

# Regional District of Bulkley Nechako Air Quality - June to October 2023

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## 1 Purpose

Information in this report was requested by the Wildfire Recovery Manager of the Regional District of Bulkley Nechako (RDBN) and is for internal use. The purpose of this report is to describe and summarize the air quality in the RDBN between June 1st and October 31st 2023.

## 2 PM<sub>2.5</sub> exceedances

Sources of particulate matter with aerodynamic diameters less than 2.5 micrometers (PM<sub>2.5</sub>) include, but are not limited to: wood-burning stoves, industries, motorized vehicles, and forest fires. Local forest fires represent the major and most frequent source contributing to short-term peak background concentrations. Provincial ambient air quality objective (AQO)s are used to gauge current and historical air quality, guide decisions, and issue public notifications during periods of degraded air quality. Table 1 details the number and percentage of days the PM<sub>2.5</sub> concentration exceeded the 24-hour AQO threshold ( $25 \mu\text{g}/\text{m}^3$ ) between June 1st and October 31st 2023 for each town in the RDBN: Smithers, Houston, Burns Lake and Vanderhoof. Vanderhoof had the most exceedances of PM<sub>2.5</sub>.

Table 1: Number of PM<sub>2.5</sub> 24-hour AQO threshold exceedances in each town

Town monitoring station	# days AQO exceeded	% days AQO exceeded
Burns Lake Fire Centre	18	12
Houston Firehall	17	11
Smithers Muheim Memorial	10	7
Vanderhoof Courthouse	33	22

## 3 Smoky Skies Bulletins issued

The Smoky Skies Bulletin (SSB) is a public notification used to communicate which regions of the province are being impacted or have reasonable potential to be impacted by wildfire smoke within 24 to 48 hours. Impacted regions are determined from available measurements of PM<sub>2.5</sub>, satellite imagery, webcams, and smoke models (e.g. firesmoke.ca). Table 2 details the number and percentage of days regions within the RDBN (Bulkley Valley, Lakes District and Stuart-Nechako) were issued under the SSB between June 1st and October 31st 2023. The Stuart - Nechako region was most frequently issued for the period evaluated.

Table 2: Number of times a region was issued under a SSB in the RDBN

Region	# issued	% issued
Bulkley Valley	19	12
Lakes District	38	25
Stuart - Nechako	52	34

## 4 Summary

Figure 1 shows the daily average  $PM_{2.5}$  concentrations for the towns of Smithers, Houston, Burns Lake and Vanderhoof from 1st June to 31st October 2023. The red dotted line shows the provincial 24-hour AQO threshold ( $25 \mu g/m^3$ ), and the black shapes highlight days that the Bulkley Valley, Lakes District and Stuart - Nechako regions were issued under the SSB. The days that these regions were issued under the SSB mostly coincide with days that daily average  $PM_{2.5}$  concentrations were close to or exceeded the provincial 24-hour AQO threshold in the towns within those regions. Differences between SSB issued and  $PM_{2.5}$  concentrations occur because forecasting smoke concentrations is inherently challenging and many areas without monitors may be impacted by smoke.

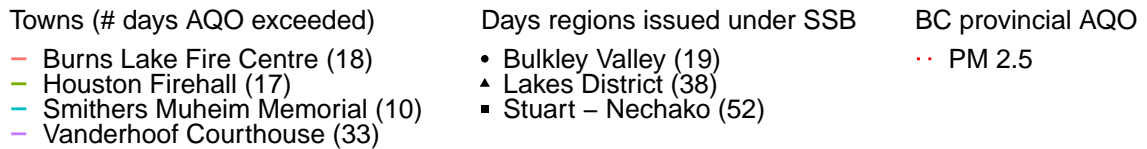
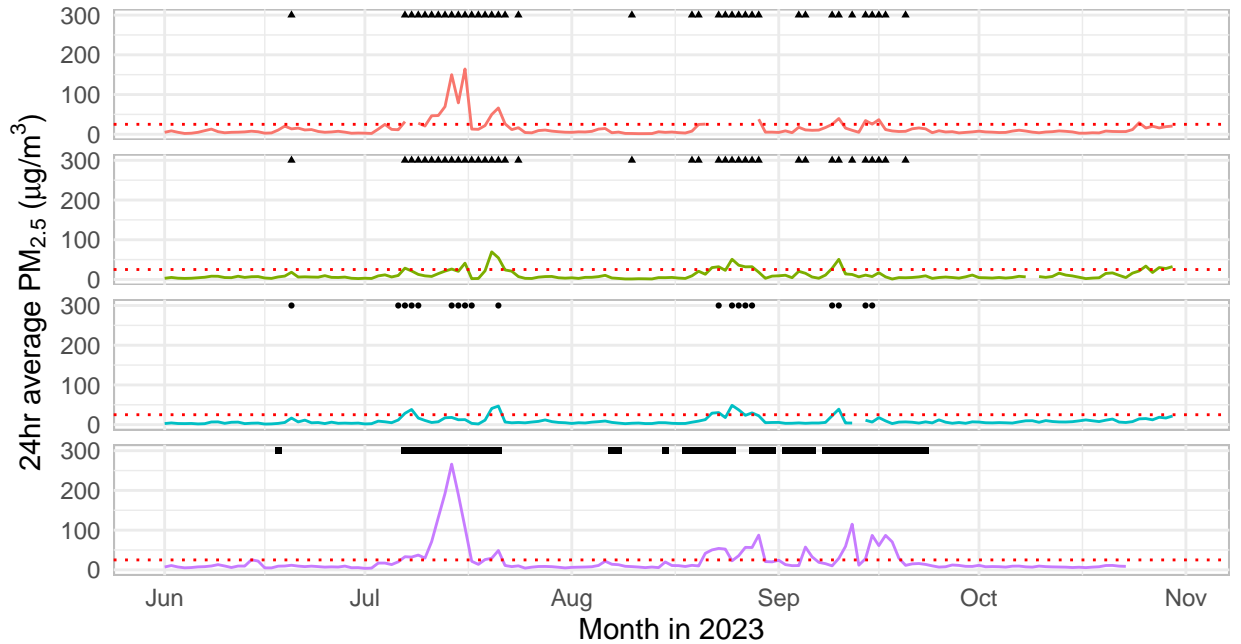


Figure 1: Summer 2023 air quality in the RDBN