

KITIMAT AIRSHED GROUP

Quarterly Air Quality Data Reports 2024

April – June 2024

Table of Contents:

Table of Contents

Kitimat Airshed Group Society	2
Kitimat Haisla Village	4
Kitimat Haul Road	8
Kitimat Riverlodge.....	12
Kitimat Industrial Ave	16
Kitimat Whitesail	19
Kitimat Yacht Club	23
Terrace Skeena Middle School	26
Downtime and Maintenance Reports from Trinity Consultants	30

Kitimat Airshed Group Society

Quarterly Data Summary Reports for April 1 to June 30 2024:

The second quarterly data summary report includes ambient air quality stations in Kitimat, Kitimaat 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 (BCENV). Summary reports will be posted quarterly to provide an overview of the air quality status in the Kitimat Terrace airshed.

The Data Review Committee works collaboratively to bring the reports to the public. The air quality stations are owned and operated by Rio Tinto in the vicinity of Haisla Village, Kitimat and Lakelse Lake. RT also manages the maintenance and calibration activities through Trinity Consultants. Maintenance reports are provided at the end of the station reports. The Data Review Committee reviews the reports and provides context and comment.

Updates in the community include the following:

- LNG Canada has received their Waste Discharge Permit (on July 15, 2024)
- LNG Canada has added NO₂ and O₃ analyzers to Haisla Village and to Riverlodge air quality stations as of May 2024. These values will be included in the Q3 data summary report.
- BC Energy Regulator (BCER) began monitoring with a Roving Air Monitor (RAM) in May 2024 in various locations in the airshed.

Observations by the KAG for this quarter include an exceedance in S₀₂ on May 9, 2024 noted at Haisla Village monitoring station.

Submitted by Kim Menounos, Fraser Basin Council
On behalf of the Kitimat Airshed Group

Automated Data Summary for

Kitimat Haisla Village 2024 Q2

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

Generated: 9 July 2024

Note

This report is generated automatically and contains unvalidated data.

Kitimat Haisla Village

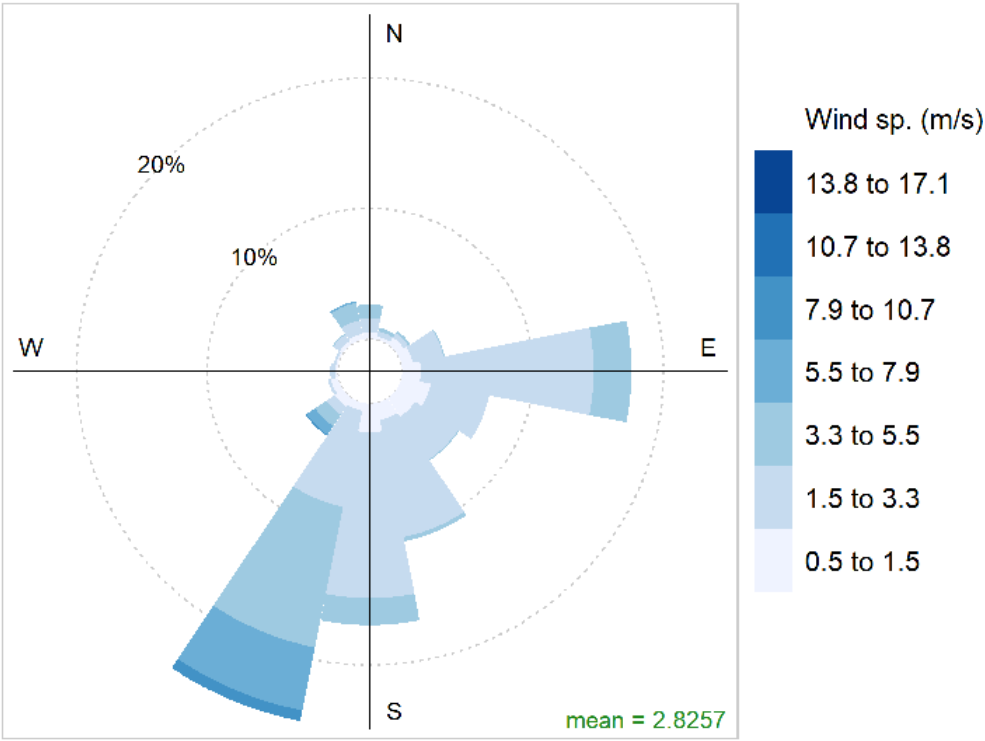
2024 Q2

Parameter	Unit	Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
AQHI		1 H					1	7	2024-05-31 15:00:00	2.7	N
SO2	ppb	1 H	70	1	0.7	4.5	-0.2	95.8	2024-05-09 11:00:00	94.3	Y
PM2.5	ug/m3	1 H			1.5	0.0	0	26	2024-05-09 11:00:00	97.8	Y
	ug/m3	24 H	25	0	1.5	0.0	0.1	4.1	2024-04-18	100.0	Y
Wind spd	m/s	1 H			2.8	0.0	0.41	10.44	2024-04-21 16:00:00	99.7	Y
Temp	°C	1 H			10.6		-0.2	23.9	2024-06-07 16:00:00	99.8	Y

