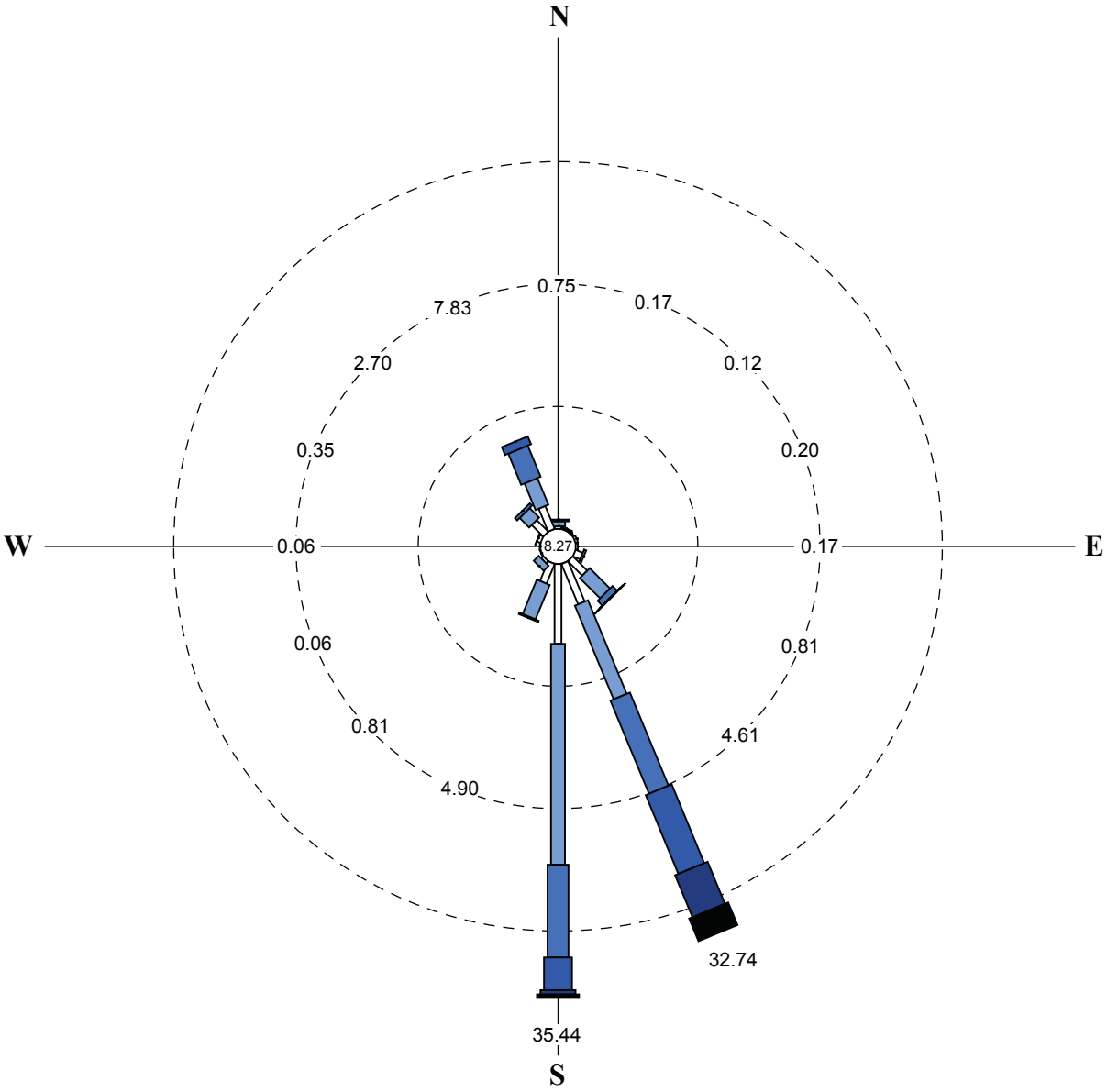


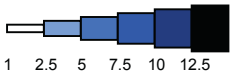
Wind Speed (Meters Per Second)

Calms included at center.
Rings drawn at 10% intervals.
Wind flow is FROM the directions shown.
No observations were missing.

FIGURE 3.4-2

Wind Rose for Schaft Creek Saddle Meteorological Station (Jan 2006 to Dec 2006)



