



KITIMAT AIRSHED GROUP

Quarterly Air Quality Data Reports 2023

July – September 2023

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Kitimat Airshed Group Society

Quarterly Data Summary Reports for July 1 to September 30, 2023

Our third quarterly data summary report includes ambient air quality stations in Kitimat, Kitamaat Village and Terrace. These reports are automatically generated using unverified data extracted from the BC Air Data Archive (Envista database) managed by the Ministry of Environment and Climate Change Strategy (BC ENV). Summary reports will be posted quarterly to provide an overview of the air quality status in the Kitimat Terrace airshed. These reports are reviewed and elaborated on by the Data Review Committee.

During this quarter, Rio Tinto's aluminum smelter reached full production and is in a stabilization phase. Further information can be found on the [Rio Tinto BC Works Website](#). Trinity Consultants maintains and operates the air quality stations for Rio Tinto in Kitimat, Kitamaat Village, and Lakelse Lake; their station notes are attached at the end of the report for reference.

Other notable activities in the Kitimat airshed are the ongoing construction at [LNG Canada's](#) project site, which is 85% complete, the construction of the Haisla bridge replacement project which officially opened in June 2023, road dust, and intermittent forest fire activity during the months of June and August, 2023.

Submitted by Brittany Bayne on behalf of the Kitimat Airshed Data Review Committee

270 City Centre
Kitimat, BC, V8C 2H7



Ministry of
Environment and
Climate Change Strategy

Automated Data Summary for
Kitimat Haisla Village
2023 Q3

Provided to the Kitimat Airshed Group by the
B.C. Ministry of Environment and Climate Change Strategy

Generated:
1 October 2023

Note

This report is generated automatically and contains unvalidated data.

Kitimat Haisla Village

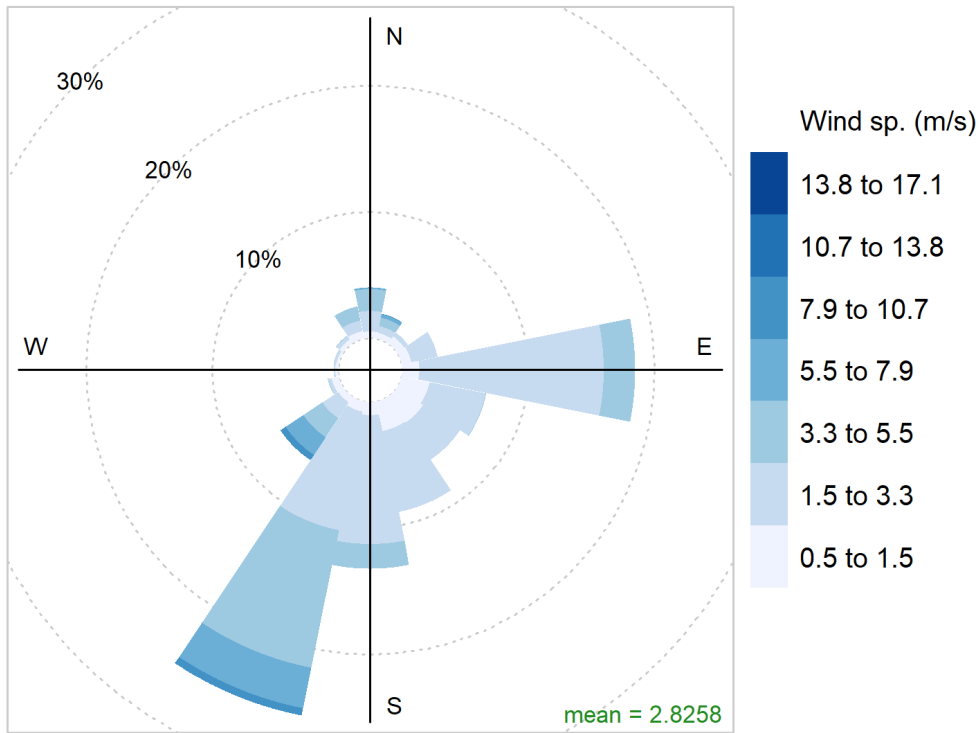
2023 Q3

Parameter	Unit	Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
SO2		1 H	70	0	0.5	3.9	-0.2	17.9	2023-07-12 12:00:00	94.2	Y
PM2.5		1 H			4.4	0.0	0.0	210.0	2023-08-08 20:00:00	96.6	Y
		24 H	25	2	4.4	0.0	0.1	42.5	2023-08-26	97.8	Y
Wind spd		1 H			2.8	0.0	0.4	10.2	2023-08-17 14:00:00	98.8	Y
Temp		1 H			16.3		8.3	33.0	2023-07-07 14:00:00	98.8	Y

Avg = Average; Comp = Completeness; Excd = number of exceedances; Neg = negative data; Obj = Air quality objective; Prd = Period; Qtr = Quarter
Comp threshold is 60%

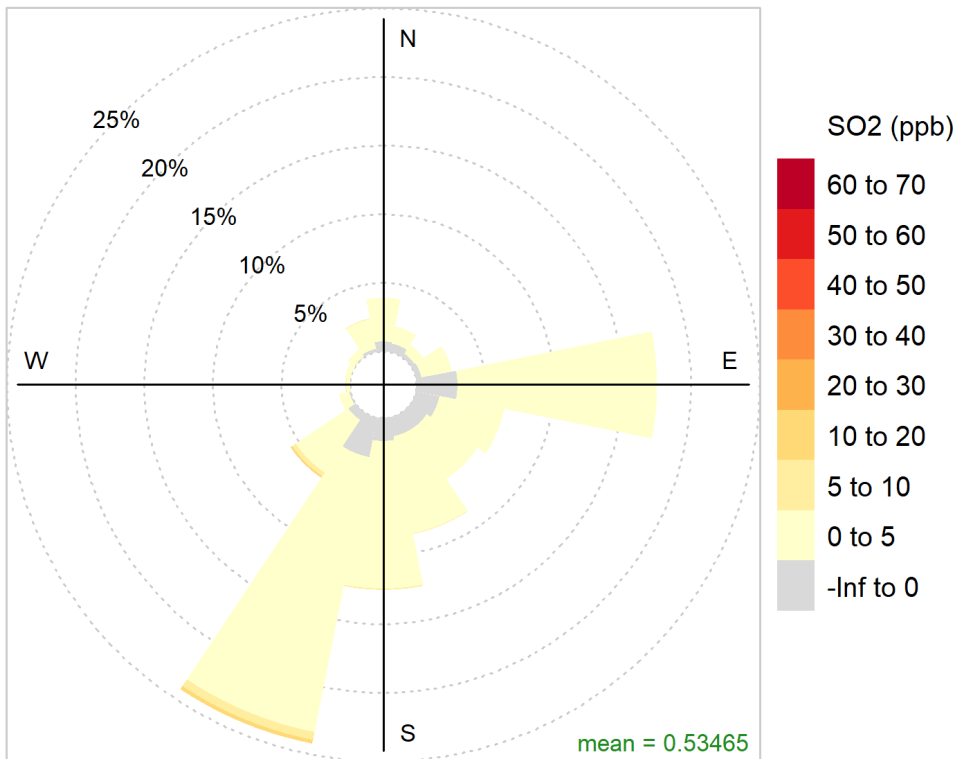
Parameter	Conversion	Unit	Notes
SO2	1 : 2.62	ppb : ug/m3	
PM2.5			
Wind spd			
Temp			