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

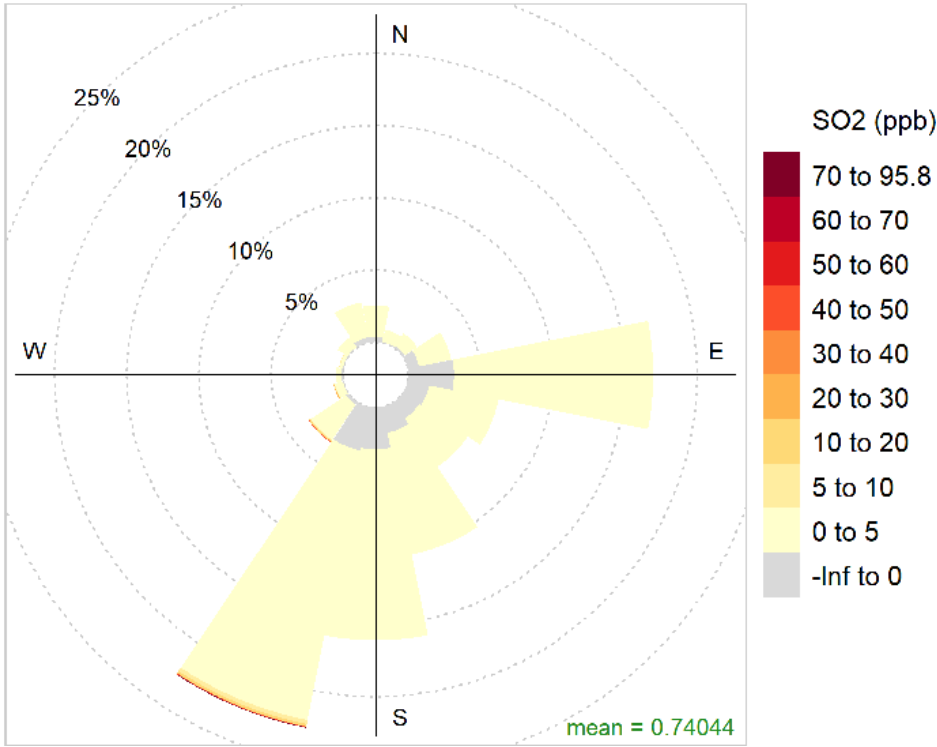
Parameter	Conversion	Unit	Notes
AQHI			
SO2	1 : 2.62	ppb : ug/m3	
PM2.5			
Wind spd			
Temp			

