REPORT

SITE C CLIMATE & AIR QUALITY MONITORING

FORT ST. JOHN, BC

2019 ANNUAL REPORT

RWDI #1601625

March 31, 2020

SUBMITTED TO

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1 INTRODUCTION

BC Hydro's Site C Clean Energy Project (the Project) in British Columbia's Peace region will create a new hydroelectric dam and generating station on the Peace River in the vicinity of the City of Fort St. John. To characterize the microclimate and to provide a baseline against which to compare future changes brought on as a result of the Project, BC Hydro installed a network of climate and air quality monitoring stations in the Peace River Valley. This network has been active since 2011, through the preparation and submission of the Project's Environmental Impact Statement, and throughout Project construction to date, which began in mid-2015.

Approval of the Project in 2014 by the Joint Review Panel comprised of the *Canadian Environmental Assessment Agency and the British Columbia Environmental Assessment* Office was contingent upon BC Hydro satisfying a number of conditions (CEAA, 2014; EAO, 2014).

Condition 12 of the Federal Decision Statement (FDS) is concerned with the health of Indigenous peoples as it relates to air quality. This Condition mandates proper management, monitoring and reporting of air quality to minimize the potential effects on Indigenous health. Condition 12.6 of the FDS requires BC Hydro to "implement the [management] plan and provide to the Agency an analysis and summary of the implementation of the plan, as well as any amendments made to the plan in response to the results, on an annual basis during construction and the first year of operation."

Condition 57 of the provincial Environmental Assessment Certificate (EAC) dictates the management plans (Air Quality Management Plan, Smoke Management Plan) that were created for the Project to minimize air emissions, monitor the ambient air quality and provide these readings to the BC Ministry of the Environment and Climate Change Strategy (BC MECCS) to notify sensitive populations if air quality thresholds are exceeded. As required by Condition 31 of the provincial Environmental Assessment Certificate (EAC), microclimate monitoring is also being conducted to support an understanding of how the Project might affect agricultural activities. Examples include changes to humidity levels that could affect crop drying as well as other climatic factors to estimate moisture deficits.

In 2019, there were four ambient air quality and eight meteorological monitoring stations in operation by the Project. The air quality stations provided continuous measurements that were used to monitor effects of the Project on Indigenous and public health, and to inform construction activities, while the meteorological stations provided continuous measurements for several meteorological parameters (discussed further in Section 2). A summary of the the applicable FDS Conditions and the provincial EAC Conditions and their status of the Project with respect to complying with the Air Quality Management Plan and Smoke Management Plan for the calendar year are presented in Appendix A. A summary of the meteorological data collected by the program is included herein, but reporting to satisfy EAC Condition 31 will be done under separate cover.

This document serves to describe the state of the climate and air quality for the ninth year of observations and the fifth year of Project construction, coinciding with the 2019 calendar year. Six previous annual monitoring reports describing the state of the climate and air quality for the years of observations, coinciding with the 2012 through 2018 calendar years have been released (RWDI AIR Inc. 2015a, 2015b, 2015c, 2016, 2017, 2018, 2019). The initial monitoring established baseline conditions that were in effect until the summer of 2015 when construction

activities began. The network has remained in operation and has continued to collect valuable climate and air quality data in the Peace region. This current report allows for comparisons to the previous data collected by the network and to 30-year climate normals from the Environment and Climate Change Canada (ECCC) station at Fort St John Airport (ECCC, 2016). Climate parameters such as temperature, precipitation, wind speed and direction, soil temperature and soil volumetric water content as well as air quality parameters such as concentrations of particulate matter (PM) specifically $PM_{2.5}$ and PM_{10}, nitrogen dioxide (NO_2), sulphur dioxide (SO_2) and carbon monoxide (CO) are presented.

1.1 Managing Air Quality

To avoid or minimize exceedances of the ambient air quality objectives (FDS, Section 12.1) BC Hydro developed a Construction Environmental Management Plan (CEMP), (Rev. 4, BC Hydro 2016), which includes a component of Air Quality Management Plan (Section 4.1) and a description of the Air Quality Monitoring Program (Appendix B). The development of the CEMP satisfies Section 12.2 of the FDS. Section 4.1 of the CEMP details the management practices that will be implemented to minimize emissions criteria of air contaminants. Contractors are required to produce site-specific Environmental Protection Plans (EPPs) that explain how the Contractor will meet the CEMP requirements. As of December 2019, construction activities, particularly the Main Civil Works, Generating Station and Spillways Civil Works, and clearing for the future Site C reservoir, are well underway involving elements of the majority of activities listed in Section 4.1 of the CEMP.

As of December 31, 2019 (cumulatively since the start of project construction), 1,116 Environmental Protection Plans (EPPs) (including revisions) have been reviewed by BC Hydro, many of which include measures to minimize emissions as per Section 4.1 of the CEMP, where applicable. These measures include:

- Application of dust suppressant (water on non-paved roads and other select areas such as laydown areas;
- Application of other products, such as liquid calcium chloride, on roads for cold weather dust suppression;
- Dust suppression systems on drilling equipment; and
- Vehicle inspection and maintenance programs.

In the calendar year 2019, over 222 EPPs (including revisions) were submitted to and reviewed by BC Hydro.

BC Hydro conducts environmental audits during construction to verify implementation of EPPs, including implementation of appropriate mitigation measures in response to air quality alerts. BC Hydro implemented the Active Compliance Management Tool (ACMT) in 2017, which is a database to house environmental inspection data. Of the 4,876 inspections conducted by BC Hydro in 2019 against air quality commitments in contractor EPPs, 98.8% were demonstrated to be fully compliant, 0.95% were partially compliant, and <0.5% were not compliant. For any instances of non-compliance, a Field Advice Memo is issued by BC Hydro to the contractor, if warranted.

BC Hydro has also developed a Smoke Management Plan (Rev. 2, BC Hydro 2018), which is another component of the CEMP (Appendix A), and which satisfies Section 12.3.2 of the FDS conditions and Condition 57 of the provincial EAC.

Open burning of piles of vegetation cleared in the footprint of the future Site C reservoir occurred in 2019. Twelve (12) ignition events within the Reservoir occurred during the year including the approximate number of piles noted below:

- 22 Feb - 15 piles in Moberly Drainage;
- 10 March – 60 piles in the Moberly Drainage; 10 piles on Tea Island (Lower Reservoir);
- 24 October – 5 piles on the South Bank Eastern Reservoir;
- 1 November (10 piles), 16 November (5 piles), 17 November (5 piles), 22 November (35 piles) – 55 piles on the South Bank Eastern Reservoir;
- 1, 2 December – 60 piles on the South Bank Eastern Reservoir;
- 1, 2 December – 225 piles in the Moberly Drainage; and
- 1 December – 240 piles in the North Bank Eastern Reservoir.

Approximate area cleared over the year 2019 included:

- Lower Reservoir - Approximately 5 ha;
- Moberly Drainage - Approximately 130 ha;
- South Bank East Reservoir – Approximately 55 ha; and
- North Bank East Reservoir - Approximately 75 ha.

In total, approximately 670 burn piles and 265 ha of brush were cleared in 2019 in the Lower Reservoir, Moberly Drainage, South Bank East Reservoir and North Bank East Reservoir.

Along the Transmission Line, approximately 230 burn piles were ignited, mostly on the western section.

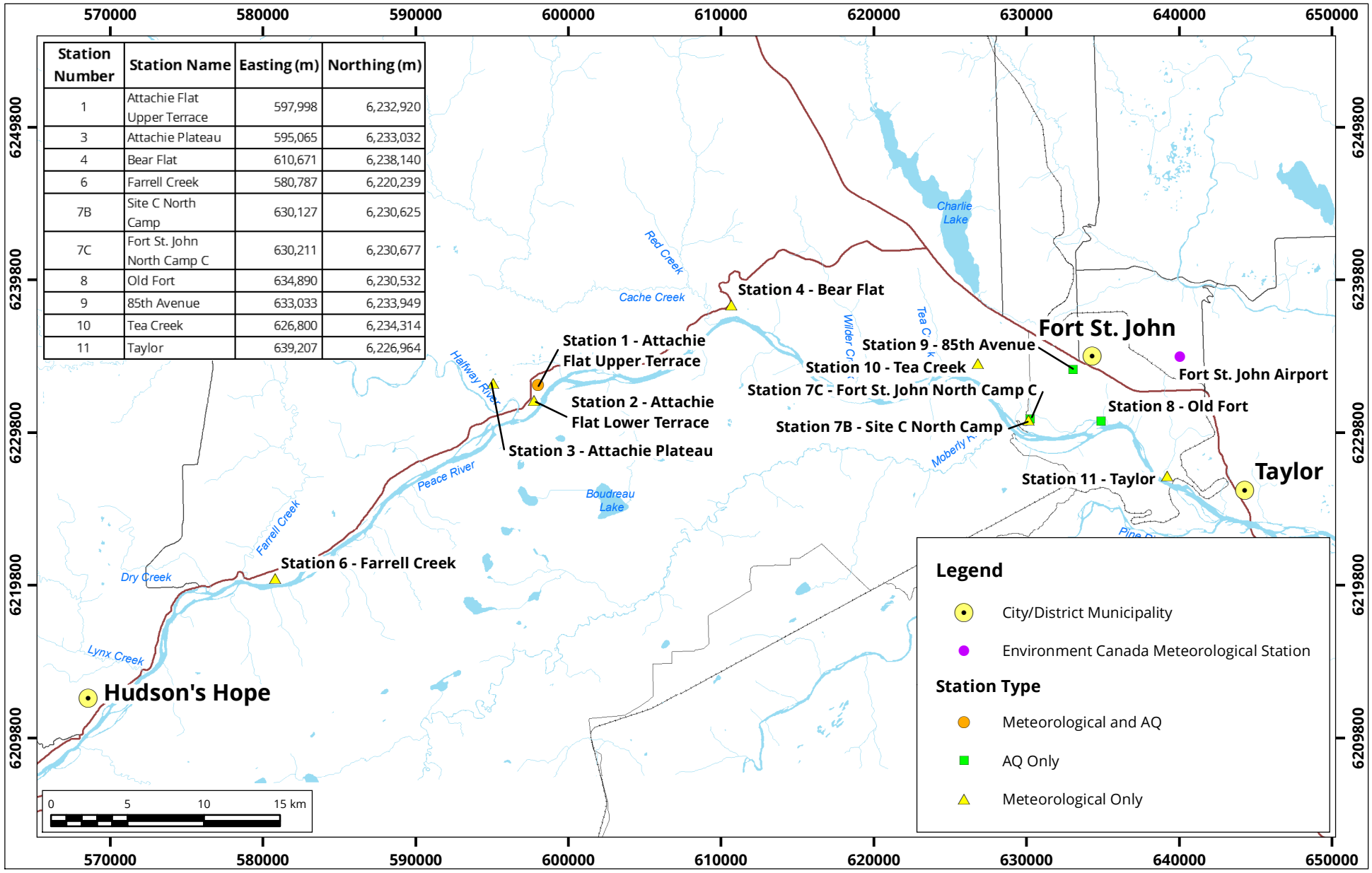
All ignition events were based on custom venting forecasts which were used to inform brush burning events. Further details are discussed in Section 4.1.

2 MONITORING NETWORK

Figure 2-1 shows the location of the network stations in relation to local communities and the Peace River. Table 2-1 and Table 2-2 show the coordinates and elevations for the locations and parameters measured at these stations, respectively.

Table 2-1: BC Hydro Site C network station locations and elevations.

Station Name	UTM NAD 83 (m)	Latitude, Longitude (decimal degrees)	Elevation (m)
Station 1 - Attachie Flat Upper Terrace	597999 E, 6232919 N	56.23N, -121.42W	479
Station 3 – Attachie Plateau	595065 E, 6233032 N	56.23N, -121.46W	645
Station 4 – Bear Flat	610669 E,6238135 N	56.27N, -121.21W	474
Station 6 – Farrell Creek	580779 E, 6220238 N	56.12N, -121.70W	471
7B/C – Site C North Camp/Fort St. John North Camp C	630127 E, 6230625 N	56.20 N, -120.90W	581
Station 8 – Old Fort	634890 E, 6230532 N	56.20N, -120.82W	423
Station 9 – 85th Avenue	633033 E, 6233949 N	56.23N, -120.85W	686
Station 10 – Tea Creek	626798 E, 6234314 N	56.24 N, -120.95W	653
Station 11 – Taylor	639206 E, 6226964 N	56.17N, -120.76W	411
Fort St. John Airport (Environment and Climate Change Canada)	640053 E, 6234872 N	56.24N, -120.74W	695



Station Number	Station Name	Easting (m)	Northing (m)
1	Attachie Flat Upper Terrace	597,998	6,232,920
3	Attachie Plateau	595,065	6,233,032
4	Bear Flat	610,671	6,238,140
6	Farrell Creek	580,787	6,220,239
7B	Site C North Camp	630,127	6,230,625
7C	Fort St. John North Camp C	630,211	6,230,677
8	Old Fort	634,890	6,230,532
9	85th Avenue	633,033	6,233,949
10	Tea Creek	626,800	6,234,314
11	Taylor	639,207	6,226,964

BC Hydro - Site C Meteorological and Air Quality Stations

True North

Drawn by: DJH | Figure: 2-1

Approx. Scale: 1:350,000

Date Revised: Feb 19, 2019

Map Projection: NAD 1983 UTM Zone 10N

Project #: 1601625

Table 2-2: **BC Hydro Site C network stations and the Fort St. John Airport ECCC station with parameters measured.**

Station	Air Temperature and Relative Humidity	Wind Speed and Direction	Precipitation	Barometric Pressure	All Radiation Components	Solar Radiation	Net radiation	Turbulent Fluxes	Visibility	Soil Temperature	Soil Moisture	Soil heat Flux	PM_{10} and $PM_{2.5}$	CO, SO_2, NO_2
Station 1 – Attachie Flat Upper Terrace	X	X	X	X	X			X	X	X	X	X	X	
Station 3 – Attachie Plateau	X	X	X	X		X	X			X	X	X		
Station 4 – Bear Flat	X	X	X	X	X			X		X	X	X		
Station 6 – Farrell Creek	X	X	X	X		X	X			X	X	X		
7B/C – Site C North Camp/Fort St. John North Camp C	X	X	X	X		X	X			X	X	X	X	X
Station 8 – Old Fort													X	
Station 9 – 85th Avenue		X											X	
Station 10 – Tea Creek	X	X	X	X	X		X			X	X	X		
Station 11 – Taylor	X	X	X	X		X	X			X	X	X		
Fort St. John Airport (ECCC)	X	X	X	X	X									

2.1 Data Collection and Quality Assurance / Quality Control (QA/QC)

Measurements from the Site C network stations were remotely downloaded to RWDI servers using Campbell Scientific's LoggerNet software over cellular modem connections at the following intervals:

- Stations with AC power (Station 1 – Attachie Flat Upper Terrace, Station 4 – Bear Flat, Station 7C – The ambient air quality portion at Fort St. John North Camp C, Station 8 – Old Fort and Station 9 – 85th Avenue) had download intervals of one hour; and
- Solar powered stations (Station 3 – Attachie Plateau, Station 6 – Farrell Creek, Station 7B – The meteorological portion at Fort St. John North Camp C, Station 10 – Tea Creek and Station 11 - Taylor) had their data collected only at specific times during daylight hours to preserve battery charge.

The first stage of quality assurance applied to the data involved the data logger by continually reading in and checking all instrumental diagnostics available from the air quality equipment for signs of an instrumental malfunction. Upon detection of a problem, the data logger can issue commands to the air quality instrument to rectify the problem and notify RWDI personnel of the problem so they can follow-up on it. The first level of QA was included in the data logger programs of Station 1 (Attachie Flat Upper Terrace), Station 7C (Fort St. John North Camp C), Station 8 (Old Fort) and Station 9 (85th Avenue).

Secondly, manually assisted and automated quality control was carried out on the raw data weekly. This involved plotting the readings over the past month and the past 14 days to allow for a visual inspection so the operator can detect anomalous trends or data outliers. This frequency of QA was maintained to allow rapid detection and repair of any instrumental malfunctions.

As part of the RWDI data validation process, a third QA/QC operation was conducted monthly to invalidate any data from an instrument known to be malfunctioning based on the results of regular checks and station visits. Results from both checks performed by RWDI personnel as well as equipment performance audits performed by the BC MECCS were used to increase confidence in the validity of the data.

3 METEOROLOGY RESULTS

Table 3-1 provides a summary of some of the climate parameters discussed in this report as well as 30-year climate normals from Fort St. John Airport for the period, 1981 to 2010 (ECCC, 2016). Climate normals were calculated from 30-year records of meteorological observations of wind speeds, temperature, precipitation and other related weather conditions at the location of interest. Climate normals are updated by ECCC on a 10-year basis and the most recent reporting period available is from 1981 to 2010. The 30-year climate normals for the maximum and minimum temperatures differ from what are reported in the published normals, because ECCC takes the daily maximum/daily minimum and averages that over the month for all years. These numbers averaged over the 30 annual maxima/minima in the period so they are more extreme and more comparable to the maximum and minimum temperatures at any one site for this year.

Table 3-1: Summary of measured climate parameters during 2019 and comparison with climate normals.

Data Record	Mean Temp (°C)	Max Temp (°C)	Min Temp (°C)	Total Precipitation (mm)	Mean wind speed (m/s)
Station 1	2.4	29.7	-34.8	410	2.1
Station 3	2.7	28.9	-35.9	433	2.4
Station 4	2.6	30.4	-35.4	393	1.6
Station 6	3.2	30.5	-37.7	422	1.4
Station 7B	3.1	30.3	-35.1	404	2.6
Station 9	-	-	-	-	3.2
Station 10	2.3	28.2	-37.0	388	2.3
Station 11	2.5	31.1	-36.5	344	1.4
Fort St. John Airport	2.1	28.4	-35.6	477	4.4
30-year climate normals (1981 – 2010)	2.3	30.2	-36.6	445	3.8
Max difference from normals	0.9	2	1.8	57	2.4

Note: — indicates insufficient or no data collected

3.1 Air Temperature and Relative Humidity

Figure 3-1 shows a time series plot of the mean daily temperature at all Site C network stations as well as the Fort St. John Airport for 2019. As was noted in the previous monitoring reports (RWDI AIR Inc. 2015a, 2015b, 2015c, 2016, 2017, 2018, 2019), much greater day to day variability was observed in the winter months (January to March, and November and December) than in the summer months (April to October). This was also observed in the 30-year averaged observations from Fort St. John Airport and was attributed to the passage of warm and cold weather fronts in the winter, bringing with them large swings in temperature. In the summer, the cold arctic air masses that dominate in winter are much farther north and there is less frontal activity in the region, resulting in less extreme temperature fluctuations.

The inter-station variation was generally very small compared to the observed diurnal variations. When averaged over the entire year, the largest difference between any two stations was 1°C. Temperature differences of 1 to 2°C were found to be reasonable given that there is a maximum horizontal separation of 60 km between Fort St. John Airport and the most distant station in the network (Station 6 – Farrell Creek) and a maximum change in station elevations of 284 m (from 411 m at Station 11 - Taylor to 695 m at Fort St. John Airport).

Annual average temperatures for 2019 at all Site C network stations were greater than those reported at Fort St. John Airport. The annual average temperature recorded at Fort St. John Airport was 0.2°C colder than the 30-year climate normal for that station.

The monthly average temperatures tabulated in Appendix B (Table B-1) show that all Site C network stations recorded warmer temperatures than Fort St. John Airport from April through June and September through November. There were no months during which all Site C network stations recorded colder temperatures than the Fort St. John Airport. Temperatures recorded at Fort St. John Airport were below the climate normals during February and April, and, June through October. Temperatures warmer than the climate normals were recorded at Fort St. John Airport in January, March, April, November and December.

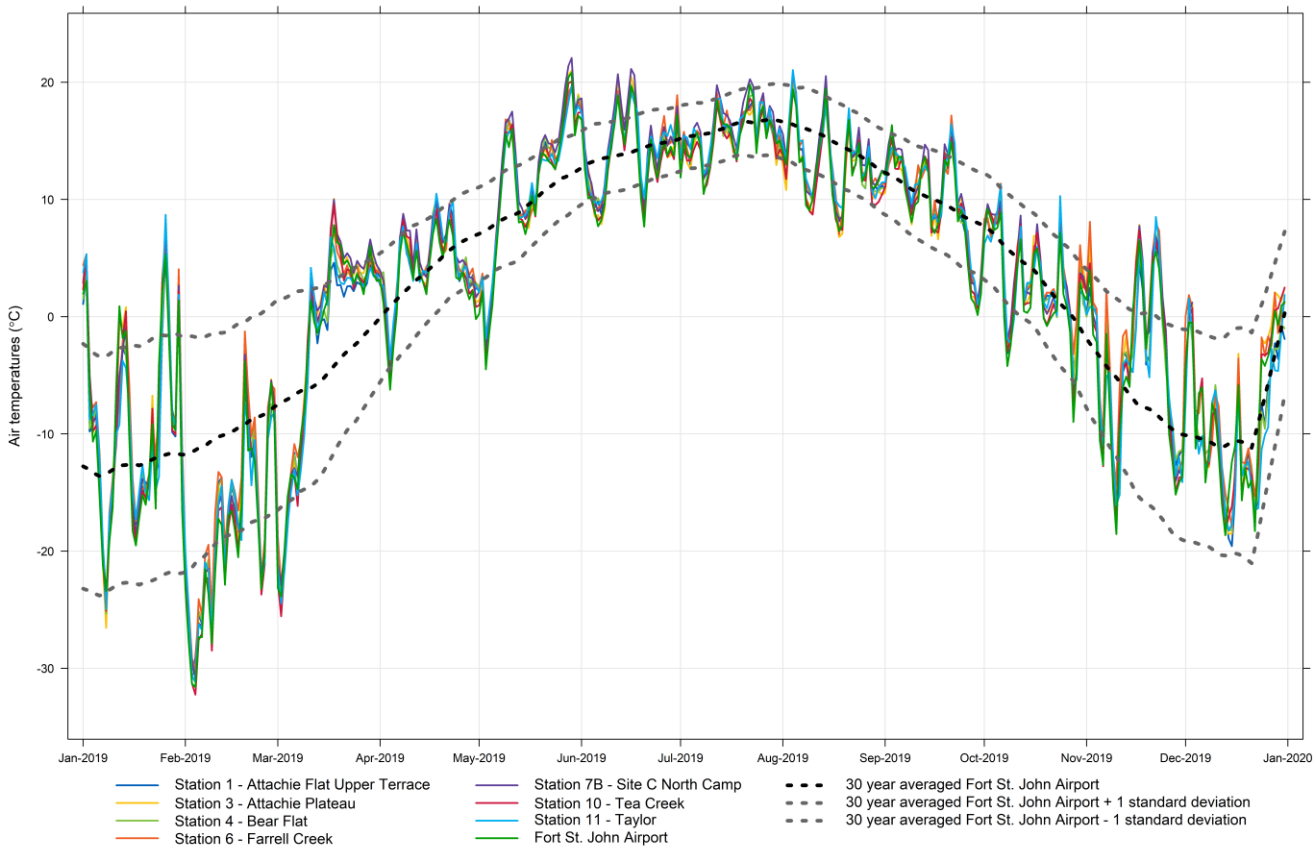


Figure 3-1: Daily average temperatures at all Site C network stations for the year 2019 and comparison with the mean ± 1 standard deviation of 30-year climate normal (based on 21-day centered rolling average) (in °C).

Figure 3-2 shows a time-series of relative humidity (RH) recorded daily at 15:00 Mountain Standard Time (MST which equals Local Standard Time or LST) at each of the stations. This single hour of the day was used instead of a daily average due to the normally large fluctuation in RH that occurs over the course of a day and to allow comparisons with climate normals. Relative humidity at Station 3 (Attachie Plateau) most frequently had the highest monthly averaged values over all of the stations (five months). Station 6 (Farrell Creek) was the station at which the monthly average RH was most frequently the lowest (ten months).

When compared to Fort St. John Airport (Appendix B, Table B-2), the annual average RH at all Site C stations were lower. Monthly average RH values over all of the stations were higher than observations from Fort St. John Airport in July. RH values recorded at Fort St. John Airport were higher than the climate normals for all months excluding March and April.

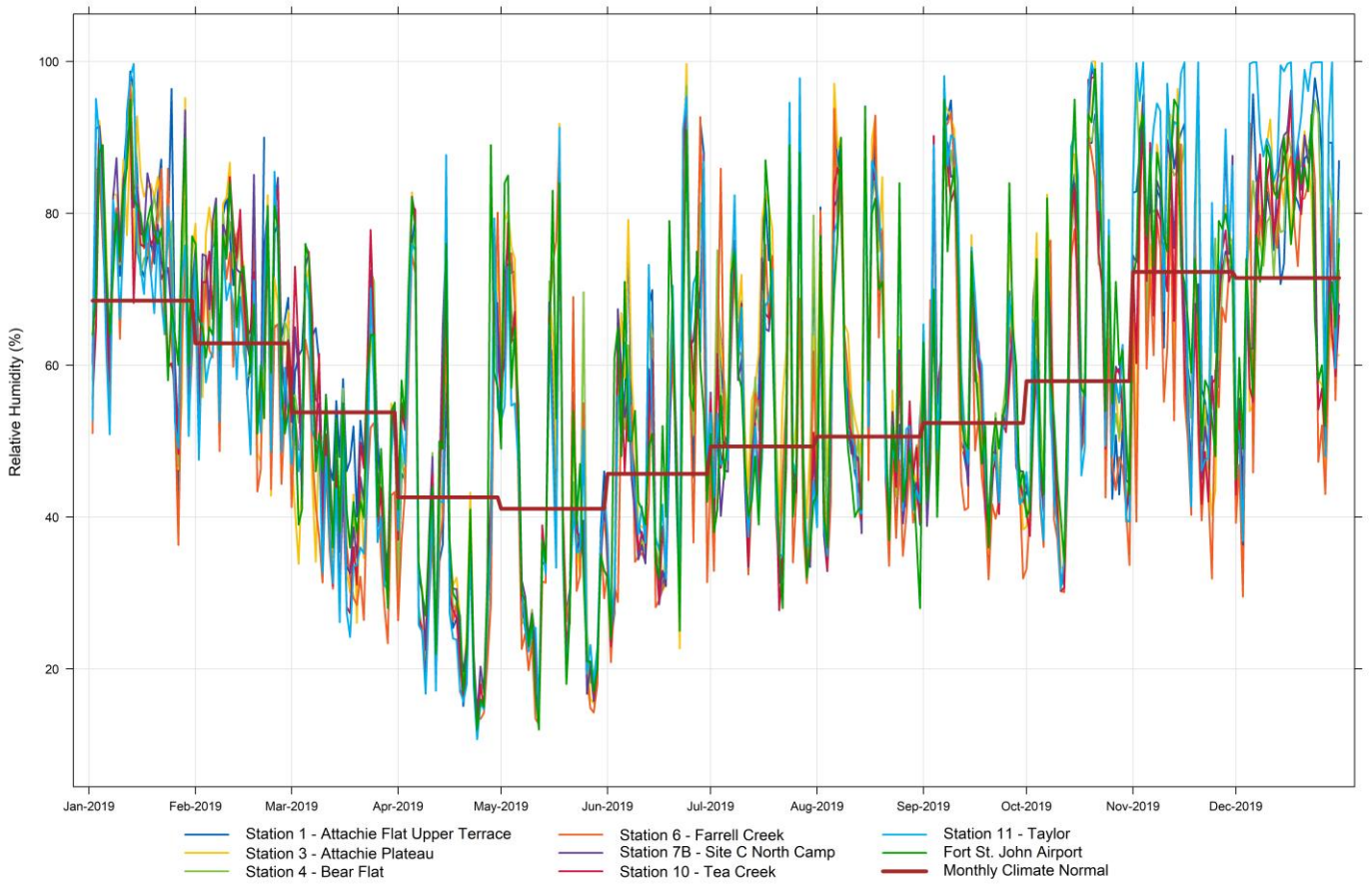


Figure 3-2: Relative humidity at all Site C network stations measured daily at 15:00 LST for the year 2019 (in percent). The monthly climate normal is shown in brown.

3.2 Wind Characteristics

Wind speed and wind direction were measured at all stations except Station 8 (Old Fort). Figure 3-3 shows wind roses for all stations with a complete year of records including Fort St. John Airport for 2019. Mean annual wind speed for 2019 ranged from 1.4 m/s (Station 6 – Farrell Creek and Station 11 – Taylor) to 3.2 m/s (Station 9 – 85th Avenue) at the Site C network stations. Fort St. John Airport recorded a mean annual wind speed of 4.3 m/s which was 13% greater than the 30-year climate normal of 3.8 m/s (Table 3-1).

The differences between stations in wind speed and wind direction that are apparent in the wind roses are attributed to small scale surface features such as proximity of trees and local topography to the network stations and their location within the meandering Peace River Valley. The higher wind speed at Fort St. John Airport is likely due to this station being on the plateau above the Peace River Valley and its very open location with a large fetch in all directions. There was a wide difference of the proportion of calms as well: ranging from 0.4 % to 29% of the 12-month period.

Wind roses split by season from all stations with a complete year of data are included in Appendix C.

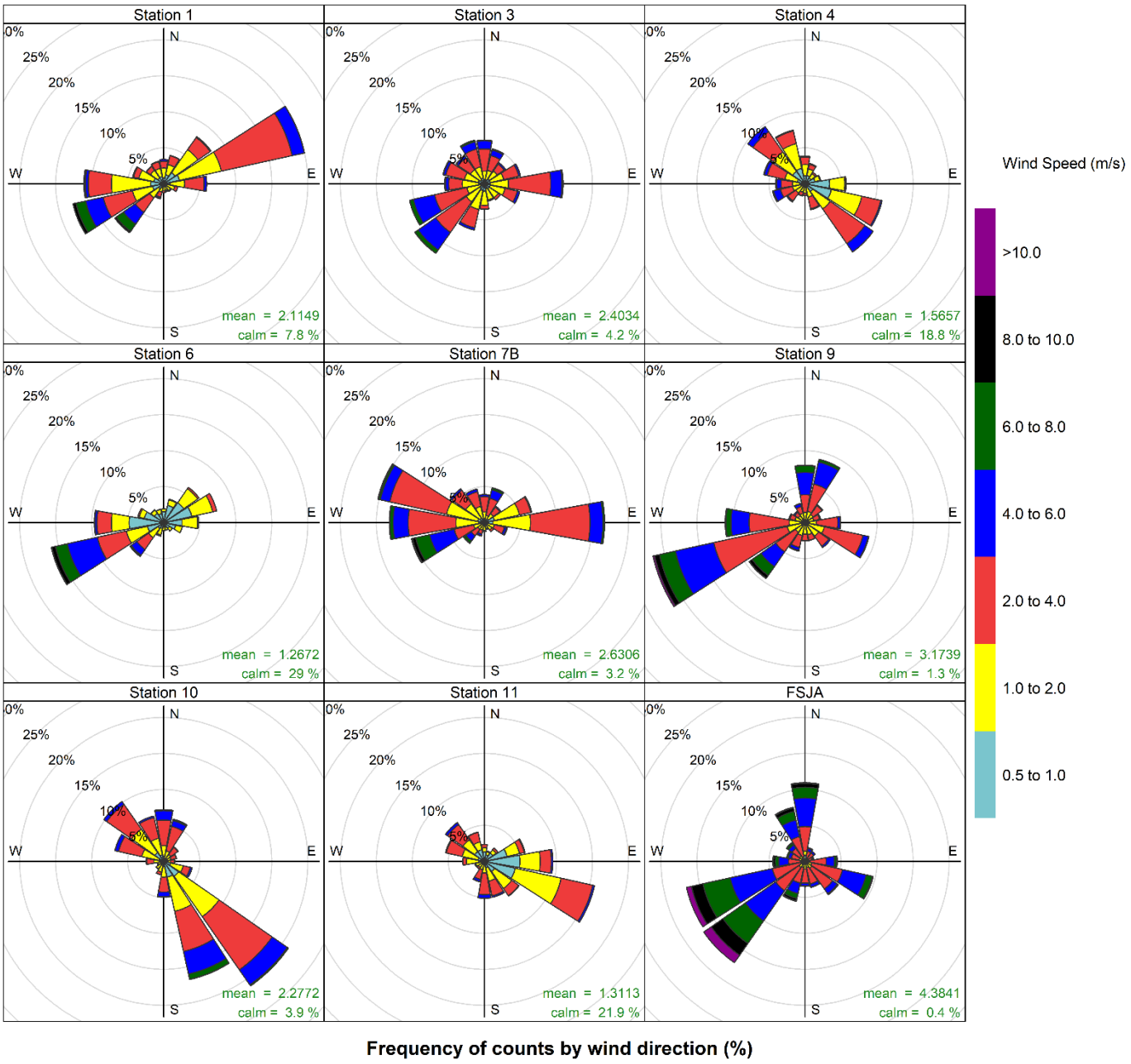


Figure 3-3: Wind roses for all Site C stations with 12-month records and Fort St John Airport for 2019.

3.3 Precipitation

Figure 3-4 shows the total monthly precipitation over the course of 2019 for each of the Site C network stations as well as for Fort St. John Airport. The gauge measures precipitation in water equivalent (i.e., any snow is melted first before the water level is measured). As a general rule of thumb, under dry and cold conditions (typical of FSJ), the equivalent amount of snow would be roughly 10 times as much than water. Values from this plot are also presented in Appendix B (Table B-3). Monthly precipitation totals have not been presented for Station 4 (Bear Flat) and Station 10 (Tea Creak) for January due to instrumental problems resulting from extreme cold events and hoar frost, that caused large amounts of data during that period to be invalid.

Of the Site C network stations, Station 3 (Attachie Plateau) recorded the greatest amount of precipitation (433 mm). All of the Site C network stations recorded lower annual cumulative precipitation than the Fort St. John Airport. This is also true for monthly totals for the months of February, July and November. In October all Site C network stations recorded higher monthly totals than Fort St. John Airport. For the remaining months, the monthly totals from at-least one Site C network station were greater than recorded at Fort St. John Airport. The lower precipitation totals reported in the winter months for the Site C network reflect the remote measurement equipment which is based on a weighing style of precipitation gauges. The Fort St. John Airport totals appear to be based on the higher value from either a Nipher gauge and manual observations of fallen snow and total snow depth with a possible adjustment to these observations to account for factors that could lead to an underestimation of melted water equivalent, including wind under-catch, evaporation and wetting losses.