Windrose
Kitimat Haisla Village - 2023 Q3

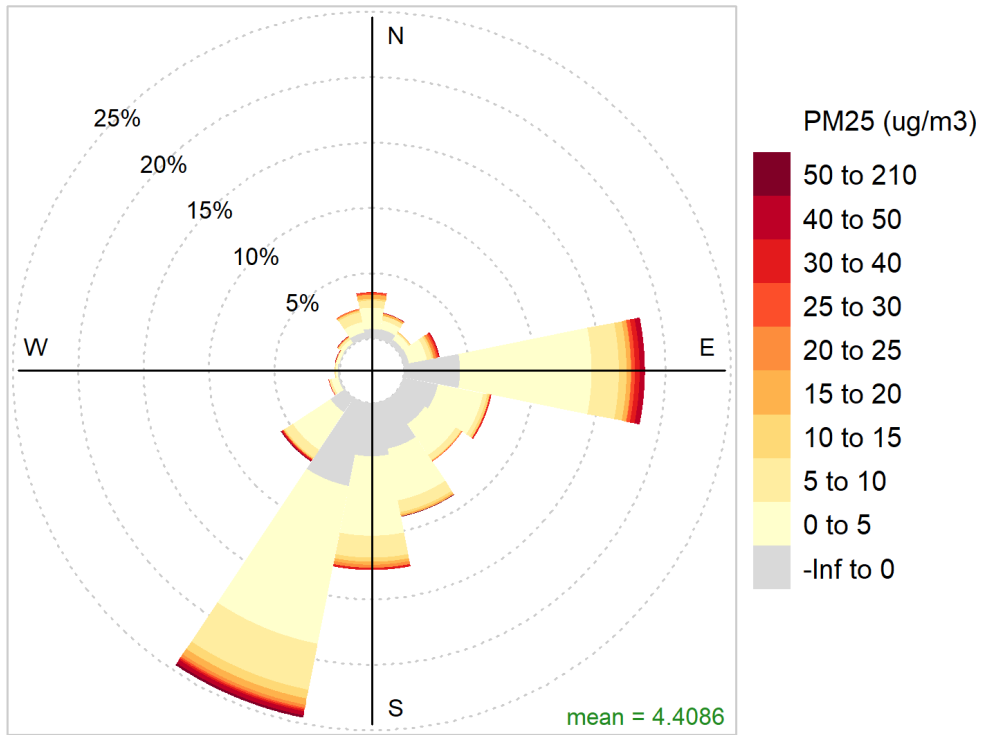


calms = 0.18%

SO2 pollution rose
Kitimat Haisla Village - 2023 Q3



PM2.5 pollution rose
Kitimat Haisla Village - 2023 Q3





Automated Data Summary for

**Kitimat Haul Road
2023 Q3**

Provided to the Kitimat Airshed Group by the
B.C. Ministry of Environment and Climate Change Strategy

Generated:
1 October 2023

Note

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Kitimat Haul Road

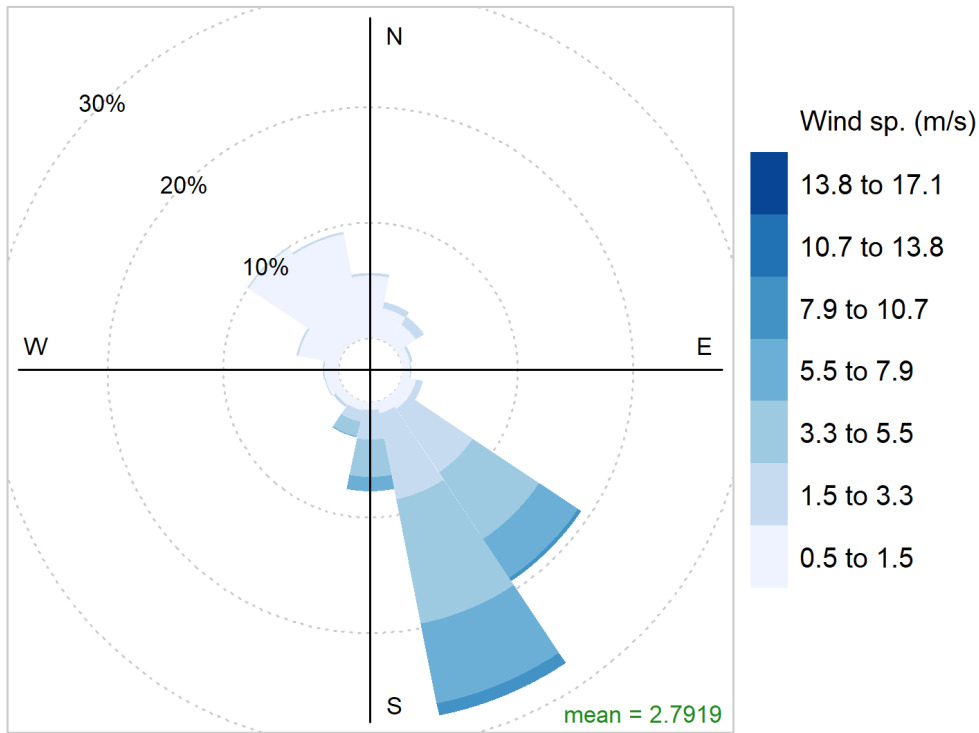
2023 Q3

Parameter	Unit Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
SO2	1 H	70	3	5.6	5.2	-0.3	85.5	2023-08-26 11:00:00	94.0	Y
HF	1 H	63	0	0.3	0.0	0.2	0.4	More than 5 occurrences (n = 63)	93.3	Y
	24 H			0.3	0.0	0.2	0.3	More than 5 occurrences (n = 66)	96.7	Y
PM2.5	1 H			8.3	0.0	0.0	64.0	2023-08-26 11:00:00	82.2	Y
	24 H	25	4	8.3	0.0	2.3	46.4	2023-08-26	81.5	Y
Wind spd	1 H			2.8	0.0	0.0	9.9	2023-07-08 18:00:00	98.9	Y
Temp	1 H			16.1		5.9	33.6	2023-07-07 15:00:00	98.9	Y

Avg = Average; Comp = Completeness; Excd = number of exceedances; Neg = negative data; Obj = Air quality objective; Prd = Period; Qtr = Quarter
Comp threshold is 60%

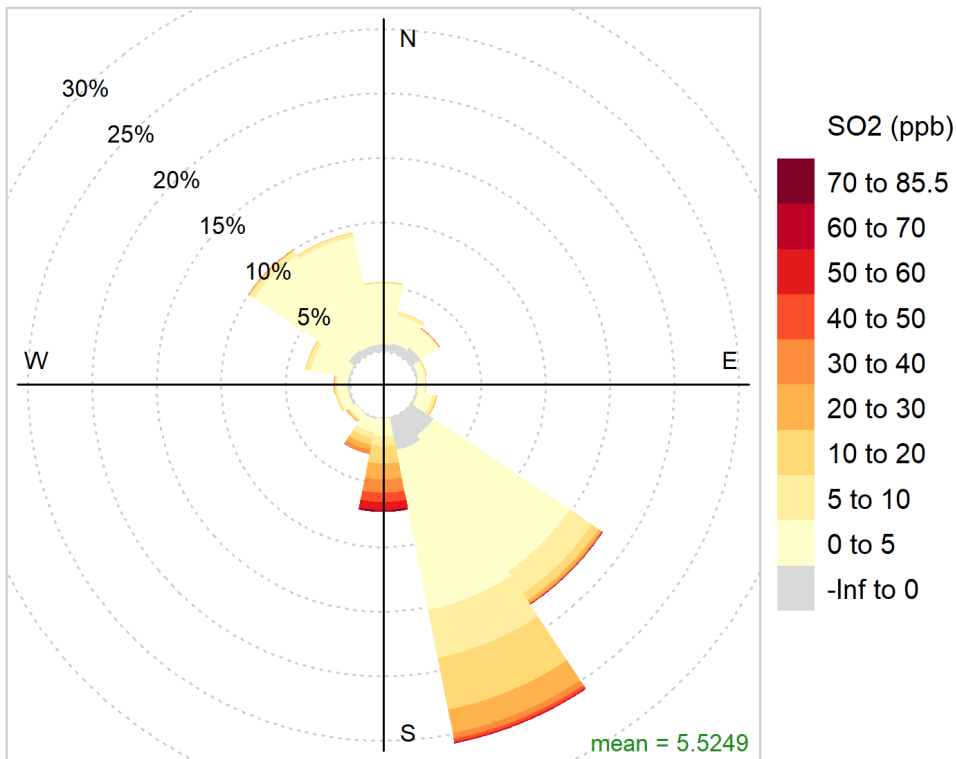
Parameter	Conversion	Unit	Notes
SO2	1 : 2.62	ppb : ug/m3	
HF	1 : 0.82	ppb : ug/m3	
PM2.5			
Wind spd			
Temp			