Windrose
Kitimat Haisla Village - 2024 Q2

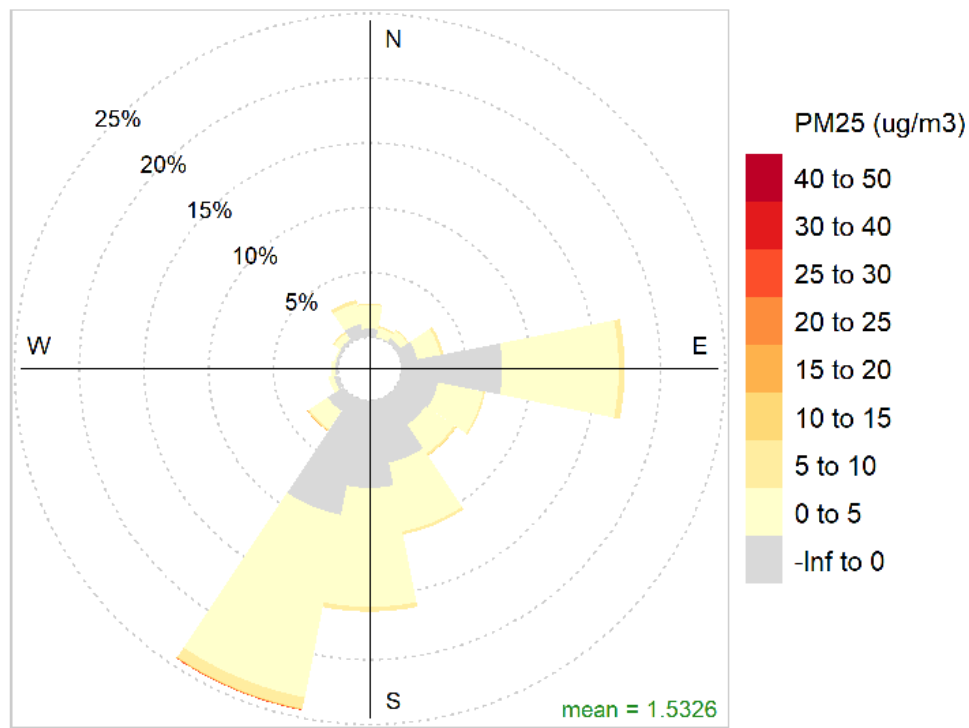


calms = 0.14%

SO2 pollution rose
Kitimat Haisla Village - 2024 Q2



PM2.5 pollution rose
Kitimat Haisla Village - 2024 Q2





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Climate Change Strategy

Automated Data Summary for

Kitimat Haul Road 2024 Q2

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

Generated:
9 July 2024

Note

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Kitimat Haul Road

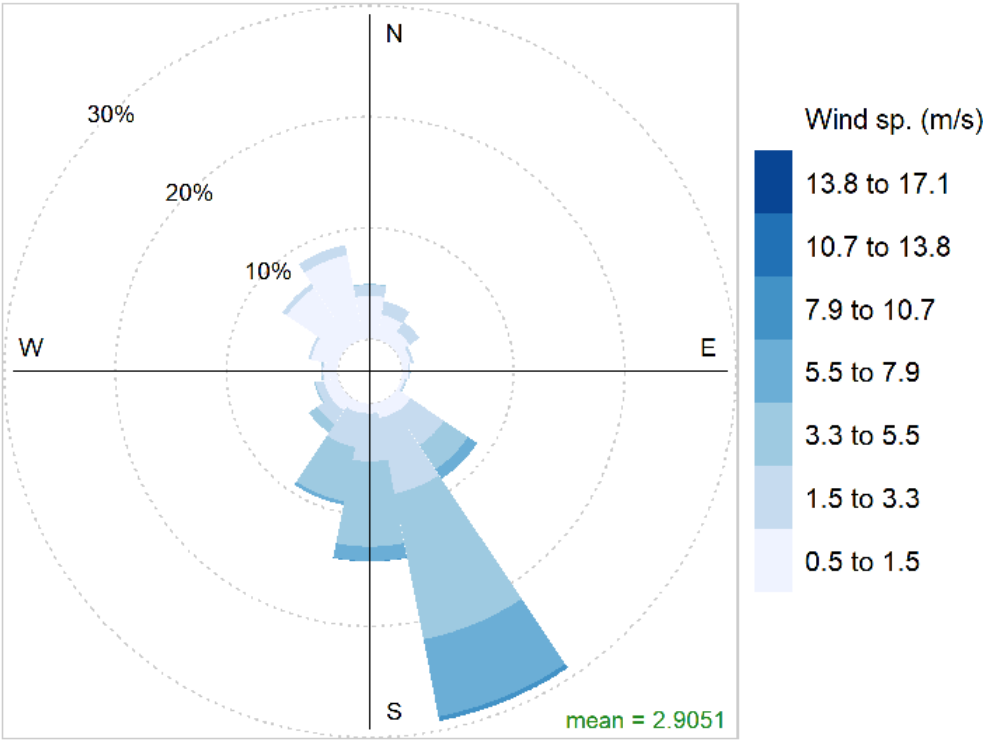
2024 Q2

Parameter	Unit	Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
SO2	ppb	1 H	70	3	7.8	0.0	0	81.7	2024-05-15 02:00:00	94.0	Y
HF	ppb	1 H	63	0	0.2	0.0	0	0.4		92.9	Y
	ppb	24 H			0.2	0.0	0.1	0.3	2024-06-08 2024-06-09 2024-06-21 2024-06-22 2024-06-27	95.6	Y
PM2.5	ug/m3	1 H			4.8	0.0	0	62	2024-06-17 16:00:00	96.7	Y
	ug/m3	24 H	25	0	4.8	0.0	1.8	13.7	2024-06-19	95.6	Y
Wind spd	m/s	1 H			2.9	0.0	0	8.52	2024-04-02 09:00:00	99.4	Y
Temp	°C	1 H			10.4		-1.7	25.3	2024-06-20 16:00:00	99.3	Y