Annual cumulative precipitation recorded at Fort St. John Airport (477 mm) was 32 mm greater than the 30-year climate normal (445 mm). Monthly cumulative precipitation at Fort St. John Airport exceeded the 30-year climate normals for the months of January through February, August, October, and November. Unusually low precipitation measurements reported for Fort St. John airport for March (0.2 mm) were comparable to all Site C network stations which, excluding Station 10 (0.4 mm), measured no precipitation during that month. Elevated precipitation measurements reported for Fort St. John Airport for August (93 mm) were comparable to 109 mm recorded at Stations 3 and 6 – the second highest reported totals for August, signalling a wet end to the summer.

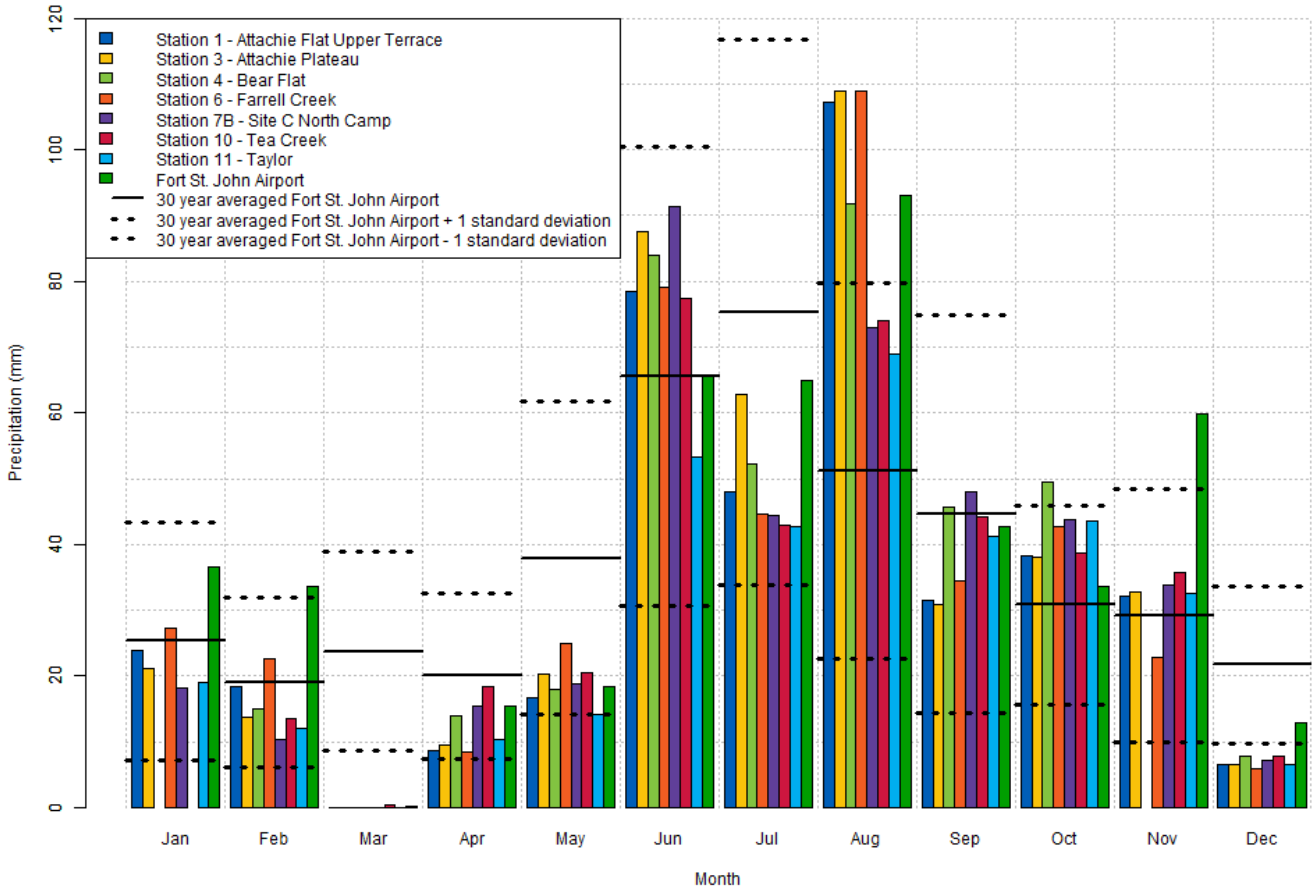


Figure 3-4: Monthly precipitation at all of the Site C network stations for 2019 and comparison with the mean ± 1 standard deviation of 30-year Fort St. John Airport climate normal.

Notes: Monthly precipitation totals have not been presented for Station 4 (Bear Flat) and Station 10 (Tea Creek) for January, due to instrumental problems that caused a large portion of the data during these periods to be invalid. Annual totals are still included for these stations for indicative purposes only.

3.4 Soil Temperature and Moisture

Figure 3-5 and Figure 3-6 provide the daily averaged soil temperature and soil moisture, respectively. Total daily precipitation recorded at Station 1 (Attachie Flat Upper Terrace) is included in Figure 3-6 to link increases in soil moisture to incoming precipitation and to identify increases that are related to other processes. Station 1 was selected due to its most complete dataset and its somewhat central location within the Site C monitoring network. Overall, there is very little difference among the soil temperature values between the stations.

The soil temperature at all stations was observed to exceed 0°C in April. Station 7B (Site C North Camp) thawed the earliest, on March 24th, and Station 4 (Bear Flat) thawed the latest, on April 10.

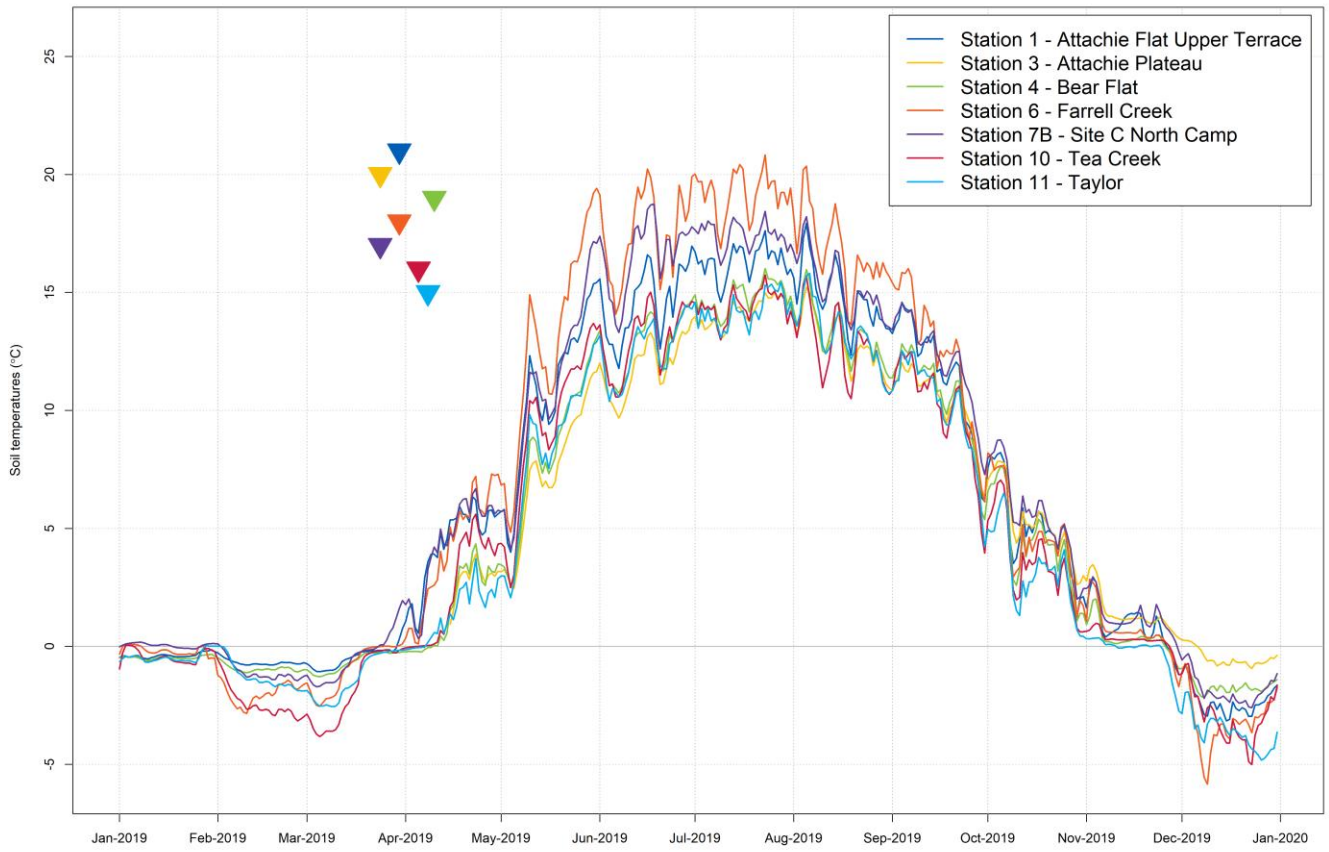


Figure 3-5: 24-hour average soil temperatures (in ^{0}C) among the Site C network stations for 2019. The coloured triangles indicate the dates when daily averaged soil temperature exceeded 0°C at each one of the stations.

Soil moisture follows a similar response pattern between all stations wherein liquid precipitation (rain) events were clearly reflected as sudden increases in moisture followed by a gradual decline. An increase of soil moisture is also recorded when soil temperature increases beyond or very near to 0°C and the soil becomes permeable to surface water produced by the snowmelt. Differences between stations are attributable to different soil types and agricultural land management practices between stations. The large number of days with rain during the spring/summer/fall in the Peace Region resulted in high soil moisture contents being maintained across the growing season.

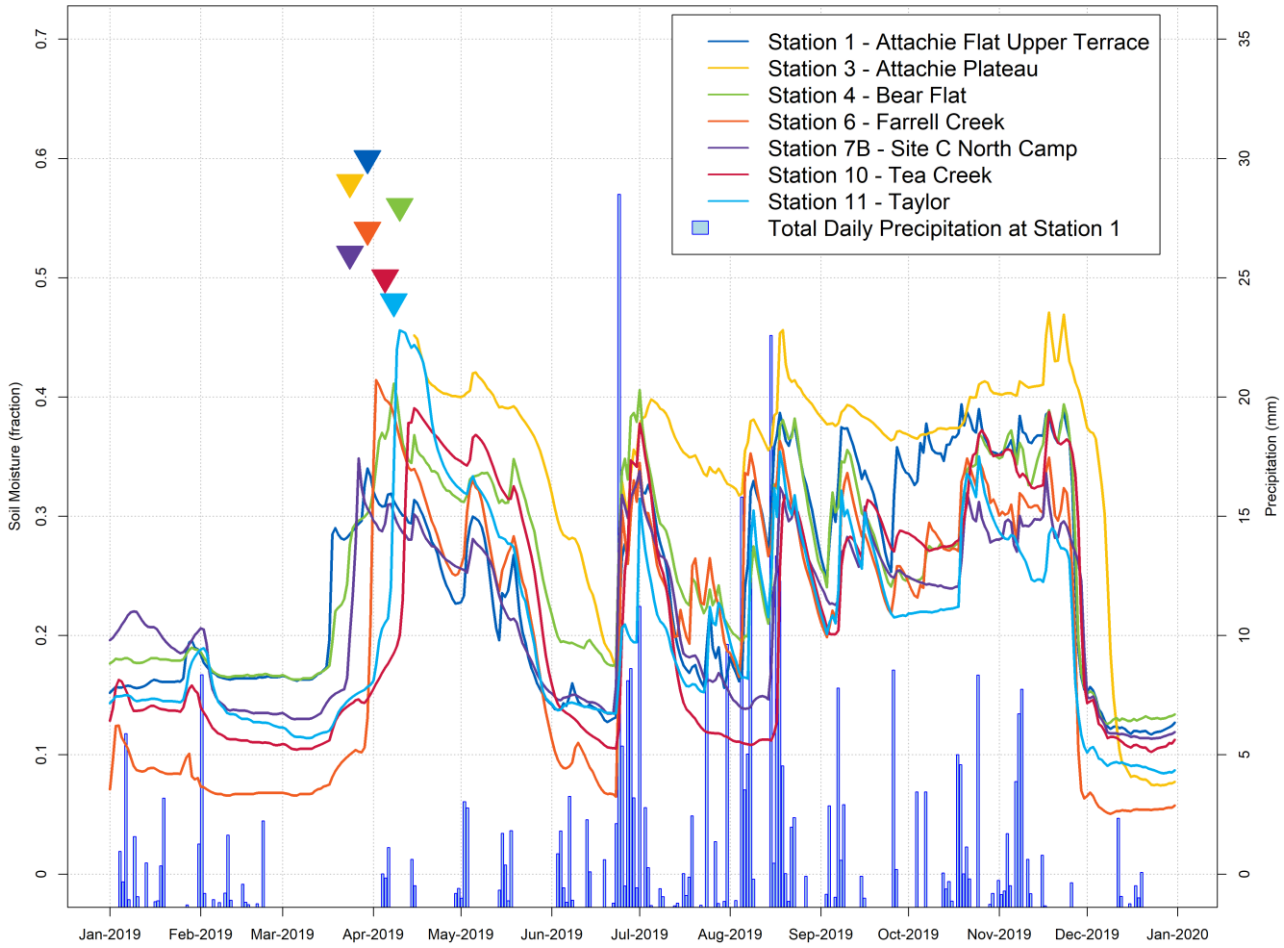


Figure 3-6: 24-hour average soil moisture readings (expressed as a decimal fraction of 1) among the Site C network stations for 2019. The coloured triangles indicate the dates when daily averaged soil temperature exceeded 0°C at each one of the stations.

4 AIR QUALITY RESULTS

Condition 12.3.4 of the FDS approval of the Project requires BC Hydro to develop a plan that includes procedures to monitor air quality effects at locations used by Indigenous groups. To this end, BC Hydro developed an Air Quality Monitoring Program (BC Hydro, 2016). As part of the monitoring program, BC Hydro installed and operates a network of ambient air quality stations in areas that may be affected by Project construction activities.

BC Hydro currently operates four ambient air quality monitoring stations in the Peace River area. Two of these stations are located in the vicinity of the Project construction including:

- Station 1 – Attachie Flat Upper Terrace; and
- Station 8 – Old Fort.

Two of these stations are located directly within Project construction work areas including:

- Station 7C –Fort St. John North Camp C; and
- Station 9 – 85th Avenue.

Stations 1, 8 and 7C have continuous Thermo Scientific SHARP 5030 and Station 9 has Thermo Scientific SHARP 5030i monitors. These monitors measure particulate matter with diameters less than 10 µm (PM_{10}) and diameters less than 2.5 µm ($PM_{2.5}$). Station 7C –Fort St. John North Camp C also measures NO_X (using a Thermo Scientific 42i analyzer), SO_2 (using a Thermo Scientific 43i analyzer) and CO (using a Thermo Scientific 48i analyzer).

Figure 2-1 and Table 2-1 provide the locations of all current air quality monitoring stations. Once construction of the shoreline protection berm begins in the area around Hudson's Hope (anticipated in 2020), an additional ambient air quality station will be installed there as well.

4.1 Particulate Matter

Table 4-1 gives an overview of the completeness of the datasets for PM_{10} and $PM_{2.5}$ at each station as well as the number of excursions and/or exceedances above the provincial 24-hour ambient air quality objectives (AAQOs) and a comparison of the annual averages with the provincial annual AAQOs. The AAQO for $PM_{2.5}$ is based on the 98th percentile of daily $PM_{2.5}$ as defined by BC MECCS. An excursion is defined as when the 24-hour average of $PM_{2.5}$ is greater than the 24-hour AAQO without the 98th percentile of daily $PM_{2.5}$ exceeding the AAQO. An exceedance refers to PM_{10} values above the 24-hour AAQO. The lower percentage complete for 24-hour averages than for hourly data stems from a requirement that, to consider a 24-hour average to be valid, it must contain at least 75% (18 hours) of valid data. This ensures that 24-hour averages are not biased toward one single time of the day. Unless specified otherwise, the 24-hour average refers to the daily block average from the 01:00 hour to the 00:00 hour-ending timestamp of the following day. The 75% data completeness criteria established by the Government of Canada for fine particulate matter ($PM_{2.5}$) can be found at: http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=En&n=BA9D8D27-1&offset=4&toc=hide&pedisable=true. Per the MOU with the BC MECCS, there is a data polling requirement of 90%. In other words, 90% of the time the Province will successfully poll data from BC Hydro's sites and display air quality readings on the Ministry's air quality public portal within an hour of when the observation is collected at the site. In 2019, the 90% data polling criteria was met.

Many of the excursions and exceedances in 2019 were related to community specific events such as road dust. Others were the result of open burning of piles of brush cleared in the footprint of the future Site C reservoir. In these cases, the BC MOE issued Smoky Skies Bulletins and Air Quality Advisories, respectively. Specific dates for these events in 2019 are provided later in this section.

Table 4-2 provides percentile levels of note for PM concentrations at each of the air quality stations. Measured PM_{10} and $PM_{2.5}$ levels at Stations 1 (Attachie Flat Upper Terrace), Station 8 (Old Fort) and 9 (85th Ave) were all below the AAQO for 99% valid days or more in 2019. Measured $PM_{2.5}$ levels at Station 7B (Site C North Camp) was similarly below the AAQO for 99% valid days or more in 2019, while PM_{10} there were below the AAQO for 95% of the valid days or more in 2019.

All PM monitors had a data completeness of greater than 75% (typical of BC MECCS permit requirements).

Four excursions above the 25 µg/m^3 AAQO and two exceedances of the AAQO for PM_{10} for a 24-hour averaging period were observed at Station 1 (Attachie Flat Upper Terrace) in 2019. Five excursions above the AAQO for $PM_{2.5}$ and 20 exceedances of the AAQO for PM_{10} both over 24-hour averaging periods were observed at Station 7C (Fort St. John North Camp C). At Station 8 (Old Fort), six excursions above the 24-hour AAQO for $PM_{2.5}$ and five exceedances above the 24-hour AAQO for PM_{10} were observed. Three excursions above the 24-hour AAQO for $PM_{2.5}$ and four exceedances above the 24-hour AAQO for PM_{10} were observed at Station 9 (85th Avenue).

There were no recorded exceedances of the 98th percentile of $PM_{2.5}$ over the provincial AAQO of 25 µg/m^3. The annual average B.C. provincial AAQO of 8 µg/m^3 for $PM_{2.5}$ was not exceeded at any station in 2019.

Table 4-1: Summary of measured PM results for 2019 (in µg/m^3).

Parameter	Station 1		Station 7B		Station 8		Station 9	
	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
Percent data complete of hourly data	92.7	98.0	92.7	98.0	94.4	98.1	84.8	95.5
Percent data complete (24-hour averages)	92.6	98.4	92.1	97.5	94.8	98.4	84.7	95.9
24-hour AAQO	25	50	25	50	25	50	25	50
24-hour AAQO excursions / exceedances (1)	4	2	5	20	6	5	3	4
98th percentile of 24-hour daily averages	21.1	28.4	20.5	**86.2**	22.0	44.9	17.9	40.7
Annual AAQO	8	NA(2)	8	NA(2)	8	NA(2)	8	NA(2)
Annual average	5.3	8.3	6.0	18.8	5.9	11.9	6.1	11.4

Notes: Bolded PM values indicates measured concentrations that exceeded their respective AAQO
(1) Excursion is used here for $PM_{2.5}$ when the 24-hour average of $PM_{2.5}$ is greater than the 24-hour AAQO without the 98th percentile of daily $PM_{2.5}$ exceeding the AAQO. Exceedance is used here to refer to PM_{10} values above the 24-hour AAQO. The AAQO for $PM_{2.5}$ is based on the 98th percentile of daily $PM_{2.5}$ as defined by BC MECCS.
(2) NA is used where the quantity in question is not applicable to the measurement.

Table 4-2: Percentile values of 24-hour averaged PM concentrations for 2019 (in µg/m^3).

Percentile	Station 1		Station 7B		Station 8		Station 9	
	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
0	0.001	0.2	0.006	0	0.06	0.2	0.3	0.3
0.1	1.2	2.3	1.2	2.8	0.9	3.2	1.3	3.2
0.25	2.1	3.7	2.1	6.4	2.0	5.5	2.3	5.1
0.5	3.7	6.3	3.9	11.7	4.0	8.6	4.3	8.5
0.75	6.0	9.7	7.4	22.8	6.7	12.9	6.9	13.9
0.9	9.1	15.3	10.6	40.2	10.8	19.5	11.7	22.3
0.95	12.8	18.2	14.5	52.8	15.4	32.7	14.9	27.3
0.975	17.1	26.2	18.8	75.4	20.6	41.4	17.3	38.5
0.98	21.1	28.4	20.5	86.2	22.0	44.9	17.9	40.7
0.99	25.9	31.1	27.5	103	27.0	56.0	22.3	47.6
0.999	123	131	160	228	154	192	132	149

Notes: Red cells denote values greater than the AAQO

Figure 4-1 through Figure 4-4 show the time series of the 24-hour daily average of both PM_{10} and $PM_{2.5}$ at each of the four AQ stations, respectively. Table 4-3 lists the events that led to excursions or exceedances at the four monitoring stations and directs the reader to the appropriate section of Appendix D where a preliminary examination of each elevated PM event is presented. Note that some of these events persisted over more than one day.

Along with the potential impact of smoke from the wildfires, Fort St. John was affected by dust advisories caused by dry road conditions and high winds which triggered regional air quality advisories on Mar 20 – 24 and Mar 28 – 31. As a result of forest fires in Alberta, Smokey Skies Bulletins for the BC Peace River (North and South) were issued on May 24 – 29 and again for northeastern parts of BC on May 31 – Jun 06. Due to the negative impact of forest waste pile burning in the region a burn ban and Smokey Skies Bulletin were issued from Dec 05 – Dec 07.

These advisories provide important regional context for the air quality exceedances recorded by stations in the Site C monitoring network. Events observed at more than one station can be considered regional in nature and more likely to be related to forest fires or dusty roads; whereas, events recorded at only one station such as at the main Project dam construction site, Station 7C (Fort St. John North Camp C) are more likely to originate from a local PM emission source.

An email alerting system operated for the duration of 2019 to immediately notify BC Hydro and its contractors about any excursions of the AAQOs taking place so they could work to identify the source and mitigate its associated effects if it was found to be related to their operations. As of December 31, 2019, the distribution list for the alerting system included 66 individuals representing 18 firms, including the Project's Independent Environmental Monitor (EDI Environmental Dynamics Inc.). A discussion for each alert received and the site contractor response to the alert can be found in Table D-1 of Appendix D.

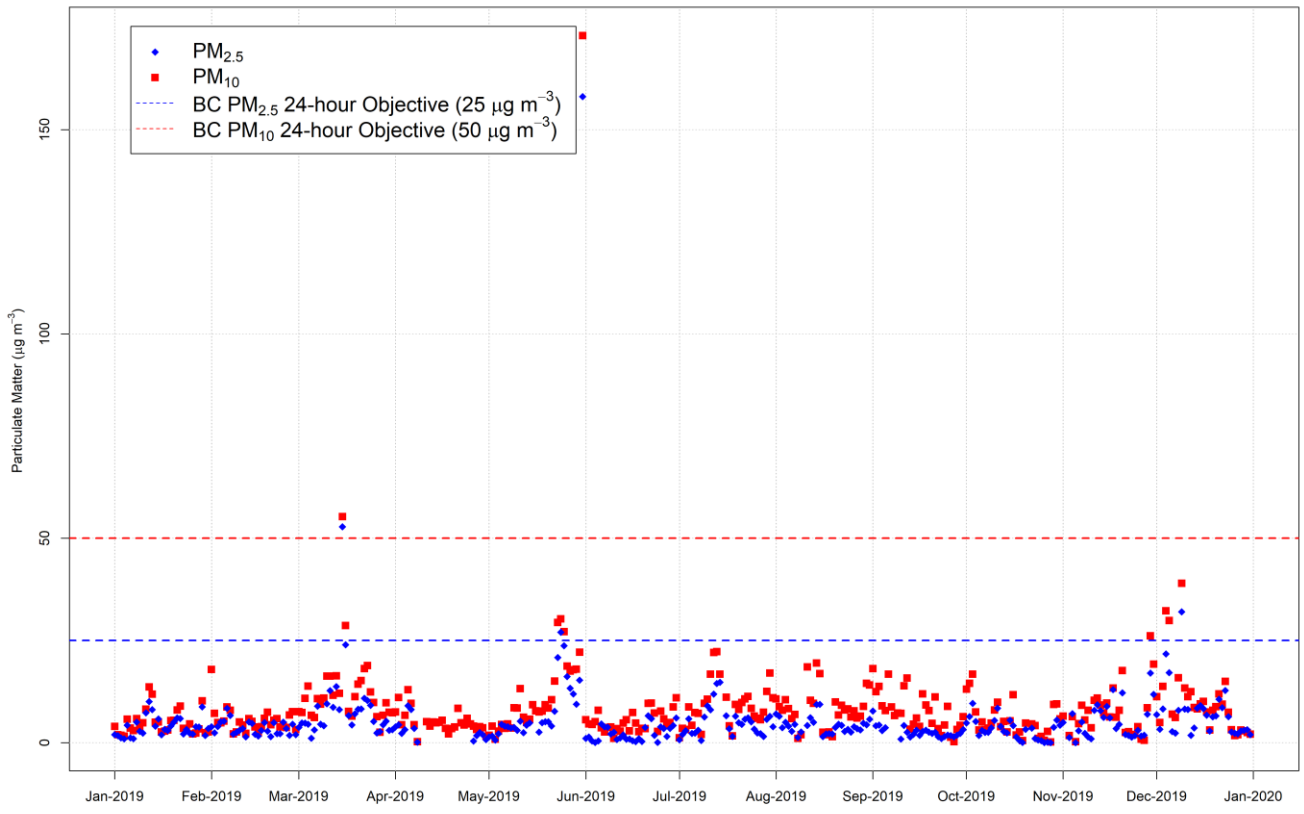


Figure 4-1: Daily average $PM_{2.5}$ and PM_{10} measurements from Station 1 – Attachie Flat Upper Terrace for 2019 (in µg/m³). The target AAQO's are plotted as broken lines.

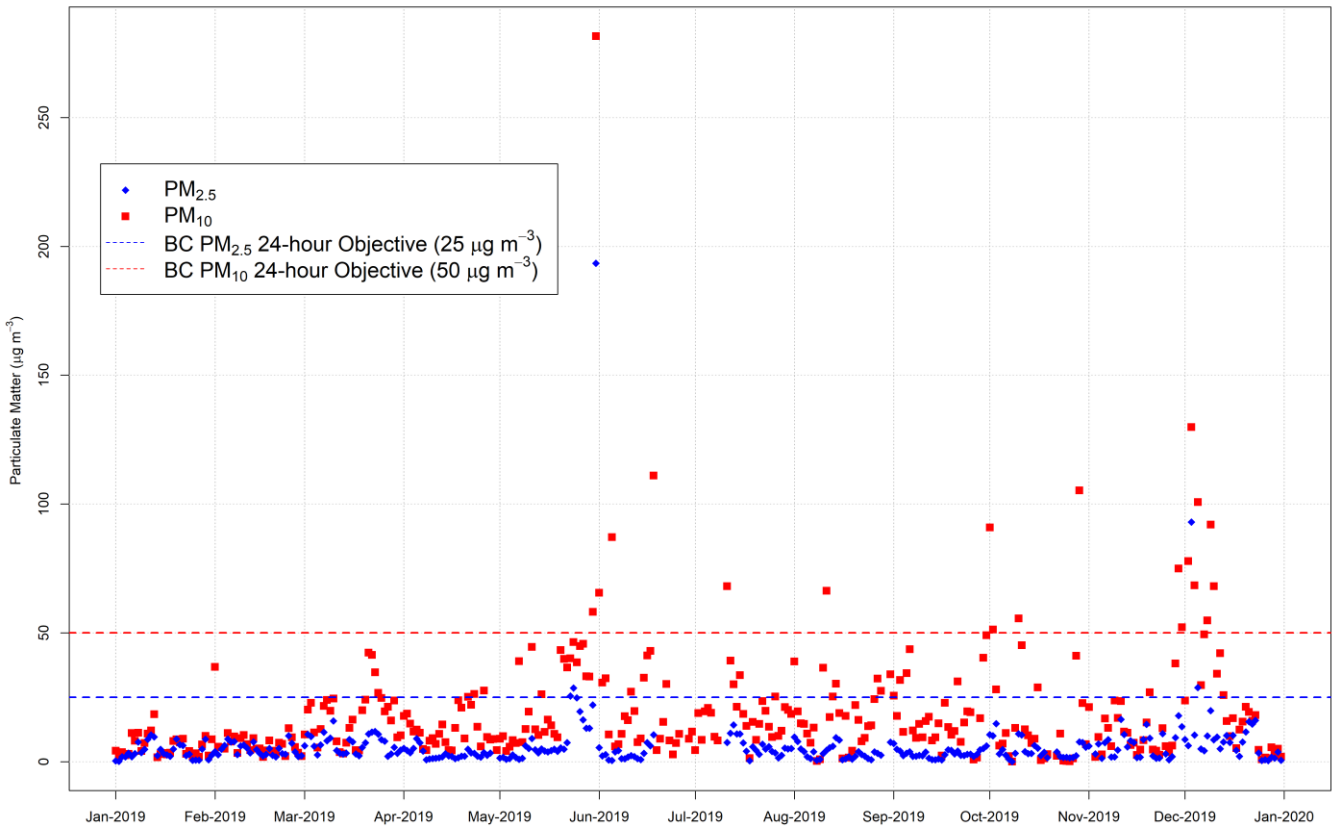


Figure 4-2: Daily average $PM_{2.5}$ and PM_{10} measurements from Station 7C – Fort St. John North Camp C for 2019 (in µg/m^3). The target AAQO's are plotted as broken lines.

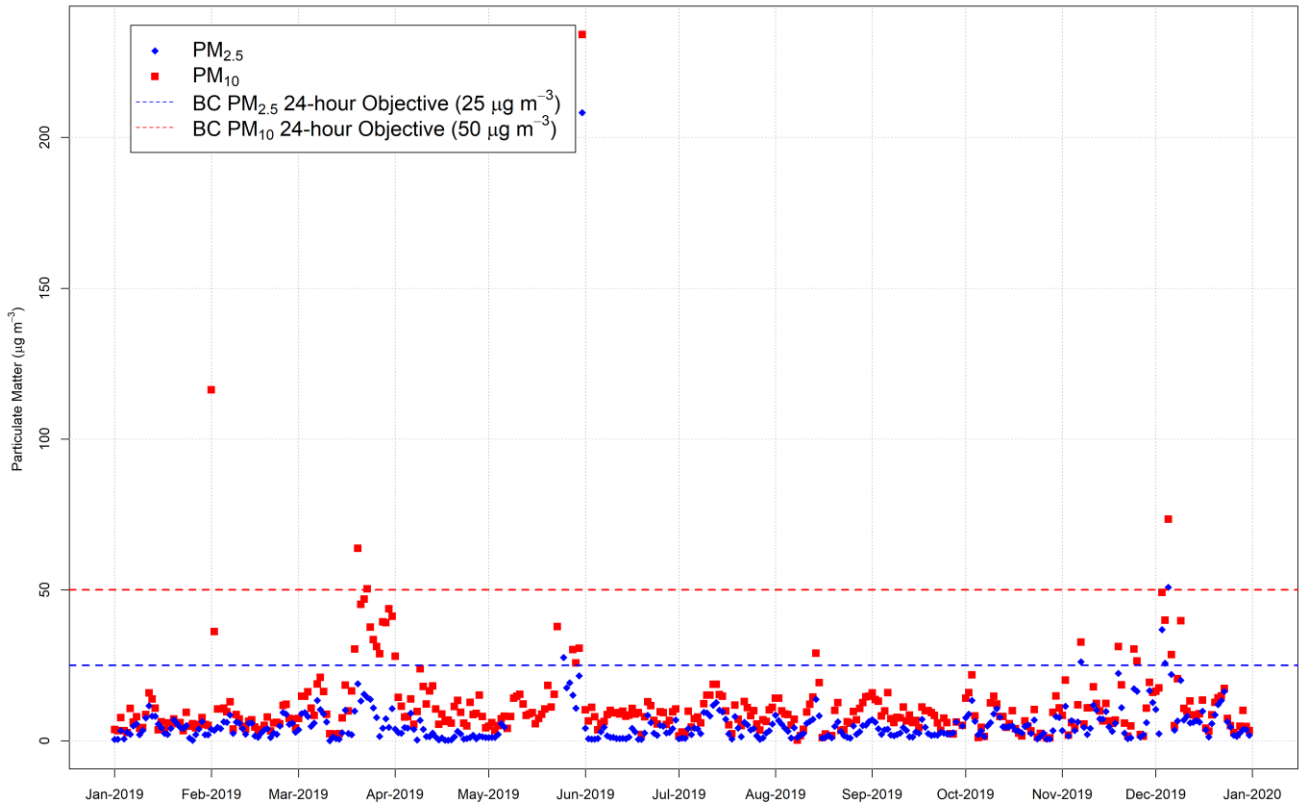


Figure 4-3: Daily average $PM_{2.5}$ and PM_{10} measurements from Station 8 – Old Fort for 2019 (in $\mu g/m^3$). The target AAQO's are plotted as broken lines.