Windrose
Kitimat Haul Road - 2023 Q3

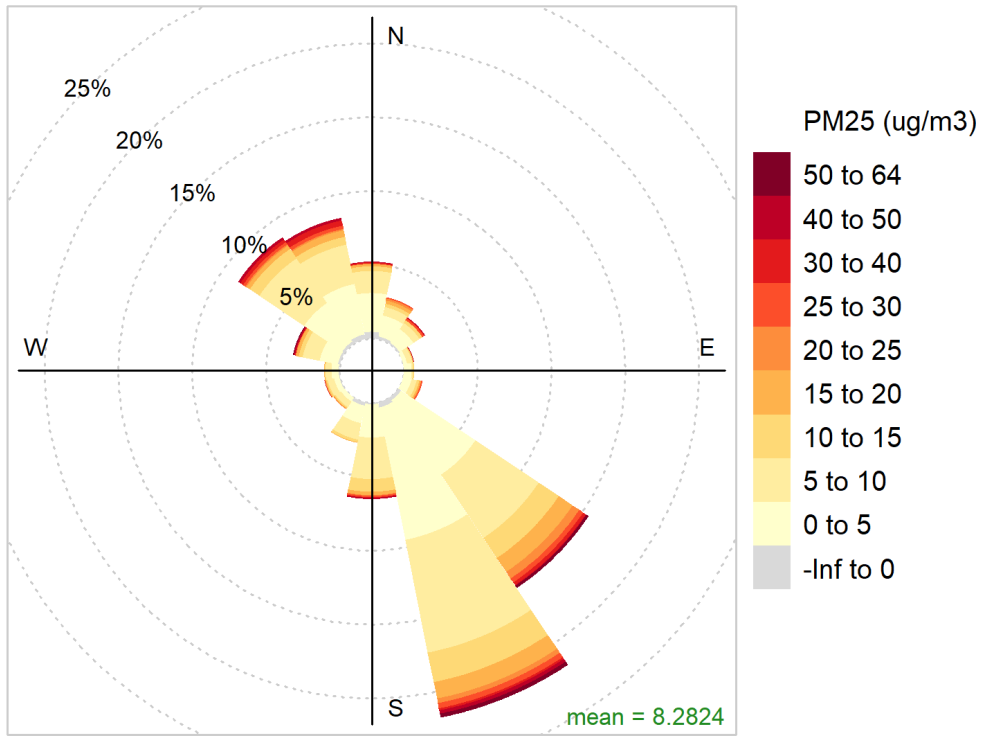


calms = 1.54%

SO2 pollution rose
Kitimat Haul Road - 2023 Q3



PM2.5 pollution rose
Kitimat Haul Road - 2023 Q3





Ministry of
Environment and
Climate Change Strategy

Automated Data Summary for
Kitimat Industrial Ave
2023 Q3

Provided to the Kitimat Airshed Group by the
B.C. Ministry of Environment and Climate Change Strategy

Generated:
1 October 2023

Note

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Kitimat Industrial Ave

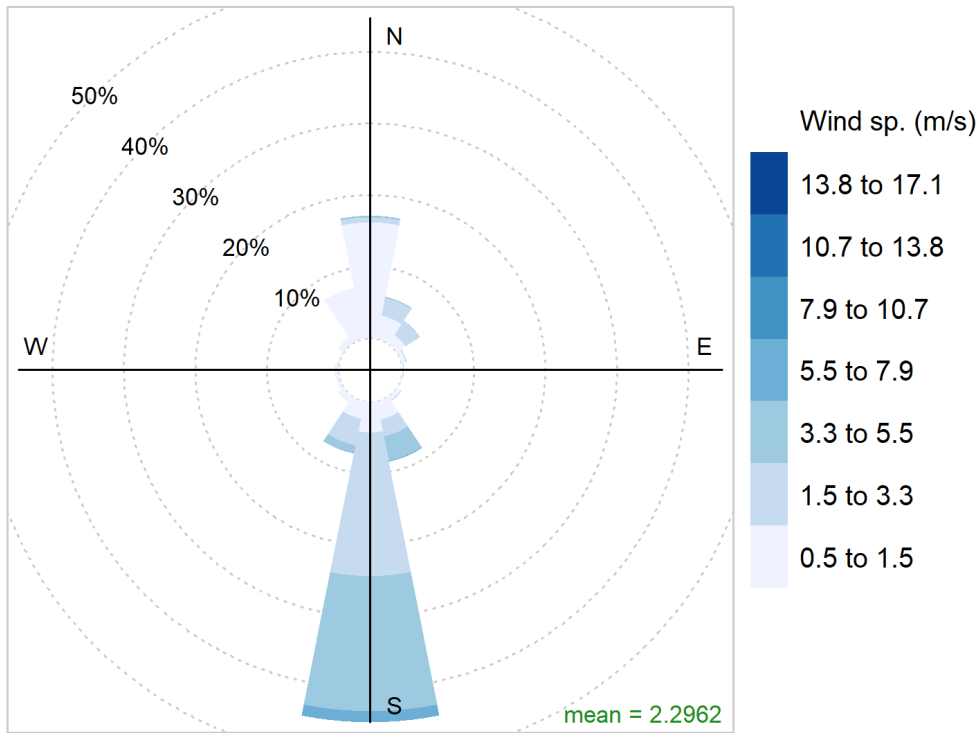
2023 Q3

Parameter	Unit	Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
SO2		1 H	70	0	2.4	0.0	0.1	42.2	2023-08-22 11:00:00	94.2	Y
Wind spd		1 H			2.1	0.0	0.0	7.5	2023-09-17 13:00:00	98.7	Y
Temp		1 H			16.1		5.7	34.9	2023-07-07 15:00:00	98.7	Y
Humidity		1 H			73.1	0.0	20.1	95.0	2023-09-15 09:00:00	98.7	Y

Avg = Average; Comp = Completeness; Excd = number of exceedances; Neg = negative data; Obj = Air quality objective; Prd = Period; Qtr = Quarter
 Comp threshold is 60%

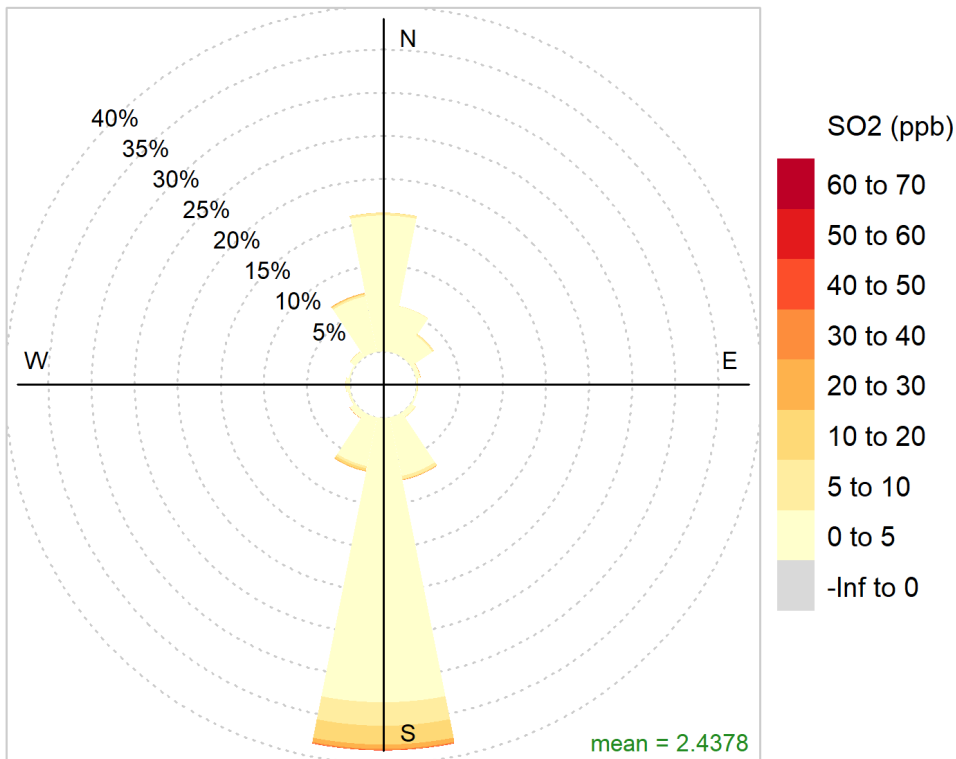
Parameter	Conversion	Unit	Notes
SO2	1 : 2.62	ppb : ug/m3	
Wind spd			
Temp			
Humidity			