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

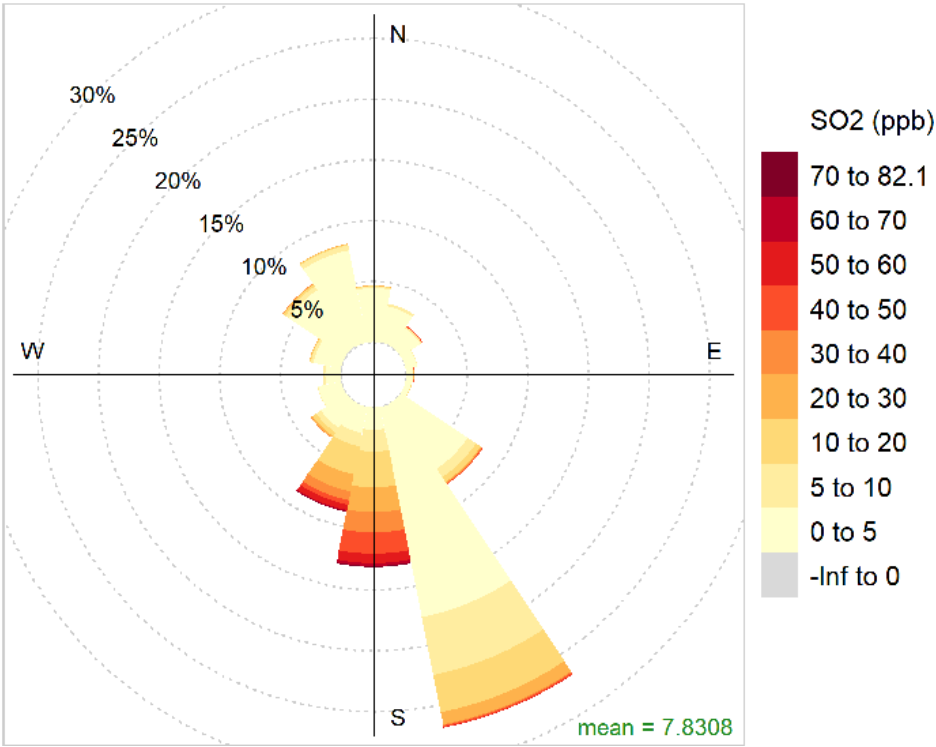
Parameter	Conversion	Unit	Notes
SO2	1 : 2.62	ppb : ug/m3	
HF	1 : 0.82	ppb : ug/m3	
PM2.5			
Wind spd			
Temp			

Windrose
Kitimat Haul Road - 2024 Q2

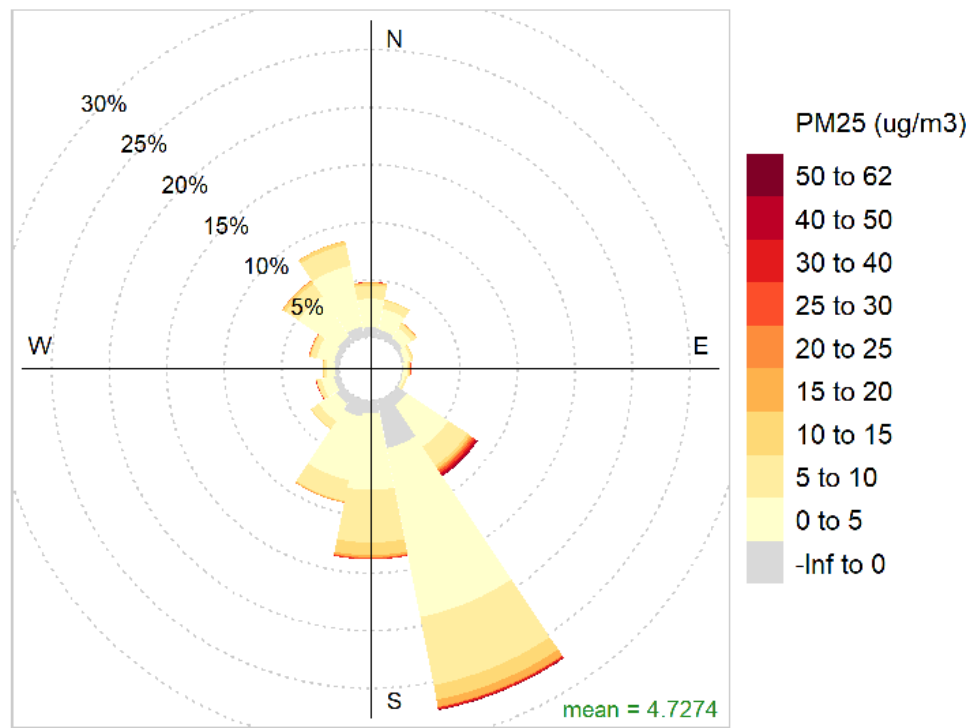


calms = 0.78%

SO2 pollution rose
Kitimat Haul Road - 2024 Q2



PM2.5 pollution rose
Kitimat Haul Road - 2024 Q2





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Automated Data Summary for

Kitimat Riverlodge 2024 Q2

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

Generated:
9 July 2024

Note

This report is generated automatically and contains unvalidated data.