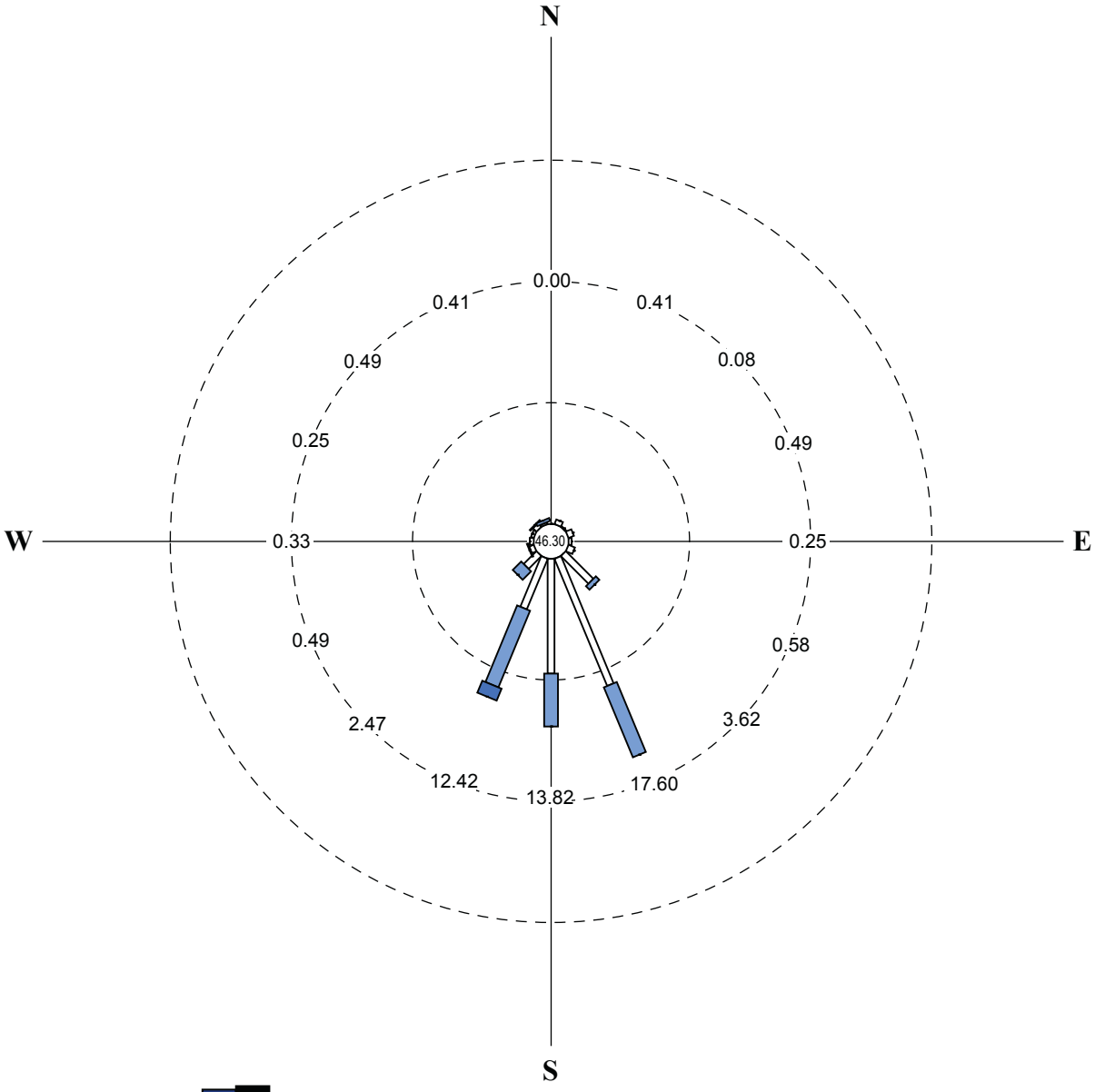


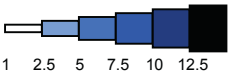
Wind Speed (Meters Per Second)

Calms included at center.
Rings drawn at 10% intervals.
Wind flow is FROM the directions shown.
No observations were missing.

FIGURE 3.4-3

Wind Rose for Mount LaCasse Meteorological Station (Aug 2006 to Dec 2006)



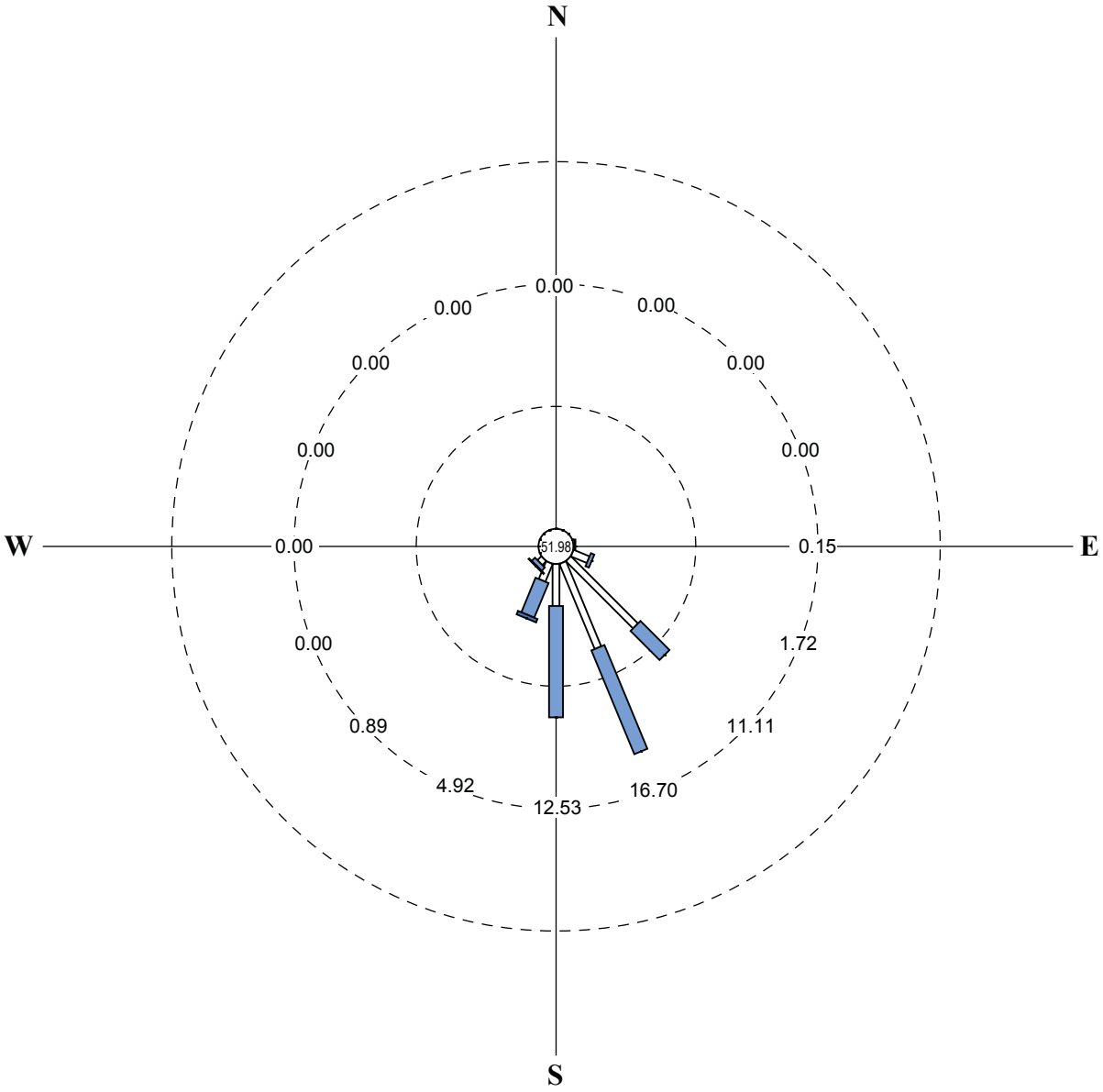


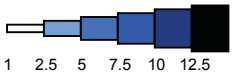
Wind Speed (Meters Per Second)

Calms included at center.
Rings drawn at 10% intervals.
Wind flow is FROM the directions shown.
No observations were missing.