Windrose
Kitimat Industrial Ave - 2023 Q3



calms = 0.20%

SO2 pollution rose
Kitimat Industrial Ave - 2023 Q3





Automated Data Summary for

Kitimat Riverlodge 2023 Q3

Provided to the Kitimat Airshed Group by the
B.C. Ministry of Environment and Climate Change Strategy

Generated:
1 October 2023

Note

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Kitimat Riverlodge

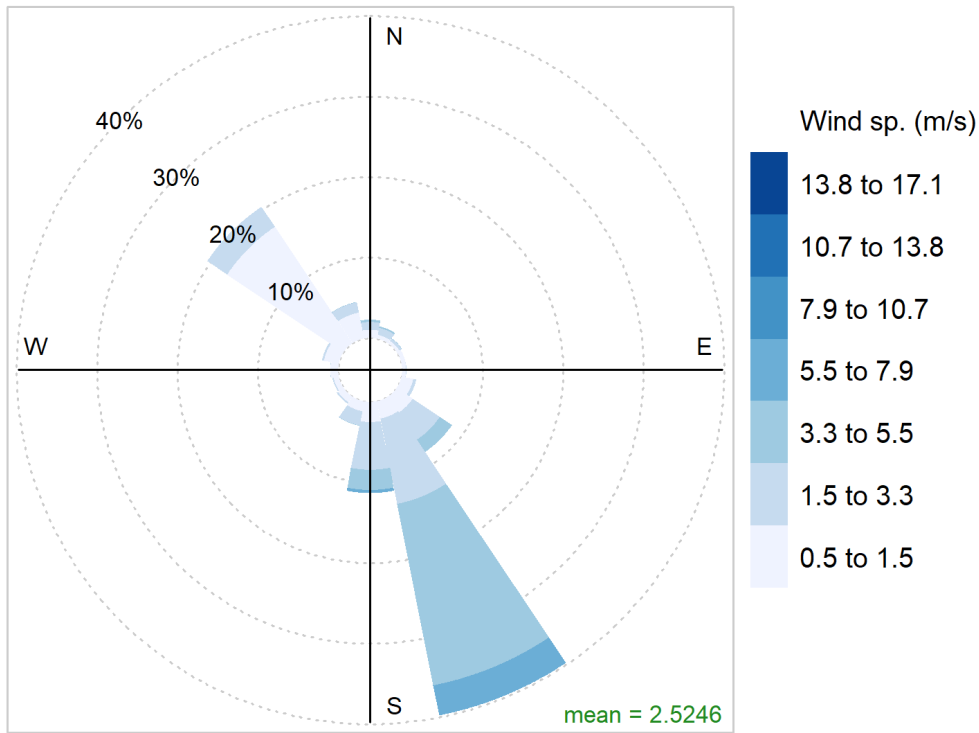
2023 Q3

Parameter	Unit Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
SO2	1 H	70	0	1.2	0.0	0.0	34.0	2023-08-22 11:00:00	90.5	Y
	1 H	63	0	0.2	0.0	0.1	0.5	2023-07-06 18:00:00 2023-07-06 19:00:00 2023-07-06 20:00:00 2023-07-06 21:00:00 2023-07-06 22:00:00 2023-07-07 00:00:00	93.1	Y
HF	24 H			0.2	0.0	0.1	0.3	More than 5 occurrences (n = 26)	96.7	Y
PM2.5	1 H			6.8	0.0	0.0	66.0	2023-07-12 11:00:00	98.3	Y
	24 H	25	3	6.8	0.0	1.6	44.6	2023-08-26	98.9	Y
PM10	1 H			10.7	0.0	0.0	88.0	2023-08-26 21:00:00	66.8	Y
	24 H	50	1	10.7	0.0	1.1	54.5	2023-08-26	66.3	Y
Wind spd	1 H			2.4	0.0	0.0	7.3	2023-08-28 18:00:00	98.6	Y
Temp	1 H			16.2		6.2	33.6	2023-07-07 15:00:00	98.6	Y

Avg = Average; Comp = Completeness; Excd = number of exceedances; Neg = negative data; Obj = Air quality objective; Prd = Period; Qtr = Quarter
Comp threshold is 60%

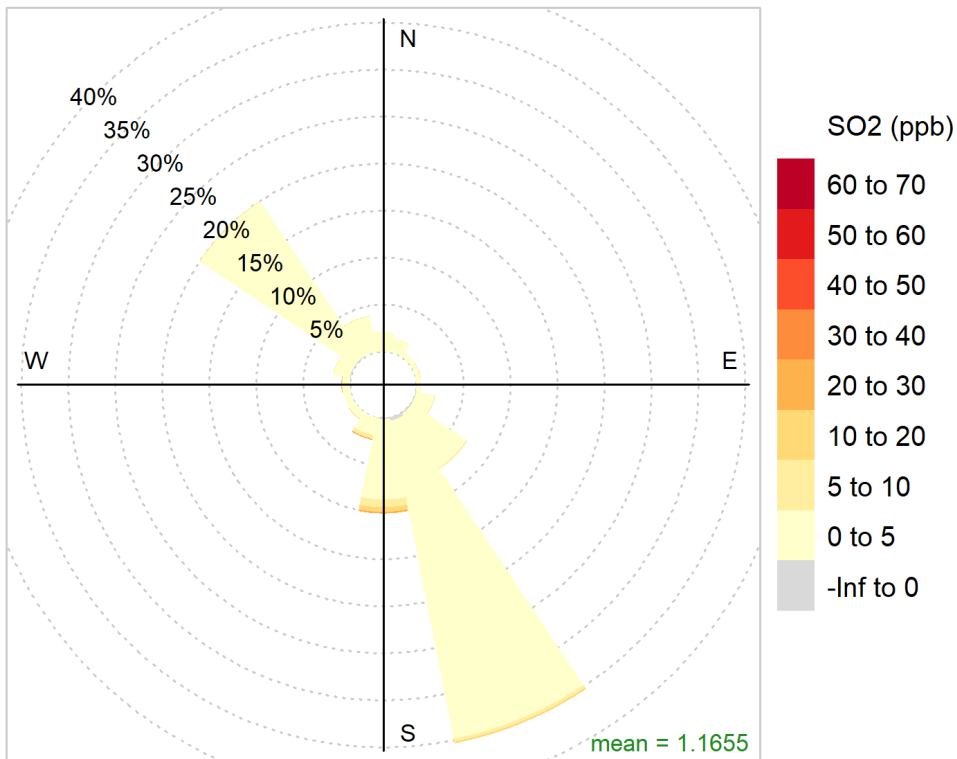
Parameter	Conversion	Unit	Notes
SO2	1 : 2.62	ppb : ug/m3	
HF	1 : 0.82	ppb : ug/m3	
PM2.5			
PM10			
Wind spd			
Temp			