Kitimat Riverlodge

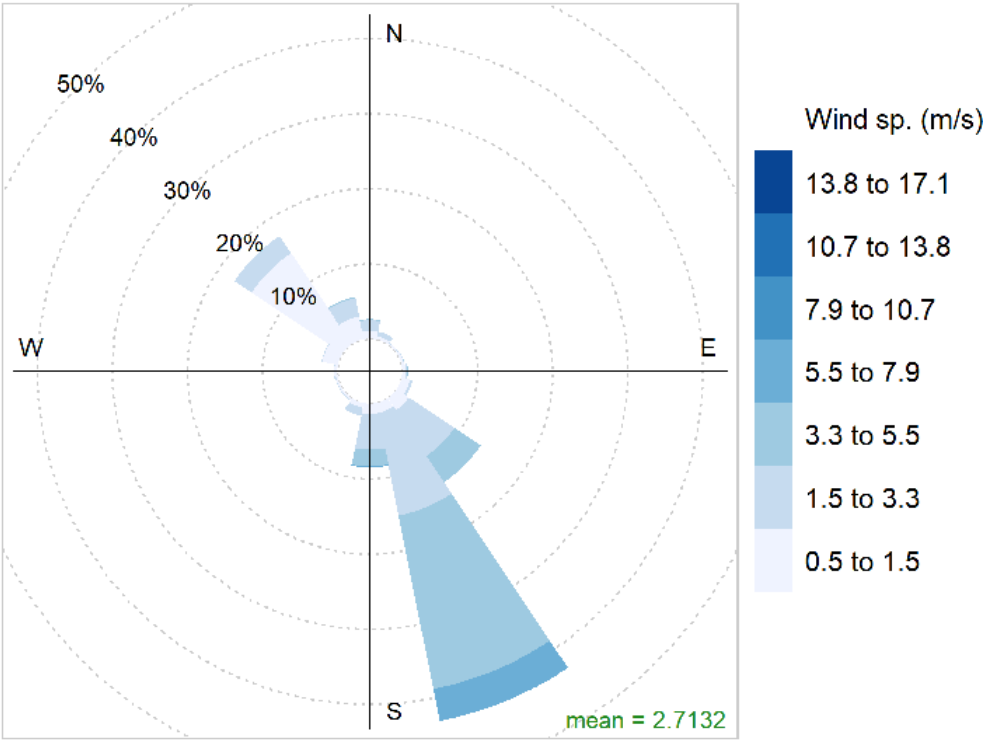
2024 Q2

Parameter	Unit	Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
AQHI		1 H					1	2	More than 5 occurrences (n = 313)	33.5	N
SO2	ppb	1 H	70	0	1.0	15.3	-0.7	48.3	2024-05-09 10:00:00	93.4	Y
HF	ppb	1 H	63	0	0.2	0.0	0	0.5		91.7	Y
	ppb	24 H			0.2	0.0	0.1	0.4	2024-06-22	97.8	Y
PM2.5	ug/m3	1 H			2.4	0.0	0	16		98.9	Y
	ug/m3	24 H	25	0	2.4	0.0	0.8	4.5	2024-04-19 2024-06-20	100.0	Y
PM10	ug/m3	1 H			5.9	0.0	0	57		99.1	Y
	ug/m3	24 H	50	0	5.9	0.0	1.5	15.4	2024-04-20	100.0	Y
Wind spd	m/s	1 H			2.6	0.0	0.02	6.84	2024-04-21 00:00:00	99.7	Y
Temp	°C	1 H			10.3		-2.3	26	2024-06-08 14:00:00	99.1	Y

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

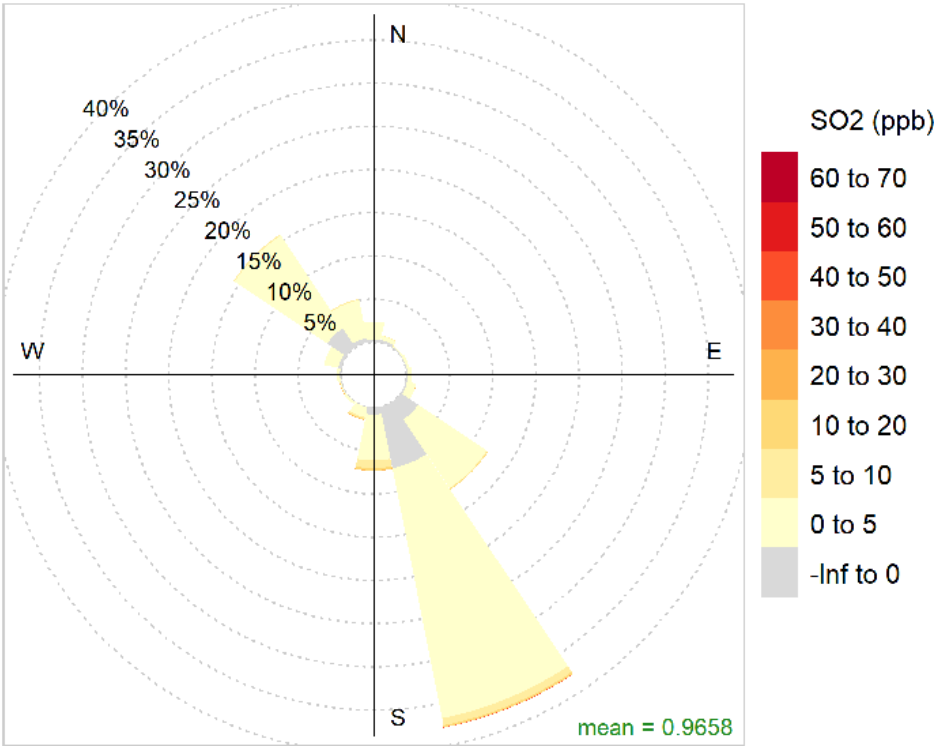
Parameter	Conversion	Unit	Notes
AQHI			
SO2	1 : 2.62	ppb : ug/m3	
HF	1 : 0.82	ppb : ug/m3	
PM2.5			
PM10			
Wind spd			
Temp			