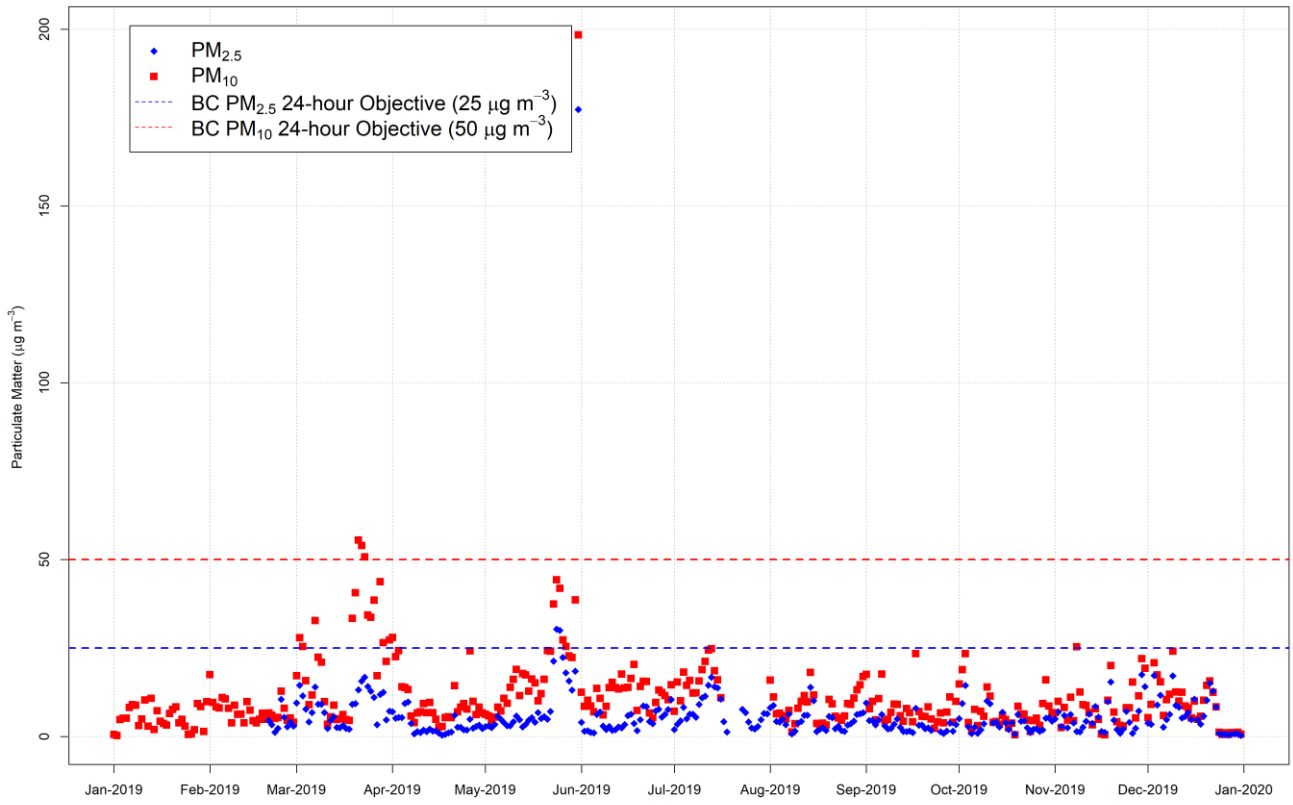


Figure 4-4: Daily average $PM_{2.5}$ and PM_{10} measurements from Station 9 - 85th Avenue for 2019 (in µg/m^3). The target AAQO's are plotted as broken lines.

Table 4-3: Summary of PM excursion or exceedance events recorded at Site C in 2019.

Start Date	End Date	Station	Contaminant	Event Number
2019-02-01	**2019-02-02**	Station 8 – Old Fort	PM_{10}	167
2019-03-15	**2019-03-17**	Station 1 – Attachie Flat Upper Terrace	$PM_{2.5}$	168
2019-03-15	**2019-03-16**	Station 1 – Attachie Flat Upper Terrace	PM_{10}	169
2019-03-20	**2019-03-24**	Station 8 – Old Fort	PM_{10}	170
2019-03-21	**2019-03-24**	Station 9 – 85th Avenue	PM_{10}	171
2019-03-29	**2019-03-29**	Station 9 – 85th Avenue	PM_{10}	172
2019-03-30	**2019-03-31**	Station 8 – Old Fort	PM_{10}	173
2019-04-01	**2019-04-01**	Station 8 – Old Fort	PM_{10}	174
2019-05-11	**2019-05-11**	Station 7B/C – Site C North Camp	PM_{10}	175
2019-05-21	**2019-05-21**	Station 7B/C – Site C North Camp	PM_{10}	176
2019-05-23	**2019-05-26**	Station 7B/C – Site C North Camp	$PM_{2.5}$	177
2019-05-24	**2019-05-27**	Station 9 – 85th Avenue	$PM_{2.5}$	178
2019-05-24	**2019-05-26**	Station 1 – Attachie Flat Upper Terrace	$PM_{2.5}$	179
2019-05-24	**2019-05-25**	Station 7B/C – Site C North Camp	PM_{10}	180
2019-05-24	**2019-05-25**	Station 9 – 85th Avenue	PM_{10}	181
2019-05-24	**2019-05-25**	Station 8 – Old Fort	PM_{10}	182
2019-05-25	**2019-05-26**	Station 8 – Old Fort	$PM_{2.5}$	183
2019-05-27	**2019-05-28**	Station 7B/C – Site C North Camp	PM_{10}	184
2019-05-31	**2019-06-02**	Station 7B/C – Site C North Camp	PM_{10}	185
2019-05-31	**2019-06-01**	Station 7B/C – Site C North Camp	$PM_{2.5}$	186
2019-05-31	**2019-06-01**	Station 8 – Old Fort	$PM_{2.5}$	187
2019-05-31	**2019-06-01**	Station 9 – 85th Avenue	$PM_{2.5}$	188
2019-05-31	**2019-06-01**	Station 9 – 85th Avenue	PM_{10}	189
2019-05-31	**2019-06-01**	Station 1 – Attachie Flat Upper Terrace	$PM_{2.5}$	190
2019-05-31	**2019-06-01**	Station 8 – Old Fort	PM_{10}	191
2019-05-31	**2019-06-01**	Station 1 – Attachie Flat Upper Terrace	PM_{10}	192
2019-06-05	**2019-06-06**	Station 7B/C – Site C North Camp	PM_{10}	193
2019-06-16	**2019-06-16**	Station 7B/C – Site C North Camp	PM_{10}	194

Start Date	End Date	Station	Contaminant	Event Number
2019-06-18	**2019-06-20**	Station 7B/C – Site C North Camp	PM_{10}	195
2019-07-10	**2019-07-10**	Station 7B/C – Site C North Camp	PM_{10}	196
2019-07-11	**2019-07-12**	Station 7B/C – Site C North Camp	PM_{10}	197
2019-08-11	**2019-08-29**	Station 7B/C – Site C North Camp	PM_{10}	198
2019-08-29	**2019-08-29**	Station 7B/C – Site C North Camp	PM_{10}	199
2019-09-06	**2019-09-06**	Station 7B/C – Site C North Camp	PM_{10}	200
2019-09-30	**2019-10-03**	Station 7B/C – Site C North Camp	PM_{10}	201
2019-10-10	**2019-10-12**	Station 7B/C – Site C North Camp	PM_{10}	202
2019-10-29	**2019-10-30**	Station 7B/C – Site C North Camp	PM_{10}	203
2019-11-02	**2019-11-03**	Station 1 – Attachie Flat Upper Terrace	$PM_{2.5}$	204
2019-11-02	**2019-11-03**	Station 1 – Attachie Flat Upper Terrace	PM_{10}	205
2019-11-07	**2019-11-08**	Station 8 – Old Fort	$PM_{2.5}$	206
2019-11-25	**2019-11-25**	Station 8 – Old Fort	$PM_{2.5}$	207
2019-11-29	**2019-12-01**	Station 7B/C – Site C North Camp	PM_{10}	208
2019-12-02	**2019-12-06**	Station 7B/C – Site C North Camp	PM_{10}	209
2019-12-03	**2019-12-05**	Station 7B/C – Site C North Camp	PM2.5	210
2019-12-03	**2019-12-05**	Station 8 – Old Fort	$PM_{2.5}$	211
2019-12-03	**2019-12-04**	Station 8 – Old Fort	PM_{10}	212
2019-12-05	**2019-12-05**	Station 1 – Attachie Flat Upper Terrace	$PM_{2.5}$	213
2019-12-05	**2019-12-05**	Station 1 – Attachie Flat Upper Terrace	PM_{10}	214
2019-12-05	**2019-12-06**	Station 7B/C	$PM_{2.5}$	215
2019-12-05	**2019-12-07**	Station 8 – Old Fort	$PM_{2.5}$	216
2019-12-05	**2019-12-06**	Station 8 – Old Fort	PM_{10}	217
2019-12-07	**2019-12-11**	Station 7B/C – Site C North Camp	PM_{10}	218
2019-12-09	**2019-12-10**	Station 7B/C – Site C North Camp	$PM_{2.5}$	219

Appendix E includes three figures that present examples of active mitigation by the site contractor to suppress roadway dust and wind erosion emissions. A brine mixture of calcium chloride and water was applied by the Main Civil Works contractor, Peace River Hydro Partners (PRHP), on July 7 and November 2, 2019 on several of the dam site construction roads as indicated on the figure. Water was also used routinely as a dust suppressant throughout the Project's active construction areas on several occasions in 2019. Hydro-seeding and spin broadcasting of seed were used in areas on the Left Bank with no vegetation was also completed to stabilize disturbed soil and prevent erosion and control fugitive dust emissions. Spin broadcasting was also used on one location of the West Bank. Appendix E includes two figures of those areas that were hydro-seeded and/or spin broadcast by PRHP at the dam site. Details of all completed mitigation measures, contractor inspection comments coupled with air quality alerts, and BC MOE-issued Smoky Skies Bulletins and Air Quality Advisories are all included in Table D-1.

Open burning of piles of vegetation cleared in the footprint of the future Site C reservoir occurred in 2019. Figure 4-5 shows the locations of the burn piles for 2019. Twelve (12) ignition events within the Reservoir occurred during the year including the approximate number of piles noted below:

- 22 Feb - 15 piles in Moberly Drainage;
- 10 March – 60 piles in the Moberly Drainage; 10 piles on Tea Island (Lower Reservoir);
- 24 October – 5 piles on the South Bank Eastern Reservoir;
- 1 November (10 piles), 16 November (5 piles), 17 November (5 piles), 22 November (35 piles) – 55 piles on the South Bank Eastern Reservoir;
- 1, 2 December – 60 piles on the South Bank Eastern Reservoir;
- 1, 2 December – 225 piles in the Moberly Drainage; and
- 1 December – 240 piles in the North Bank Eastern Reservoir.

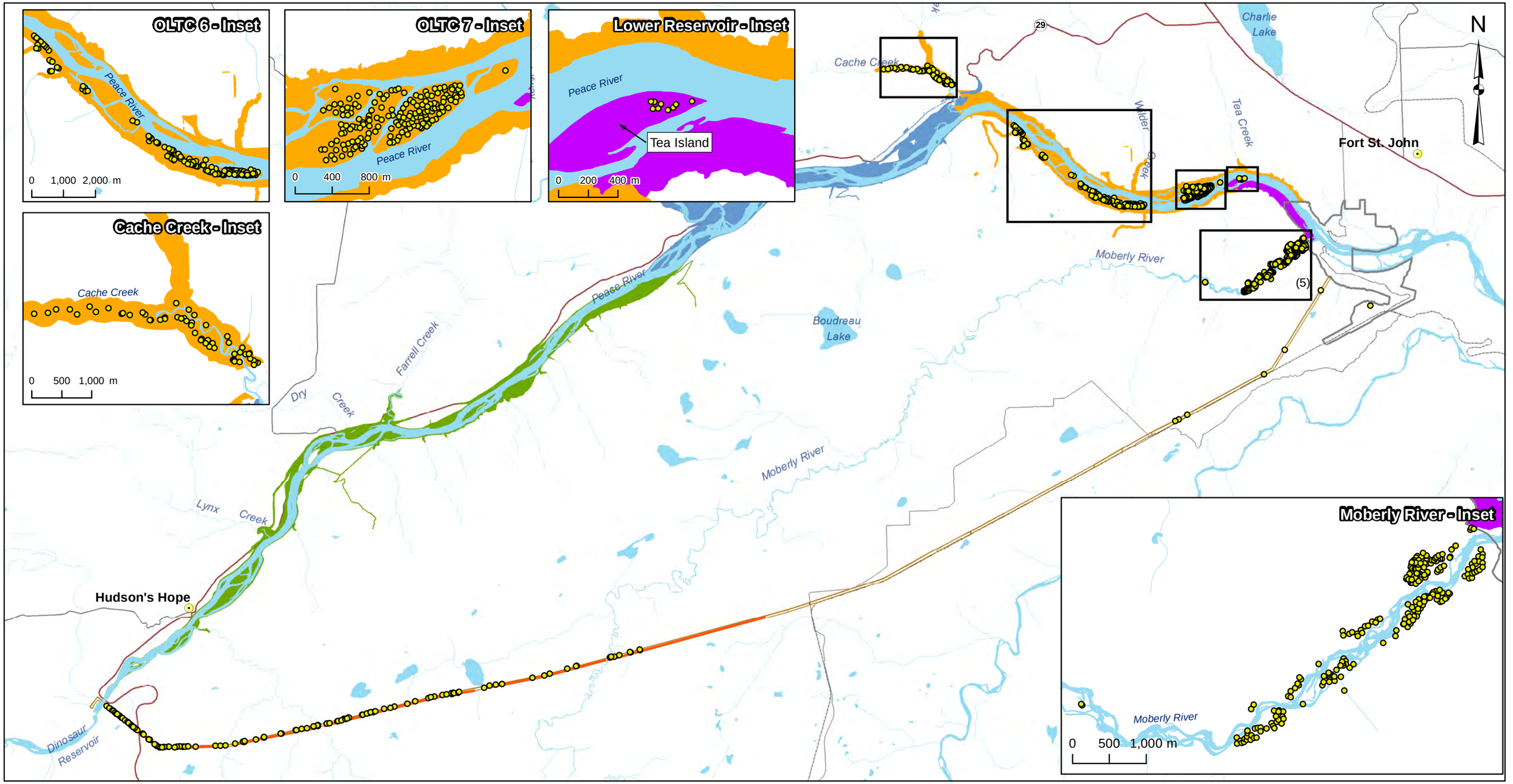
Approximate area cleared over the year 2019 included:

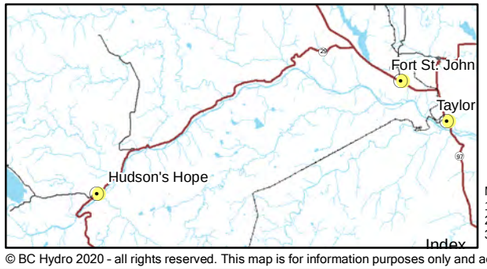
- Lower Reservoir - Approximately 5 ha;
- Moberly Drainage - Approximately 130 ha;
- South Bank East Reservoir – Approximately 55 ha; and
- North Bank East Reservoir - Approximately 75 ha.

In total, approximately 670 burn piles and 265 ha of brush were cleared in 2019 in the Lower Reservoir, Moberly Drainage, South Bank East Reservoir and North Bank East Reservoir.

Along the Transmission Line, approximately 230 burn piles were ignited, mostly on the western section.

All ignition events were based on custom venting forecasts which were used to inform brush burning events. These forecasts were provided by the Ministry of Forests, Lands and Natural Resource Operations. A Qualified Environmental Professional (QEP) sent out advance notification for every ignition event to the stakeholder list included as Appendix A in the Smoke Management Plan (Revision 2) (BC Hydro, 2016). Notices were also included in publications (e.g. notifications to First Nations, biweekly construction bulletins, etc.) distributed by the BC Hydro public relations team.





Map Notes:
1. Datum: NAD83
2. Projection: UTM Zone 10N
3. Base Data: Province of B.C.

Legend

Piles Burned in 2019
- Burn Pile (716 burn piles)
- Transmission Line West (229 burn piles)

- Transmission Corridor
- Road
- Highway
- Western Reservoir
- Middle Reservoir
- Eastern Reservoir
- Lower Reservoir
- Dam Site Area

1:200,000 0 10 km

BC Hydro

2019 Burn Piles

Date	Mar. 27, 2020	DWG NO	1016-N11-00804	R 0

Construction of the Site C Clean Energy Project is subject to required regulatory and permitting approvals.

Path: X:\ArcGISProjects\Environment\Physical_Environment\BurnPiles_2019_1016_N11_00804.mxd

4.2 Gaseous Criteria Air Contaminants

Table 4-4 gives an overview of the completeness of the datasets for gaseous criteria air contaminants (CO, NO_2 and SO_2) measured at Station 7C (Fort St. John North Camp C) as well as the number of any excursions and/or exceedances above the provincial AAQOs and a comparison of the annual averages with the provincial AAQOs.

For CO, a value is an exceedance once it is greater than the provincial Pollution Control Objectives (PCOs); whereas, for NO_2 and SO_2, there is only an exceedance if the 98th and 97th percentile of daily 1-hour maxima in the year is greater than their AAQOs, respectively. If this condition has not been met, values above the respective AAQOs do not constitute exceedances and are classified only as excursions.

Table 4-4: Summary of gaseous criteria air contaminant results for 2019 (in µg/m^3).

	NO_2	SO_2	CO	CO (8-Hour Rolling average)
Percent data complete	99.5	99.5	96.7	96.0
1-hour AAQO	113	183	14,300	5,500
Maximum Values	109	54.47	**15,333.42**	4,647.90
AAQO Exceedances / Excursions	0	0	1.0	0
Annual AAQO	60	13	NA(1)	NA(1)
Annual Average	6.6	1.2	160	NA(1)
97th percentile of Daily 1-Hour Maximum	NA(1)	19.9	NA(1)	NA(1)
98th percentile of Daily 1-Hour Maximum	56.2	NA(1)	NA(1)	NA(1)

Notes: (1): NA is used where the quantity in question is not applicable to the measurement.
(2): The term excursion is used here for NO_2 and SO_2 when the daily 1-hour maximum is greater than their respective AAQO but without satisfying the 98th or 97th percentile condition for achievement.
(3): Achievement based on annual average of 1-hour concentrations over one year, effective January 1, 2020. Used to inform new air management decisions beginning January 1, 2017 and all air management decisions beginning January 1, 2020.

No excursions of the 1-hour SO_2 and 1-hour NO_2 AAQOs were observed in 2019. There was one observed exceedance of the 1-hour PCOs for CO in 2019 and none for the 8-hour. The annual average NO_2 and SO_2 concentrations were well below their respective annual AAQOs.

Figure 4-6 through Figure 4-8 show the daily 1-hour maximum concentrations of NO_2 and SO_2, as well as the 1-hour and 8-hour rolling average CO concentrations, respectively. The maximum NO_2 concentration of 109 µg/m^3 was recorded on March9th, the maximum SO_2 concentration of 54.47 µg/m^3 was recorded on July 17th and the CO concentration recorded both its one-hour and 8-hour rolling average maxima of 15,222.42 µg/m^3 on December 3rd and 4647.9 µg/m^3 on December 4th, respectively.

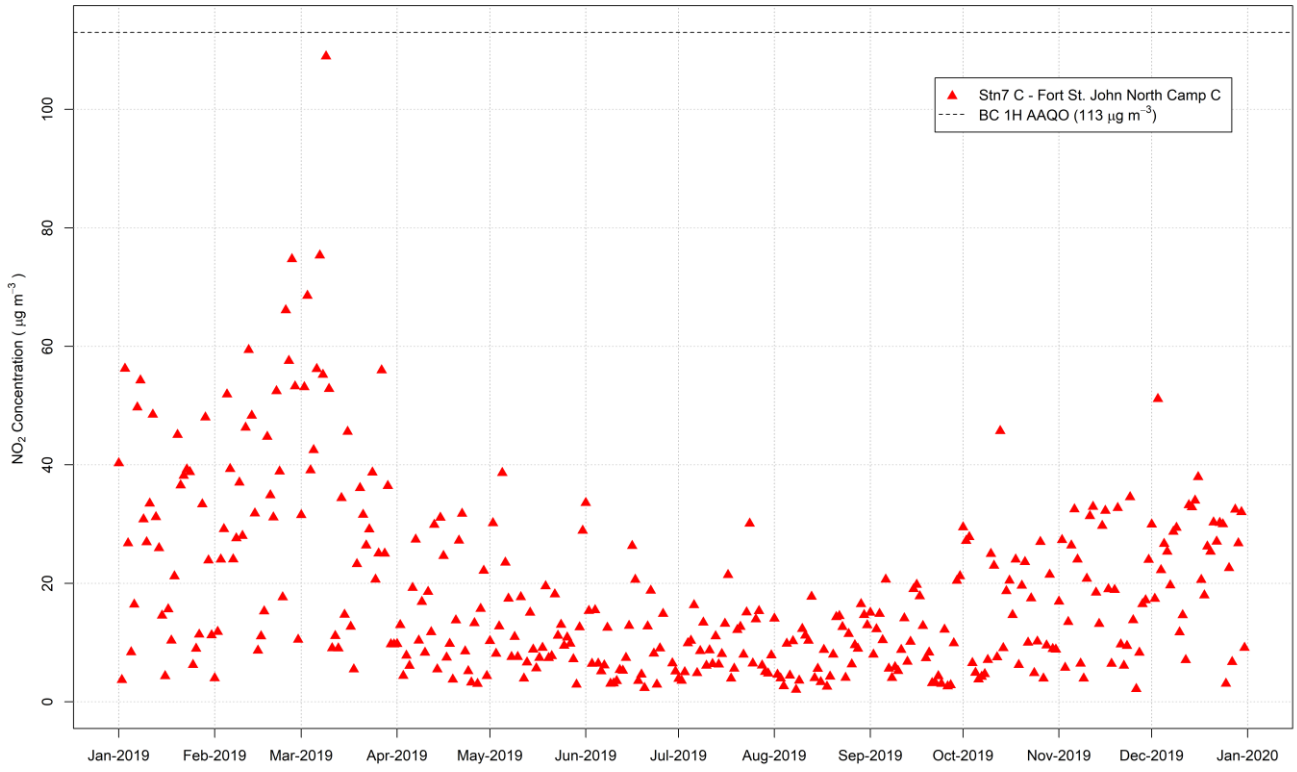


Figure 4-6: Daily 1-hour maximum NO_2 concentrations from Station 7C – Fort St. John North Camp C for 2019 (in µg/m^3).

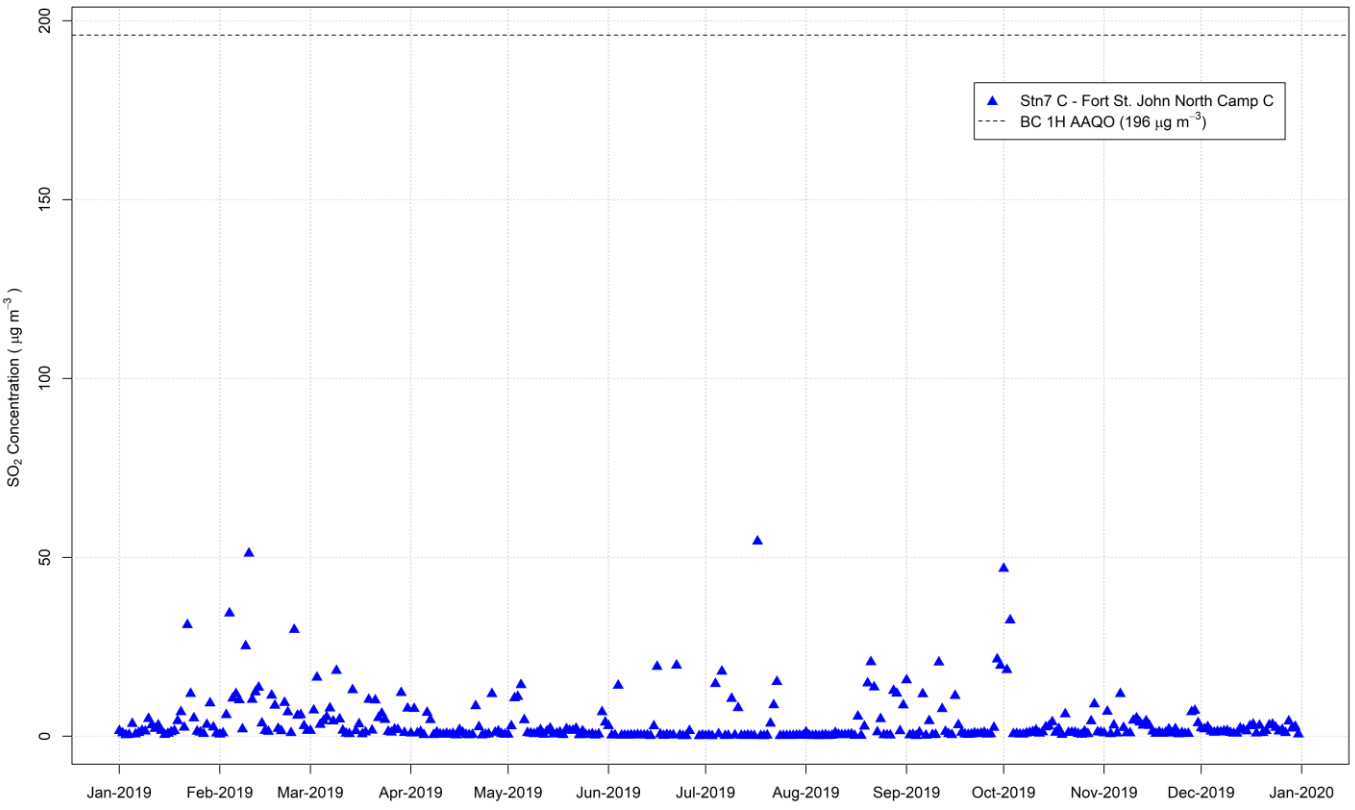


Figure 4-7: Daily 1-hour maximum SO_2 concentrations from Station 7C – Fort St. John North Camp C for 2019 (in µg/m^3).

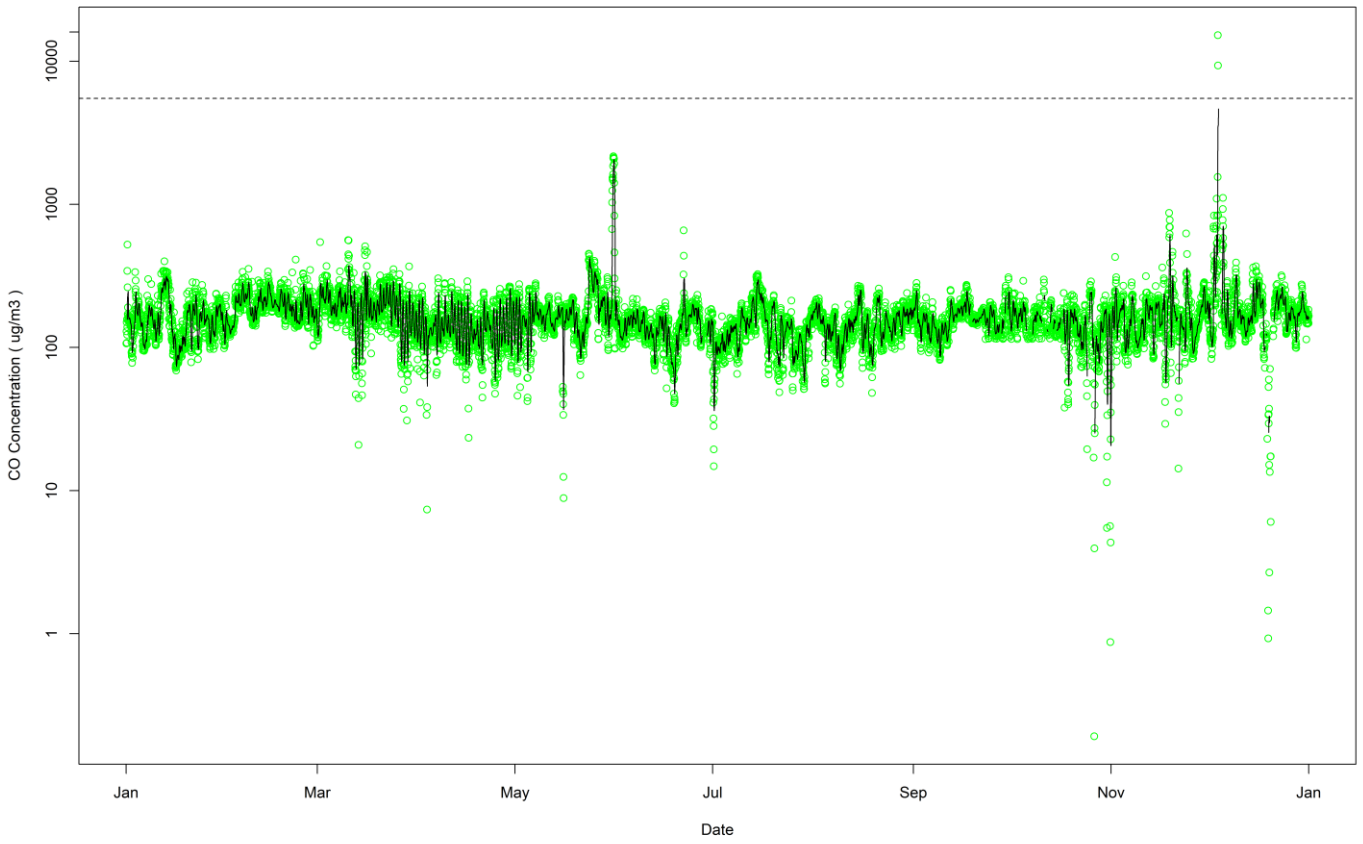


Figure 4-8: 1-hour (green) and 8-hour rolling average (black line) CO concentrations from Station 7C – Fort St. John North Camp C for 2019 (in µg/m^3).

4.3 Air Quality Reporting

Section 12.3.3 of the FDS conditions requires that BC Hydro produce a plan that includes procedures to enable the appropriate authorities to alert sensitive receptor groups and Reservoir Area Indigenous Groups in case of any measured exceedances of the AAQO's and to address those exceedances. Following Section 5.0 of BC Hydro's Air Quality Monitoring Program, that forms part of the CEMP (BC Hydro 2016), BC Hydro has developed a Memorandum of Understanding (MOU) with the BC MECCS to allow access to all air quality readings monitored by BC Hydro. According to the MOU, the BC MECCS will be responsible for reporting the information publicly on the Ministry's near real-time air quality data portal[1]. This data portal is currently active and available to all interested parties to view current and historical air quality data from BC Hydro's air quality monitoring stations. Based on these measurements and other monitoring in the region, the BC MECCS and Northern Health are able to issue air quality advisories. Quality assured data are provided annually to the BC MECCS. Final validated data must be delivered four to eight weeks prior to the subsequent Provincial Clean Air Day as indicated in the MOU. As of January 2018, as noted in the MOU, measurements from the Site C monitoring network are also being shared regularly (monthly) with the Pacific Climate Impacts Consortium (PCIC).[2] PCIC is a regional climate service centre at the University of Victoria that provides practical information on the physical impacts of climate variability and change in the Pacific and Yukon Region of Canada.

4.3.1 Monitoring Station Audits

The BC MECCS conducted equipment performance audits of the four ambient air quality monitoring stations on June 13th and October 24th, 2019, in accordance with the MOU. The results of these audits are presented in Table 4-5 and indicated that all of the audit results showed 'Pass'.

Table 4-5: Summary of BC MECCS audit results for 2019.

Station	Parameter	Audit dates	
		June 13, 2019	October 24, 2019
Station 1	SHARP $PM_{2.5}$	Pass	Pass
	SHARP PM_{10}	Pass	Pass
Station 7C	SHARP $PM_{2.5}$	Pass	Pass
	SHARP PM_{10}	Pass	Pass
	NO_x	Pass	Pass
	SO_2	Pass	Pass
Station 8	SHARP $PM_{2.5}$	Pass	Pass
	SHARP PM_{10}	Pass	Pass
Station 9	SHARP $PM_{2.5}$	Pass	Pass
	SHARP PM_{10}	Pass	Pass

[1] https://envistaweb.env.gov.bc.ca/ Data is available by searching in the reporting tool under purpose = BC HYDRO
[2] https://www.pacificclimate.org/

5 CONCLUSIONS

In fulfillment of the conditions outlined by the Project's environmental assessment approvals, this document reports on the climate and air quality as observed by the Site C monitoring network and the Environment and Climate Change Canada weather station at Fort St. John Airport during the 2019 calendar year.

Very small differences in ambient air temperature or in relative humidity were observed between the stations. This was attributed to the short distances and small elevation differences between stations; however, wind speed and wind direction were found to vary between stations due to small-scale surface features and terrain elevations having a larger impact on the local air flow patterns.

Site C network stations recorded a warmer annual average temperature than the Fort St. John Airport, which recorded a cooler annual average, when compared to 30-year climate normals. All stations, excluding Stations 10 and 11, recorded less precipitation than the Fort St. John Airport. The Fort St. John Airport annual average wind speeds greater than the Site C network.

Overall, there is very little difference in soil temperature between the stations. The soil temperature at all stations was observed to exceed 0 °C in April. The soil temperature at all stations was observed to exceed 0°C in April. Station 7B (Site C North Camp) thawed the earliest, on March 24th, and Station 4 (Bear Flat) thawed the latest, on April 10.

Four excursions above the 25 µg/m^3 AAQO and two exceedances of the AAQO for PM_{10} for a 24-hour averaging period were observed at Station 1 (Attachie Flat Upper Terrace) in 2019. Five excursions above the AAQO for $PM_{2.5}$ and 20 exceedances of the AAQO for PM_{10}, both over 24-hour averaging periods, were observed at Station 7C (Fort St. John North Camp C). At Station 8 (Old Fort), six excursions above the 24-hour AAQO for $PM_{2.5}$ and five exceedances above the 24-hour AAQO for PM_{10} were observed. Three excursions above the 24-hour AAQO for $PM_{2.5}$ and four exceedances above the 24-hour AAQO for PM_{10} were observed at Station 9 (85th Avenue).

The year 2019 had an inactive wildfire season in the northern British Columbia with just one event in May attributed to this. Many of the 24-hour PM_{10} exceedances were observed only at Station 7C (Fort St. John North Camp C) and not at any of the other BC Hydro stations, and have therefore, been attributed to dam construction activities. An alerting system is in place to immediately notify BC Hydro and its contractors about excursions of the AAQOs taking place so they can work to identify the activities onsite that may be responsible for the emissions and implement mitigation measures or change activities to reduce those emissions. BC Hydro conducted environmental audits throughout 2019 to verify implementation of the EPPs, including implementation of appropriate mitigation measures in response to air quality alerts.