Windrose
Kitimat Riverlodge - 2023 Q3

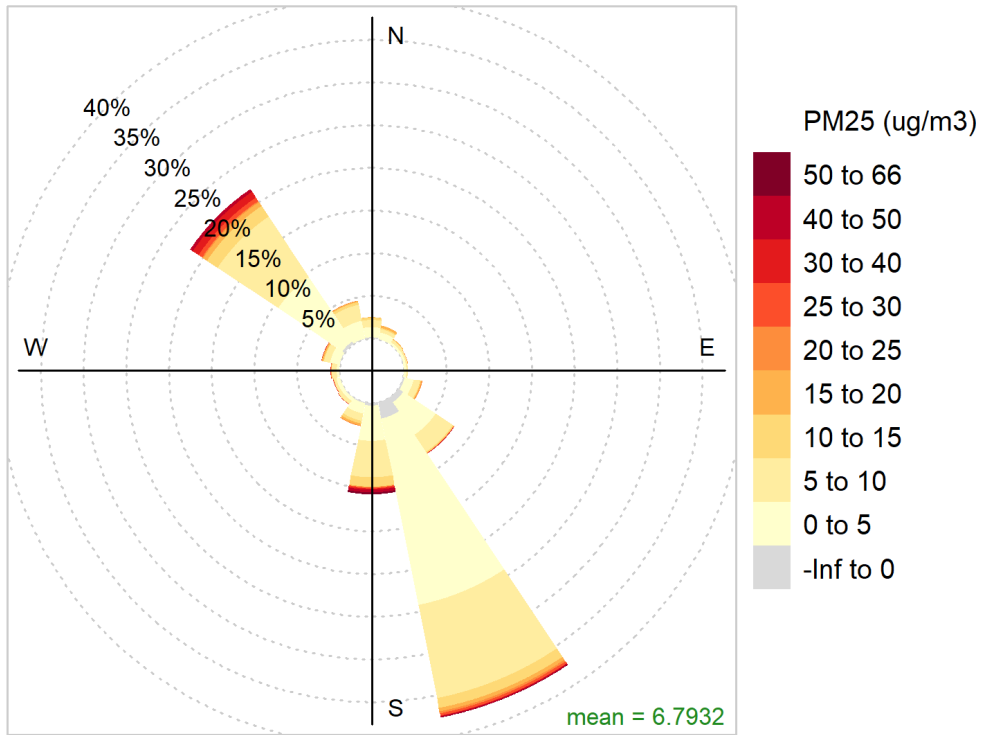


calms = 5.20%

SO2 pollution rose
Kitimat Riverlodge - 2023 Q3



PM2.5 pollution rose
Kitimat Riverlodge - 2023 Q3





Automated Data Summary for

Kitimat Whitesail 2023 Q3

Provided to the Kitimat Airshed Group by the
B.C. Ministry of Environment and Climate Change Strategy

Generated:
1 October 2023

Note

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Kitimat Whitesail

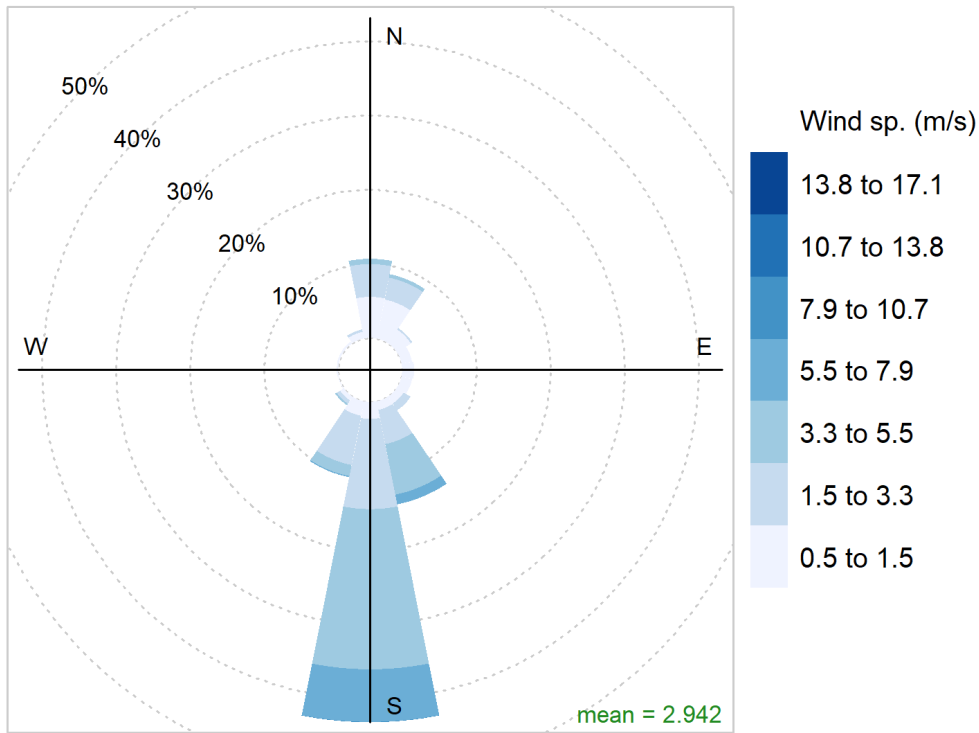
2023 Q3

Parameter	Unit Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
AQHI	1 H					1	10+	2023-08-22 04:00:00	94.9	Y
NO2	1 H	60	0	0.8	0.0	0.1	5.0	2023-09-20 20:00:00 2023-09-29 20:00:00	93.7	Y
SO2	1 H	70	0	0.3	38.8	-0.5	24.0	2023-09-08 11:00:00	93.4	Y
O3	1 H	82	0	18.0	0.0	0.7	41.3	2023-08-27 17:00:00	93.5	Y
PM2.5	1 H			4.8	0.0	0.0	186.0	2023-08-22 04:00:00	94.2	Y
	24 H	25	3	4.8	0.0	0.3	42.7	2023-08-26	94.6	Y
Wind spd	1 H			2.8	0.0	0.0	7.9	2023-08-28 18:00:00	98.9	Y
Temp	1 H			15.8		6.4	33.3	2023-07-07 16:00:00	98.9	Y
Humidity	1 H			77.8	0.0	25.5	100.0	More than 5 occurrences (n = 10)	98.9	Y

Avg = Average; Comp = Completeness; Excd = number of exceedances; Neg = negative data; Obj = Air quality objective; Prd = Period; Qtr = Quarter
Comp threshold is 60%

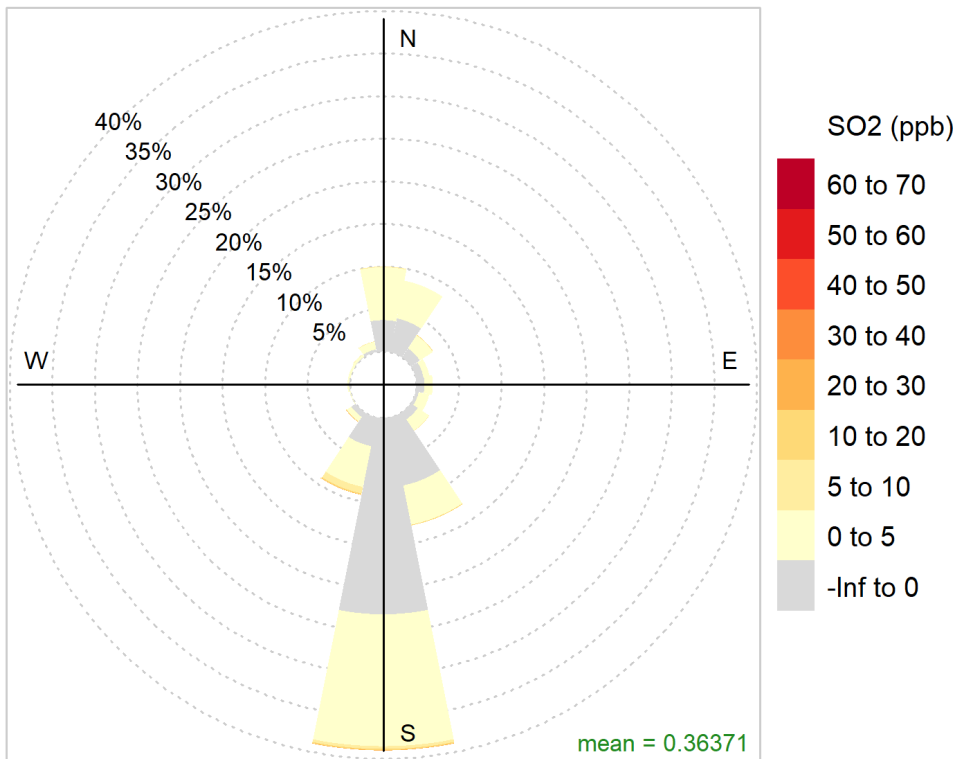
Parameter	Conversion	Unit	Notes
AQHI			
NO2	1 : 1.88	ppb : ug/m3	
SO2	1 : 2.62	ppb : ug/m3	
O3	1 : 1.96	ppb : ug/m3	
PM2.5			
Wind spd			
Temp			
Humidity			