FIGURE 3.4-4

Wind Rose for Schaft Creek Rain Wise Meteorological Station (Aug 2006 to Sep 2006)





Wind Speed (Meters Per Second)

Calms included at center.
Rings drawn at 10% intervals.
Wind flow is FROM the directions shown.
No observations were missing.

FIGURE 3.4-5

Wind Rose for Mess Creek Rain Wise Meteorological Station (Aug 2006 to Sep 2006)

3.6 Snow

The data collected at Schaft Creek Saddle meteorological station covers a little over one full year of data, and one full snow season (Figure 3.6-1). The snow depth in December 2005 is much lower than values recorded for the same time in 2006. In fall 2006, snow appears earlier at Schaft Creek LaCasse meteorological station (compared to Saddle station). This reflects the higher elevation of this station compared to Schaft Creek Saddle station. The monthly average air temperature for November 2006 is quite low, and this is reflected in the high snow accumulations for this month (Figure 3.2-1).

The average snow depth at the end of the month at the regional stations is much lower than the observed 2006 data from the Schaft Creek Saddle station (Figure 3.6-2). As with the regional stations, the snow has melted by the end of May at the on-site station, and little snow is evident at the end of October. The higher snow depths seen at the Project site may be due to a combination of higher elevation and a more northern location (compared to Bob Quinn, and Iskut Ranch regional stations). It may also reflect that 2006 was a year with higher precipitation than the average values recorded at the regional stations.

3.6.1 Snow Probing

The results from manual snow depth measurements (snow probing) taken in 2006 and early 2007 are summarized in Table 3.6-1. Snow depths in 2007 are approximately 1.5 to 2.5 times greater than the same time in 2006.

Table 3.6-1
Results of the Schaft Creek Project Snow Probing (cm)

	SSP1		SSP2		SSP3		SSP4	
Date	**2006**	**2007**	**2006**	**2007**	**2006**	**2007**	**2006**	**2007**
Elevation (masl)	1010	1010	866	866	904	904	n/a	n/a
Feb-01	130	202	109	160	104	173	83	138
Mar-01	130	245	98	190	91	210	68	178
Apr-01	128	n/a	104	n/a	97	n/a	97	n/a
May-01	138	n/a	94	n/a	73	n/a	53	n/a

All results displayed are the average of 7 samples
n/a = not available

3.6.2 Snow Surveys

The two snow survey locations at the Project site gave a maximum snow-water-equivalent (SWE) of 295 mm at Skeeter Lake Valley (SSCW1) and 593 mm at Schaft Camp High Elevation (SSCW2) in 2006 (Table 3.6-2). The snow surveys conducted in 2007 at both the on-site snow courses and at the regional snow courses have a higher SWE than the values from 2006. Snow survey field data sheets from the snow courses in the project area are listed in Appendix 1.

Table 3.6-2
Snow-Water-Equivalent (mm) for 2006 and 2007 Snow Surveys

	[1,2]Tumeka Creek (4D10P)	[2]Kinaskan Lake (4D11P)		[2]Wade Lake (4D14P)		Skeeter Lake Valley (SSCW1)		Schaft Camp High Elevation (SSCW2)	
Date	**2007**	**2006**	**2007**	**2006**	**2007**	**2006**	**2007**	**2006**	**2007**
Elev (masl)	1220	1020	1020	1370	1370	854	854	1436	1436
Jan-01	158	120	300	146	172	n/a	n/a	n/a	n/a
Feb-01	529	214	405	229	184	n/a	495	n/a	765
Mar-01	623	266	431	259	229	295	594	593	838
Apr-01	n/a	315	n/a	308	n/a	257	n/a	422	n/a
May-01	n/a	364	n/a	371	n/a	227	n/a	561	n/a

n/a = not available
1: Snow Pillow was not sampled at Tumeka Creek (4D10P) in 2006 or Telegraph Creek (4D01P) in 2006 and 2007
2: Source BCMOE 2007