No excursions or exceedances of the 1-hour SO_2 and 1-hour NO_2 AAQOs were observed in 2019. There was an observed exceedance of the 1-hour PCOs for CO occurring on December 3rd in 2019. The annual average NO_2 and SO_2 concentrations were well below their respective annual AAQOs.

6 REFERENCES

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APPENDIX A

2019 COMPLIANCE SUMMARY

Table A- 1: Summary of AQMP Conditions and Year 2019 Compliance Summary

Condition	Condition Description	Plan Reference	Status	Evidence/Deliverables
EAC Condition 57	The EAC Holder must develop an Air Quality Management Plan and Smoke Management Plan	Construction Environmental Management Plan Section 4.1 (Air Quality Management Plan) and Appendices A (Smoke Management Plan and B (Air Quality Monitoring Plan)	Completed February 4, 2016	Construction Environmental Monitoring Plan
	The Air Quality Management Plan and Smoke Management Plan must include at least the following to describe how the EAC Holder:			
	• Identify places of high use by Indigenous Groups for traditional purposes and develop mitigation measures if adverse effects are predicted at those locations.	Ground truthing activities are conducted per the Aboriginal Plant Use Mitigation Plan, Cultural Resources Mitigation Plan, and Heritage Resources Management Plan.	• BC Hydro has initiated ground truthing programs with the purpose of engaging with Indigenous land users, including registered trapline holders, to verify and accurately locate Indigenous land use information, and to identify concerns related to specific features, or sites that may be affected by the Project. BC Hydro has provided funding to Indigenous groups for ground truthing through Consultation and Capacity Funding Agreements. During this reporting period, ground truthing was undertaken by Blueberry	To date, ground truthing has identified areas of Indigenous use along the transmission line right-of-way, Cache Creek / Bear Flats, and Halfway River / Attachie Flats. Confidential ground truthing reports that summarize the ground truthing activities identify times when these areas may be used. Setback distances and ignition criteria described in the Smoke Management Plan (Sections 4.4 and 5.0, respectively) would apply in these areas. Indigenous groups will be notified of planned debris burning through the activities and tools described in section 5.0 of the Aboriginal Group Communications Plan (Appendix D of the CEMP). BC Hydro continues to consult with Indigenous groups regarding construction plans, and has sent invitation letters in April 2017, September 2017, January 2018, June 2018 and August 2018 highlighting areas where construction is planned in order that Indigenous groups could ground truth areas of traditional significance prior to construction.

Condition	Condition Description	Plan Reference	Status	Evidence/Deliverables
			River First Nations, Doig River First Nation, Halfway River First Nation, McLeod Lake Indian Band, and Saulteau First Nation.	
	• Measures to manage emissions and dust from all Project activities.	Construction Environmental Management Plan Section 4.1	Completed February 4, 2016, and ongoing	Section 4.1 provides mitigation measures to be completed to manage emissions and dust.
	• Measures to manage Project effects on air quality associated with concrete production at concrete batch plants.	Construction Environmental Management Plan Section 4.1	Completed February 4, 2016, and ongoing	Section 4.1 provides mitigation measures to be taken to manage air quality effects associated with concrete batch plant operations
	• Control Project-related smoke by following the most current BC Ministry of Environment Open Burning Smoke Control Regulation.	Construction Environmental Management Plan Appendix A	Ongoing	Section 4.1 and Appendix A of the CEMP refer to the requirement to control Project-related smoke in accordance with the BC Ministry of Environment's Open Burning Smoke Control Regulation. BC Hydro audits compliance with this requirement by reviewing contractor EPPs and conducting environmental audits during construction to verify implementation of EPPs.
	• Measures to retain vegetative barriers, or install temporary barriers, where practical.	Construction Environmental Management Plan Section 4.1	Ongoing	Section 4.1 identifies this commitment.
	• Procedures to provide MOE with data collected during monitoring so that they can notify sensitive populations if air quality thresholds are exceeded.	Construction Environmental Management Plan Appendix B Section 5.0	Ongoing	BC Hydro has entered into an agreement with the BC MOE to make all air quality measurements available in near real-time. All operational air quality stations are accessed hourly by the BC MOE.
	The EAC Holder must monitor air quality associated with shoreline protection works at Hudson's Hope during the construction period and for the first two years of operations.	Construction Environmental Management Plan Appendix B Section 4.0	Future requirement	Shoreline protection works at Hudson's Hope are planned to commence in 2020– 2022, and air quality monitoring plans will be implemented during construction and for the first 2 years of reservoir operations.

Condition	Condition Description	Plan Reference	Status	Evidence/Deliverables
	The EAC Holder must provide these draft Air Quality Management Plan and Smoke Management Plan to MOE, City of Fort St. John, District of Hudson's Hope, Peace River Regional District, District of Taylor, District of Hudson's Hope, District of Chetwynd and Indigenous Groups for review a minimum of 90 days prior to the commencement of construction activities.	Draft Construction Environmental Management Plan Section 4.1 (Air Quality Management Plan) and Appendix A (Smoke Management Plan) and Appendix B (Air Quality Monitoring Program)	Completed	The draft CEMP was submitted for review and comment on October 17, 2014.
	The EAC Holder must file the final Air Quality Management Plan and Smoke Management Plan with EAO, MOE, City of Fort St. John, District of Hudson's Hope, Peace River Regional District, District of Taylor, District of Chetwynd and Indigenous Groups a minimum of 30 days prior to the commencement of construction activities.	Construction Environmental Management Plan Section 4.1 (Air Quality Management Plan) and Appendix A (Smoke Management Plan) and Appendix B (Air Quality Monitoring Program)	Completed	The final (Revision 1) of the CEMP was provided to regulatory agencies, governments and Indigenous Groups on June 5, 2015. The CEMP continues to be updated as required, with the most recent version, Revision 6.1, dated December 12, 2019, was accessible to regulators, government agencies, Indigenous Groups and the public via the Site C Clean Energy Project website at: https://www.sitecproject.com/document-library/environmental-management.
	The EAC Holder must develop, implement and adhere to the final Air Quality Management Plan and Smoke Management Plan, and any amendments, to the satisfaction of EAO.	Construction Environmental Management Plan Section 4.1 (Air Quality Management Plan) and Appendices A (Smoke Management Plan and B (Air Quality Monitoring Plan)	Ongoing	2019 Air Quality Management Plan Annual Report BC Hydro audits contractor compliance with implementation of relevant requirements of the Air Quality Management Plan through: • reviewing Environmental Protection Plans (EPPs) submitted by the contractors and, • conducting environmental audits during construction to verify that requirements of the Plan are being considered and implemented as required BC Hydro will continue to issue Field Advice Memos to its contractors to address any issues of non-compliance.
EAC Condition 59	The EAC Holder must outline measures including relocation of affected home-owners, as deemed appropriate in consultation with affected home-	Construction Environmental Management Plan Section 4.11 (Noise and Vibration Management) and	Consultation with affected homeowners or Northern Health/BC Ministry of	A noise and air quality complaint response process has been developed and is being implemented. Key steps in the process include proactive noise mitigation, complaint response,

Condition	Condition Description	Plan Reference	Status	Evidence/Deliverables
	owners, to address serious levels of noise or changes in air quality during construction of the Project. The measures would be included in the appropriate plans.	Appendix B (Air Quality Monitoring Plan)	Environment to occur if necessary	monitoring/notification as required, and additional mitigation if warranted.
FDS Condition 12.1	The Proponent shall ensure that Designated Project construction is undertaken in a manner that protects the health of Indigenous peoples, by ensuring that exceedances of federal and provincial ambient air quality objectives are avoided or minimized and by managing the potential effects of smoke and dustfall.		Ongoing	Construction Environmental Management Plan Section 4.1 (Air Quality Management Plan) and Appendices A (Smoke Management Plan and B (Air Quality Monitoring Plan) BC Hydro audits contractor compliance with implementation of relevant requirements of the Air Quality Management Plan through: • reviewing Environmental Protection Plans (EPPs) submitted by the contractors and, • conducting environmental audits during construction to verify that requirements of the Plan are being considered and implemented as required BC Hydro will continue to issue Field Advice Memos to its contractors to address any issues of non-compliance.
FDS Condition 12.2	The Proponent shall develop, in consultation with Reservoir Area Indigenous groups, an air quality management plan to ensure exceedances of those ambient air quality objectives due to Designated Project construction are avoided or minimized at human receptor sites located outside the Project Activity Zone.	Construction Environmental Management Plan Section 4.1 (Air Quality Management Plan) and Appendices A (Smoke Management Plan and B (Air Quality Monitoring Plan)	Completed February 4, 2016	Construction Environmental Management Plan
FDS Condition 12.3	The plan shall include:			

Condition	Condition Description	Plan Reference	Status	Evidence/Deliverables
FDS Condition 12.3.1	• measures to avoid or minimize exceedances of federal and provincial ambient air quality objectives for Total Suspended Particulates (TSP), Particulate Matter ($PM_{2.5}$, PM_{10}), Carbon Monoxide (CO), Nitrogen Dioxide (NO_2) and Sulphur Dioxide (SO_2);	Construction Environmental Management Plan Section 4.1	Completed February 4, 2016	Construction Environmental Management Plan
FDS Condition 12.3.2	• measures to minimize or manage the potential effects of smoke and dustfall;	Construction Environmental Management Plan Section 4.1 (Air Quality Management Plan) and Appendices A (Smoke Management Plan)	Completed February 4, 2016	Construction Environmental Management Plan
FDS Condition 12.3.3	• procedures to enable the appropriate authorities to alert sensitive receptor groups and Reservoir Area Indigenous groups in cases of exceedance of air quality standards and to address those exceedances; and	Construction Environmental Management Plan Appendix B Section 5.0	Ongoing	BC Hydro has entered into an agreement with the BC MOE to make all air quality data available in near real-time. All operational air quality stations are accessed hourly by the BC MOE.
FDS Condition 12.3.4	• procedures to monitor air quality effects at locations used by Indigenous groups and to develop mitigation measures if adverse effects are predicted at those locations.	Construction Environmental Management Plan Appendix B	Completed July 8, 2016	Air quality monitors measuring PM_{10} and $PM_{2.5}$ were installed at three locations before construction began. A fourth station at the construction site measuring PM_{10}, $PM_{2.5}$, SO_2, NO_x and CO was installed July 7, 2016.
FDS Condition 12.4	The Proponent shall submit to the Agency and Reservoir Area Indigenous groups a draft copy of the plan for review 90 days prior to initiating construction.	Construction Environmental Management Plan Section 4.1 (Air Quality Management Plan) and Appendix A (Smoke Management Plan)	Completed	The draft CEMP was submitted for review and comment on October 17, 2014.

Condition	Condition Description	Plan Reference	Status	Evidence/Deliverables
FDS Condition 12.5	The Proponent shall submit to the Agency the final plan a minimum of 30 days prior to initiating construction. When submitting the final plan, the Proponent shall provide to the Agency an analysis that demonstrates how it has appropriately considered the input, views or information received from Reservoir Area Indigenous groups.	Construction Environmental Management Plan Section 4.1 (Air Quality Management Plan) and Appendices A (Smoke Management Plan)	Completed	The final Construction Environmental Management Plan, along with the Consideration Tracking Table was submitted on June 5, 2015.
FDS Condition 12.6	The Proponent shall implement the plan and provide to the Agency an analysis and summary of the implementation of the plan, as well as any amendments made to the plan in response to the results, on an annual basis during construction and the first year of operation.	Air Quality Management Plan 2015	5th Annual Report to CEAA included in this document.	Air Quality Management Plan 2015. • 1st Annual Report to CEAA submitted July 2016. • Second Annual Report submitted March 21, 2017 and revised June 14, 2017. • Third Annual Report was submitted March 29, 2018 • 4th Annual Report submitted April 1, 2019. • 5th Annual Report included in this document
FDS Condition 12.7	The Proponent shall provide a copy of the same version of its annual reporting on ambient air quality as provided to the Agency and in the same timeframe to Reservoir Area Indigenous groups and the Métis Nation British Columbia.	Air Quality Management Plan 2015	5th Annual Report to CEAA included in this document.	Air Quality Management Plan 2015. • 1st Annual Report to CEAA submitted July 2016. • Second Annual Report submitted March 21, 2017 and revised June 14, 2017. • Third Annual Report submitted March 29, 2018 • 4th Annual Report submitted April 1, 2019. • 5th Annual Report included in this document.

APPENDIX B

DATA TABLES

Table B- 1: **Monthly average temperatures at all Site C network stations and Fort St. John Airport for the year 2019 as well as the 30-year climate normals from 1981 to 2010.**

Month	Station 1	Station 3	Station 4	Station 6	Station 7B	Station 10	Station 11	FSJ Airport	Climate Normals
Jan	-9.6	-8.8	-9.1	-8.2	-9.0	-9.1	-9.2	-9.5	-12.8
Feb	-17.7	-17.7	-17.6	-16.4	-18.0	-18.8	-18.3	-19.1	-9.6
Mar	-3.5	-1.7	-2.7	-2.0	-1.5	-2.5	-3.0	-2.5	-4.6
Apr	4.3	4.2	4.6	4.5	4.8	4.0	4.5	3.5	3.9
May	11.4	11.3	11.6	11.4	12.1	10.9	11.2	10.7	9.8
Jun	14.2	14.0	14.2	14.4	14.9	13.5	14.5	13.5	14.1
Jul	15.4	15.1	15.5	15.9	16.5	15.1	16.0	15.4	16.2
Aug	13.1	12.6	13.1	13.4	13.8	12.5	13.6	12.9	14.9
Sep	10.0	9.8	10.1	10.2	10.7	9.8	10.3	9.6	10.1
Oct	3.2	3.3	3.3	4.0	3.5	2.9	3.0	2.2	3.6
Nov	-3.9	-3.0	-3.8	-2.4	-3.6	-3.8	-4.2	-4.5	-6.6
Dec	-9.6	-8.0	-9.2	-7.5	-8.2	-8.2	-9.7	-8.3	-11.4
Annual average	2.4	2.7	2.6	3.2	3.1	2.3	2.5	2.1	2.3

Notes: A "-" indicates a period for which the data was not sufficiently complete to calculate a valid monthly or annual average.

Table B- 2: Monthly average relative humidity measured at15:00 LST at all Site C network stations and Fort St. John Airport for the year 2019 as well as the 30-year climate normals from 1981 to 2010.

Month	Station 1	Station 3	Station 4	Station 6	Station 7B	Station 10	Station 11	FSJ airport	Climate normals
Jan	76.6	75.4	74.5	72.2	75.8	72.5	72.5	75.5	68.5
Feb	68.8	68.4	66.5	63.2	70.5	68.8	63.5	67.2	62.9
Mar	53.2	44.4	50.0	40.9	48.9	48.9	44.0	48.9	53.8
Apr	35.4	39.9	37.9	34.9	41.1	38.6	36.6	41.8	42.6
May	41.7	42.6	41.5	41.1	39.8	39.5	38.7	41.5	41.1
Jun	52.5	53.8	50.8	47.0	50.7	50.8	53.2	51.6	45.7
Jul	57.3	61.8	57.7	53.6	52.6	53.2	53.5	52.3	49.3
Aug	58.3	62.4	59.5	55.7	56.3	57.3	57.3	56.1	50.6
Sep	58.1	59.6	59.9	55.2	58.9	58.9	60.9	58.8	52.4
Oct	59.4	61.8	59.5	56.1	61.3	58.9	60.7	63.1	57.9
Nov	76.0	68.9	75.7	62.7	72.3	68.4	80.5	74.3	72.3
Dec	79.2	72.0	77.8	70.7	74.6	72.3	86.1	73.5	71.5
Annual average	56.6	56.2	52.1	52.9	55.5	57.5	56.1	58.5	55.7

Notes: A "-" indicates a period for which the data was not sufficiently complete to calculate a valid monthly or annual average.

Table B- 3: Monthly precipitation totals at all Site C stations and Fort St. John Airport for the year 2019 as well as the 30-year climate normals from 1981 to 2010.

Month	Station 1	Station 3	Station 4	Station 6	Station 7B	Station 10	Station 11	FSJ Airport	Climate normals
Jan	24.0	21.2	-	27.3	18.2	-	19.0	36.5	25.4
Feb	18.4	13.9	14.9	22.7	10.4	13.5	12.1	33.7	19.0
Mar	0	0	0	0	0	0.4	0	0.2	23.7
Apr	8.8	9.6	13.9	8.5	15.5	18.5	10.3	15.4	20.0
May	16.8	20.3	17.9	25.0	18.8	20.6	14.2	18.4	37.9
Jun	78.5	87.6	83.9	79.1	91.4	77.3	53.2	65.6	65.6
Jul	47.9	62.9	52.3	44.6	44.5	42.9	42.7	64.9	75.2
Aug	107	109	91.8	109	73.0	74.0	68.9	93.0	51.2
Sep	31.5	30.8	45.7	34.4	48.0	44.1	41.3	42.8	44.7
Oct	38.2	38.1	49.6	42.7	43.7	38.8	43.6	33.6	30.8
Nov	32.2	32.9	-	22.9	33.8	35.8	32.5	59.8	29.2
Dec	6.6	6.5	7.9	5.9	7.2	7.9	6.6	12.9	22.0
Total[(1)]	410	433	378	422	404	374	344	477	445

Notes: A "-" indicates a period for which the data was not sufficiently complete to calculate a valid monthly or annual total.

APPENDIX C

SEASONAL WIND ROSES

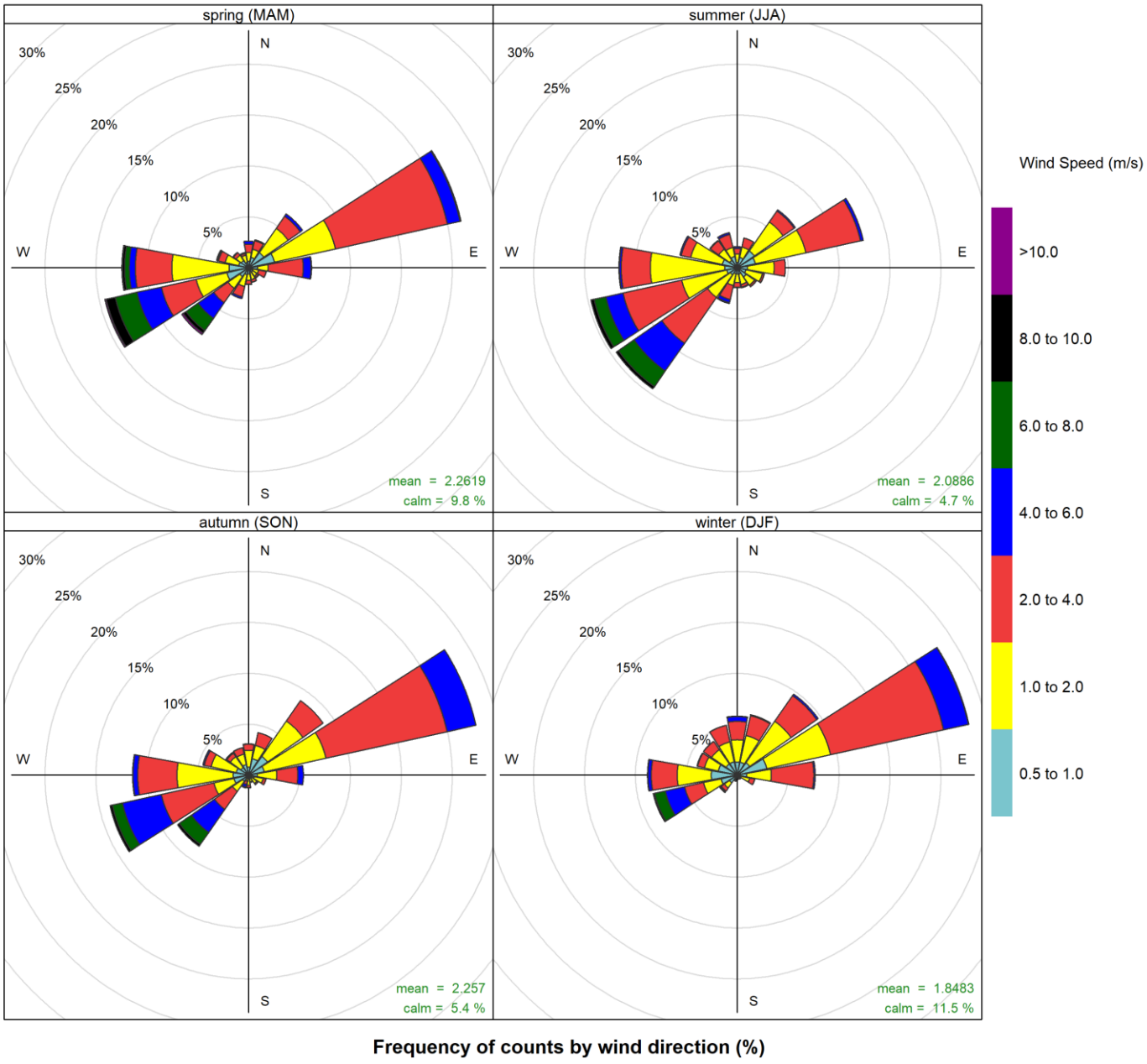


Figure C-1: Wind Roses by season for Station 1 (Attachie Flat Upper Terrace) for 2019.

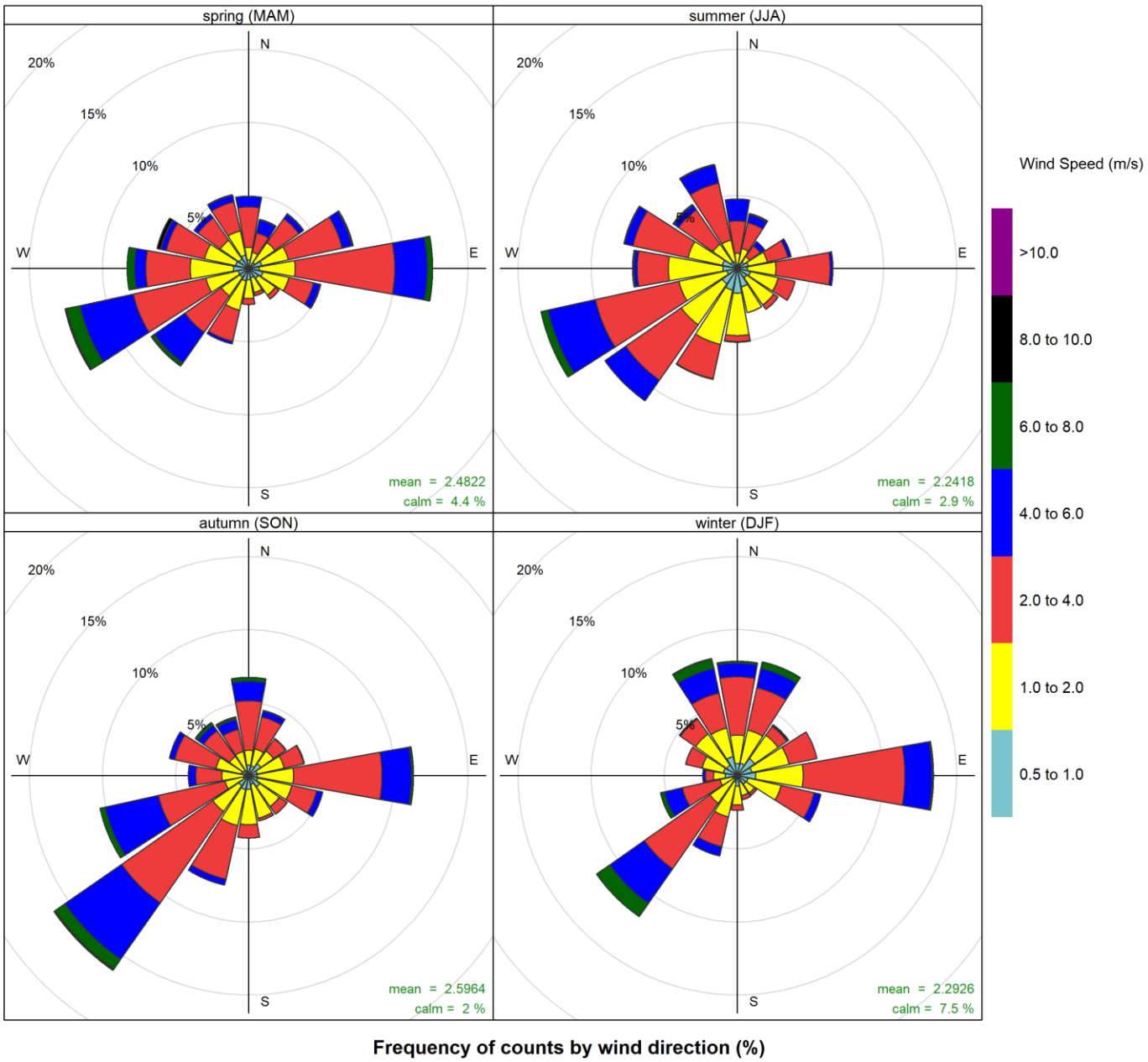


Figure C-2: Wind Roses by season for Station 3 (Attachie Plateau) for 2019.

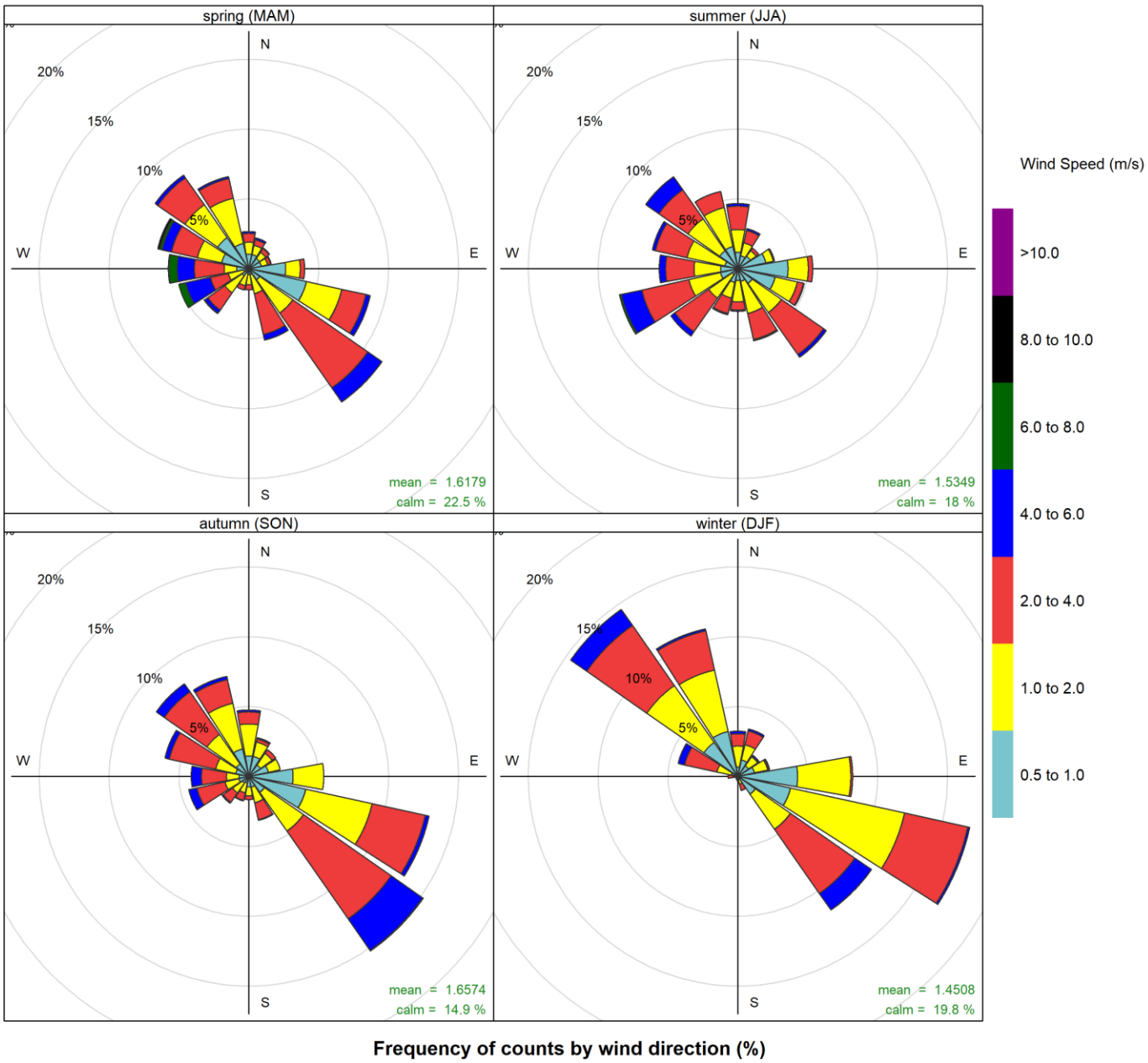


Figure C-3: Wind Roses by season for Station 4 (Bear Flat) for 2019.

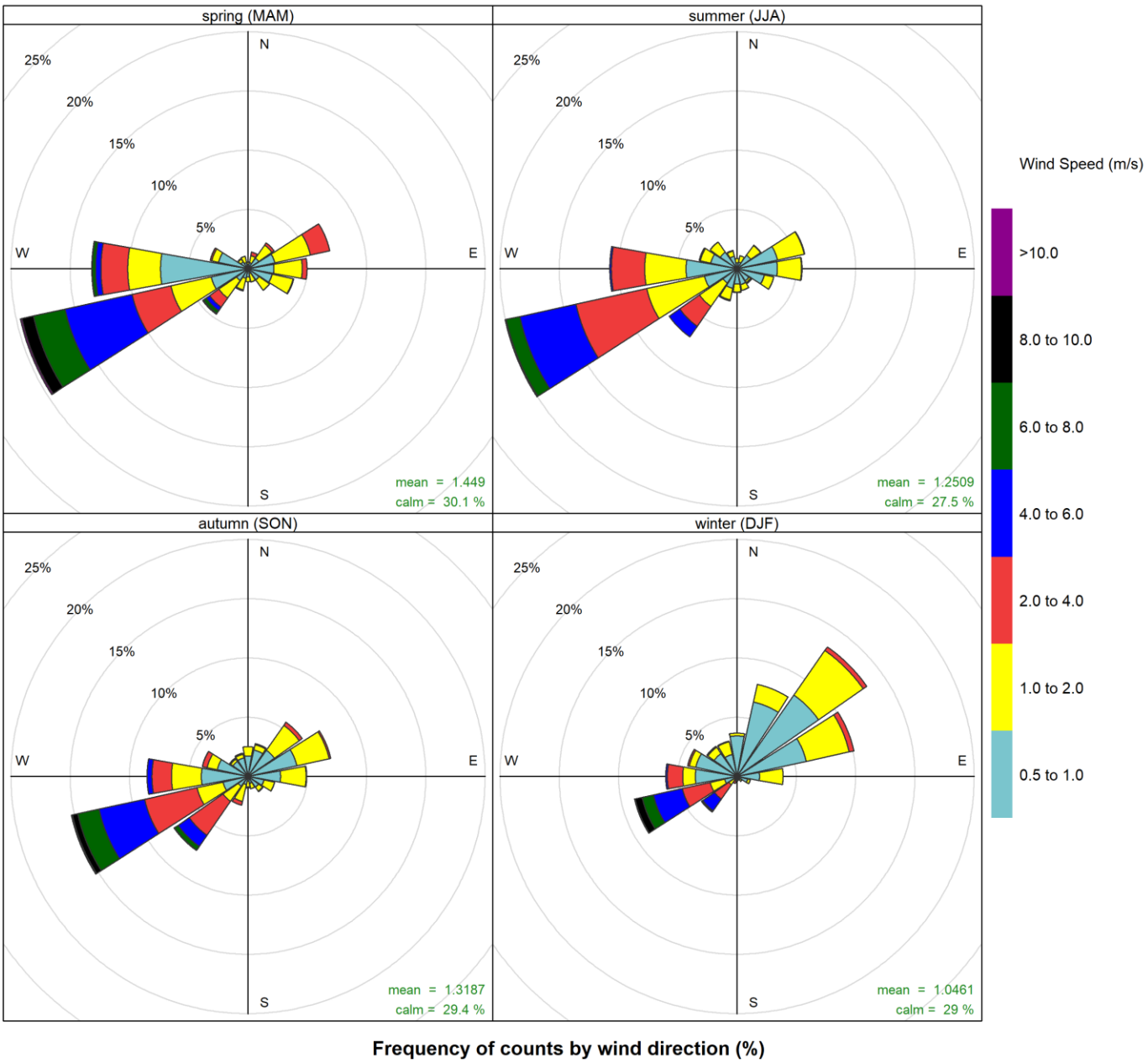


Figure C-4: Wind Roses by season for Station 6 (Farrell Creek) for 2019.