Windrose
Kitimat Whitesail - 2023 Q3

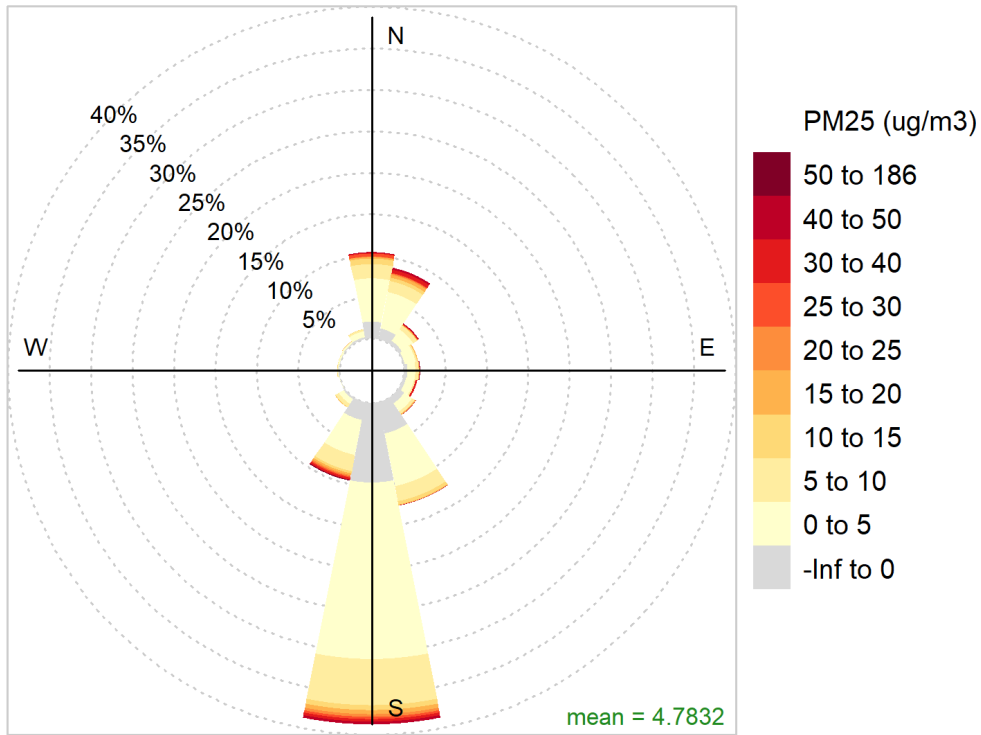


calms = 4.71%

SO2 pollution rose
Kitimat Whitesail - 2023 Q3



PM2.5 pollution rose
Kitimat Whitesail - 2023 Q3





Automated Data Summary for

Kitimat Yacht Club 2023 Q3

Provided to the Kitimat Airshed Group by the
B.C. Ministry of Environment and Climate Change Strategy

Generated:
1 October 2023

Note

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Kitimat Yacht Club

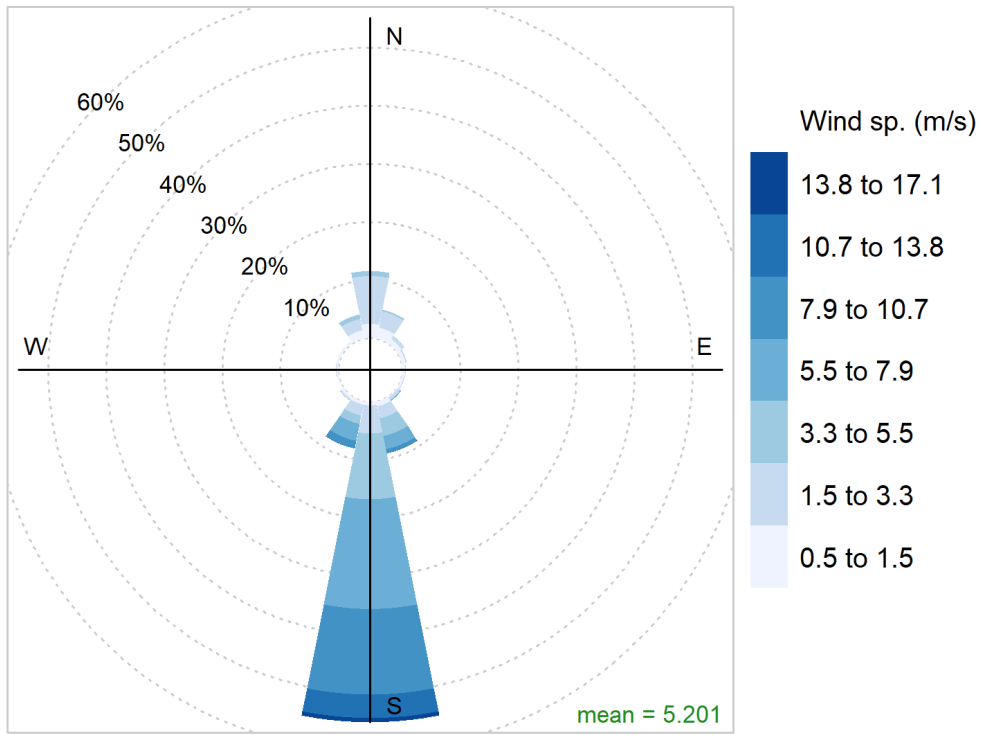
2023 Q3

Parameter	Unit	Avg	Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
Wind spd	1 H					5.2	0.0	0.2	16.2	2023-08-28 18:00:00	98.9	Y
Temp	1 H					16.0		7.5	32.4	2023-07-07 14:00:00	98.9	Y

Avg = Average; Comp = Completeness; Excd = number of exceedances; Neg = negative data; Obj = Air quality objective; Prd = Period; Qtr = Quarter
Comp threshold is 60%

Parameter	Conversion	Unit	Notes
Wind spd			
Temp			

Windrose
Kitimat Yacht Club - 2023 Q3



calms = 0.27%



Automated Data Summary for
Terrace Skeena Middle School
2023 Q3

Provided to the Kitimat Airshed Group by the
B.C. Ministry of Environment and Climate Change Strategy

Generated:
1 October 2023

Note

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Terrace Skeena Middle School