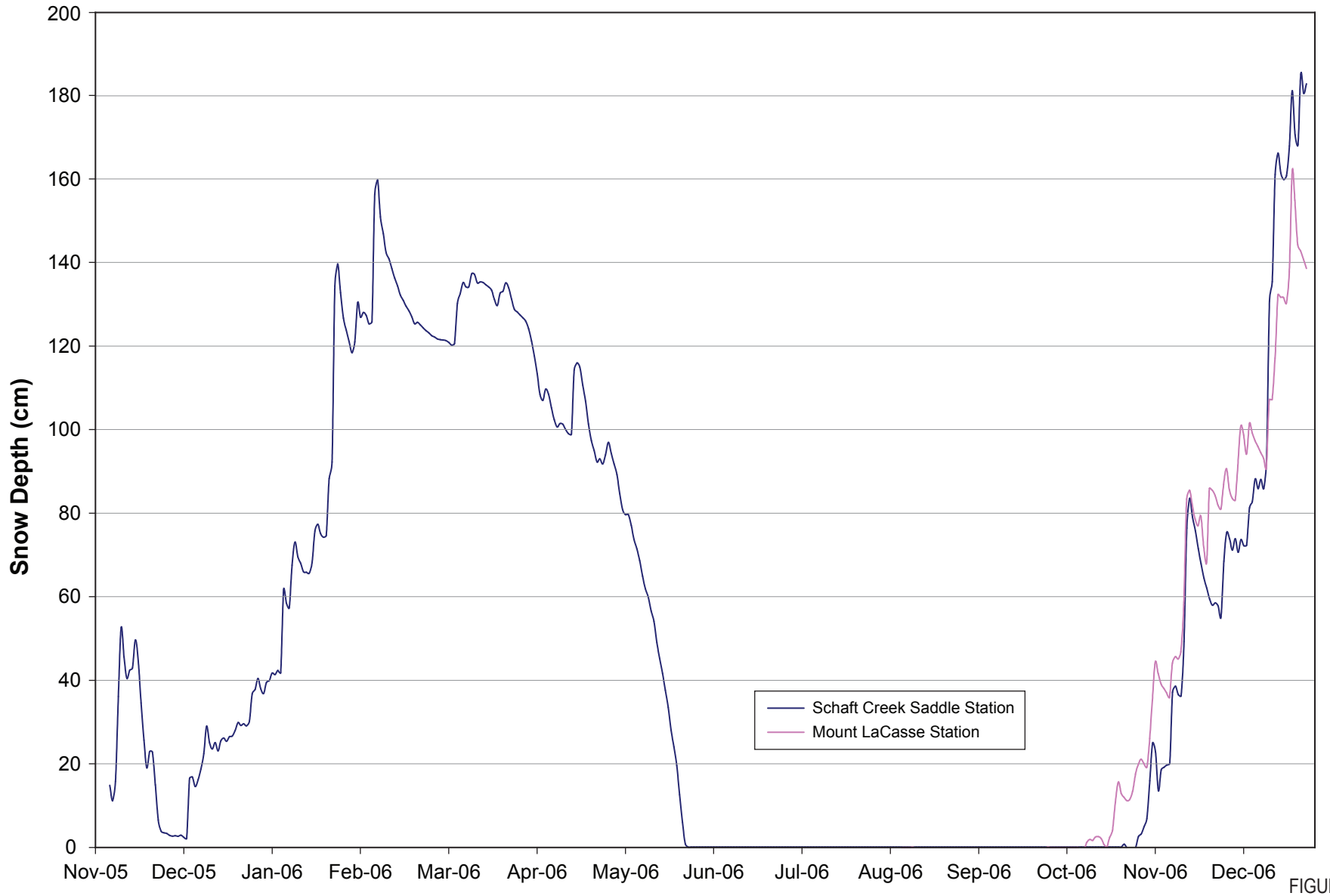


FIGURE 3.6-1

Daily Average Snow Depth at Schaft Creek Project Meteorological Stations

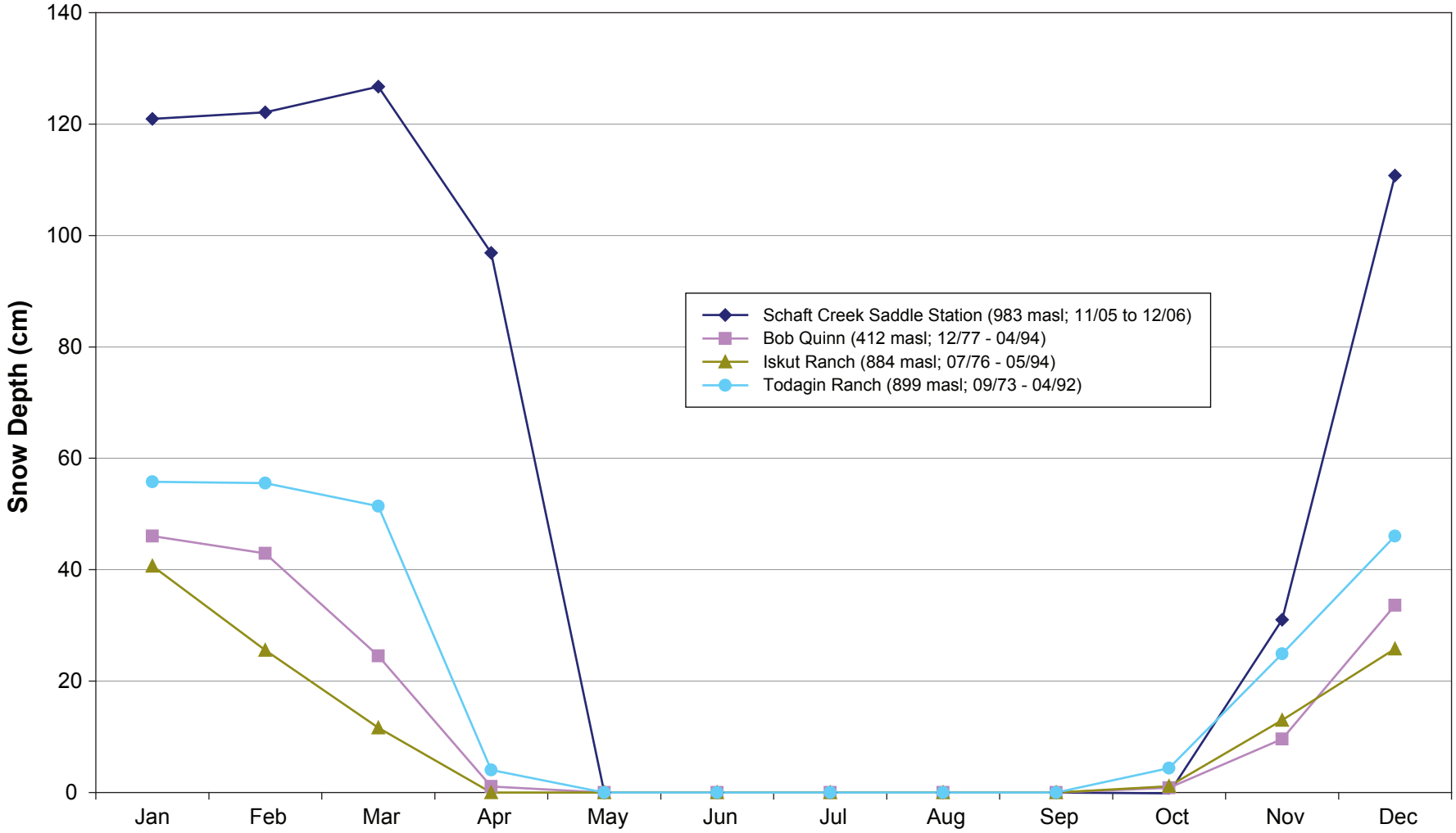


FIGURE 3.6-2

Average Snow Depth at the End of the Month at Schaft Creek Saddle and Regional Meteorological Stations

4. SUMMARY

4. Summary

Automated weather stations equipped with sensors for temperature, precipitation, solar radiation, snow depth, and wind speed and direction were installed at four sites within the proposed project area. Snow-water-equivalent was also measured at two snow survey locations onsite. To characterize the climate conditions in the wider region, data from four government weather stations within a 100 km radius of the project area were used.

Data collection is on-going at Schaft Creek Saddle, and Mount LaCasse meteorological stations. Schaft Creek Saddle meteorological station was installed in October 2005 and continues to operate through 2007. Mount LaCasse meteorological station was installed in August 2006 and also continues to operate through 2007. The Schaft Creek and Mess Creek RainWise stations were installed in August 2006 and operated until early October 2006.

Estimates for annual values for on-site stations are taken from Schaft Creek Saddle station because it is the only station with a full calendar year of data. Air temperature at Saddle station averaged -0.2°C with monthly averages ranging from -14.4°C in November to 12.5°C in July 2006. The hourly minimum temperature was recorded in March 2006 at a value of -30.0°C.