Windrose
Kitimat Riverlodge - 2024 Q2

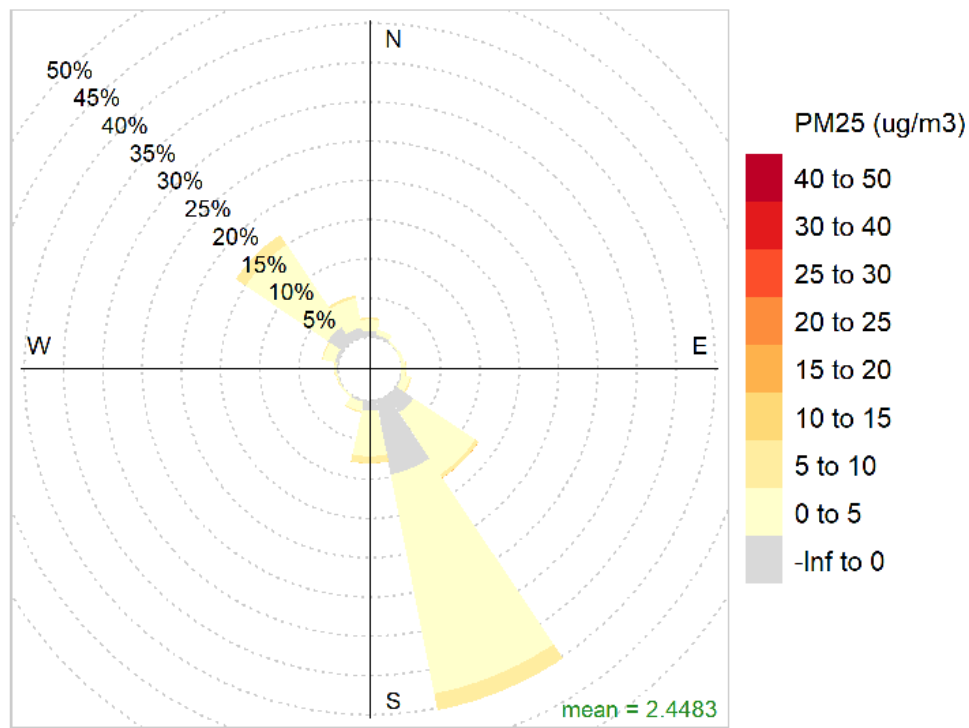


calms = 0.10%

SO2 pollution rose
Kitimat Riverlodge - 2024 Q2



PM2.5 pollution rose
Kitimat Riverlodge - 2024 Q2





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Climate Change Strategy

Automated Data Summary for

Kitimat Industrial Ave 2024 Q2

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

Generated:
9 July 2024

Note

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Kitimat Industrial Ave

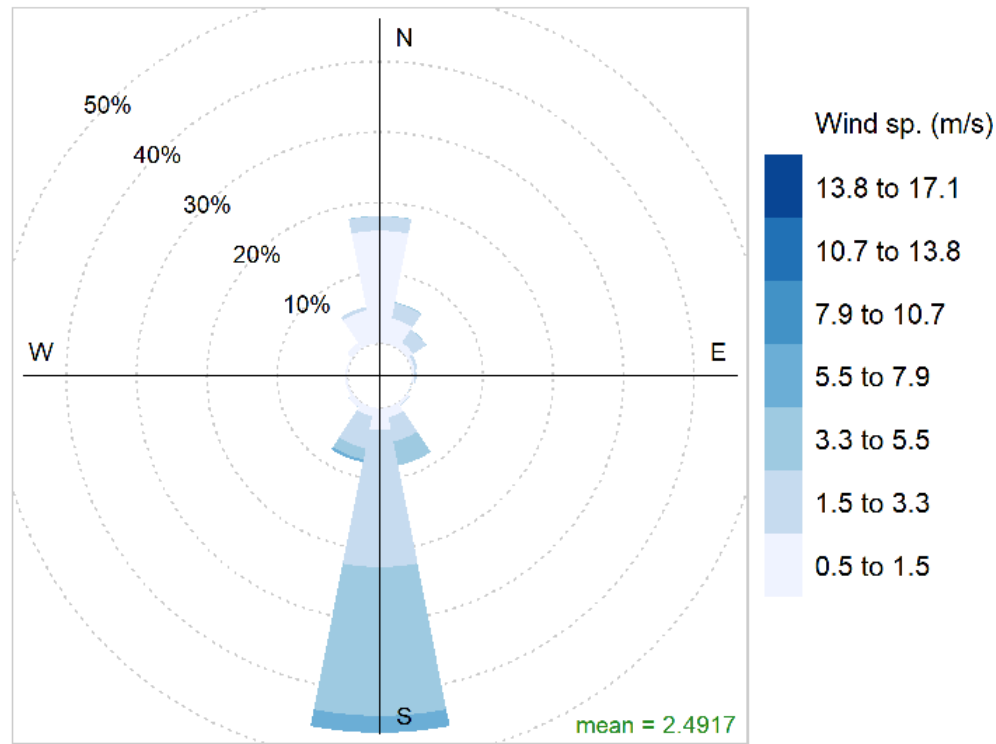