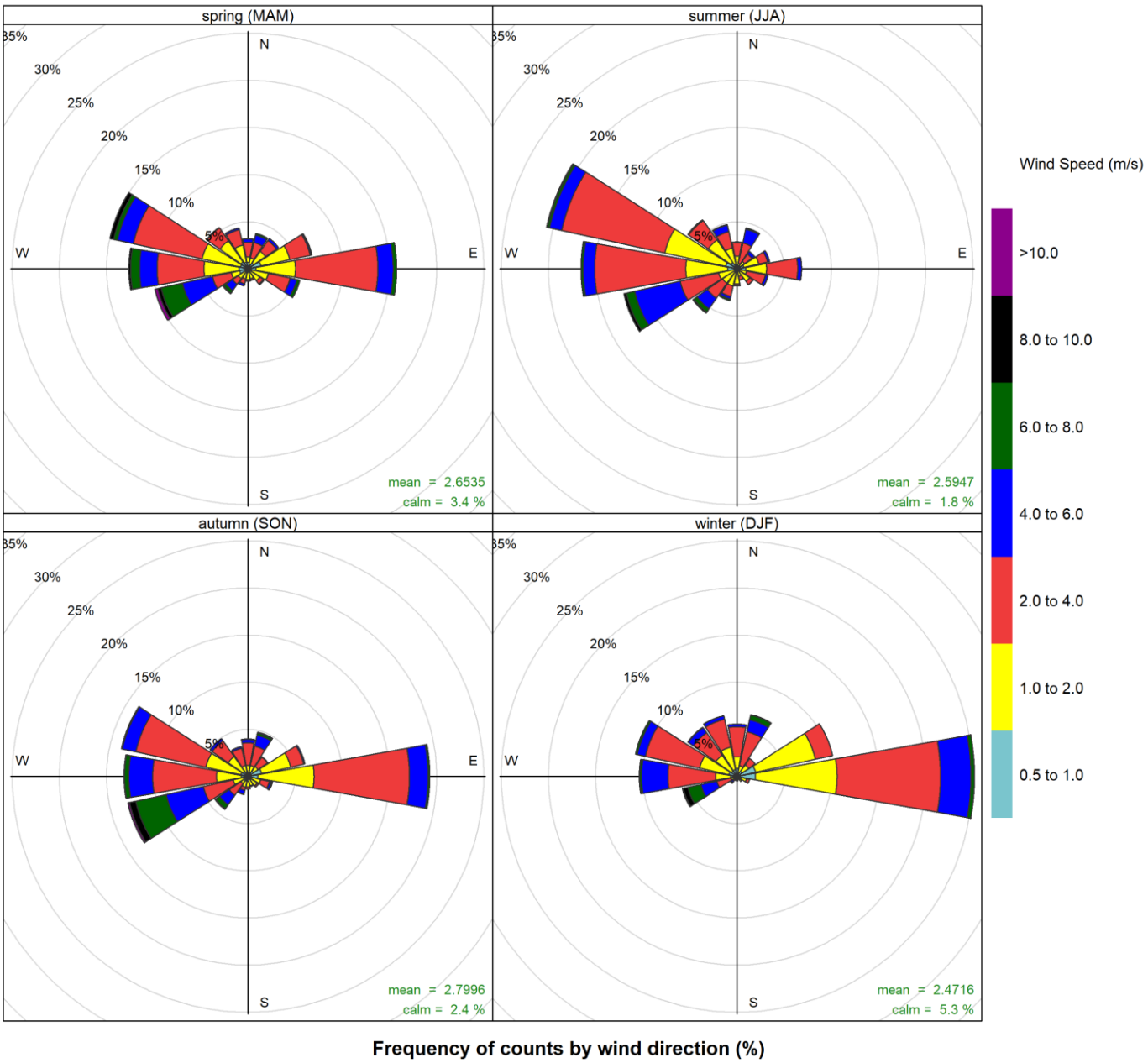


Figure C-5: Wind Roses by season for Station 7B/C (Site C North Camp/Fort St. John North Camp C) for 2019.

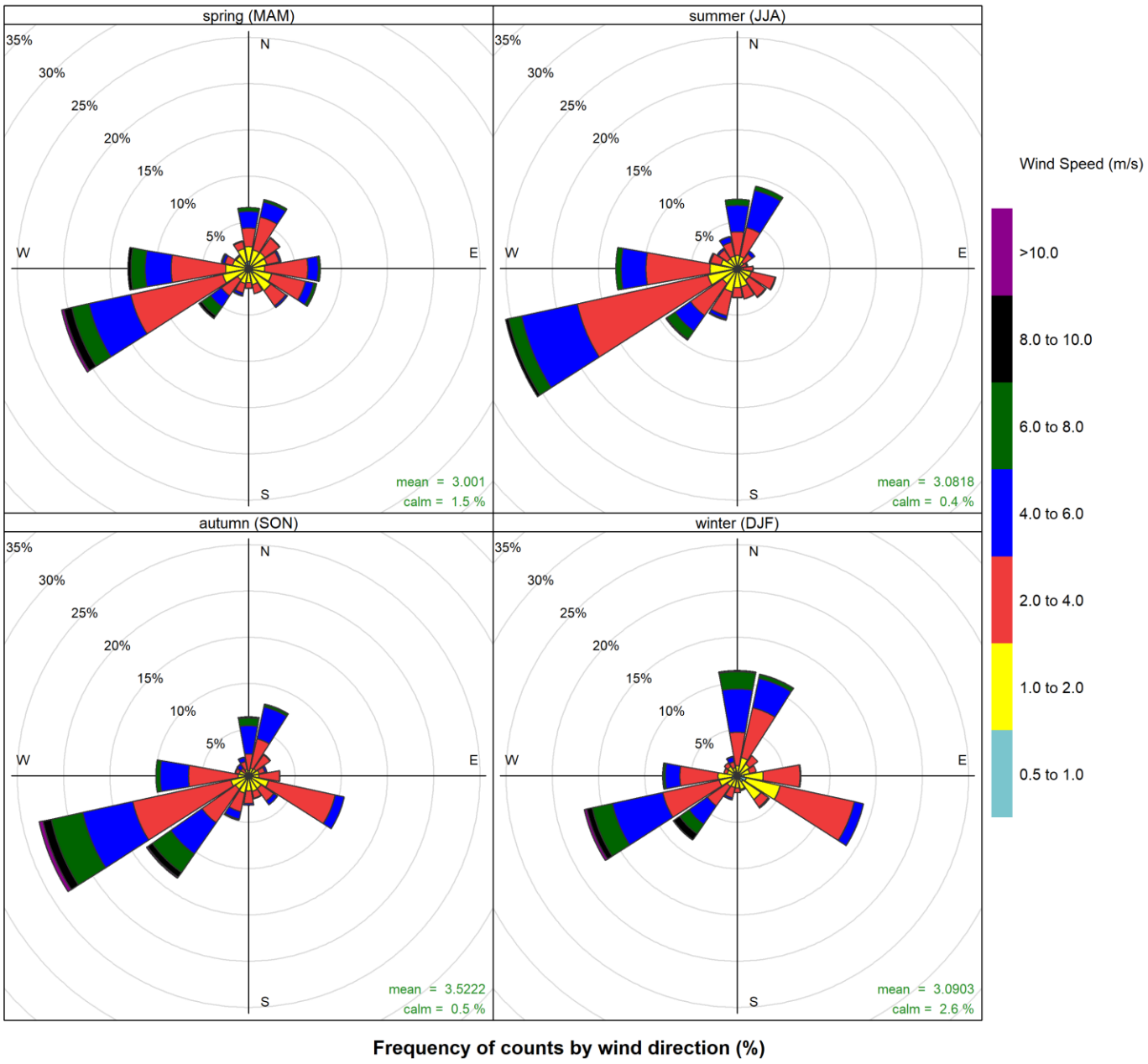


Figure C-6: Wind Roses by season for Station 9 (85th Avenue) for 2019.

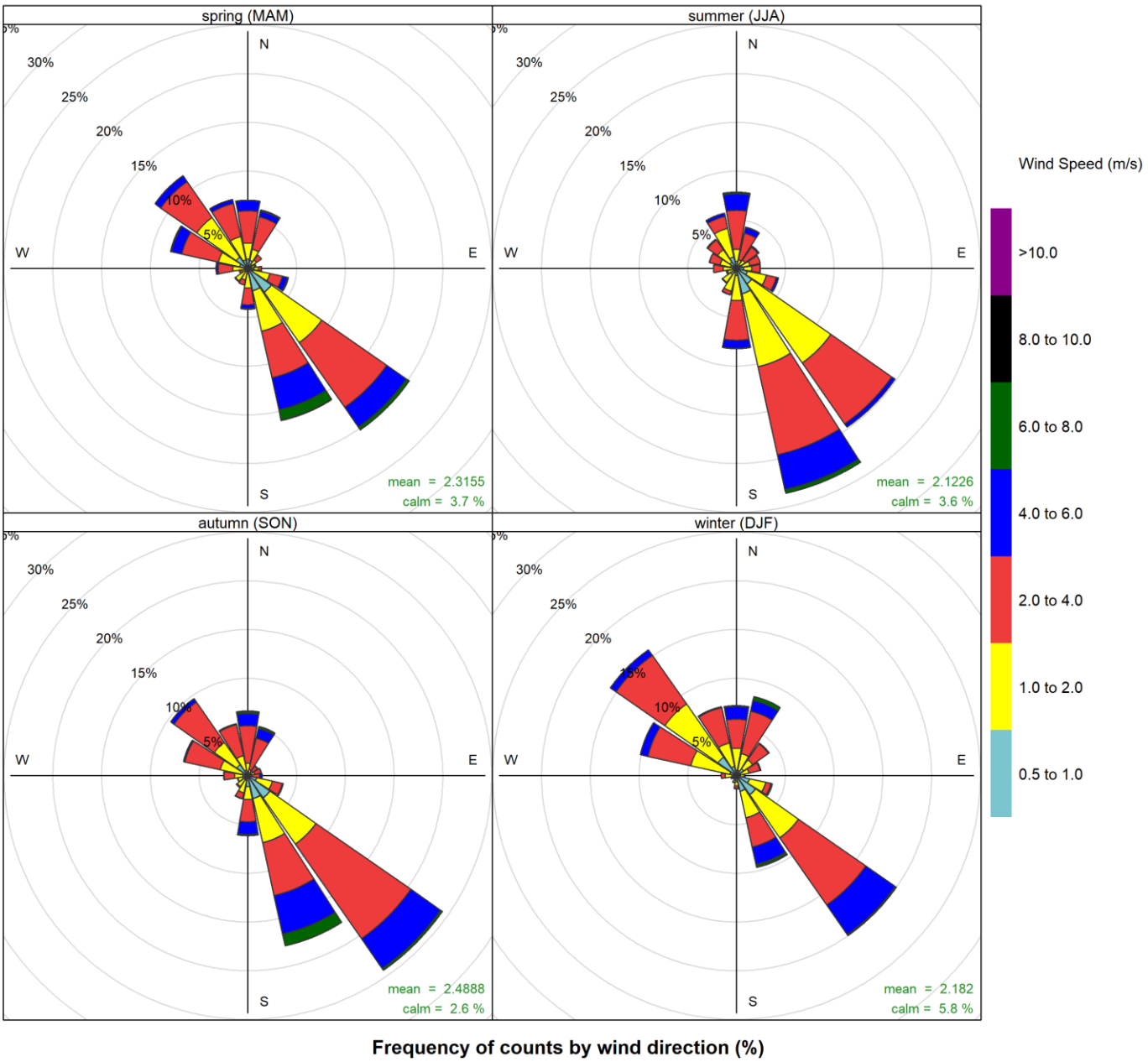


Figure C-7: Wind Roses by season for Station 10 (Tea Creek) for 2019.

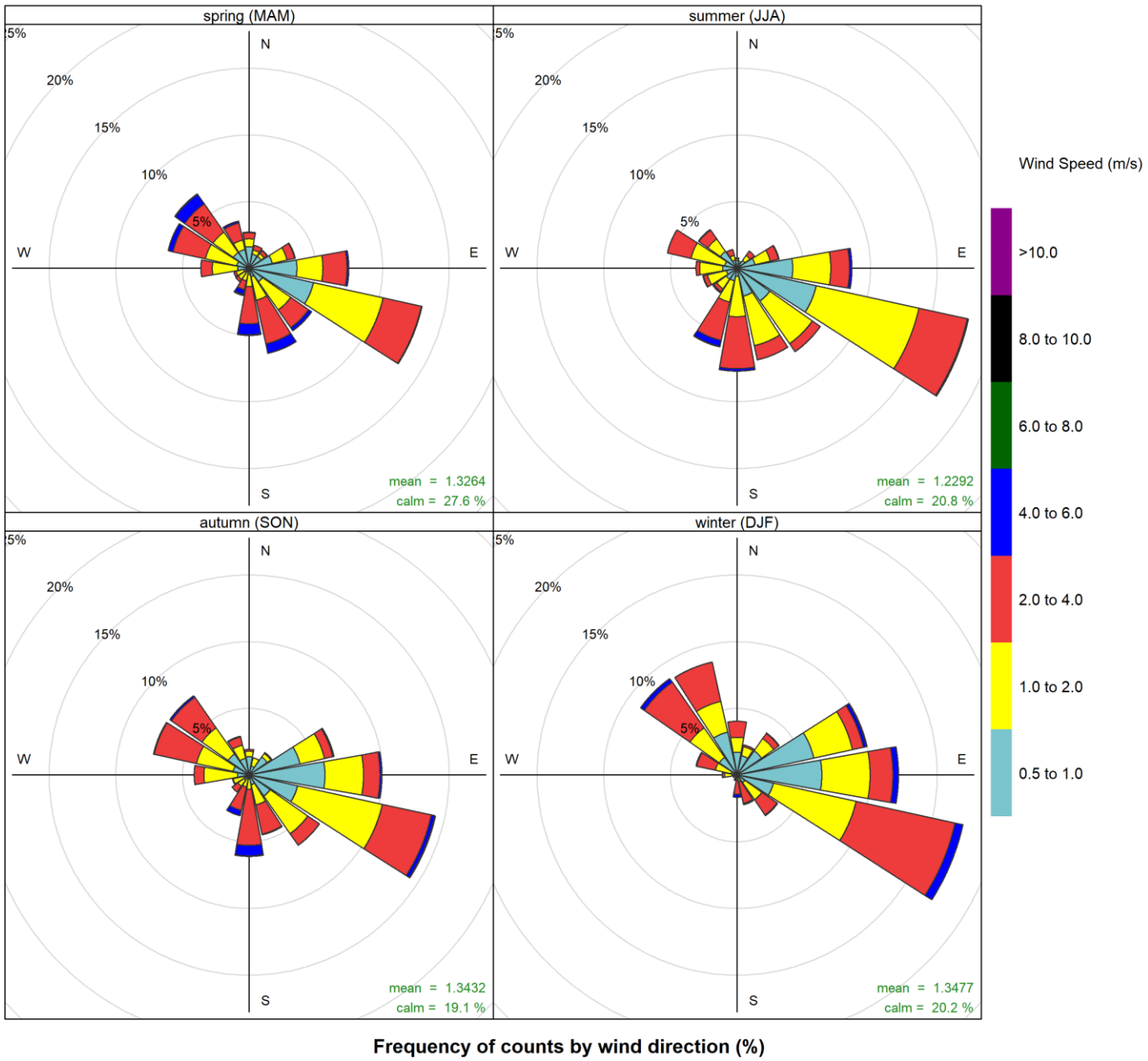


Figure C-8: Wind Roses by season for Station 11 (Taylor) for 2019.

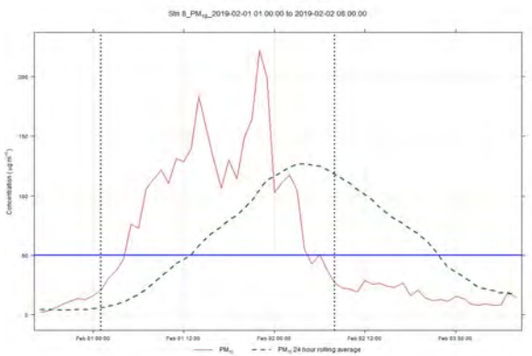
APPENDIX D

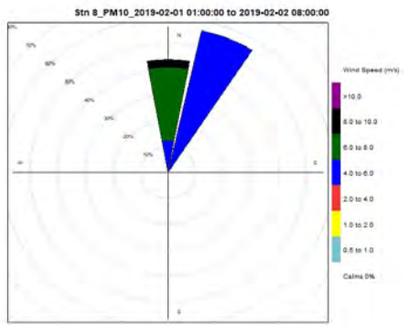
AIR QUALITY ALERT RESPONSE

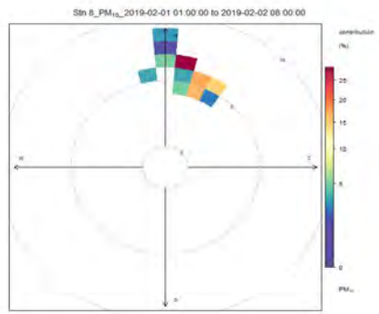
[1] Site Response provided by contractor, scope of contract as follows:

4Evergreen = reservoir clearing
Allteck: transmission line construction
AFDE = Aecon, Flatiron, Dragados, and EBC: Generating Station and Spillways Civil Work
PRHP = Peace River Hydro Partners: Main Civil Works
M & M = construction services for fish habitat mitigation
IDL = joint use warehouse construction
Duz Cho = building demolition services
HRIDL LP = Halfway River general contractor
Pathfinder = Pathfinder Endeavours Ltd

Event Number	Date / Time Alert Issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
167	2019-02-01 13:00	IN Alert 'PM10 > 90% Alert': PM10 (47.8 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-02-01 13:00 MST.	in	90%	PM10	Station-8	N	NA	Y	N-NNE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE:** Air Quality Management. No dust suppression activities were undertaken during the monitoring period. **Allteck:** Air Quality Management. No construction related air quality issues were identified during the reporting period. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **IDL:** Air Quality Management: No air quality concerns. **M&M Resources:** No issues identified. Idling minimized where practical. Equipment equipped with catalytic reduction systems (DEF).	During the event, wind directions that contributed the most particulate matter were N and NNE.The wind speed from these directions were up to 6 m/s.
167	2019-02-01 14:00	IN Alert 'PM10 Alert': PM10 (54.4 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-02-01 14:00 MST.	in	100%	PM10	Station-8	N	NA	Y	N-NNE	As noted above	As noted above
167	2019-02-02 23:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station-8	N	NA	Y	N-NNE	As noted above	As noted above
167	2019-02-02 23:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM10	Station-8	N	NA	Y	N-NNE	As noted above	As noted above







[1] Site Response provided by contractor, scope of contract as follows:

4Evergreen = reservoir clearing
Allteck: transmission line construction
AFDE = Aecon, Flatiron, Dragados, and EBC: Generating Station and Spillways Civil Works
PRHP = Peace River Hydro Partners: Main Civil Works
M & M = construction services for fish habitat mitigation
IDL = joint use warehouse construction
Duz Cho = building demolition services
HRIDL LP = Halfway River general contractor
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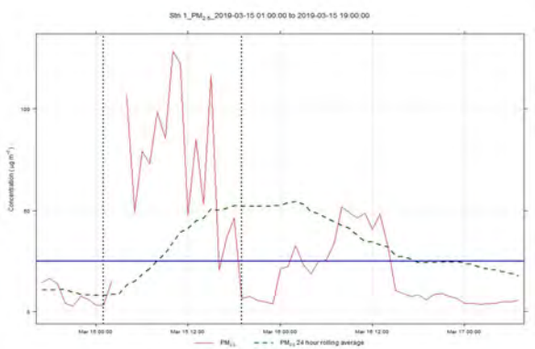
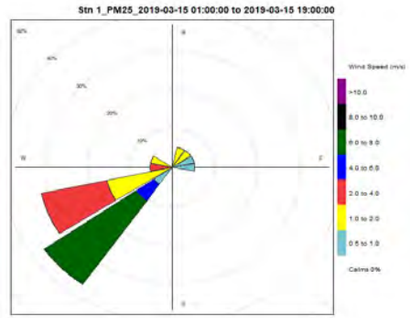
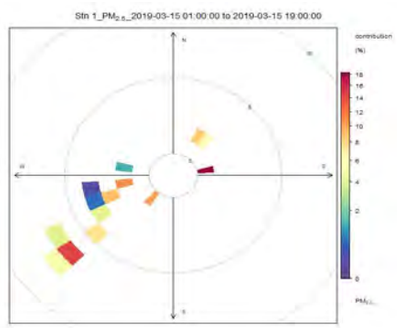
Event number	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
168	2019-03-15 8:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (24.5 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-03-15 08:00 MST.	in	90%	PM2.5	Station 1	N	N/A	Y	SW-WSW	**PRHP:** The purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE:** No dust suppression activities were undertaken during the monitoring period. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)). **IDL:** There was no burning. No other air quality concerns.	During the event, wind directions that contributed the most particulate matter were ENE, SW and WSW with wind speeds up to 1 m/s, 8 m/s and 4 m/s repectively. Also, RWDI was informed by BC Hydro that there was burning along the highway realignment near Halfway River, and likely igniting at Cache Creek, the Transmission Line, and the Moberly on 2019-03-15.
168	2019-03-15 9:00	IN Alert 'PM2.5 Alert': PM2.5 (28.8 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-03-15 09:00 MST.	in	100%	PM2.5	Station 1	N	N/A	Y	SW-WSW	As noted above	As noted above
168	2019-03-16 19:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	100%	PM2.5	Station 1	N	N/A	Y	SW-WSW	As noted above	As noted above
168	2019-03-17 3:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM2.5	Station 1	N	N/A	Y	SW-WSW	As noted above	As noted above







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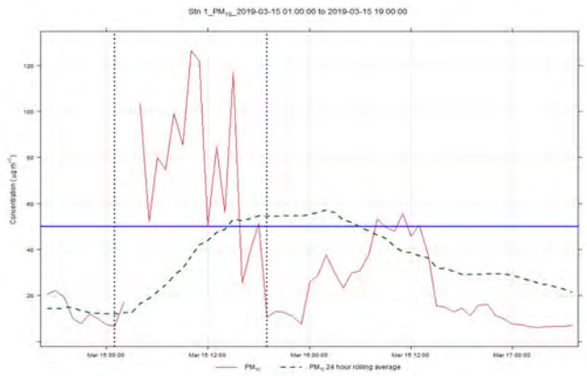
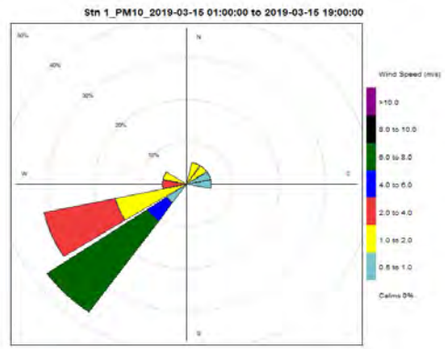
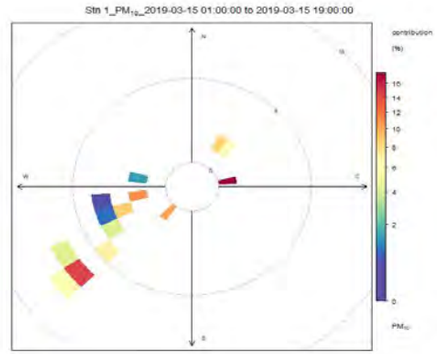
Event number	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
169	2019-03-15 13:00	IN Alert 'PM10 > 90% Alert': PM10 (47.1 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-03-15 13:00 MST.	in	90%	PM10	Station 1	N	N/A	Y	SW-WSW	**PRHP:** The purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associate hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE:** No dust suppression activities were undertaken during the monitoring period. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)). **IDL:** There was no burning. No other air quality concerns.	During the event, wind directions that contributed the most particulate matter were ENE, SW and WSW with wind speeds up to 1 m/s, 8 m/s and 4 m/s repectively. Also, RWDI was informed by BC Hydro that there was burning along the highway realignment near Halfway River, and likely igniting at Cache Creek, the Transmission Line, and the Moberly on 2019-03-15.
169	2019-03-15 15:00	IN Alert 'PM10 Alert': PM10 (51.5 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-03-15 15:00 MST.	in	100%	PM10	Station 1	N	N/A	Y	SW-WSW	As noted above	As noted above
169	2019-03-16 7:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	100%	PM10	Station 1	N	N/A	Y	SW-WSW	As noted above	As noted above
169	2019-03-16 10:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM10	Station 1	N	N/A	Y	SW-WSW	As noted above	As noted above







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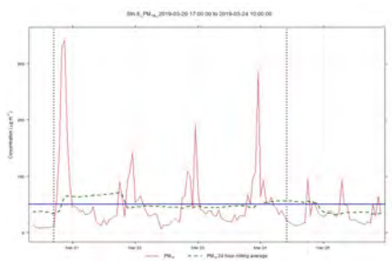
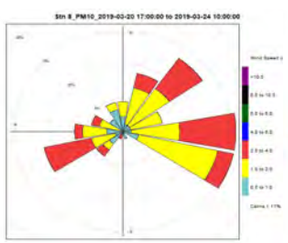
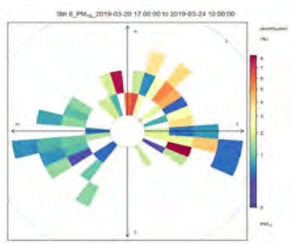
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
170	2019-03-20 21:00	IN Alert 'PM10 > 90% Alert': PM10 (58.3 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-20 21:00 MST.	in	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	**AFDE:** No dust suppression activities were undertaken during the monitoring period. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements (see attached Weekly Environmental Monitoring and Inspection Checklist. **PRHP:** unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind directions that contributed the most particulate matter were NNW, N, NE and ESE with wind speeds up to 2 m/s, 2 m/s, 3 m/s and 3 m/s repectively. Also, the Ministry of Environment and Climate Change Strategy in collaboration with Northern Health issued an Air Quality Advisory for Fort St John due to high concentrations of particulate matter (PM10) on 2019-03-20. it remaind in effect unitl 2019-03-24.
170	2019-03-20 21:00	IN Alert 'PM10 Alert': PM10 (58.3 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-20 21:00 MST.	in	100%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-21 21:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-21 22:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-22 1:00	IN Alert 'PM10 > 90% Alert': PM10 (45.4 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-22 01:00 MST.	in	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-22 18:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-22 21:00	IN Alert 'PM10 > 90% Alert': PM10 (47.3 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-22 21:00 MST.	in	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-23 4:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-23 6:00	IN Alert 'PM10 > 90% Alert': PM10 (45.1 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-23 06:00 MST.	in	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-23 8:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-23 9:00	IN Alert 'PM10 > 90% Alert': PM10 (45.5 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-23 09:00 MST.	in	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-23 21:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-23 22:00	IN Alert 'PM10 > 90% Alert': PM10 (45.3 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-23 22:00 MST.	in	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-24 0:00	IN Alert 'PM10 Alert': PM10 (50.3 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-24 00:00 MST.	in	100%	PM10	Station 8	N	N/A	Y	NE-E-ESE	**FMI**: Weekly inspection confirmed that air quality management was in compliance with EPP requirements (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)). **PRHP**: unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	As noted above
170	2019-03-24 23:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above
170	2019-03-24 23:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM10	Station 8	N	N/A	Y	NE-E-ESE	As noted above	As noted above







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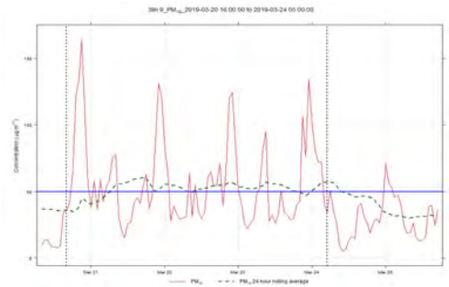
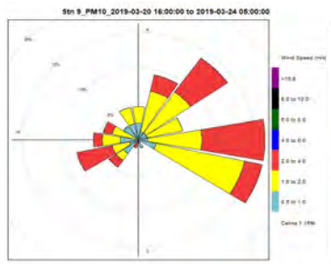
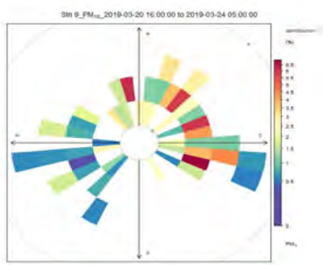
171	2019-03-21 4:00	IN Alert 'PM10 > 90% Alert': PM10 (45.7 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-03-21 04:00 MST.	in	90%	PM10	Station 9	N	N/A	Y	NE-E-ESE	**AFDE:** No dust suppression activities were undertaken during the monitoring period. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)). **PRHP:** unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind directions that contributed the most particulate matter were NNW, N, NE and ESE with wind speeds up to 2 m/s, 2 m/s, 3 m/s and 3 m/s repectively. Also, the Ministry of Environment and Climate Change Strategy in collaboration with Northern Health issued an Air Quality Advisory for Fort St John due to high concentrations of particulate matter (PM10) on 2019-03-20. it remaind in effect unitl 2019-03-24.
171	2019-03-21 7:00	IN Alert 'PM10 Alert': PM10 (52.2 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-03-21 07:00 MST.	in	90%	PM10	Station 9	N	N/A	Y	NE-E-ESE	As noted above	As noted above
171	2019-03-22 8:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	100%	PM10	Station 9	N	N/A	Y	NE-E-ESE	As noted above	As noted above
171	2019-03-22 10:00	IN Alert 'PM10 Alert': PM10 (50.9 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-03-22 10:00 MST.	in	100%	PM10	Station 9	N	N/A	Y	NE-E-ESE	As noted above	As noted above
171	2019-03-23 20:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	100%	PM10	Station 9	N	N/A	Y	NE-E-ESE	As noted above	As noted above
171	2019-03-24 0:00	IN Alert 'PM10 Alert': PM10 (50.8 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-03-24 00:00 MST.	in	100%	PM10	Station 9	N	N/A	Y	NE-E-ESE	As noted above	As noted above
171	2019-03-24 10:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	100%	PM10	Station 9	N	N/A	Y	NE-E-ESE	As noted above	As noted above
171	2019-03-24 20:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	90%	PM10	Station 9	N	N/A	Y	NE-E-ESE	As noted above	As noted above







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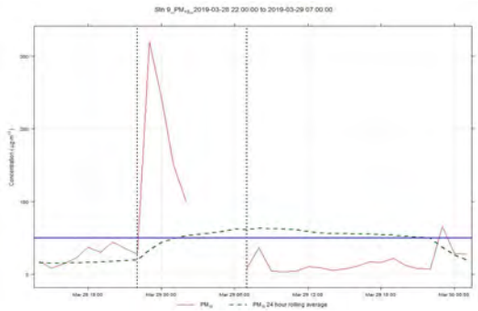
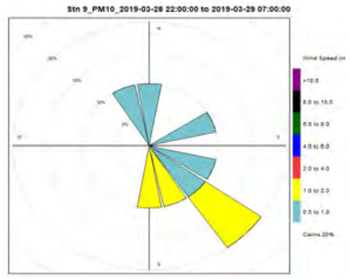
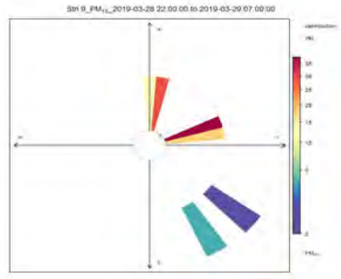
172	2019-03-29 1:00	IN Alert 'PM10 > 90% Alert': PM10 (46.4 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-03-29 01:00 MST.	in	90%	PM10	Station 9	N	N/A	N	SE	**FMI**: Weekly inspection confirmed that air quality management was in compliance with EPP requirements (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)). **PRHP:** unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind directions that contributed the most particulate matter were NNE and ESE with wind speeds up to 2 m/s. Also, the Ministry of Environment and Climate Change Strategy in collaboration with Northern Health issued an Air Quality Advisory for Fort St John due to high concentrations of particulate matter (PM10) on 2019-03-28. it remaind in effect unitl 2019-03-31.
172	2019-03-29 20:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	90%	PM10	Station 9	N	N/A	N	SE	As noted above	As noted above







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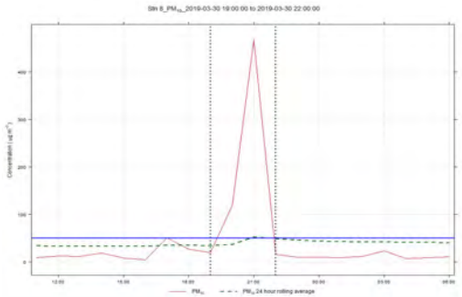
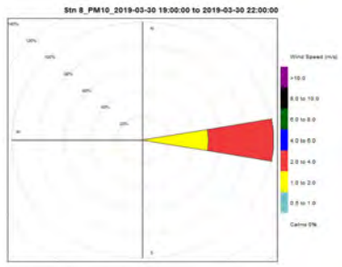
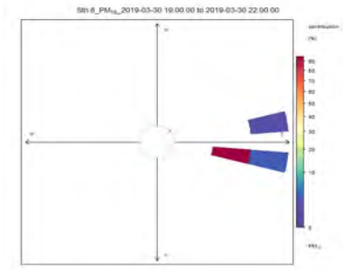
173	2019-03-30 21:00	IN Alert 'PM10 > 90% Alert': PM10 (50.9 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-30 21:00 MST.	in	90%	PM10	Station 8	N	N/A	N	E	**PRHP:** unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed the most particulate matter was E with wind speeds up to 2 m/s. Also, the Ministry of Environment and Climate Change Strategy in collaboration with Northern Health issued an Air Quality Advisory for Fort St John due to high concentrations of particulate matter (PM10) on 2019-03-28. it remaind in effect unitl 2019-03-31.
173	2019-03-30 21:00	IN Alert 'PM10 Alert': PM10 (50.9 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-03-30 21:00 MST.	in	100%	PM10	Station 8	N	N/A	N	E	As noted above	As noted above
173	2019-03-30 23:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM10	Station 8	N	N/A	N	E	As noted above	As noted above
173	2019-03-31 0:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	N	E	As noted above	As noted above







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PRHP = Peace River Hydro Partners: Main Civil Works
M & M = construction services for fish habitat mitigation
IDL = joint use warehouse construction
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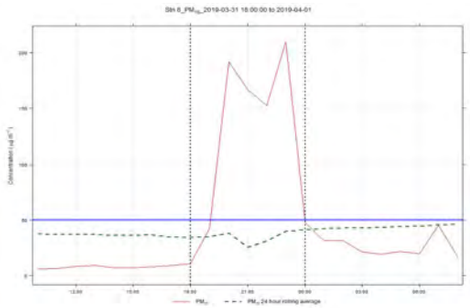
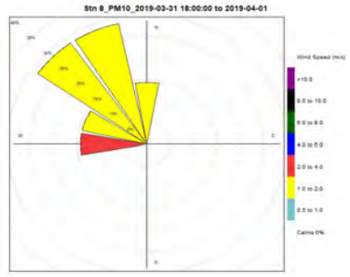
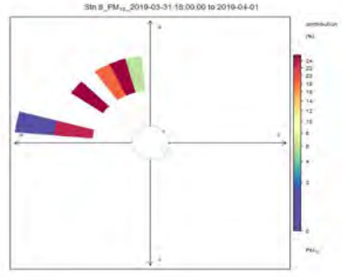
HRIDL LP = Halfway River general contractor
Pathfinder = Pathfinder Endeavours Ltd