The mean annual average precipitation estimated using climateBC software ranged from 665 to 859 mm depending on the location within the project area. This estimate is lower than the observed annual precipitation of 1039 mm at Schaft Creek Saddle meteorological station.

Average annual observed wind speed at Schaft Creek Saddle station was 2.5 m/s and the wind direction was mainly from the south. Other stations in the project area had similar data for wind direction, however Mouth LaCasse station experienced higher wind velocities.

The average annual solar radiation was measured at 108 W/m^2, with a monthly range of 6.0 to 243 W/m^2.

The snow surveys from 2007 show that the snow pack is greater in 2007 compared to 2006. The peak snow depth measured during the snow probing events from 2006 was 138 cm and occurred at SSP1 (elevation 1010 masl). In 2007, the greatest snow depth from the same station measured to date is 245 cm. Snow depths at all snow probing stations (SSP1 through SSP4) are approximately 1.5 to 2.5 times greater in 2007 than the same time in 2006. For snow courses, the maximum snow water equivalent (SWE) measured in 2006 occurred in March. At Schaft Creek Camp High Elevation (SSCW2, elevation 1436 masl) the SWE was 593 mm, and at Skeeter Lake Valley (SSCW1, elevation 854 masl) the SWE was 295 mm. The values measured at the same stations in March 2007 are 838 mm and 594 mm, respectively.

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APPENDIX 1
SNOW SURVEY FIELD DATA SHEETS

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Creek Project Environmental Baseline Study, Project no. 772-4

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW1		2006	2	28
			Year	Month	Day
Snow Course Name:	Skeeter Lake Valley				
Observer's Name:	Wade Brunham				
Number of Tubes Used:	3	Driving Wrench Used: Yes:	Yes	Scale No.:	Rescan snow survey kit
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1		78.74	68.58	154.94	127	27.9	35.5
2		73.66	71.12	151.13	127	24.1	32.8
3		78.74	68.58	154.94	127	27.9	35.5
4		86.36	73.66	157.48	127	30.5	35.3
5		83.82	81.28	158.75	127	31.8	37.9
6		91.44	82.55	162.56	127	35.6	38.9
7		88.9	73.66	161.29	127	34.3	38.6
8		76.2	63.5	152.4	127	25.4	33.3
9		86.36	73.66	154.94	127	27.9	32.4
10		81.28	73.66	156.21	127	29.2	35.9
Total		825.5				294.64	
Average		82.55				29.464	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 15:17:00 a.m. / p.m. ended 16:37:00 a.m. / p.m.

A. Weather Conditions at Snow Course

	Freezing	✓	Thawing		Temp	-15	˚C
	Blowing		Calm	✓			
Skies:	Clear	✓	Partly Cloudy		Overcast		
Precipitation:	None	✓	Raining		Snowing		

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 0 cm

	Wet		Dry	✓			
	Soft		Crusted	✓			
Support:	None		Person on skies/snowshoes	✓	Person on foot		
Serious Drifting:	No	✓	Yes*		Which Stations		
Evidence of oversnow traffic:	Yes*		No	✓			

C. Sampling Conditions

	Easy		Moderately Difficult		Very Difficult	✓	
Ground Reached on all Samples:	Yes		No*	✓			
Ice Layers:	In snowpack	✓	On ground	✓			
Ground under snow:	Dry		Damp		Wet		Frozen

D. General Condition en Route

Snow line elevation _____ metres

Thaw:	None	✓	Sunny slopes		General		
Small streams:	Bridged with snow	✓	Open		Clear		Muddy

*Describe fully under remarks

E. Remarks:

A lot of ice in the snow and on the bottem. Multiple samples had to be taken at each site. Due to ice build up the ground was never reached.

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Creek Project Environmental Baseline Study, Project no. 772-4

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW1		2006	4	4
			Year	Month	Day
Snow Course Name:	Skeeter Lake Valley				
Observer's Name:	Wade Brunham				
Number of Tubes Used:	2	Driving Wrench Used: Yes:	Yes	Scale No.:	Rescan snow survey kit
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1	86.36	86.36	68.58	106.68	83.82	22.9	26.5
2	99.06	99.06	82.55	111.76	83.82	27.9	28.2
3	83.82	83.82	73.66	109.22	83.82	25.4	30.3
4	88.9	88.9	66.04	106.68	83.82	22.9	25.7
5	91.44	91.44	76.2	113.03	83.82	29.2	31.9
6	93.98	93.98	73.66	111.76	83.82	27.9	29.7
7	96.52	96.52	73.66	111.76	83.82	27.9	28.9
8	81.28	81.28	63.5	105.41	83.82	21.6	26.6
9	83.82	83.82	67.31	109.22	83.82	25.4	30.3
10	86.36	86.36	67.31	109.22	83.82	25.4	29.4
Total		891.54				256.54	
Average		89.154				25.654	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 10:30:00 a.m. / p.m. ended 11:11:00 a.m. / p.m.

A. Weather Conditions at Snow Course

	Freezing		Thawing	✓	Temp	4	˚C
	Blowing		Calm	✓			
Skies:	Clear		Partly Cloudy	✓	Overcast		
Precipitation:	None	✓	Raining		Snowing		

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 0 cm

	Wet		Dry	✓			
	Soft		Crusted	✓			
Support:	None		Person on skies/snowshoes		Person on foot	✓	
Serious Drifting:	No	✓	Yes*		Which Stations		
Evidence of oversnow traffic:	Yes*		No	✓			

C. Sampling Conditions

	Easy		Moderately Difficult	✓	Very Difficult		
Ground Reached on all Samples:	Yes		No*	✓			
Ice Layers:	In snowpack	✓	On ground	✓			
Ground under snow:	Dry		Damp		Wet	✓	Frozen

D. General Condition en Route

Snow line elevation _____ metres

Thaw:	None		Sunny slopes		General	✓	
Small streams:	Bridged with snow	✓	Open		Clear		Muddy

*Describe fully under remarks

E. Remarks:

Difficult sampling, not able to get a good (80%) sample at station 4, over 20 atempts were made and the best core length to snow depth ratio (74%) was used

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Creek Project Environmental Baseline Study, Project no. 772-4

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW1		2006	4	28
			Year	Month	Day
Snow Course Name:	Skeeter Lake Valley				
Observer's Name:	Wade Brunham				
Number of Tubes Used:	2	Driving Wrench Used: Yes:	Yes	Scale No.:	20ft Rescan
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1	71.12	71.12	55.88	102.87	76.2	26.7	37.5
2	73.66	73.66	58.42	104.14	76.2	27.9	37.9
3	53.34	53.34	45.72	96.52	76.2	20.3	38.1
4	58.42	58.42	48.26	96.52	76.2	20.3	34.8
5	63.5	63.5	50.8	99.06	76.2	22.9	36.0
6	71.12	71.12	58.42	101.6	76.2	25.4	35.7
7	68.58	68.58	55.88	99.06	76.2	22.9	33.3
8	53.34	53.34	45.72	96.52	76.2	20.3	38.1
9	58.42	58.42	46.99	99.06	76.2	22.9	39.1
10	53.34	53.34	43.18	93.98	76.2	17.8	33.3
Total		624.84				227.33	
Average		62.484				22.733	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 9:58:00 a.m. p.m. ended 10:24:00 a.m. p.m.