2024 Q2

Parameter	Unit	Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
SO2	ppb	1 H	70	0	2.4	0.1	-0.1	39.2	2024-05-09 09:00:00	92.6	Y
Wind spd	m/s	1 H			2.4	0.0	0.1	7.7	2024-04-21 14:00:00	97.3	Y
Temp	°C	1 H			10.0		-2.7	26.3	2024-06-26 15:00:00	95.8	Y
Humidity	% RH	1 H			70.8	0.0	9.9	94.5	2024-05-28 03:00:00 2024-05-28 04:00:00	95.8	Y

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

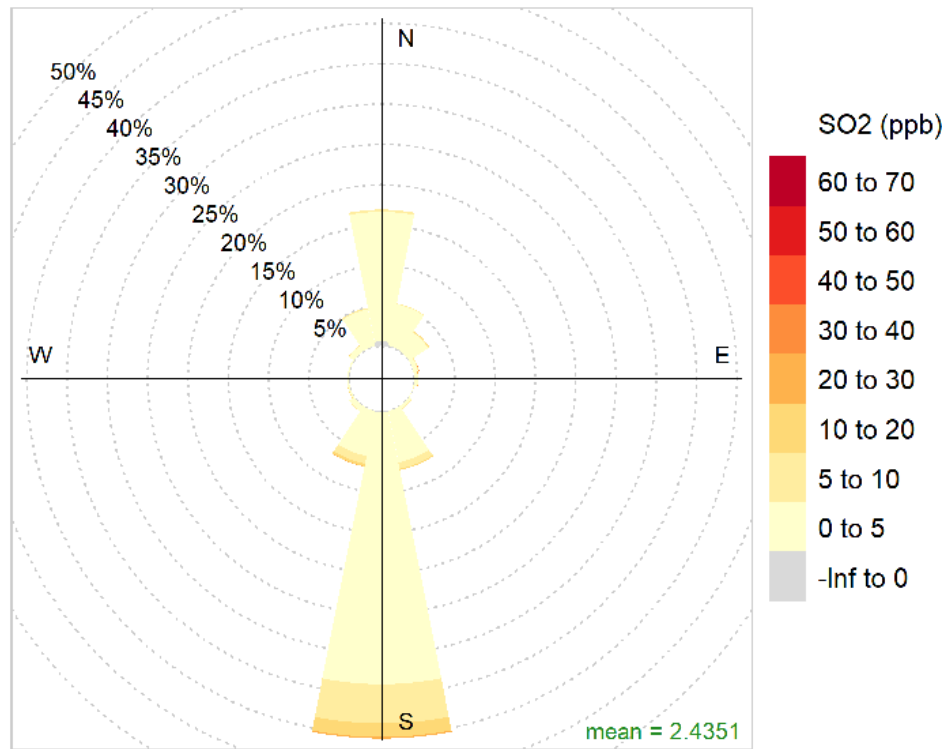
Parameter	Conversion	Unit	Notes
SO2	1 : 2.62	ppb : ug/m3	
Wind spd			
Temp			
Humidity			