Event number	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
174	2019-04-01 8:00	IN Alert 'PM10 > 90% Alert': PM10 (46 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-04-01 08:00 MST.	in	90%	PM10	Station 8	N	N/A	N	NW-NNW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed the most particulate matter was WNW, NW and NNW with wind speeds up to 2 m/s.
174	2019-04-01 21:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	N	NW-NNW	As noted above	As noted above







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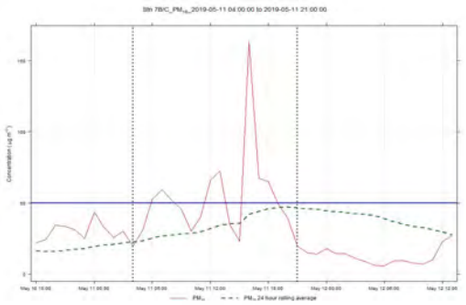
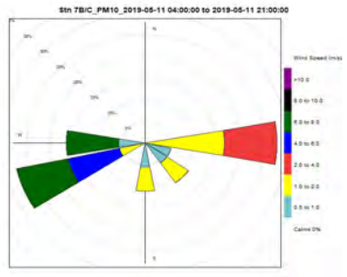
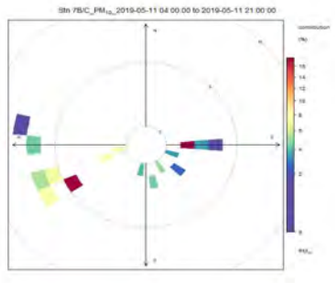
Event number	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
175	2019-05-11 18:00	IN Alert 'PM10 > 90% Alert': PM10 (46 µg/m3) at Stn 7B/C: North Camp for 2019-05-11 18:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	E-WSW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **Allteck:** No construction related air quality issues were identified during the reporting period. No excessive idling was observed.All equipment is inspected daily and is in good operational condition.	During the event, wind direction that contributed the most particulate matter was E and WSW with wind speeds up to 2 m/s and 5 m/s respectively.
175	2019-05-12 0:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	E-WSW	As noted above	As noted above







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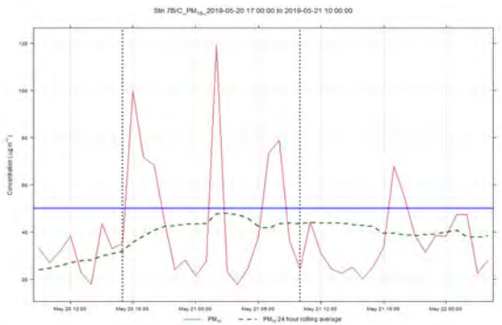
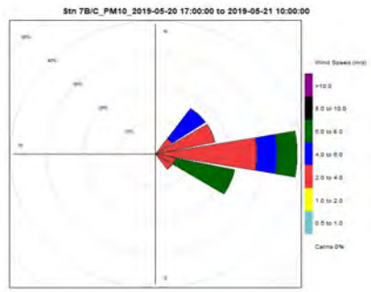
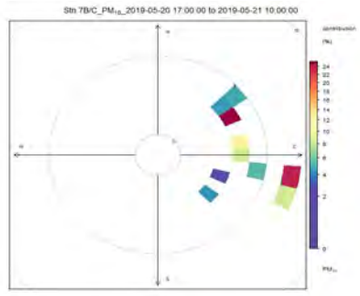
Event number	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
176	2019-05-21 2:00	IN Alert 'PM10 > 90% Alert': PM10 (47.6 µg/m3) at Stn 7B/C: North Camp for 2019-05-21 02:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	E	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed the most particulate matter was E and NE with wind speeds up to 2 m/s and 5 m/s respectively.
176	2019-05-21 6:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	E	As noted above	As noted above







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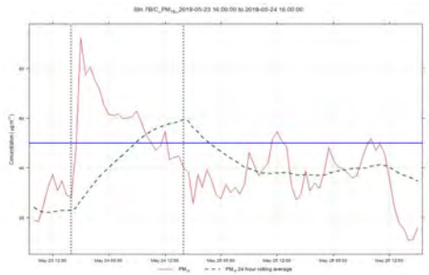
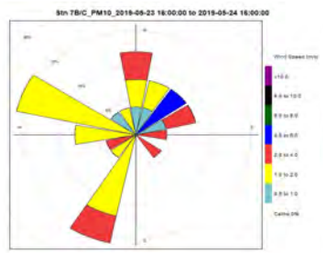
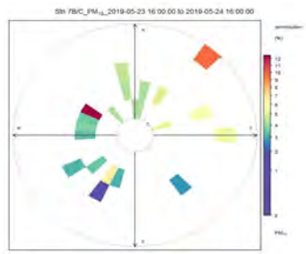
Event number	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
177	2019-05-23 23:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (23.9 µg/m3) at Stn 7B/C: North Camp for 2019-05-23 23:00 MST.	in	90%	PM2.5	Station 7B/C	N	N/A	N	SSW-WNW-N	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind directions that contributed the most particulate matter were NE and WNW with wind speeds up to 5 m/s and 2 m/s repectively. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-24 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-05-29.
177	2019-05-24 0:00	IN Alert 'PM2.5 Alert': PM2.5 (25.5 µg/m3) at Stn 7B/C: North Camp for 2019-05-24 00:00 MST.	in	100%	PM2.5	Station 7B/C	N	N/A	N	SSW-WNW-N	As noted above	As noted above
177	2019-05-25 4:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM2.5	Station 7B/C	N	N/A	N	SSW-WNW-N	As noted above	As noted above
177	2019-05-25 8:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM2.5	Station 7B/C	N	N/A	N	SSW-WNW-N	As noted above	As noted above
177	2019-05-25 20:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (22.8 µg/m3) at Stn 7B/C: North Camp for 2019-05-25 20:00 MST.	in	90%	PM2.5	Station 7B/C	N	N/A	N	SSW-WNW-N	As noted above	As noted above
177	2019-05-26 1:00	IN Alert 'PM2.5 Alert': PM2.5 (25.3 µg/m3) at Stn 7B/C: North Camp for 2019-05-26 01:00 MST.	in	100%	PM2.5	Station 7B/C	N	N/A	N	SSW-WNW-N	**AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	As noted above
177	2019-05-26 14:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM2.5	Station 7B/C	N	N/A	N	SSW-WNW-N	**FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	As noted above
177	2019-05-26 18:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM2.5	Station 7B/C	N	N/A	N	SSW-WNW-N		As noted above







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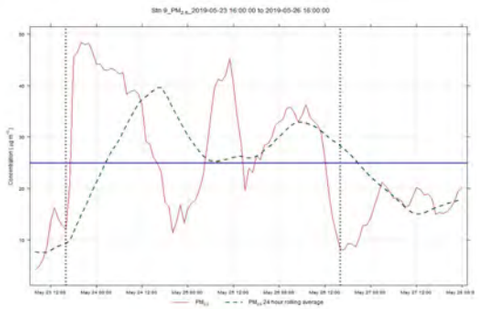
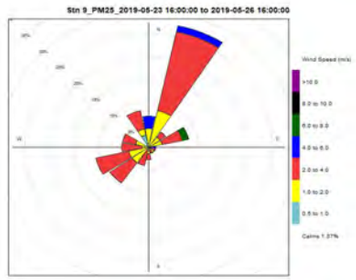
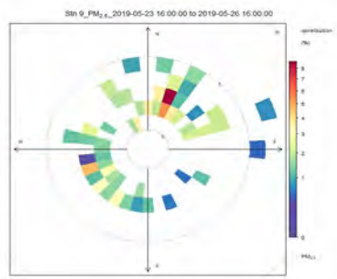
Event number	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
178	2019-05-24 1:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (22.8 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-05-24 01:00 MST.	in	90%	PM2.5	Station 9	N	N/A	Y	NNE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind directions that contributed the most particulate matter were NNW, N, NNE and ENE with wind speeds up to 1 m/s, 2 m/s, 3 m/s and 4 m/s repectively. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-24 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-05-29.
178	2019-05-24 3:00	IN Alert 'PM2.5 Alert': PM2.5 (25.8 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-05-24 03:00 MST.	in	100%	PM2.5	Station 9	N	N/A	Y	NNE	As noted above	As noted above
178	2019-05-26 21:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	100%	PM2.5	Station 9	N	N/A	Y	NNE	**AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	As noted above
178	2019-05-27 0:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	90%	PM2.5	Station 9	N	N/A	Y	NNE	As noted above	As noted above







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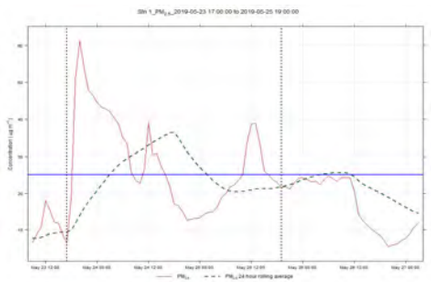
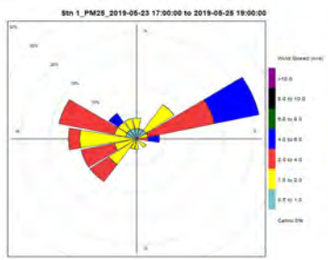
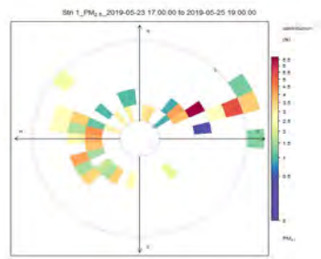
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
179	2019-05-24 2:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (23 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-05-24 02:00 MST.	in	90%	PM2.5	Station 1	N	N/A	Y	ENE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind directions that contributed the most particulate matter were NNW, N, NNE and ENE with wind speeds up to 1 m/s, 2 m/s, 3 m/s and 4 m/s repectively. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-24 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-05-29.
179	2019-05-24 4:00	IN Alert 'PM2.5 Alert': PM2.5 (25.8 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-05-24 04:00 MST.	in	100%	PM2.5	Station 1	N	N/A	Y	ENE	As noted above	As noted above
179	2019-05-25 3:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	100%	PM2.5	Station 1	N	N/A	Y	ENE	**Allteck:** No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition.	As noted above
179	2019-05-25 5:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM2.5	Station 1	N	N/A	Y	ENE	As noted above	As noted above
179	2019-05-25 22:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (22.6 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-05-25 22:00 MST.	in	90%	PM2.5	Station 1	N	N/A	Y	ENE	As noted above	As noted above
179	2019-05-26 5:00	IN Alert 'PM2.5 Alert': PM2.5 (25.1 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-05-26 05:00 MST.	in	100%	PM2.5	Station 1	N	N/A	Y	ENE	**AFDE**: Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	As noted above
179	2019-05-26 12:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	100%	PM2.5	Station 1	N	N/A	Y	ENE	As noted above	As noted above
179	2019-05-26 15:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM2.5	Station 1	N	N/A	Y	ENE	**PRHP:** There were 24 RWDI air quality notifications for the week of May 26 - June 1, 2019. The 24-hour rolling average of PM10 concentrations has exceeded and remains greater than 45 ug/m3 (90% of the BC 24-hour air quality objective of 50 ug/m3). **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	As noted above







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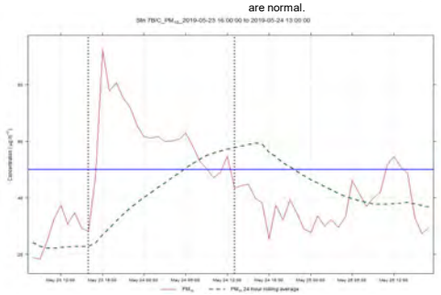
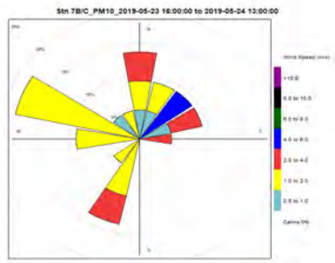
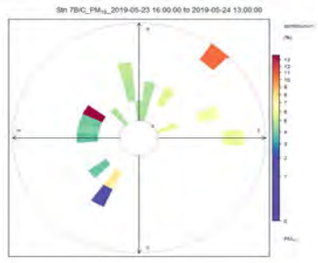
180	2019-05-24 3:00	IN Alert 'PM10 > 90% Alert': PM10 (45.3 µg/m3) at Stn 7B/C: North Camp for 2019-05-24 03:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	N-SSW-WNW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind directions that contributed the most particulate matter were NNE, SSW and WNW with wind speeds up to 3 m/s. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-24 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-05-29. Note: the instruemnt was installed on 2019-05-24 after completing its annual manintenance
180	2019-05-24 6:00	IN Alert 'PM10 Alert': PM10 (50.5 µg/m3) at Stn 7B/C: North Camp for 2019-05-24 06:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	N	N-SSW-WNW	As noted above	As noted above
180	2019-05-24 22:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	N	N-SSW-WNW	As noted above	As noted above
180	2019-05-25 2:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	N-SSW-WNW	**Allteck:** No construction related air quality issues were identified during the reporting period. □ No excessive idling was observed. □ All equipment is inspected daily and is in good operational condition.	As noted above







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Allteck: transmission line construction
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HRIDL LP = Halfway River general contractor
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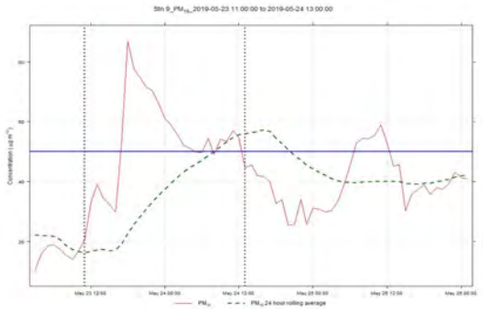
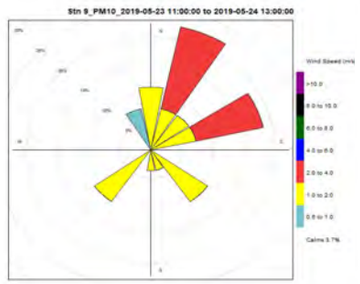
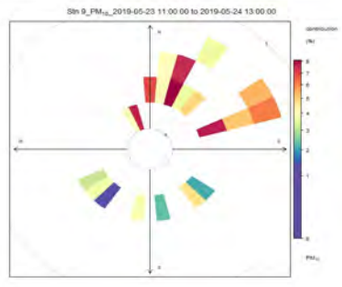
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
181	2019-05-24 5:00	IN Alert 'PM10 > 90% Alert': PM10 (45.8 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-05-24 05:00 MST.	in	90%	PM10	Station 9	N	N/A	N	NNE-ENE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind directions that contributed the most particulate matter were NNE and ENE with wind speeds up to 5 m/s and 2 m/s repectively. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-24 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-05-29.
181	2019-05-24 8:00	IN Alert 'PM10 Alert': PM10 (50.1 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-05-24 08:00 MST.	in	100%	PM10	Station 9	N	N/A	N	NNE-ENE	As noted above	As noted above
181	2019-05-24 21:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	100%	PM10	Station 9	N	N/A	N	NNE-ENE	As noted above	As noted above
181	2019-05-25 0:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	90%	PM10	Station 9	N	N/A	N	NNE-ENE	**Allteck:** No construction related air quality issues were identified during the reporting period, □ No excessive idling was observed. □ All equipment is inspected daily and is in good operational condition.	As noted above







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Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
182	2019-05-24 8:00	IN Alert 'PM10 > 90% Alert': PM10 (45.3 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-05-24 08:00 MST.	in	90%	PM10	Station 8	N	**The instrument was swapped with its original after completing its annual mainteannce on 2019-05-24. During routine calibration visit on 2019-05-27, the instrument failed the sample flow check. As a result, the data was invalidated after the installation of the instrument on 2019-05-24 afternoon until the routine calibration visit on 2019-05-27.**	N	NNE-ENE-SE		
182	2019-05-24 13:00	IN Alert 'PM10 Alert': PM10 (50.9 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-05-24 13:00 MST.	in	100%	PM10	Station 8	N	As noted above	N	NNE-ENE-SE		
182	2019-05-25 14:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM10	Station 8	Y	As noted above	N	NNE-ENE-SE		
182	2019-05-25 16:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	Y	As noted above	N	NNE-ENE-SE		

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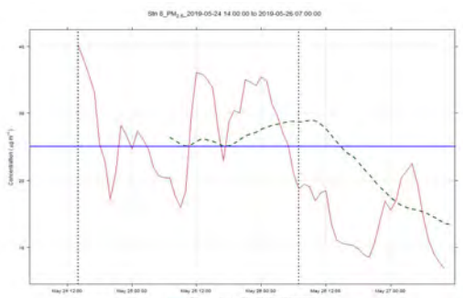
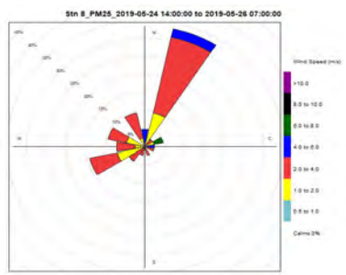
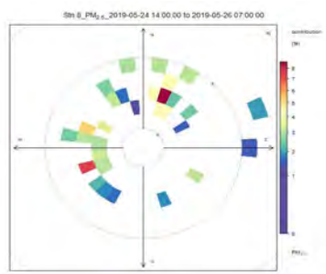
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
183	2019-05-25 8:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (22.9 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-05-25 08:00 MST.	in	90%	PM2.5	Station 8	N	N/A	Y	NNE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **Allteck:** No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition.	During the event, wind directions that contributed the most particulate matter were NNE, WSW and WNW with wind speeds up to 3 m/s. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-24 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-05-29. Note: the instrument was installed on 2019-05-24 after completing its annual manintenance
183	2019-05-25 11:00	IN Alert 'PM2.5 Alert': PM2.5 (25.3 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-05-25 11:00 MST.	in	100%	PM2.5	Station 8	N	N/A	Y	NNE	As noted above	As noted above
183	2019-05-26 16:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM2.5	Station 8	N	N/A	Y	NNE	**FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	As noted above
183	2019-05-26 19:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM2.5	Station 8	N	N/A	Y	NNE	As noted above	As noted above







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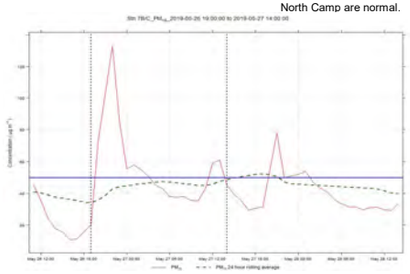
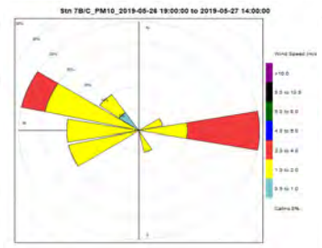
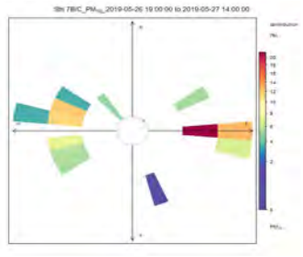
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
184	2019-05-27 1:00	IN Alert 'PM10 > 90% Alert': PM10 (45.6 µg/m3) at Stn 7B/C: North Camp for 2019-05-27 01:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	E-WNW	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	During the event, wind directions that contributed the most particulate matter were E and WNW with wind speeds up to 3 m/s and 2 m/s respectively.. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-24 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-05-29.
184	2019-05-27 11:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	E-WNW	As noted above	As noted above
184	2019-05-27 12:00	IN Alert 'PM10 > 90% Alert': PM10 (46 µg/m3) at Stn 7B/C: North Camp for 2019-05-27 12:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	E-WNW	As noted above	As noted above
184	2019-05-27 16:00	IN Alert 'PM10 Alert': PM10 (50.7 µg/m3) at Stn 7B/C: North Camp for 2019-05-27 16:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	N	E-WNW	**AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	As noted above
184	2019-05-27 22:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	N	E-WNW	As noted above	As noted above
184	2019-05-28 3:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	E-WNW	As noted above	As noted above







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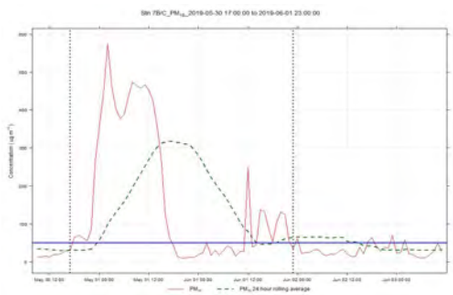
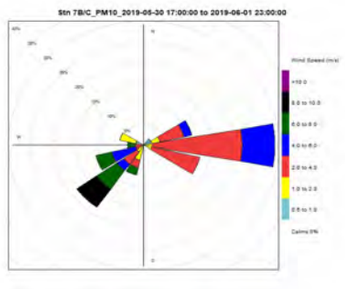
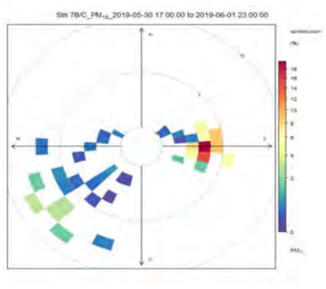
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
185	2019-05-31 0:00	IN Alert 'PM10 > 90% Alert': PM10 (58.2 µg/m3) at Stn 7B/C: North Camp for 2019-05-31 00:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	Y	E-SW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)). **AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	During the event, wind directions that contributed the most particulate matter were ESE and SW with wind speeds up to 4 m/s and 5 m/s respectively.. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-31 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-06-01.
185	2019-05-31 0:00	IN Alert 'PM10 Alert': PM10 (58.2 µg/m3) at Stn 7B/C: North Camp for 2019-05-31 00:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	Y	E-SW	As noted above	As noted above
185	2019-06-01 15:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	Y	E-SW	As noted above	As noted above
185	2019-06-01 19:00	IN Alert 'PM10 Alert': PM10 (51.3 µg/m3) at Stn 7B/C: North Camp for 2019-06-01 19:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	Y	E-SW	As noted above	As noted above
185	2019-06-02 15:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	Y	E-SW	As noted above	As noted above
185	2019-06-02 16:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	Y	E-SW	As noted above	As noted above







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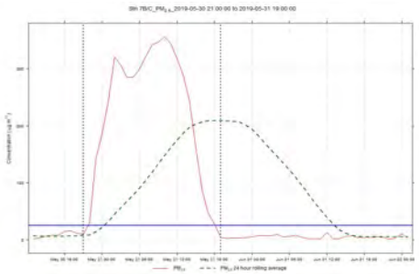
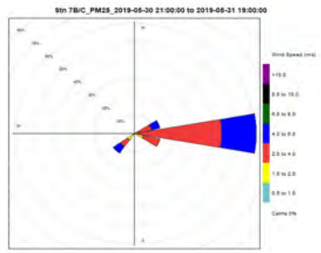
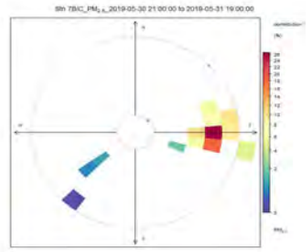
186	2019-05-31 1:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (32 µg/m3) at Stn 7B/C: North Camp for 2019-05-31 01:00 MST.	in	90%	PM2.5	Station 7B/C	N	N/A	Y	E	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	During the event, wind directions that contributed the most particulate matter were ESE and SE with wind speeds up to 4 m/s and 5 m/s respectively.. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-31 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-06-01.
186	2019-05-31 1:00	IN Alert 'PM2.5 Alert': PM2.5 (32 µg/m3) at Stn 7B/C: North Camp for 2019-05-31 01:00 MST.	in	100%	PM2.5	Station 7B/C	N	N/A	Y	E	**AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	As noted above
186	2019-06-01 14:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM2.5	Station 7B/C	N	N/A	Y	E	As noted above	As noted above
186	2019-06-01 14:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM2.5	Station 7B/C	N	N/A	Y	E	As noted above	As noted above







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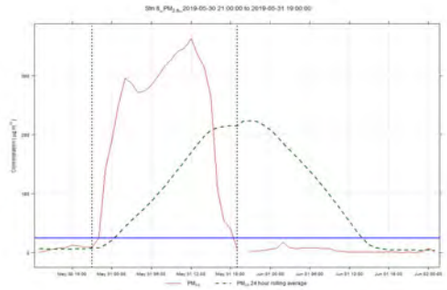
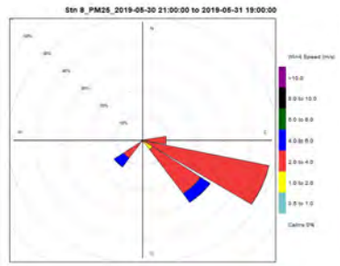
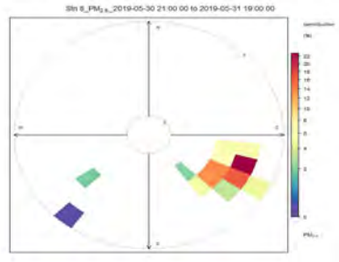
187	2019-05-31 1:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (26.4 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-05-31 01:00 MST.	in	90%	PM2.5	Station 8	N	N/A	Y	ESE-SE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	During the event, wind directions that contributed the most particulate matter were ESE and SE with wind speeds up to 4 m/s and 5 m/s respectively. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-31 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-06-01.
187	2019-05-31 1:00	IN Alert 'PM2.5 Alert': PM2.5 (26.4 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-05-31 01:00 MST.	in	100%	PM2.5	Station 8	N	N/A	Y	ESE-SE	As noted above	
187	2019-06-01 15:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM2.5	Station 8	N	N/A	Y	ESE-SE	**AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	As noted above
187	2019-06-01 15:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM2.5	Station 8	N	N/A	Y	ESE-SE	As noted above	







[1] Site Response provided by contractor, scope of contract as follows:

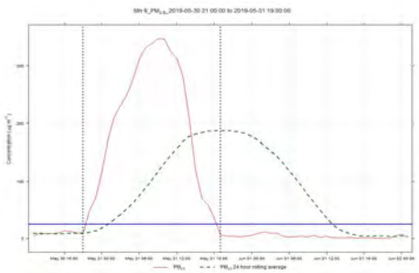
4Evergreen = reservoir clearing
Allteck: transmission line construction
AFDE = Aecon, Flatiron, Dragados, and EBC: Generating Station and Spillways Civil Works

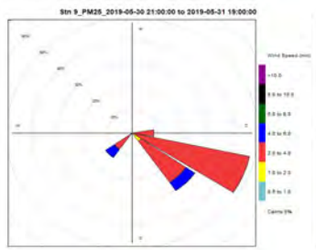
PRHP = Peace River Hydro Partners: Main Civil Works
M & M = construction services for fish habitat mitigation

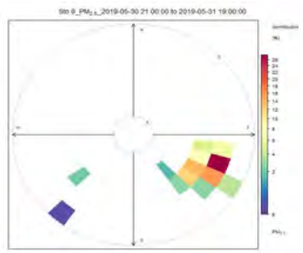
IDL = joint use warehouse construction
Duz Cho = building demolition services

HRIDL LP = Halfway River general contractor
Pathfinder = Pathfinder Endeavours Ltd

Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
188	2019-05-31 1:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (25.5 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-05-31 01:00 MST.	in	90%	PM2.5	Station 9	N	N/A	Y	ESE-SE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	During the event, wind directions that contributed the most particulate matter were ENE with wind speeds up to 4 m/s. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-31 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-06-01.
188	2019-05-31 1:00	IN Alert 'PM2.5 Alert': PM2.5 (25.5 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-05-31 01:00 MST.	in	100%	PM2.5	Station 9	N	N/A	Y	ESE-SE	As noted above	As noted above
188	2019-06-01 13:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	100%	PM2.5	Station 9	N	N/A	Y	ESE-SE	As noted above	As noted above
188	2019-06-01 14:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	90%	PM2.5	Station 9	N	N/A	Y	ESE-SE	**AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	As noted above







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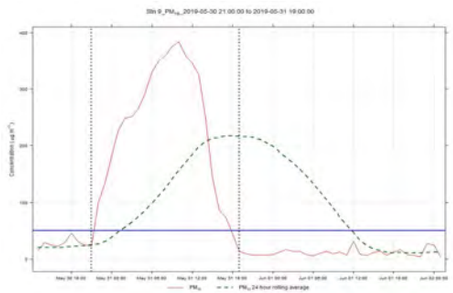
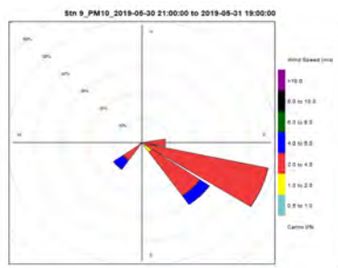
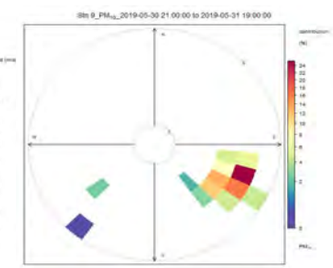
189	2019-05-31 1:00	IN Alert 'PM10 > 90% Alert': PM10 (47.7 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-05-31 01:00 MST.	in	90%	PM10	Station 9	N	N/A	Y	ESE-SE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	During the event, wind directions that contributed the most particulate matter were ESE and SE with wind speeds up to 4 m/s and 5 m/s respectively.. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-31 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-06-01.
189	2019-05-31 2:00	IN Alert 'PM10 Alert': PM10 (57 µg/m3) at Stn 9: Fort St. John 85th Ave for 2019-05-31 02:00 MST.	in	100%	PM10	Station 9	N	N/A	Y	ESE-SE	As noted above	As noted above
189	2019-06-01 12:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	100%	PM10	Station 9	N	N/A	Y	ESE-SE	As noted above	As noted above
189	2019-06-01 13:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 9: Fort St. John 85th Ave are normal.	out	90%	PM10	Station 9	N	N/A	Y	ESE-SE	**AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	As noted above







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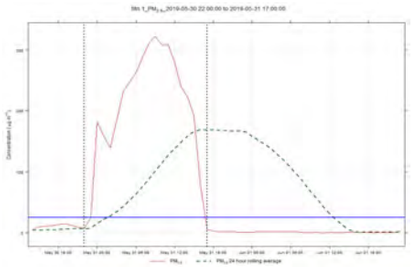
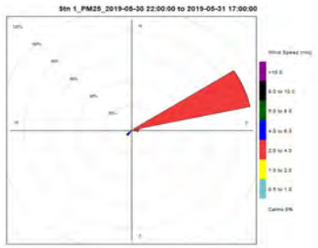
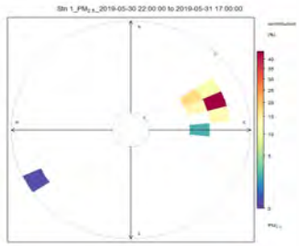
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
190	2019-05-31 2:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (24.5 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-05-31 02:00 MST.	in	90%	PM2.5	Station 1	N	N/A	Y	ENE	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	During the event, wind directions that contributed the most particulate matter were E and ENE with wind speeds up to 5 m/s and 5 m/s, respectively. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-31 due to wildfire smoke affecting multiple regions. It remained in effect until 2019-06-01.
190	2019-05-31 3:00	IN Alert 'PM2.5 Alert': PM2.5 (30.7 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-05-31 03:00 MST.	in	100%	PM2.5	Station 1	N	N/A	Y	ENE	**AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	As noted above
190	2019-06-01 14:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM2.5	Station 1	N	N/A	Y	ENE	As noted above	As noted above
190	2019-06-01 14:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	100%	PM2.5	Station 1	N	N/A	Y	ENE	As noted above	As noted above







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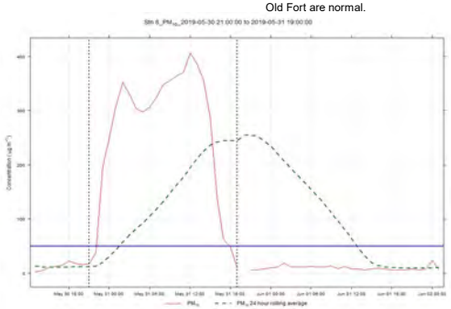
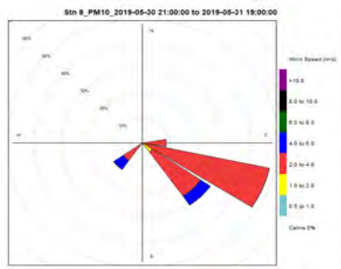
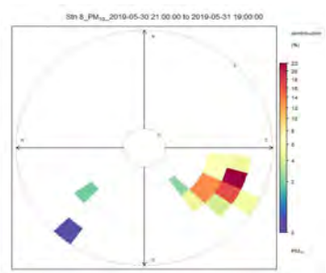
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
191	2019-05-31 2:00	IN Alert 'PM10 > 90% Alert': PM10 (50.5 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-05-31 02:00 MST.	in	90%	PM10	Station 8	N	N/A	Y	ESE-SE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	During the event, wind directions that contributed the most particulate matter were ESE and SE with wind speeds up to 4 m/s and 5 m/s respectively. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-31 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-06-01.
191	2019-05-31 2:00	IN Alert 'PM10 Alert': PM10 (50.5 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-05-31 02:00 MST.	in	100%	PM10	Station 8	N	N/A	Y	ESE-SE	As noted above	As noted above
191	2019-06-01 14:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	Y	ESE-SE	As noted above	As noted above
191	2019-06-01 14:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM10	Station 8	N	N/A	Y	ESE-SE	As noted above	As noted above