A. Weather Conditions at Snow Course

	Freezing		Thawing	✓	Temp	2	˚C
	Blowing		Calm	✓			
Skies:	Clear		Partly Cloudy		Overcast	✓	
Precipitation:	None	✓	Raining		Snowing		

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 0 cm

	Wet	✓	Dry					
	Soft	✓	Crusted					
Support:	None		Person on skies/snowshoes	✓	Person on foot			
Serious Drifting:	No	✓	Yes*		Which Stations			
Evidence of oversnow traffic:	Yes*		No	✓				

C. Sampling Conditions

	Easy	✓	Moderately Difficult		Very Difficult			
Ground Reached on all Samples:	Yes	✓	No*					
Ice Layers:	In snowpack	✓	On ground					
Ground under snow:	Dry		Damp	✓	Wet		Frozen	

D. General Condition en Route

Snow line elevation metres

Thaw:	None		Sunny slopes		General	✓		
Small streams:	Bridged with snow	✓	Open		Clear		Muddy	

*Describe fully under remarks

E. Remarks:

Ground was reached at all sites, Lots of grass and mud at bottom of core

Began to snow lightly during sampling.

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Project Environmental Baseline Study (Project no. 772-4) for CopperFox Metals

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW1		2007	FEB	1
			Year	Month	Day
Snow Course Name:	Skeeter Lake valley SNOW COURSE				
Observer's Name:	DAN JARRATT, LARRY GREENLAW				
Number of Tubes Used:	4 then 3	Driving Wrench Used: Yes:	X	Scale No.:	20 FT
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1	161.29	161.29	139.7	220.98	175.26	45.72	28.346
2	154.94	151.13	137.16	180.34	132.08	48.26	31.933
3	156.21	152.4	137.16	180.34	132.08	48.26	31.667
4	161.29	153.67	139.7	182.88	132.08	50.8	33.058
5	170.18	166.37	140.97	182.88	132.08	50.8	30.534
6	152.4	148.59	140.97	180.34	132.08	48.26	32.479
7	165.1	162.56	137.16	180.34	132.08	48.26	29.688
8	167.64	165.1	143.51	185.42	132.08	53.34	32.308
9	167.64	165.1	140.97	182.88	132.08	50.8	30.769
10	162.56	157.48	143.51	182.88	132.08	50.8	32.258
Total		1583.69				495.3	
Average		158.369				49.53	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 11:46:00 a.m. / p.m. ended 12:15:00 a.m. / p.m.

A. Weather Conditions at Snow Course

	Freezing	X	Thawing		Temp	-5	˚C
	Blowing		Calm	X			
Skies:	Clear	X	Partly Cloudy		Overcast		
Precipitation:	None	X	Raining		Snowing		

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 0 cm

	Wet		Dry					
	Soft		Crusted					
Support:	None		Person on skies/snowshoes		Person on foot			
Serious Drifting:	No	X	Yes*		Which Stations			
Evidence of oversnow traffic:	Yes*	X	No					

C. Sampling Conditions

	Easy	X	Moderately Difficult		Very Difficult			
Ground Reached on all Samples:	Yes	X	No*					
Ice Layers:	In snowpack	X	On ground					
Ground under snow:	Dry	X	Damp		Wet		Frozen	

D. General Condition en Route

Snow line elevation 0 metres

Thaw:	None	X	Sunny slopes		General			
Small streams:	Bridged with snow	X	Open		Clear		Muddy	

*Describe fully under remarks

E. Remarks:

oversnow traffic from small mammals.

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Project Environmental Baseline Study (Project no. 772-4) for CopperFox Metals

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW1		2007	MAR	2
			Year	Month	Day
Snow Course Name:	Skeeter Lake valley SNOW COURSE				
Observer's Name:	DAN JARRATT, LARRY GREENLAW				
Number of Tubes Used:	4 then 3	Driving Wrench Used: Yes:	X	Scale No.:	20 FT
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1	187.96	185.42	149.86	228.6	172.72	55.88	30.137
2	193.04	191.77	167.64	238.76	172.72	66.04	34.437
3	185.42	180.34	158.75	233.68	172.72	60.96	33.803
4	189.23	186.69	165.1	231.14	172.72	58.42	31.293
5	194.31	186.69	153.67	233.68	172.72	60.96	32.653
6	172.72	170.18	151.13	233.68	172.72	60.96	35.821
7	184.15	177.8	152.4	228.6	172.72	55.88	31.429
8	182.88	179.07	152.4	228.6	172.72	55.88	31.206
9	186.69	182.88	160.02	236.22	172.72	63.5	34.722
10	184.15	179.07	158.75	228.6	172.72	55.88	31.206
Total		1819.91				594.36	
Average		181.991				59.436	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 9:00:00 a.m. / p.m. ended 10:10:00 a.m. / p.m.

A. Weather Conditions at Snow Course

	Freezing	X	Thawing		Temp	-15	˚C
	Blowing		Calm	X			
Skies:	Clear		Partly Cloudy		Overcast	X	
Precipitation:	None		Raining		Snowing	X	

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 2 cm

	Wet		Dry	X				
	Soft		Crusted					
Support:	None		Person on skies/snowshoes	X	Person on foot			
Serious Drifting:	No	X	Yes*		Which Stations			
Evidence of oversnow traffic:	Yes*		No	X				

C. Sampling Conditions

	Easy	X	Moderately Difficult		Very Difficult			
Ground Reached on all Samples:	Yes	X	No*					
Ice Layers:	In snowpack	X	On ground					
Ground under snow:	Dry		Damp	X	Wet		Frozen	

D. General Condition en Route

Snow line elevation 0 metres

Thaw:	None	X	Sunny slopes		General			
Small streams:	Bridged with snow	X	Open		Clear		Muddy	

*Describe fully under remarks

E. Remarks:

Quantum heli 206 B 2XI Jet Ranger

20 ft scale was field repaired with a hose clamp because the bottom ring broke off 2 days ago.