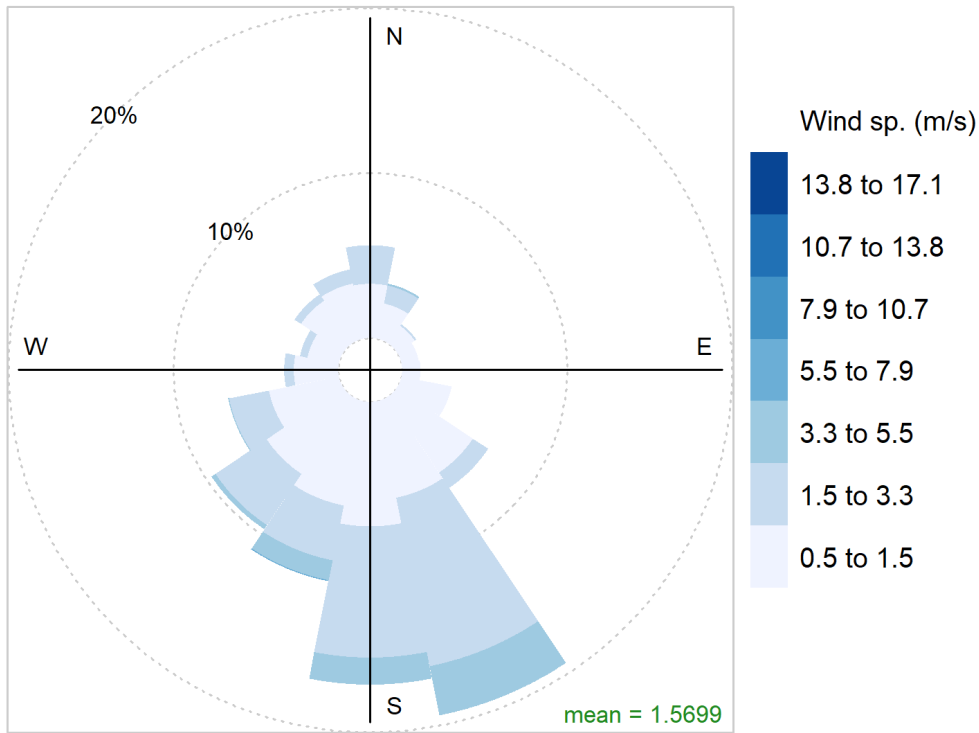
2023 Q3

Parameter	Unit	Avg	Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
AQHI	1 H							1	5	More than 5 occurrences (n = 7)	98.9	Y
NO2	1 H	60		0		-0.6	72.6	-2.1	10.0	2023-07-13 08:00:00	94.9	Y
SO2	1 H	70		0		1.2	0.0	0.1	16.2	2023-07-15 11:00:00	94.9	Y
O3	1 H	82		0		17.5	0.0	0.2	54.1	2023-08-27 18:00:00	94.9	Y
PM2.5	1 H					6.5	0.0	0.7	44.6	2023-08-26 14:00:00	98.9	Y
	24 H	25		3		6.5	0.0	1.9	37.0	2023-08-26	98.9	Y
Wind spd	1 H					1.3	0.0	0.0	5.8	2023-07-01 17:00:00	98.9	Y
Temp	1 H					17.1		6.4	33.9	2023-07-07 16:00:00	98.9	Y
Humidity	1 H					68.0	0.0	19.6	95.7	2023-09-28 05:00:00	98.9	Y

Avg = Average; Comp = Completeness; Excd = number of exceedances; Neg = negative data; Obj = Air quality objective; Prd = Period; Qtr = Quarter
 Comp threshold is 60%

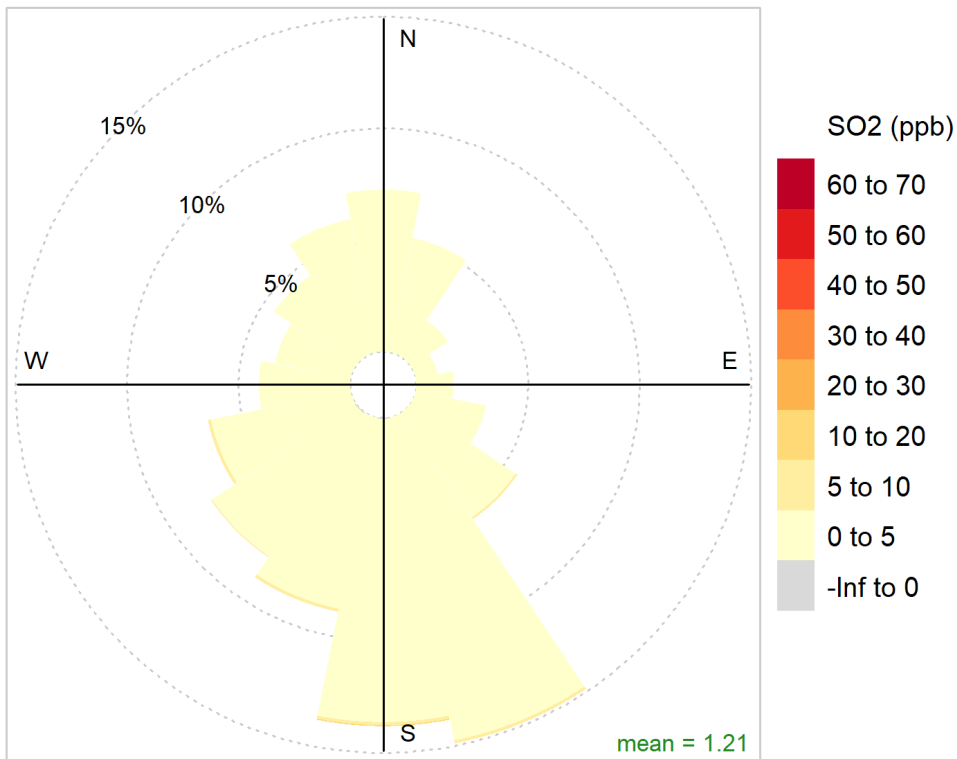
Parameter	Conversion	Unit	Notes
AQHI			
NO2	1 : 1.88	ppb : ug/m3	
SO2	1 : 2.62	ppb : ug/m3	
O3	1 : 1.96	ppb : ug/m3	
PM2.5			
Wind spd			
Temp			
Humidity			

Windrose
Terrace Skeena Middle School - 2023 Q3

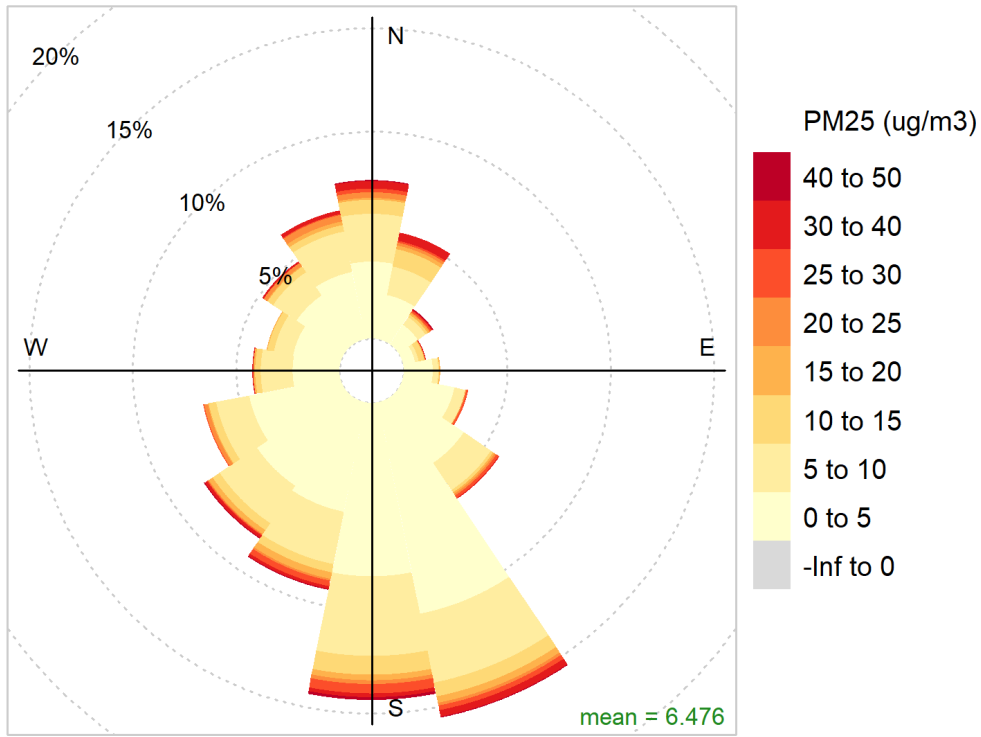


calms = 21.74%

SO2 pollution rose
Terrace Skeena Middle School - 2023 Q3



PM2.5 pollution rose
Terrace Skeena Middle School - 2023 Q3



Trinity Consultants Downtime and Maintenance Summaries

Significant Offline Periods						
Station	Start Date	Start Hour	End Date	End Hour	Parameters	Description
Haul Road	2023-07-01	2200	2023-08-09	1600	PM	Temperature Sensor Issue (Intermittent; most hours)
Riverlodge	2023-07-02	2100	2023-07-07	0	HF	Sample Heater GFCI Tripped
Riverlodge	2023-07-07	1400	2023-07-08	2200	HF	Sample Heater GFCI Tripped
Riverlodge	2023-07-22	1000	2023-07-25	1400	SO2	Analyzer Malfunction; Reboot Needed
Riverlodge	2023-07-26	1400	2023-08-24	1300	PM10	Leak Found
Riverlodge	2023-08-08	400	2023-08-08	900	Wind	Reporting Excessive Zeros
Riverlodge	2023-08-08	1900	2023-08-09	1500	HF	Sample Heater GFCI Tripped
Riverlodge	2023-08-23	200	2023-08-23	1500	HF	Sample Heater GFCI Tripped
Riverlodge	2023-08-24	1400	2023-08-24	1600	All	Power Outage
Riverlodge	2023-08-25	500	2023-08-28	0	Wind	Reporting Excessive Zeros (Intermittent)
Riverlodge	2023-08-27	2100	2023-08-28	1300	HF	Sample Heater GFCI Tripped
Village	2023-08-24	1400	2023-08-24	1600	All	Power Outage
Whitesail	2023-07-10	1000	2023-07-13	1100	PM2.5	72-hour Zero Test