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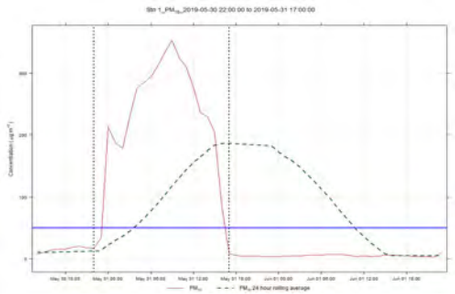
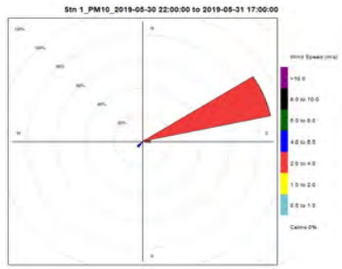
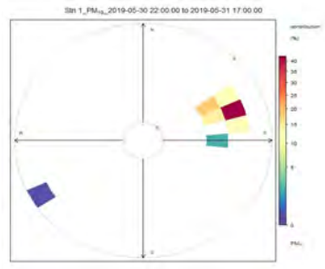
192	2019-05-31 4:00	IN Alert 'PM10 > 90% Alert': PM10 (50 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-05-31 04:00 MST.	in	90%	PM10	Station 1	N	N/A	Y	ENE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)).	During the event, wind directions that contributed the most particulate matter were ESE and SE with wind speeds up to 4 m/s and 5 m/s respectively.. Also, the British Columbia Ministry of Environment in collaboration with Northern Health issued a Smoky Skies Bulletin for BC on 2019-05-31 due to wildfire smoke affecting multiple regions. It remaind in effect until 2019-06-01.
192	2019-05-31 4:00	IN Alert 'PM10 Alert': PM10 (50 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-05-31 04:00 MST.	in	100%	PM10	Station 1	N	N/A	Y	ENE	As noted above	As noted above
192	2019-06-01 12:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM10	Station 1	N	N/A	Y	ENE	**AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The Dust Suppression Log indicated that the AFDE water truck used 52.5 loads (1,050 m3) of water for dust suppression during this monitoring period throughout the GSS site.	As noted above
192	2019-06-01 12:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	100%	PM10	Station 1	N	N/A	Y	ENE	As noted above	As noted above







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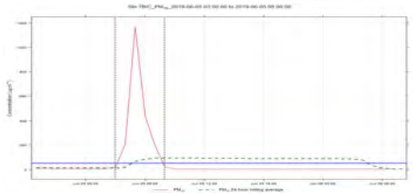
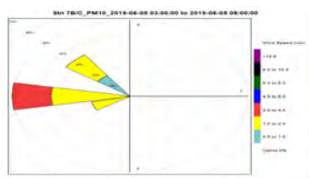
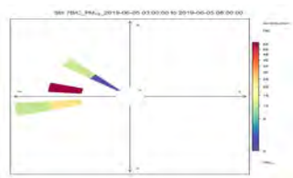
193	2019-06-05 5:00	IN Alert 'PM10 > 90% Alert': PM10 (66.3 µg/m3) at Stn 7B/C: North Camp for 2019-06-05 05:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	W-NW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. (see attached Weekly Environmental Monitoring and Inspection Checklist (Appendix A)). 4.4 Transportation.	During the event, wind directions that contributed the most particulate matter were W to WNW with wind speeds up to 2 m/s.
193	2019-06-05 5:00	IN Alert 'PM10 Alert': PM10 (66.3 µg/m3) at Stn 7B/C: North Camp for 2019-06-05 05:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	N	W-NW	As noted above	As noted above
193	2019-06-06 5:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	W-NW	As noted above	As noted above
193	2019-06-06 5:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	N	W-NW	As noted above	As noted above







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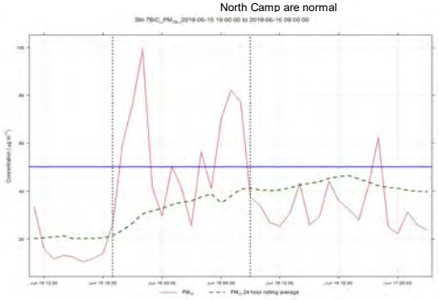
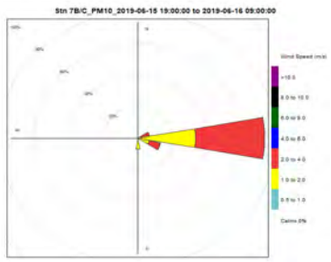
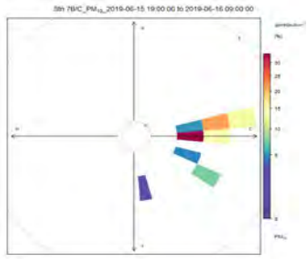
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
194	2019-06-16 17:00	IN Alert 'PM10 > 90% Alert': PM10 (45.3 µg/m3) at Stn 7B/C: North Camp for 2019-06-16 17:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	E	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The AFDE water truck used 800 m3 of water for dust suppression throughout the GSS site. **Allteck:** No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition. **ATCO:** No air quality concerns. Water truck used for dust suppression as needed. Interior air quality is being tested. **Duz Cho:** Dust control focusing on the lower and the upper haul road was completed daily during the reporting period. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **HRIDL LP:** Water truck is being used for dust suppression. Water is sourced from Halfway River as per WSA Water Permit. **Pathfinder**: Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust. Numerous air quality alerts were received.	During the event, wind directions that contributed the most particulate matter were ESE to SSE with wind speeds up to 4 m/s respectively.
194	2019-06-16 21:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal	out	90%	PM10	Station 7B/C	N	N/A	N	E	As noted above	As noted above







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Allteck: transmission line construction
AFDE = Aecon, Flatiron, Dragados, and EBC: Generating Station and Spillways Civil Works

PRHP = Peace River Hydro Partners: Main Civil Works
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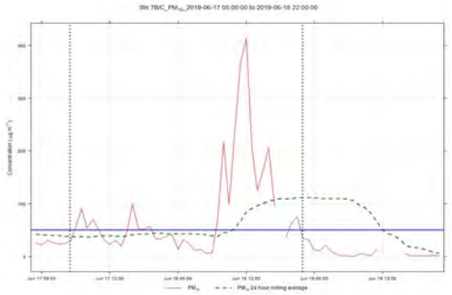
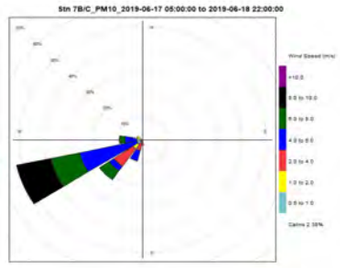
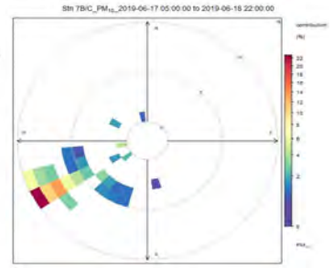
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
195	2019-06-18 9:00	IN Alert 'PM10 > 90% Alert': PM10 (46.1 µg/m3) at Stn 7B/C: North Camp for 2019-06-18 09:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	Y	WSW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE:** Road dust control via water truck was conducted as required during the monitoring period. The AFDE water truck used 800 m3 of water for dust suppression throughout the GSS site. **Allteck:** No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition.ATCO: No air quality concerns. Water truck used for dust suppression as needed. Interior air quality is being tested. **Duz Cho:** Dust control focusing on the lower and the upper haul road was completed daily during the **reporting period.** **FMI: Weekly inspection confirmed that air quality management was in compliance with EPP requirements** **HRIDL LP: Water truck is being used for dust suppression. Water is sourced from Halfway River as per WSA Water Permit.** **Pathfinder:** Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust. Numerous air quality alerts were received.	During the event, wind directions that contributed the most particulate matter were WSW with wind speeds up to 10 m/s respectively.
195	2019-06-18 10:00	IN Alert 'PM10 Alert': PM10 (54 µg/m3) at Stn 7B/C: North Camp for 2019-06-18 10:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	Y	WSW	As noted above	As noted above
195	2019-06-19 22:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	Y	WSW	As noted above	As noted above
195	2019-06-20 0:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	Y	WSW	As noted above	As noted above







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196	2019-07-10 8:00	IN Alert 'PM10 > 90% Alert': PM10 (45.2 µg/m3) at Stn 7B/C: North Camp for 2019-07-10 08:00 MST	in	90%	PM10	Station 7B/C	Y	**This alert can be considered false. The readings were showing high due to the analyzer taking time to stabilize after re-installation during annual maintenance.**	N/A	N/A		
196	2019-07-10 15:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	Y	As noted above	N/A	N/A		

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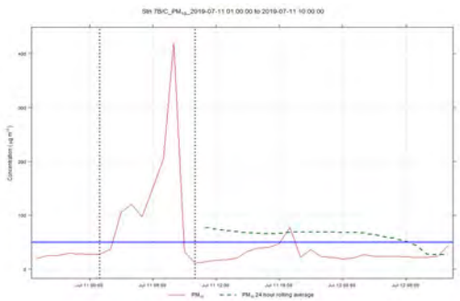
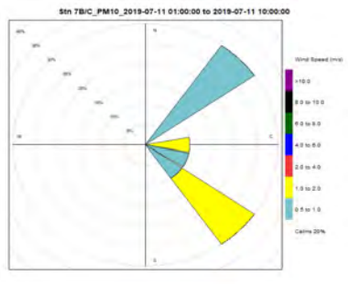
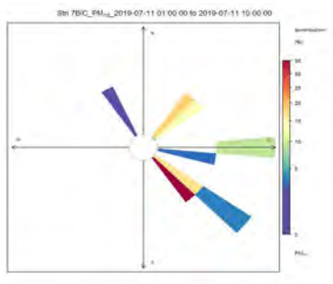
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
197	2019-07-11 7:00	IN Alert 'PM10 > 90% Alert': PM10 (46.6 µg/m3) at Stn 7B/C: North Camp for 2019-07-11 07:00 MST	in	90%	PM10	Station 7B/C	N	N/A	N	NW-SE	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **Allteck:** No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition. **ATCO:** On days when it was not raining, water truck was used to suppress dust. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **HRIDL LP:** Water truck is being used for dust suppression as needed. **Pathfinder:** Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust.	During the event, wind directions that contributed the most particulate matter were NW and SE with wind speeds up to 1 m/s and 2 m/s respectively.
197	2019-07-11 8:00	IN Alert 'PM10 Alert': PM10 (63.2 µg/m3) at Stn 7B/C: North Camp for 2019-07-11 08:00 MST	in	100%	PM10	Station 7B/C	N	N/A	N	NW-SE	As noted above	As noted above
197	2019-07-12 7:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	NW-SE	As noted above	As noted above
197	2019-07-12 7:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	N	NW-SE	As noted above	As noted above







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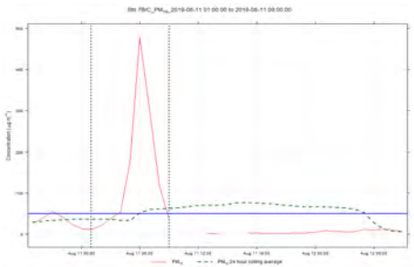
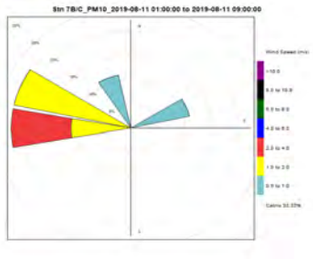
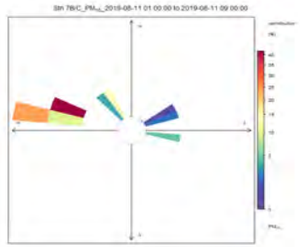
198	8/11/2019 6:00	IN Alert 'PM10 > 90% Alert': PM10 (51.6 µg/m3) at Stn 7B/C: North Camp for 2019-08-11 06:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	Y	W-NNW	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE**: Road dust control via water truck was conducted as required during the monitoring period. A total of 444 m3 of water was withdrawn from the Peace River for AFDE dust suppression activities. Approximately 220 m3 were used by AFDE and the remainder by FMI. **Allteck**: No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition. **FMI**: Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **Pathfinder**: Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust.	During the event, wind directions that contributed the most particulate matter were W and NWW with wind speeds up to 2 m/s.
198	8/11/2019 6:00	IN Alert 'PM10 Alert': PM10 (51.6 µg/m3) at Stn 7B/C: North Camp for 2019-08-11 06:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	Y	W-NNW	As noted above	As noted above
198	8/12/2019 4:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	Y	W-NNW	As noted above	As noted above
198	8/12/2019 5:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	Y	W-NNW	As noted above	As noted above







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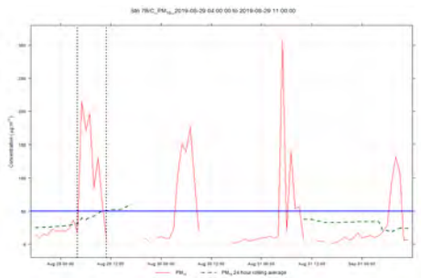
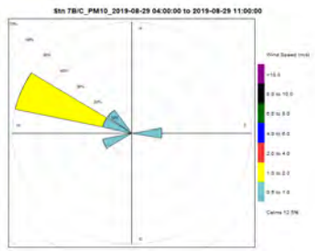
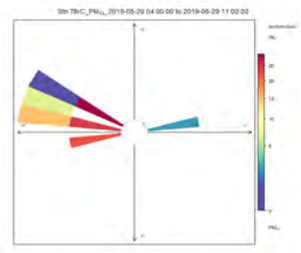
199	8/29/2019 10:00	IN Alert 'PM10 > 90% Alert': PM10 (46.8 µg/m3) at Stn 7B/C: North Camp for 2019-08-29 10:00 MST	in	90%	PM10	Station 7B/C	N	N/A	Y	SSW-NW	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE**: Road dust control via water truck was conducted as required during the monitoring period. A total of 332 m3 of water was withdrawn from the Peace River for AFDE dust suppression activities and used by AFDE. **Allteck**: No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition. **FMI**: Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **Pathfinder**: Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust.	During the event, wind directions that contributed were SSW through NW with wind speeds up to 2 m/s
199	8/29/2019 18:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	Y	SWW-NW	As noted above	As noted above







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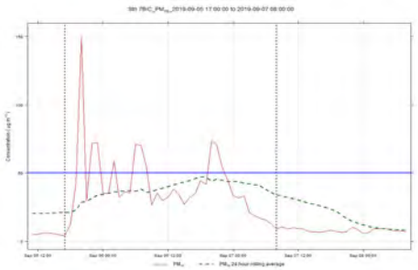
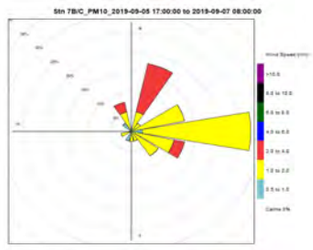
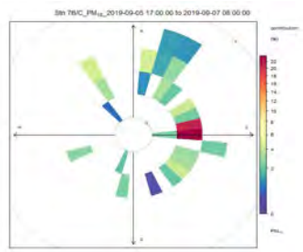
200	2019-09-06 18:00	IN Alert 'PM10 > 90% Alert': PM10 (45.8 µg/m3) at Stn 7B/C: North Camp for 2019-09-06 17:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	E-NE	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE**: Road dust control via water truck was conducted as required during the monitoring period. A total of 60 m3 of water was withdrawn from the Peace River for AFDE dust suppression activities. **Allteck:** No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **Pathfinder:** Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust.	During the event, wind directions that contributed were from the E to NNE with wind speeds up to 2 m/s
200	2019-09-06 20:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	E-NE	As noted above	
200	2019-09-06 21:00	IN Alert 'PM10 > 90% Alert': PM10 (45.6 µg/m3) at Stn 7B/C: North Camp for 2019-09-06 21:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	E-NE	As noted above	
200	2019-09-06 22:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	E-NE	As noted above	







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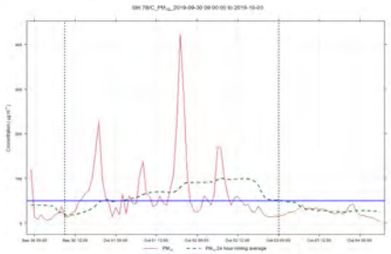
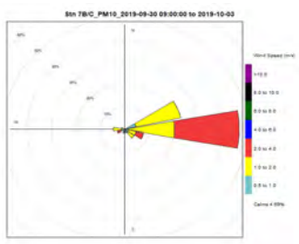
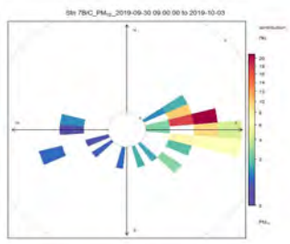
201	2019-09-30 19:00	IN Alert 'PM10 > 90% Alert': PM10 (47.1 µg/m3) at Stn 7B/C: North Camp for 2019-09-30 19:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	Y	E	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE:** Road dust control via water truck was conducted as required during the monitoring period. A total of 100 m3 of water was withdrawn from the Peace River for AFDE dust suppression activities. **Allteck:** No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **Pathfinder:** Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust.	During the event, wind directions that contributed were from the ENE with wind speeds up to 4 m/s
201	2019-09-30 20:00	IN Alert 'PM10 Alert': PM10 (50.9 µg/m3) at Stn 7B/C: North Camp for 2019-09-30 20:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	Y	E	As noted above	As noted above
201	2019-09-30 23:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	Y	E	As noted above	As noted above
201	2019-10-01 2:00	IN Alert 'PM10 Alert': PM10 (51.4 µg/m3) at Stn 7B/C: North Camp for 2019-10-01 02:00 MST	in	100%	PM10	Station 7B/C	N	N/A	Y	E	As noted above	As noted above
201	2019-10-03 2:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	Y	E	As noted above	As noted above
201	2019-10-03 6:11	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	Y	E	As noted above	As noted above







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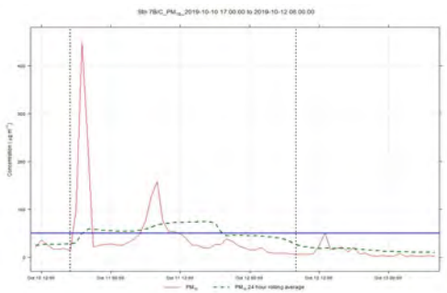
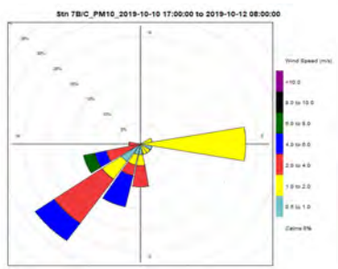
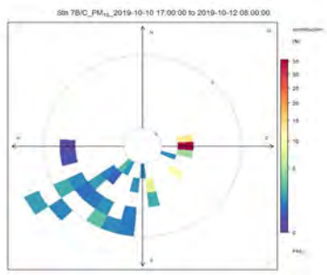
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
202	2019-10-10 19:00	IN Alert 'PM10 > 90% Alert': PM10 (49.8 µg/m3) at Stn 7B/C: North Camp for 2019-10-10 19:00 MST	in	90%	PM10	Station 7B/C	N	N/A	Y	E-SW	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE**: Road dust control via water truck was conducted as required during the monitoring period. A total of 100 m3 of water was withdrawn from the Peace River for AFDE dust suppression activities. **Allteck:** No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **Pathfinder:** Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust.	During the event, wind direction that contributed were E and SW with wind speeds up to 2 m/s
202	2019-10-01 20:00	IN Alert 'PM10 Alert': PM10 (59 µg/m3) at Stn 7B/C: North Camp for 2019-10-10 20:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	Y	E-SW	As noted above	As noted above
202	2019-10-11 20:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal	out	100%	PM10	Station 7B/C	N	N/A	Y	E-SW	As noted above	As noted above
202	2019-10-12 1:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	Y	E-SW	As noted above	As noted above







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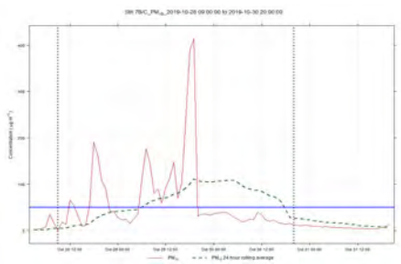
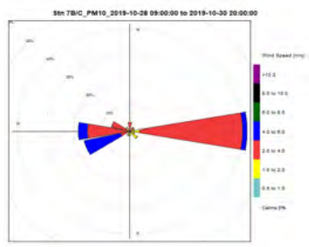
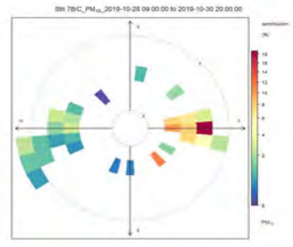
203	2019-10-29 5:00	IN Alert 'PM10 > 90% Alert': PM10 (45.8 µg/m3) at Stn 7B/C: North Camp for 2019-10-29 05:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	Y	E	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE:** Road dust control via water truck was conducted as required during the monitoring period. One water truck load of 16 m3 was withdrawn by FMI from the Peace River for dust suppression & compaction activities during this monitoring period. **Allteck**: No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **Pathfinder**: Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust.	During the event, wind direction that contributed were E and WSW with wind speeds up to 6 m/s
203	2019-10-29 6:00	IN Alert 'PM10 Alert': PM10 (50.2 µg/m3) at Stn 7B/C: North Camp for 2019-10-29 06:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	Y	E	As noted above	As noted above
203	2019-10-30 18:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	Y	E	As noted above	As noted above
203	2019-10-30 18:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	Y	E	As noted above	As noted above







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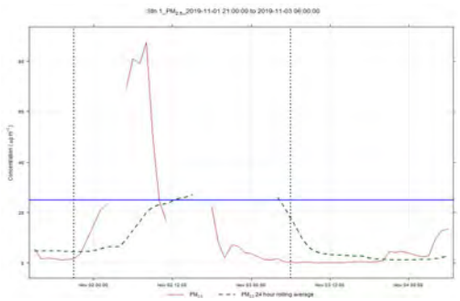
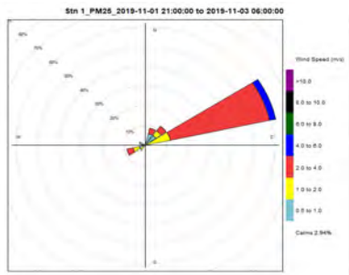
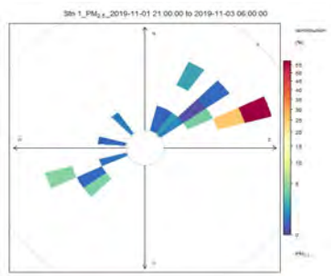
204	2019-11-02 8:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (25.4 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-11-02 08:00 MST.	in	90%	PM2.5	Station 1	N	N/A	N	ENE	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. **AFDE**: Road dust control via water truck has been suspended for the winter season. **Allteck**: No construction related air quality issues were identified during the reporting period. No excessive idling was observed. All equipment is inspected daily and is in good operational condition. **FMI:** Weekly inspection confirmed that air quality management was in compliance with EPP requirements. **Pathfinder:** Vehicles were not left to idle. All vehicles stayed on existing roads so as not to create dust.	During the event, wind direction that contributed were NNE to ENE with wind speeds up to 6 m/s
204	2019-11-02 8:00	IN Alert 'PM2.5 Alert': PM2.5 (25.4 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-11-02 08:00 MST.	in	100%	PM2.5	Station 1	N	N/A	N	ENE	As noted above	As noted above
204	2019-11-03 9:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	100%	PM2.5	Station 1	N	N/A	N	ENE	As noted above	As noted above
204	2019-11-03 10:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM2.5	Station 1	N	N/A	N	ENE	As noted above	As noted above







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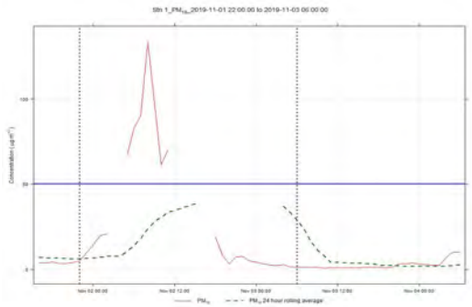
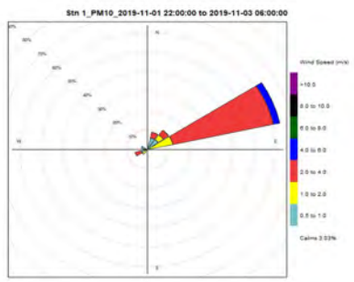
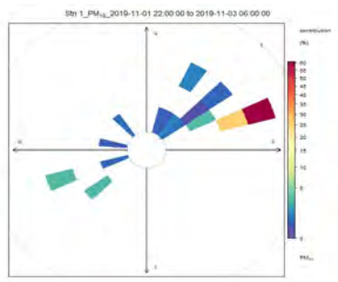
205	2019-11-02 16:00	IN Alert 'PM10 > 90% Alert': PM10 (45.6 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-11-02 16:00 MST.	in	90%	PM10	Station 1	N	N/A	N	ENE	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were ENE with wind speeds up to 6 m/s
205	2019-11-03 4:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal	out	90%	PM10	Station 1	N	N/A	N	ENE	As noted above	







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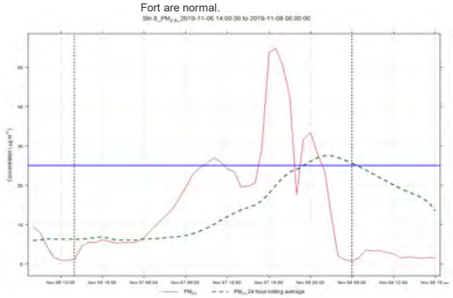
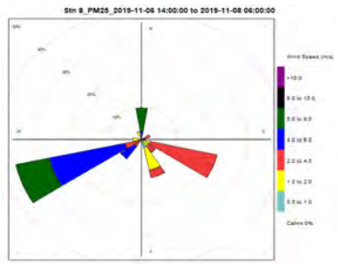
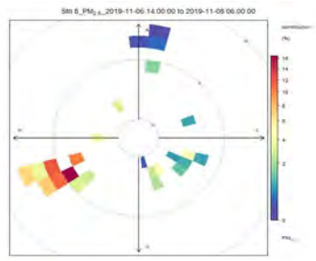
206	2019-11-07	IN Alert 'PM2.5 > 90% Alert': PM2.5 (22.7 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-11-07 21:00 MST.	in	90%	PM2.5	Station 8	N	N/A	Y	SWW-SE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were SW with wind speeds up to 8 m/s
206	2019-11-08 0:00	IN Alert 'PM2.5 Alert': PM2.5 (25.6 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-11-08 00:00 MST.	in	100%	PM2.5	Station 8	N	N/A	Y	SWW-SE	**PRHP**: s. There were 2 RWDI air quality notifications for the week of November 3 - 9, 2019. The 24-hour rolling average of PM2.5 concentrations has exceeded and remains greater than the BC 24-hour air quality objective of 25 ug/m3. **4Evergreen:** The custom venting index for the OLTC 6, 8 work site showed "Fair" and "Good" for November 8, 2019. The Pre-Burn Checklist was reviewed by the EM and discussed with the site foreman, Gary Meagher. Prior to burning the EM conducted pre-disturbance wildlife sweeps on the piles. A test burn took place at 10:50 AM prior to lighting seven decks of aspen and mixed wood (10 AM-2 PM). A Burn Tracking Form was completed throughout the day. The excavator was utilized to feed the fires. Burn piles ignited Nov 8, were tended to promote burning in accordance to the smoke management plan. All burning took place in compliance with the Site C CEMP, Smoke Management Plan, site specific EPP and was scheduled through utilization of the site-specific venting indexes. Daily Burn Forms have been included in Appendix H along with a post burn photo log of all 140 surveyed piles. Dust was not an issue during this reporting period due to the frozen ground conditions and snow cover. The no-idling policy was followed to reduce emissions with exceptions as per the EPP. Staging areas were located a significant distance (> 1km) from sensitive receptors (e.g. residences, livestock).	As noted above
206	2019-11-08 8:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM2.5	Station 8	N	N/A	Y	SWW-SE	As noted above	As noted above
206	2019-11-08 10:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM2.5	Station 8	N	N/A	Y	SWW-SE	As noted above	As noted above







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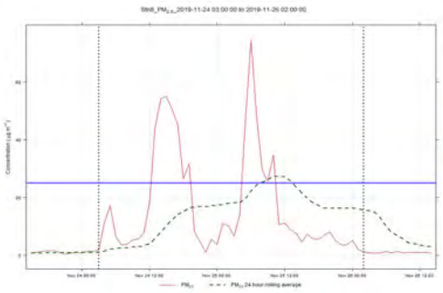
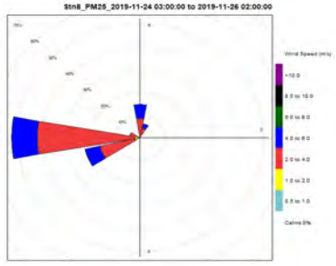
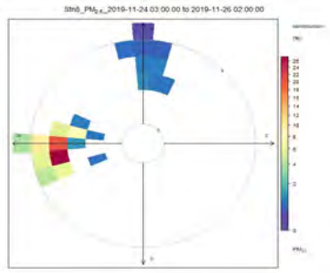
207	2019-11-25 7:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (23.4 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-11-25 07:00 MST.	in	90%	PM2.5	Station 8	N	N/A	N	WSW-W	**PRHP**: For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were WSW to W with wind speeds up to 6 m/s
207	2019-11-25 9:00	IN Alert 'PM2.5 Alert': PM2.5 (25.7 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-11-25 09:00 MST.	in	100%	PM2.5	Station 8	N	N/A	N	WSW-W	As noted above	As noted above
207	2019-11-25 14:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM2.5	Station 8	N	N/A	N	WSW-W	As noted above	As noted above
207	2019-11-25 16:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM2.5	Station 8	N	N/A	N	WSW-W	As noted above	As noted above







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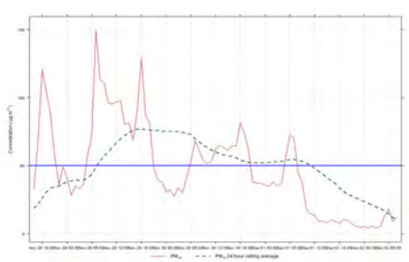
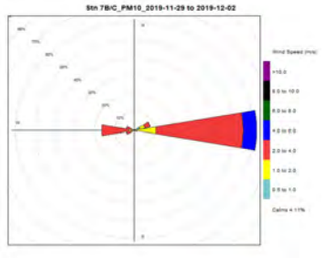
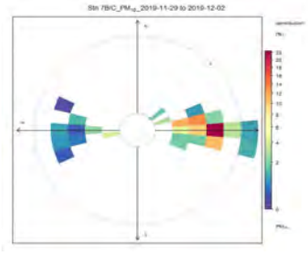
208	2019-11-29 7:00	IN Alert 'PM10 > 90% Alert': PM10 (49.1 µg/m3) at Stn 7B/C: North Camp for 2019-11-29 07:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	N	E	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were E with wind speeds up to 6 m/s
208	2019-11-29 8:00	IN Alert 'PM10 Alert': PM10 (53.2 µg/m3) at Stn 7B/C: North Camp for 2019-11-29 08:00 MST	in	100%	PM10	Station 7B/C	N	N/A	N	E	As noted above	As noted above
208	2019-12-01 12:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	N	E	As noted above	As noted above
208	2019-12-01 14:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	N	E	As noted above	As noted above







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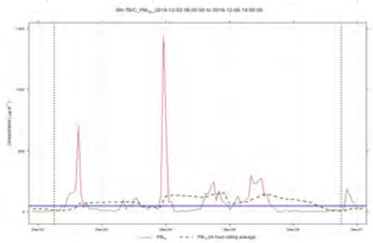
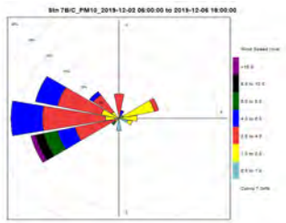
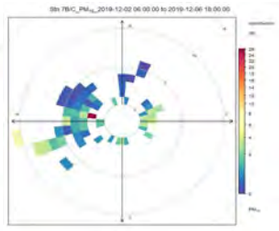
209	2019-12-02 15:00	IN Alert 'PM10 > 90% Alert': PM10 (64.2 µg/m3) at Stn 7B/C: North Camp for 2019-12-02 15:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	Y	W	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. There were 14 RWDI air quality notifications for the week of May 19 - 25, 2019. The 24-hour rolling average of PM2.5 concentrations has exceeded and remains greater than 22.5ug/m3 (90% of the BC 24-hour air quality objective of 25 ug/m3).	During the event, wind direction that contributed were WNW to WSW with wind speeds up to 6 m/s
209	2019-12-02 15:00	IN Alert 'PM10 Alert': PM10 (64.2 µg/m3) at Stn 7B/C: North Camp for 2019-12-02 15:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	Y	W	As noted above	As noted above
209	2019-12-03 15:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	Y	W	**PRHP**: There were 22 RWDI air quality notifications for the week of December 1 - 7, 2019. The 24-hour rolling average of PM10 concentrations has exceeded and remains greater than the BC 24-hour air quality objective of 50 ug/m3. **4Evergreen:** The custom venting index for the OLTC 6, 8 work site indicated "Good" venting opportunity existed for December 2, 2019. The Pre-Burn Checklist was reviewed by the EM and discussed with the site foreman, Garry M. Prior to burning the EM conducted pre-disturbance wildlife sweeps on all piles scheduled for ignition. A test burn took place at 09:20 AM prior to lighting 53 piles. A Burn Tracking Form was completed throughout the day. The excavators were utilized to feed the fires. Piles ignited from Dec 2 were noted to be releasing < 5% smoke by the end of the 96-hour window as specified by the Smoke Management Plan (SMP) Revision 2. Piles ignited Nov 2 were stoked by machinery overnight and throughout the day to promote burning. New piles being constructed were georeferenced by the EM.	As noted above
209	2019-12-03 15:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	Y	W	As noted above	As noted above
209	2019-12-03 23:00	IN Alert 'PM10 > 90% Alert': PM10 (102 µg/m3) at Stn 7B/C: North Camp for 2019-12-03 23:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	y	W	As noted above	As noted above
209	2019-12-03 23:00	IN Alert 'PM10 Alert': PM10 (102 µg/m3) at Stn 7B/C: North Camp for 2019-12-03 23:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	y	W	As noted above	As noted above
209	2019-12-06 10:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	y	W	As noted above	During the event, wind direction that contributed were WNW to WSW with wind speeds up to 6 m/s. Regional burn ban 5-7 Dec put in place due to smokey skies advisory.
209	2019-12-06 10:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	y	W	As noted above	As noted above







[1] Site Response provided by contractor, scope of contract as follows:

4Evergreen = reservoir clearing
Allteck: transmission line construction
AFDE = Aecon, Flatiron, Dragados, and EBC: Generating Station and Spillways Civil Works
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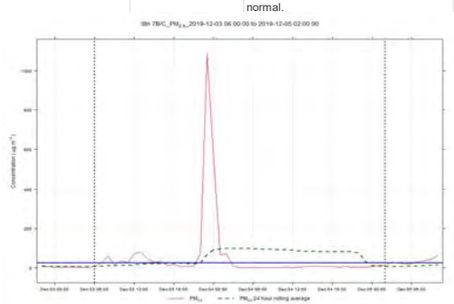
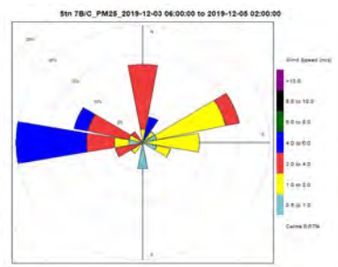
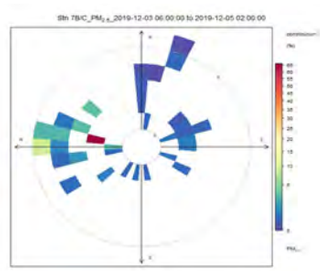
M & M = construction services for fish habitat mitigation
IDL = joint use warehouse construction
Duz Cho = building demolition services
HRIDL LP = Halfway River general contractor
Pathfinder = Pathfinder Endeavours Ltd

Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
210	2019-12-03 16:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (22.8 µg/m3) at Stn 7B/C: North Camp for 2019-12-03 16:00 MST.	in	90%	PM2.5	Station 7B/C	N	N/A	y	W	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards. There were 14 RWDI air quality notifications for the week of May 19 - 25, 2019. The 24-hour rolling average of PM2.5 concentrations has exceeded and remains greater than 22.5ug/m3 (90% of the BC 24-hour air quality objective of 25 ug/m3). **PRHP**: There were 22 RWDI air quality notifications for the week of December 1 - 7, 2019. . The 24-hour rolling average of PM10 concentrations has exceeded and remains greater than the BC 24-hour air quality objective of 50 ug/m3.	During the event, wind direction that contributed were WNW with wind speeds up to 6 m/s
210	2019-12-03 18:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM2.5	Station 7B/C	N	N/A	y	W	**4Evergreen:** The custom venting index for the OLTC 6, 8 work site indicated "Good" venting opportunity existed for December 2, 2019. The Pre-Burn Checklist was reviewed by the EM and discussed with the site foreman, Garry M. Prior to burning the EM conducted pre-disturbance wildlife sweeps on all piles scheduled for ignition. A test burn took place at 09:20 AM prior to lighting 53 piles. A Burn Tracking Form was completed throughout the day. The excavators were utilized to feed the fires. Piles ignited from Dec 2 were noted to be releasing < 5% smoke by the end of the 96-hour window as specified by the Smoke Management Plan (SMP) Revision 2. Piles ignited Nov 2 were stoked by machinery overnight and throughout the day to promote burning. New piles being constructed were georeferenced by the EM.	As noted above
210	2019-12-03 22:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (24.7 µg/m3) at Stn 7B/C: North Camp for 2019-12-03 22:00 MST.	in	90%	PM2.5	Station 7B/C	N	N/A	y	W	As noted above	As noted above
210	2019-12-03 23:00	IN Alert 'PM2.5 Alert': PM2.5 (69.7 µg/m3) at Stn 7B/C: North Camp for 2019-12-03 23:00 MST.	in	100%	PM2.5	Station 7B/C	N	N/A	y	W	As noted above	As noted above
210	2019-12-05 0:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM2.5	Station 7B/C	N	N/A	y	W	As noted above	During the event, wind direction that contributed were WNW with wind speeds up to 6 m/s. Regional burn ban 5-7 Dec put in place due to Smokey Skies Advisory.
210	2019-12-05 0:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM2.5	Station 7B/C	N	N/A	y	W	As noted above	As noted above







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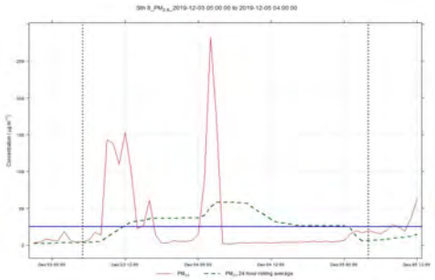
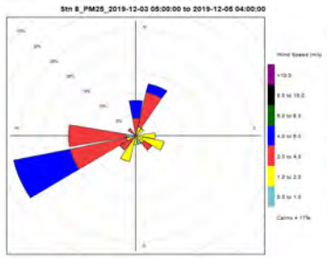
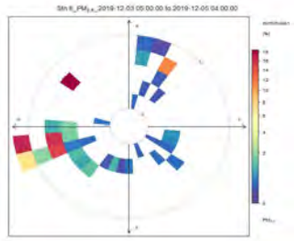
Duz Cho = building demolition services
HRIDL LP = Halfway River general contractor
Pathfinder = Pathfinder Endeavours Ltd

Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
211	2019-12-03 12:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (24.3 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-12-03 12:00 MST.	in	90%	PM2.5	Station 8	N	N/A	y	SWW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were NW and WSW with wind speeds up to 6 m/s
211	2019-12-03 12:00	IN Alert 'PM2.5 Alert': PM2.5 (29.7 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-12-03 13:00 MST.	in	100%	PM2.5	Station 8	N	N/A	y	SWW	As noted above	As noted above
211	2019-12-05 1:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM2.5	Station 8	N	N/A	y	SWW	As noted above	During the event, wind direction that contributed were NW and WSW with wind speeds up to 6 m/s. Regional burn ban 5-7 Dec put in place due to Smokey Skies Advisory.
211	2019-12-05 2:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM2.5	Station 8	N	N/A	y	SWW	As noted above	As noted above







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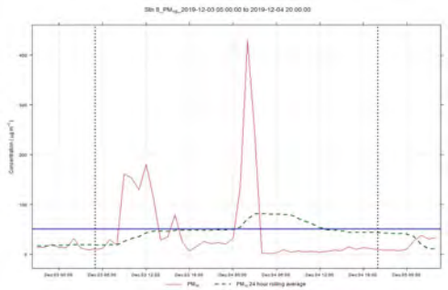
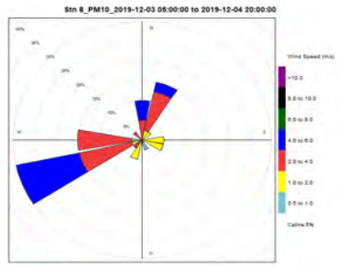
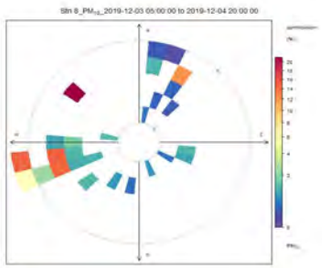
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
212	2019-12-03 14:00	IN Alert 'PM10 > 90% Alert': PM10 (46 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-12-03 14:00 MST.	in	90%	PM10	Station 8	N	N/A	Y	SWW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were NW and WSW with wind speeds up to 6 m/s
212	2019-12-04 1:00	IN Alert 'PM10 Alert': PM10 (51.2 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-12-04 01:00 MST.	in	100%	PM10	Station 8	N	N/A	Y	SWW	As noted above	As noted above
212	2019-12-04 14:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM10	Station 8	N	N/A	Y	SWW	As noted above	As noted above
212	2019-12-04 17:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	Y	SWW	As noted above	As noted above







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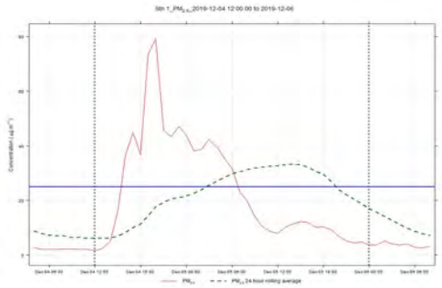
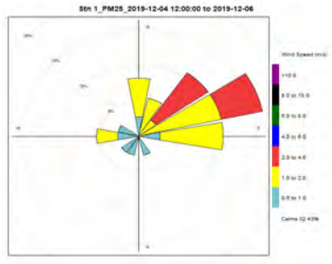
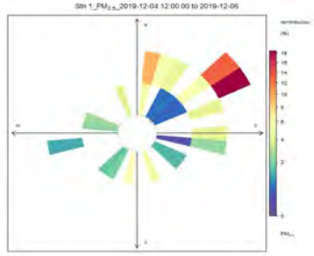
213	2019-12-05 2:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (23.2 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-12-05 02:00 MST.	in	90%	PM2.5	Station 1	N	N/A	N	NE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were NE with wind speeds up to 4 m/s. Regional burn ban 5-7 Dec put in place due to Smokey Skies Advisory.
213	2019-12-05 4:00	IN Alert 'PM2.5 Alert': PM2.5 (26.3 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-12-05 04:00 MST.	in	100%	PM2.5	Station 1	N	N/A	N	NE	As noted above	As noted above
213	2019-12-05 21:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	100%	PM2.5	Station 1	N	N/A	N	NE	As noted above	As noted above
213	2019-12-05 22:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM2.5	Station 1	N	N/A	N	NE	As noted above	As noted above







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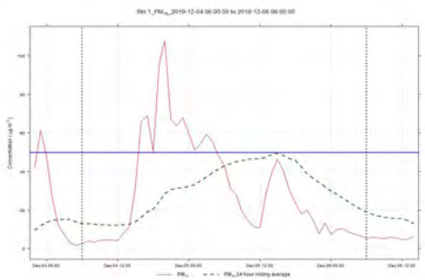
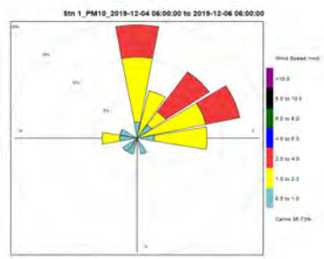
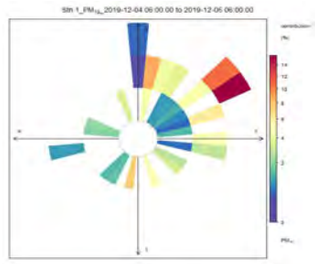
Event number (serial)	Date / Time Alert issued	Alert text	IN / OUT	90% / 100%	Contaminant	Station Name	Instrumental Error (Y/N)	Reason for Instrumental Error	Did a measured Exceedance / excursion occur?	Dominant wind direction during event	BC Hydro (BCH) or Contractor Response	Comment regarding current conditions / observations
214	2019-12-05 9:00	IN Alert 'PM10 > 90% Alert': PM10 (45.6 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-12-05 09:00 MST.	in	90%	PM10	Station 1	N	N/A	N	N-NEE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were NE with wind speeds up to 4 m/s. Regional burn ban 5-7 Dec put in place due to Smokey Skies Advisory.
214	2019-12-05 19:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM10	Station 1	N	N/A	N	N-NEE	As noted above	As noted above







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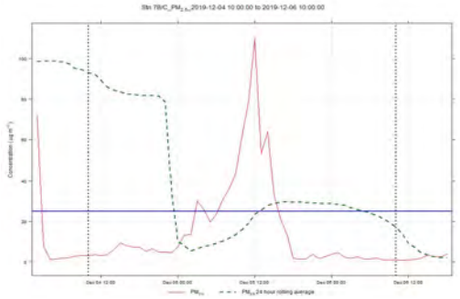
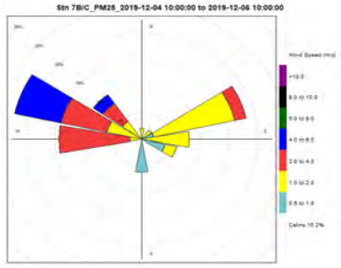
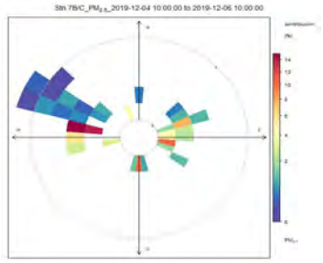
215	2019-12-05 12:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (23.5 µg/m3) at Stn 7B/C: North Camp for 2019-12-05 12:00 MST.	in	90%	PM2.5	Station 7B/C	N	N/A	Y	WNW-ENE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were WNW with wind speeds up to 4 m/s. Regional burn ban 5-7 Dec put in place due to Smokey Skies Ddvisory.
215	2019-12-05 13:00	IN Alert 'PM2.5 Alert': PM2.5 (25.6 µg/m3) at Stn 7B/C: North Camp for 2019-12-05 13:00 MST.	in	100%	PM2.5	Station 7B/C	N	N/A	y	WNW-ENE	As noted above	As noted above
215	2019-12-06 6:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM2.5	Station 7B/C	N	N/A	Y	WNW-ENE	As noted above	As noted above
215	2019-12-06 8:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM2.5	Station 7B/C	N	N/A	Y	WNW-ENE	As noted above	As noted above







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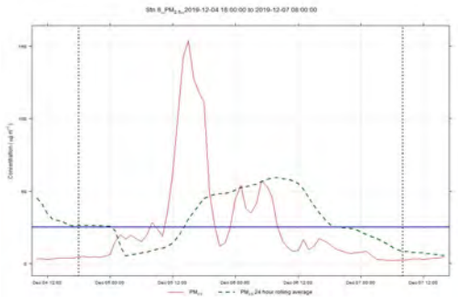
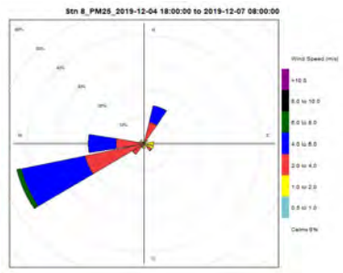
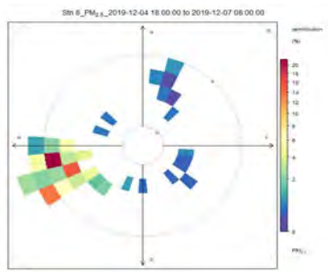
216	2019-12-05 15:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (27.5 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-12-05 15:00 MST.	in	90%	PM2.5	Station 8	N	N/A	y	WSW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were WSW with wind speeds up to 8 m/s. Regional burn ban 5-7 Dec put in place due to Smokey Skies Advisory.
216	2019-12-05 15:00	IN Alert 'PM2.5 Alert': PM2.5 (27.5 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-12-05 15:00 MST.	in	100%	PM2.5	Station 8	N	N/A	y	WSW	As noted above	As noted above
216	2019-12-06 20:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM2.5	Station 8	N	N/A	y	WSW	As noted above	As noted above
216	2019-12-07 1:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM2.5	Station 8	N	N/A	y	WSW	As noted above	As noted above







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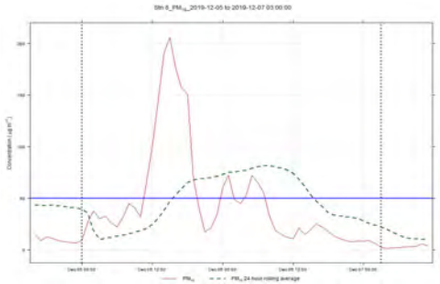
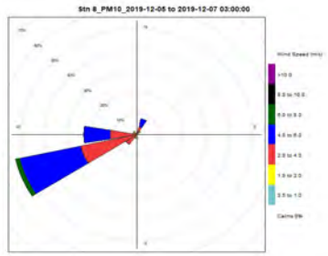
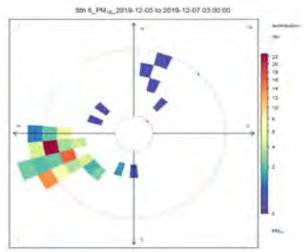
217	2019-12-05 16:00	IN Alert 'PM10 > 90% Alert': PM10 (50.6 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-12-05 16:00 MST.	in	90%	PM10	Station 8	N	N/A	Y	WSW	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were WSW with wind speeds up to 8 m/s. Regional burn ban 5-7 Dec put in place due to smokey skies advisory.
217	2019-12-05 16:00	IN Alert 'PM10 Alert': PM10 (50.6 µg/m3) at Stn 8: Fort St. John Old Fort for 2019-12-05 16:00 MST.	in	100%	PM10	Station 8	N	N/A	Y	WSW	As noted above	As noted above
217	2019-12-06 16:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	100%	PM10	Station 8	N	N/A	Y	WSW	As noted above	As noted above
217	2019-12-06 17:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 8: Fort St. John Old Fort are normal.	out	90%	PM10	Station 8	N	N/A	Y	WSW	As noted above	As noted above







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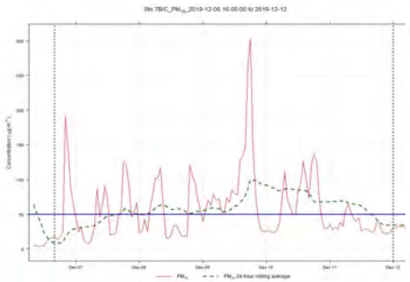
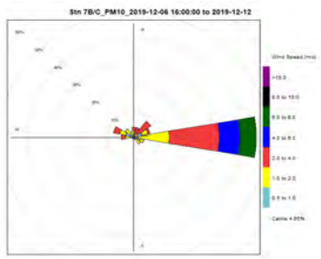
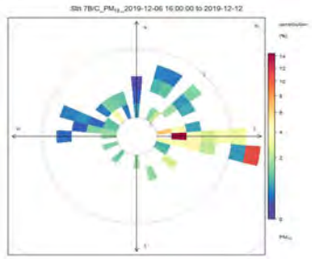
218	2019-12-07 12:00	IN Alert 'PM10 > 90% Alert': PM10 (47.7 µg/m3) at Stn 7B/C: North Camp for 2019-12-07 12:00 MST.	in	90%	PM10	Station 7B/C	N	N/A	y	E	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were ESE with wind speeds up to 8 m/s. Regional burn ban 5-7 Dec put in place due to Smokey Skies Advisory.
218	2019-12-07 17:00	IN Alert 'PM10 Alert': PM10 (51.2 µg/m3) at Stn 7B/C: North Camp for 2019-12-07 17:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	y	E	As noted above	As noted above
218	2019-12-08 0:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	y	E	As noted above	As noted above
218	2019-12-08 3:00	IN Alert 'PM10 Alert': PM10 (50.5 µg/m3) at Stn 7B/C: North Camp for 2019-12-08 03:00 MST.	in	100%	PM10	Station 7B/C	N	N/A	y	E	As noted above	As noted above
218	2019-12-11 16:00	OUT Alert 'PM10 Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	100%	PM10	Station 7B/C	N	N/A	y	E	As noted above	As noted above
218	2019-12-11 18:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	y	E	As noted above	As noted above
218	2019-12-11 18:00	OUT Alert 'PM10 > 90% Alert': PM10 conditions at Stn 7B/C: North Camp are normal.	out	90%	PM10	Station 7B/C	N	N/A	y	E	As noted above	As noted above







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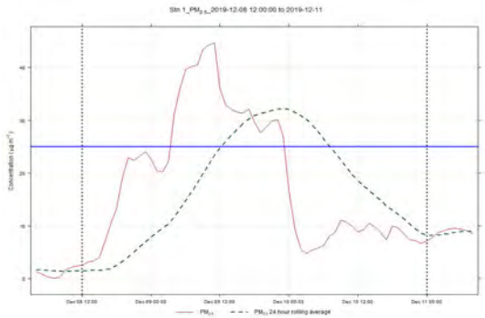
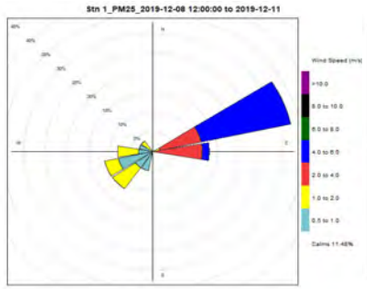
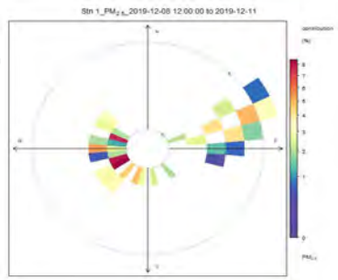
219	2019-12-09 11:00	IN Alert 'PM2.5 > 90% Alert': PM2.5 (22.5 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-12-09 11:00 MST.	in	90%	PM2.5	Station 1	N	N/A	Y	ENE	**PRHP:** For the purposes of fugitive dust emissions from construction and production activities, the business unit performing those activities will self-manage and is ultimately responsible for controlling and protecting workers from those associated hazards, whether that be the installation of sprinkler systems or calling upon water truck support. The PRHP QHSE Department will continue to support each business unit in their efforts to mitigate dust hazards.	During the event, wind direction that contributed were ENE and W with wind speeds up to 2 m/s
219	2019-12-09 13:00	IN Alert 'PM2.5 Alert': PM2.5 (25.4 µg/m3) at Stn 1: Peace Valley Attachie Flat Upper Terrace for 2019-12-09 13:00 MST.	in	100%	PM2.5	Station 1	N	N/A	Y	ENE	As noted above	As noted above
219	2019-12-10 8:00	OUT Alert 'PM2.5 Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	100%	PM2.5	Station 1	N	N/A	Y	ENE	As noted above	As noted above
219	2019-12-10 10:00	OUT Alert 'PM2.5 > 90% Alert': PM2.5 conditions at Stn 1: Peace Valley Attachie Flat Upper Terrace are normal.	out	90%	PM2.5	Station 1	N	N/A	Y	ENE	As noted above	As noted above

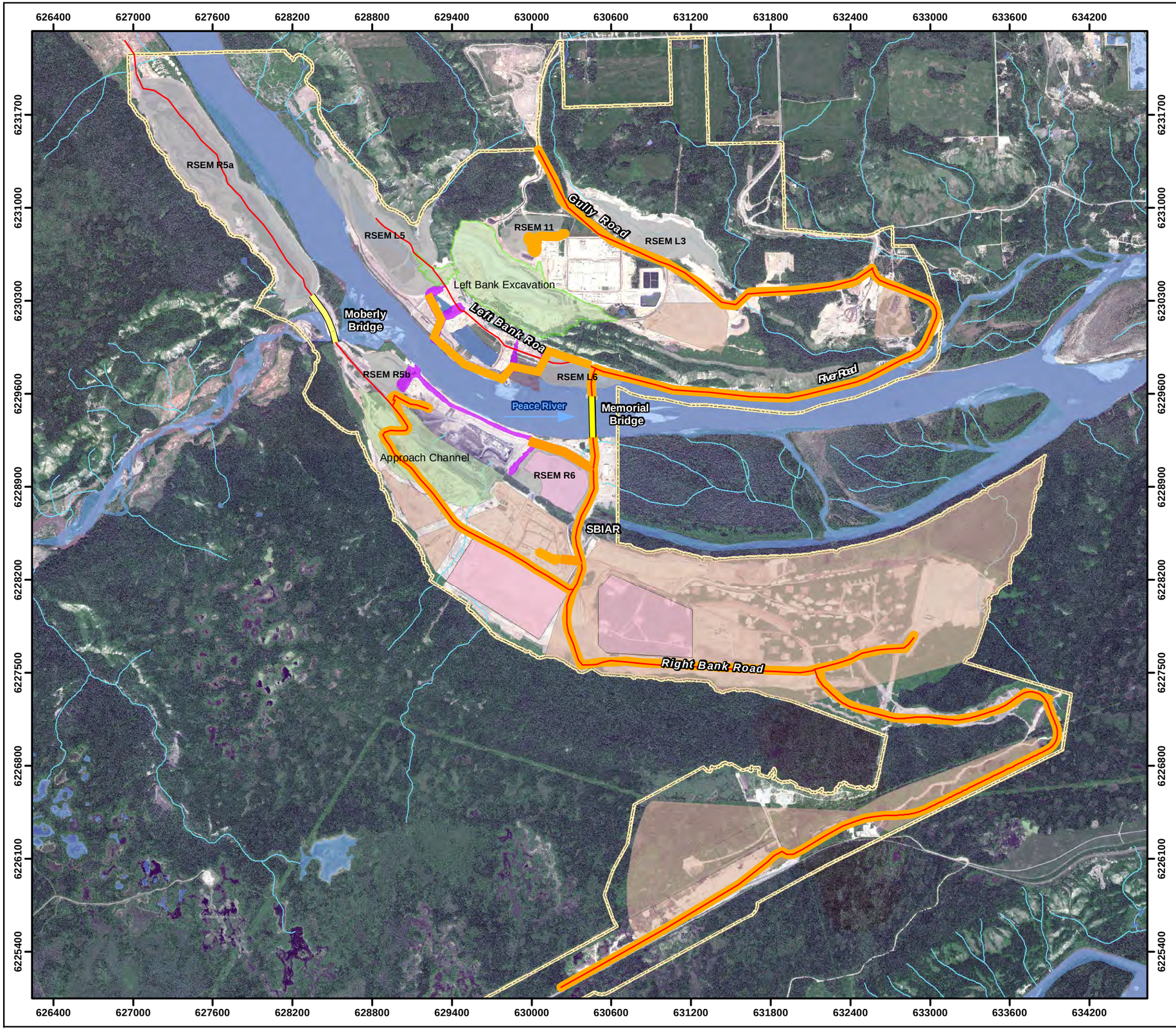






APPENDIX E

EXAMPLES OF DUST SUPPRESSION WITH CALCIUM CHLORIDE ROADWAY APPLICATION, HYDRO-SEEDING AND SPIN BROADCAST



Site C Clean Energy Project

Dust Management
Calcium Chloride Application Areas
(July 7, 2019 & Nov. 2, 2019)

Legend

Main Road

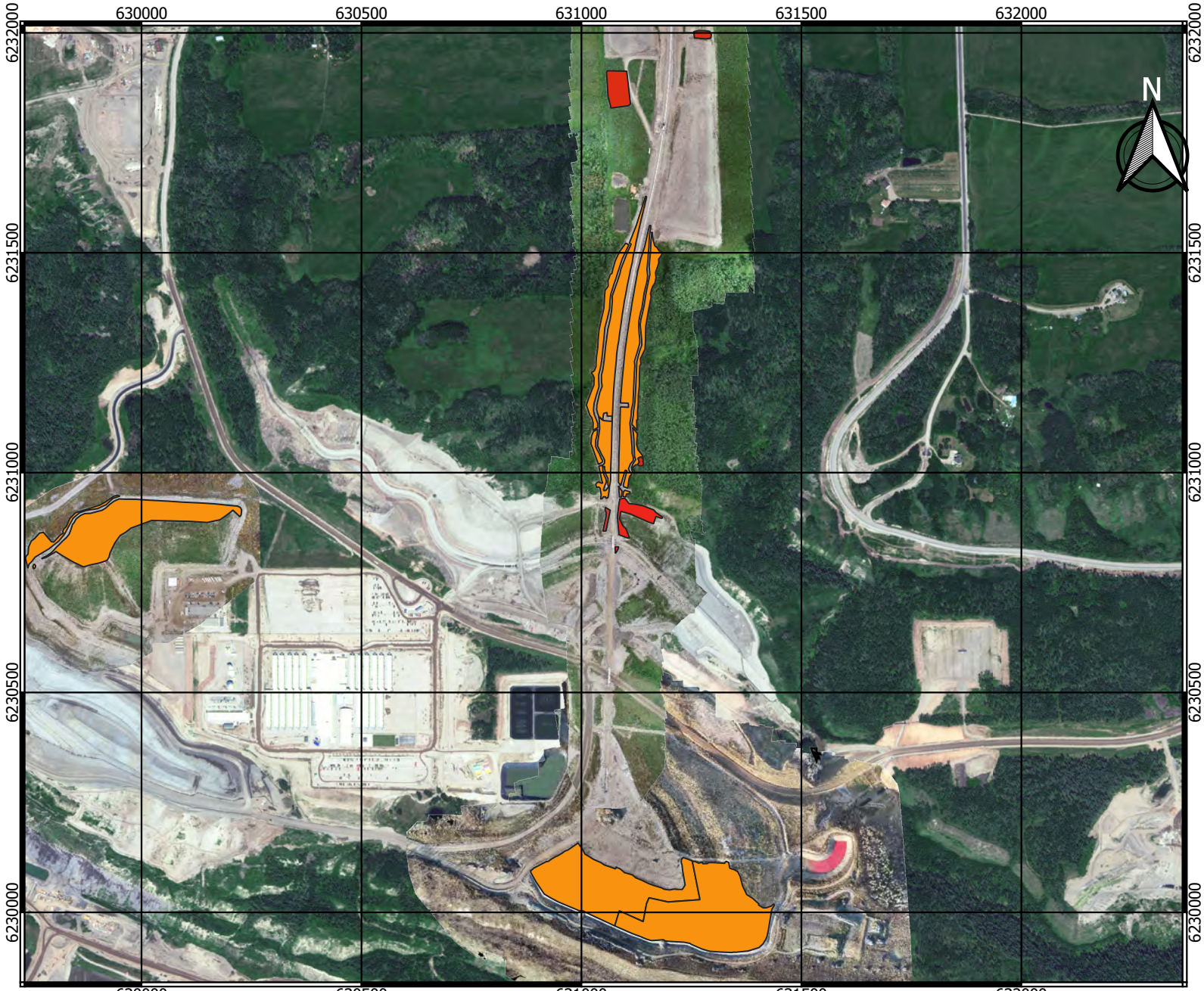
- Main Road
- Bridge
- Calcium Chloride Applicaton Areas
- Other Contractors Areas
- All Sites
- Site C Project Boundary
- Cofferdams
- Water Bodies

Data Source: Photosat Image 2016-04-14

Figure 1

PEACE RIVER HYDRO PARTNERS

Created By:	PRHP Environmental Dept.	Rev:
Datum:	NAD 83 Zone 10N	0
Date:	March 19, 2020	



Site C Clean Energy Project

Seeded Area Locations - Left Bank
(2019)

Legend

- Spin Broadcast Area
- Hydroseed Area

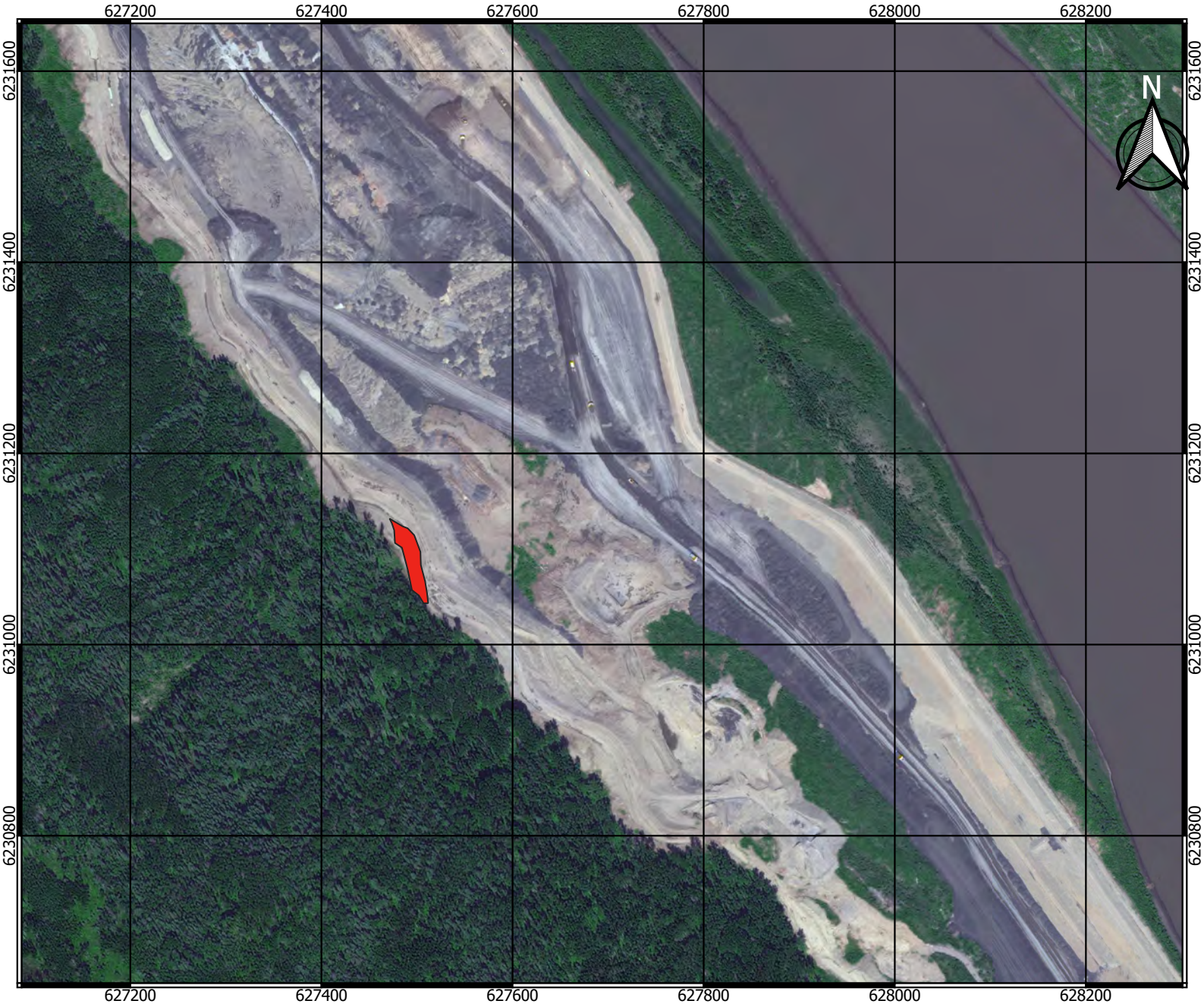
Data Source: Photosat Image 2017-06-17

Figure 6-2

PEACE RIVER HYDRO PARTNERS

Created By: PRHP Environment Dept.
Datum: NAD 83 Zone 10
Date: January 28, 2020

Rev: 0



Site C Clean Energy Project

Seeded Area Locations - Right Bank
(2019)

Legend

Spin Broadcast Area

Data Source: Photosat Image 2017-06-17

Figure 6-3

PEACE RIVER HYDRO PARTNERS

Created By: PRHP Environment Dept.
Datum: NAD 83 Zone 10
Date: January 28, 2020

Rev: 0