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Creek Project Environmental Baseline Study, Project no.772-4

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW1		2006	2	28
			Year	Month	Day
Snow Course Name:	Skeeter Lake Valley				
Observer's Name:	Wade Brunham				
Number of Tubes Used:	3	Driving Wrench Used: Yes:	Yes	Scale No.:	Rescan snow survey kit
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1		119.38	107.95	167.64	127	40.6	34.0
2		142.24	116.84	175.26	127	48.3	33.9
3		149.86	129.54	180.34	127	53.3	35.6
4		191.77	177.8	200.66	127	73.7	38.4
5		193.04	175.26	193.04	127	66.0	34.2
6		177.8	152.4	189.23	127	62.2	35.0
7		177.8	165.1	187.96	127	61.0	34.3
8		189.23	167.64	195.58	127	68.6	36.2
9		177.8	162.56	190.5	127	63.5	35.7
10		165.1	142.24	182.88	127	55.9	33.8
Total		1684.02				593.09	
Average		168.402				59.309	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 10:11:00 a.m. / p.m. ended 11:39:00 a.m. / p.m.

A. Weather Conditions at Snow Course

	Freezing	✓	Thawing		Temp	-10	˚C
	Blowing		Calm	✓			
Skies:	Clear	✓	Partly Cloudy		Overcast		
Precipitation:	None	✓	Raining		Snowing		

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 0 cm

	Wet		Dry	✓			
	Soft		Crusted	✓			
Support:	None		Person on skies/snowshoes	✓	Person on foot		
Serious Drifting:	No	✓	Yes*		Which Stations		
Evidence of oversnow traffic:	Yes*	✓	No				

C. Sampling Conditions

	Easy		Moderately Difficult	✓	Very Difficult		
Ground Reached on all Samples:	Yes		No*	✓			
Ice Layers:	In snowpack	✓	On ground				
Ground under snow:	Dry		Damp		Wet		Frozen ✓

D. General Condition en Route

Snow line elevation _____ metres

Thaw:	None	✓	Sunny slopes		General		
Small streams:	Bridged with snow	✓	Open		Clear		Muddy

*Describe fully under remarks

E. Remarks:

At stations 1 & 2 an ice layer was hit at 51cm. Wolf tracks present throughout the site

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Creek Project Environmental Baseline Study, Project no. 772-4

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW2		2006	4	4
			Year	Month	Day
Snow Course Name:	Schaft Camp High Elevation				
Observer's Name:	Wade Brunham				
Number of Tubes Used:	2	Driving Wrench Used: Yes:	Yes	Scale No.:	Rescan snow survey kit
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1	104.14	104.14	100.33	114.3	83.82	30.5	29.3
2	99.06	99.06	93.98	116.84	83.82	33.0	33.3
3	99.06	99.06	96.52	114.3	83.82	30.5	30.8
4	144.78	144.78	137.16	132.08	83.82	48.3	33.3
5	152.4	152.4	129.54	134.62	83.82	50.8	33.3
6	149.86	149.86	124.46	129.54	83.82	45.7	30.5
7	151.13	151.13	130.81	132.08	83.82	48.3	31.9
8	148.59	148.59	121.92	132.08	83.82	48.3	32.5
9	139.7	139.7	118.11	129.54	83.82	45.7	32.7
10	135.89	135.89	119.38	124.46	83.82	40.6	29.9
Total		1324.61				421.64	
Average		132				42.2	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 12:35:00 a.m. / p.m. ended 13:07:00 a.m. / p.m.

A. Weather Conditions at Snow Course

	Freezing		Thawing	✓	Temp	3	˚C
	Blowing		Calm	✓			
Skies:	Clear		Partly Cloudy	✓	Overcast		
Precipitation:	None	✓	Raining		Snowing		

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 0 cm

	Wet	✓	Dry				
	Soft		Crusted	✓			
Support:	None		Person on skies/snowshoes		Person on foot	✓	
Serious Drifting:	No	✓	Yes*		Which Stations		
Evidence of oversnow traffic:	Yes*		No	✓			

C. Sampling Conditions

	Easy	✓	Moderately Difficult		Very Difficult			
Ground Reached on all Samples:	Yes		No*	✓				
Ice Layers:	In snowpack	✓	On ground					
Ground under snow:	Dry		Damp		Wet		Frozen	

D. General Condition en Route

Snow line elevation metres

Thaw:	None		Sunny slopes		General	✓		
Small streams:	Bridged with snow	✓	Open		Clear		Muddy	

*Describe fully under remarks

E. Remarks:

The ground was not reached at any of the sample locations due to soft snow at or near the bottom of the snow pack. A good crust had developed on the snow but generally deteriorated as temperatures increased

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Creek Project Environmental Baseline Study, Project no. 772-4

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW2		2006	4	28
Snow Course Name:	Schaft Camp High Elevation		Year	Month	Day
Observer's Name:	Wade Brunham				
Number of Tubes Used:	3	Driving Wrench Used: Yes:	Yes	Scale No.:	20ft Rescan
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1	142.24	142.24	127	165.1	121.92	43.2	30.4
2	111.76	111.76	109.22	157.48	121.92	35.6	31.8
3	185.42	185.42	172.72	182.88	121.92	61.0	32.9
4	189.23	189.23	180.34	182.88	121.92	61.0	32.2
5	139.7	139.7	132.08	162.56	121.92	40.6	29.1
6	187.96	187.96	175.26	185.42	121.92	63.5	33.8
7	199.39	199.39	187.96	195.58	121.92	73.7	36.9
8	213.36	213.36	203.2	200.66	121.92	78.7	36.9
9	185.42	185.42	167.64	190.5	121.92	68.6	37.0
10	119.38	119.38	104.14	157.48	121.92	35.6	29.8
Total		1673.86				561.34	
Average		167				56.1	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 12:20:00 a.m. / p.m. ended 13:00:00 a.m. / p.m.