Maintenance						
<u>Station</u>	<u>Start Date</u>	<u>Start Hour</u>	<u>End Date</u>	<u>End Hour</u>	<u>Parameters</u>	<u>Description</u>
Village	2023-07-14	1100	2023-07-14	1100	None	Calibrator Found Off; Powered Back On
Village	2023-07-27	800	2023-07-27	1300	PM2.5	Monthly Maintenance; Nozzle Rebuilt
Village	2023-07-28	1000	2023-07-28	1000	PM2.5	BAM Inlet Tube Maintenance
Village	2023-08-09	1000	2023-08-09	1000	SO2	Filter Changed
Village	2023-08-23	1100	2023-08-23	1300	PM2.5	Monthly Maintenance
Village	2023-09-05	1600	2023-09-05	1600	PM2.5	Tape Replaced; Leak Test
Village	2023-09-12	1300	2023-09-12	1300	SO2	Filter Changed
Village	2023-09-21	1300	2023-09-21	1500	SO2	MP Verification and Calibration
Village	2023-09-22	1000	2023-09-22	1000	None	Envidas Logger Replacement and T701 Annual Maintenance
Village	2023-09-30	800	2023-09-30	900	PM2.5	Monthly Maintenance
Haul Road	2023-07-13	1000	2023-07-13	1800	PM2.5	Temperature Sensor Replacement; Flow Calibration
Haul Road	2023-07-14	1400	2023-07-14	1500	PM2.5	Investigating Pressure Sensor; Confirmed No Issue In Readings
Haul Road	2023-07-28	1400	2023-07-28	1400	SO2/HF	HF Flow Verification
Haul Road	2023-08-07	1100	2023-08-07	1700	PM2.5	Monthly Maintenance; Flow Instability Found
Haul Road	2023-08-09	1500	2023-08-09	1500	PM2.5	Flow Adjustments; Passing Flow Check
Haul Road	2023-08-29	800	2023-08-29	900	SO2/HF	SO2 MP Verification
Haul Road	2023-08-29	1000	2023-08-29	1500	SO2/HF	HF/SO2 Cal Gas Replacements; HF MP Verification
Haul Road	2023-08-29	1600	2023-08-29	1700	SO2/HF	SO2 MP Verification After Cylinder Replacement
Haul Road	2023-09-05	1200	2023-09-05	1200	PM2.5	Tape Replaced
Haul Road	2023-09-06	900	2023-09-06	1100	SO2/HF	SO2 MP Verification and Calibration
Haul Road	2023-09-21	1400	2023-09-21	1500	None	T701 Annual Maintenance
Haul Road	2023-09-22	1100	2023-09-22	1400	None	Envidas Logger Replaced
Haul Road	2023-09-30	1400	2023-09-30	1600	PM2.5	Monthly Maintenance

Industrial	2023-08-08	1400	2023-08-08	1400	SO2	Filter Replaced
Industrial	2023-09-06	1100	2023-09-06	1300	SO2	SO2 MP Verification and Calibration
Industrial	2023-09-13	900	2023-09-13	1000	SO2	Filter Changed; Inlet Line Adjustments
Industrial	2023-09-21	1300	2023-09-21	1500	None	T701 Annual Maintenance
Riverlodge	2023-07-06	1300	2023-07-06	1300	None	Found HF Inlet Heater GFCI Tripped
Riverlodge	2023-07-07	1400	2023-07-07	1600	HF/SO2	Inlet Filters Changed; HF Inlet Heater Troubleshooting
Riverlodge	2023-07-25	1400	2023-07-25	1400	SO2	Analyzer Rebooted to Restore Communications
Riverlodge	2023-07-26	900	2023-07-26	1400	PM10	Monthly Maintenance; Nozzle Rebuilt
Riverlodge	2023-07-26	1400	2023-07-26	1600	PM2.5	Monthly Maintenance; Nozzle Rebuilt
Riverlodge	2023-07-28	1100	2023-07-28	1400	HF/SO2	HF Flow Rate Verification
Riverlodge	2023-08-09	1300	2023-08-09	1300	None	Found HF Inlet Heater GFCI Tripped
Riverlodge	2023-08-22	1300	2023-08-22	1800	PM10	Monthly Maintenance; Leak Found
Riverlodge	2023-08-23	1400	2023-08-23	1500	PM2.5	Monthly Maintenance
Riverlodge	2023-08-23	1400	2023-08-23	1400	None	Found HF Inlet Heater GFCI Tripped
Riverlodge	2023-08-24	1100	2023-08-24	1400	PM10	Repaired Leak
Riverlodge	2023-08-25	1300	2023-08-25	1400	PM10	Verified No Leaks
Riverlodge	2023-08-25	1300	2023-08-25	1300	HF	Heater GFCI Replaced
Riverlodge	2023-08-28	1100	2023-08-28	1200	HF/SO2	HF Gas Cylinders Replaced and MP Verifications
Riverlodge	2023-09-13	1400	2023-09-13	1400	HF/SO2	Filters Replaced
Riverlodge	2023-09-20	1200	2023-09-20	1500	HF/SO2	SO2 MP Verification and Calibration
Riverlodge	2023-09-21	1000	2023-09-21	1500	None	Envidas Logger Replaced and T701 Annual Maintenance
Riverlodge	2023-09-30	1200	2023-09-30	1200	PM2.5	Monthly Maintenance
Riverlodge	2023-09-30	1300	2023-09-30	1300	PM10	Monthly Maintenance
Whitesail	2023-07-10	1000	2023-07-10	1100	PM2.5	Monthly Maintenance; Started 72 Hour Zero Test
Whitesail	2023-07-12	1300	2023-07-12	1300	PM2.5	Stopped Zero Test Due to Wildfire Smoke
Whitesail	2023-07-13	900	2023-07-13	900	PM2.5	Correct BAM Zero Background
Whitesail	2023-08-09	1200	2023-08-09	1200	SO2/NOx/O3	Filters Changed

Whitesail	2023-08-10	1200	2023-08-10	1300	PM2.5	Monthly Maintenance
Whitesail	2023-08-22	900	2023-08-22	1200	SO2/NOx/O3	SO2/NOx MP Verification and Calibration
Whitesail	2023-08-24	1000	2023-08-24	1200	SO2/NOx/O3	O3 MP Verification and Calibration
Whitesail	2023-08-28	1400	2023-08-28	1400	SO2/NOx/O3	SO2 Gas Cylinder Test
Whitesail	2023-08-28	1600	2023-08-28	1600	SO2/NOx/O3	SO2/NOx MP Verification Attempt; ZPS Interruption
Whitesail	2023-08-29	800	2023-08-29	900	SO2/NOx/O3	SO2/NOx MP Verifications
Whitesail	2023-08-30	1100	2023-08-30	1100	None	T700 Troubleshooting
Whitesail	2023-09-05	1500	2023-09-05	1500	PM2.5	Tape Change; Leak Check
Whitesail	2023-09-12	1200	2023-09-12	1200	SO2/NOx/O3	Filters Replaced
Whitesail	2023-09-20	1300	2023-09-20	1300	None	T701 Annual Maintenance
Whitesail	2023-09-21	900	2023-09-21	900	SO2/NOx/O3	Manula Zero Check; Good
Whitesail	2023-09-30	1000	2023-09-30	1100	PM2.5	Monthly Maintenance