A. Weather Conditions at Snow Course

	Freezing		Thawing	✓	Temp	-1	˚C
	Blowing	✓	Calm				
Skies:	Clear		Partly Cloudy	✓	Overcast		
Precipitation:	None	✓	Raining		Snowing		

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 0 cm

	Wet	✓	Dry				
	Soft	✓	Crusted				
Support:	None		Person on skies/snowshoes	✓	Person on foot		
Serious Drifting:	No	✓	Yes*		Which Stations		
Evidence of oversnow traffic:	Yes*		No	✓			

C. Sampling Conditions

	Easy		Moderately Difficult	✓	Very Difficult			
Ground Reached on all Samples:	Yes		No*	✓				
Ice Layers:	In snowpack		On ground	✓				
Ground under snow:	Dry		Damp		Wet		Frozen	✓

D. General Condition en Route

Snow line elevation _____ metres

Thaw:	None		Sunny slopes		General	✓		
Small streams:	Bridged with snow	✓	Open		Clear		Muddy	

*Describe fully under remarks

E. Remarks:

Some drifting observed at 3, 4, 6, 7, 8, 9. Very cold and windy sampling difficult at site 10

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Project Environmental Baseline Study (Project no. 772-4) for CopperFox Metals

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW2		2007	FEB	1
			Year	Month	Day
Snow Course Name:	Schaft camp SNOW COURSE				
Observer's Name:	DAN JARRATT, LARRY GREENLAIR				
Number of Tubes Used:	3	Driving Wrench Used: Yes:	X	Scale No.:	20 FT
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1	215.9	212.09	210.82	205.74	132.08	73.66	34.731
2	198.12	195.58	194.31	203.2	132.08	71.12	36.364
3	208.28	207.01	184.15	200.66	132.08	68.58	33.129
4	226.06	224.79	222.25	213.36	132.08	81.28	36.158
5	238.76	236.22	232.41	213.36	132.08	81.28	34.409
6	223.52	219.71	213.36	208.28	132.08	76.2	34.682
7	233.68	231.14	228.6	215.9	132.08	83.82	36.264
8	233.68	231.14	227.33	215.9	132.08	83.82	36.264
9	233.68	229.87	215.9	210.82	132.08	78.74	34.254
10	205.74	201.93	180.34	198.12	132.08	66.04	32.704
Total		2189.48				764.54	
Average		218.948				76.454	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 12:50:00 a.m. / p.m. ended 13:26:00 a.m. / p.m.

A. Weather Conditions at Snow Course

	Freezing	X	Thawing		Temp	-5	˚C
	Blowing		Calm	X			
Skies:	Clear	X	Partly Cloudy		Overcast		
Precipitation:	None	X	Raining		Snowing		

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 0 cm

	Wet		Dry					
	Soft		Crusted					
Support:	None		Person on skies/snowshoes		Person on foot			
Serious Drifting:	No	X	Yes*		Which Stations			
Evidence of oversnow traffic:	Yes*		No	X				

C. Sampling Conditions

	Easy	X	Moderately Difficult		Very Difficult			
Ground Reached on all Samples:	Yes	X	No*					
Ice Layers:	In snowpack	X	On ground					
Ground under snow:	Dry	X	Damp		Wet		Frozen	

D. General Condition en Route

Snow line elevation 0 metres

Thaw:	None	X	Sunny slopes		General			
Small streams:	Bridged with snow	X	Open		Clear		Muddy	

*Describe fully under remarks

E. Remarks:

plugs were all dry, needles, moss, some bark (very little), beautiful site.

British Columbia Ministry of Water, Land and Air Protection- Environmental Protection Division- Flood Hazard/River Forecast Centre

Schaft Project Environmental Baseline Study (Project no. 772-4) for CopperFox Metals

SNOW SURVEY FIELD DATA SHEET

Snow Course No.	SSCW2		2007	MAR	1
			Year	Month	Day
Snow Course Name:	Schaft camp SNOW COURSE				
Observer's Name:	DAN JARRATT, LARRY GREENLAIR				
Number of Tubes Used:	3	Driving Wrench Used: Yes:	X	Scale No.:	20 FT
		No:			

Station Number	Snow Depth (cm)		Core Length (cm)	Weight of Tube and Core (cm)	Weight Tube Only Before Sampling (cm)	Snow-Water Equivalent (cm)	Density (%)
	With Dirt Plug	Without Dirt Plug					
1	236.22	233.68	203.2	254	172.72	81.28	34.783
2	220.98	218.44	195.58	246.38	172.72	73.66	33.721
3	231.14	228.6	213.36	256.54	172.72	83.82	36.667
4	248.92	246.38	228.6	259.08	172.72	86.36	35.052
5	257.81	256.54	241.3	259.08	172.72	86.36	33.663
6	243.84	238.76	226.06	256.54	172.72	83.82	35.106
7	248.92	246.38	223.52	259.08	172.72	86.36	35.052
8	259.08	254	238.76	261.62	172.72	88.9	35.000
9	243.84	241.3	227.33	264.16	172.72	91.44	37.895
10	234.95	229.87	220.98	248.92	172.72	76.2	33.149
Total		2393.95				838.2	
Average		239.395				83.82	

Please complete in field or as soon after snow sampling as possible.

Time sampling began 14:50:00 a.m. / p.m. ended 15:40:00 a.m. / p.m.

A. Weather Conditions at Snow Course

	Freezing	X	Thawing		Temp	-22	˚C
	Blowing	X	Calm				
Skies:	Clear		Partly Cloudy		Overcast	X	
Precipitation:	None		Raining		Snowing	X	Lightly

B. Surface Snow Conditions at Snow Course

Fresh fallen snow depth 1 cm

	Wet		Dry	X			
	Soft		Crusted				
Support:	None		Person on skies/snowshoes	X	Person on foot		
Serious Drifting:	No	X	Yes*		Which Stations		
Evidence of oversnow traffic:	Yes*		No	X			

C. Sampling Conditions

	Easy	X	Moderately Difficult		Very Difficult			
Ground Reached on all Samples:	Yes	X	No*					
Ice Layers:	In snowpack	X	On ground		Moderate near last 0.5m of the profile			
Ground under snow:	Dry		Damp		Wet		Frozen	

D. General Condition en Route

Snow line elevation 0 metres

Thaw:	None	X	Sunny slopes		General			
Small streams:	Bridged with snow	X	Open		Clear		Muddy	

*Describe fully under remarks

E. Remarks: Quantum 206B Jet Ranger helicopter 2XI