Windrose
Kitimat Industrial Ave - 2024 Q2



calms = 0.10%

SO2 pollution rose
Kitimat Industrial Ave - 2024 Q2





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Automated Data Summary for

Kitimat Whitesail 2024 Q2

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

Generated:
9 July 2024

Note

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Kitimat Whitesail

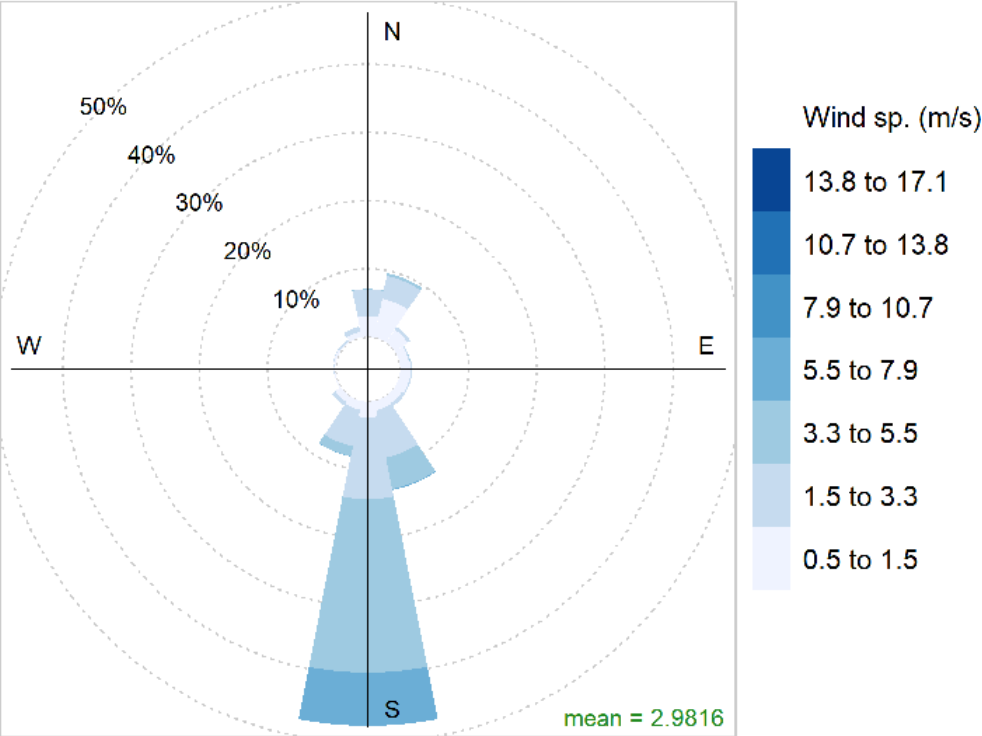
2024 Q2

Parameter	Unit	Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
AQHI		1 H					1	3	More than 5 occurrences (n = 25)	63.6	Y
NO2	ppb	1 H	60	0	0.8	0.0	0.2	5.3	2024-04-05 05:00:00	94.2	Y
SO2	ppb	1 H	70	0	0.1	63.0	-1.3	24.7	2024-05-09 14:00:00	93.7	Y
O3	ppb	1 H	82	0	24.5	0.0	1.8	52.8	2024-04-19	93.6	Y
PM2.5	ug/m3	1 H			2.9	0.0	0	15	2024-06-06 21:00:00	99.5	Y
	ug/m3	24 H	25	0	2.9	0.0	0.9	5.5	2024-06-19	100.0	Y
Wind spd	m/s	1 H			3.0	0.0	0.12	7.65	2024-04-14 15:00:00	99.5	Y
Temp	°C	1 H			10.2		-2.6	106	2024-06-24 09:00:00	99.5	Y
Humidity	% RH	1 H			74.8	0.0	14.2	99	2024-05-28 06:00:00 2024-05-28 07:00:00	99.5	Y

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

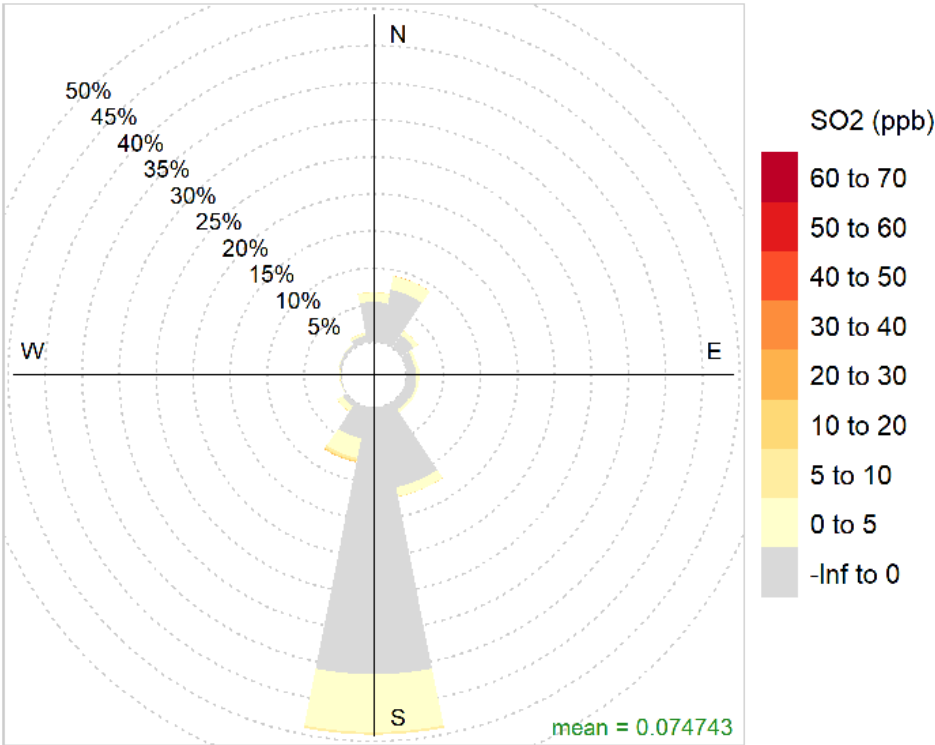
Parameter	Conversion	Unit	Notes
AQHI			
NO2	1 : 1.88	ppb : ug/m3	
SO2	1 : 2.62	ppb : ug/m3	
O3	1 : 1.96	ppb : ug/m3	
PM2.5			
Wind spd			
Temp			
Humidity			

Windrose
Kitimat Whitesail - 2024 Q2

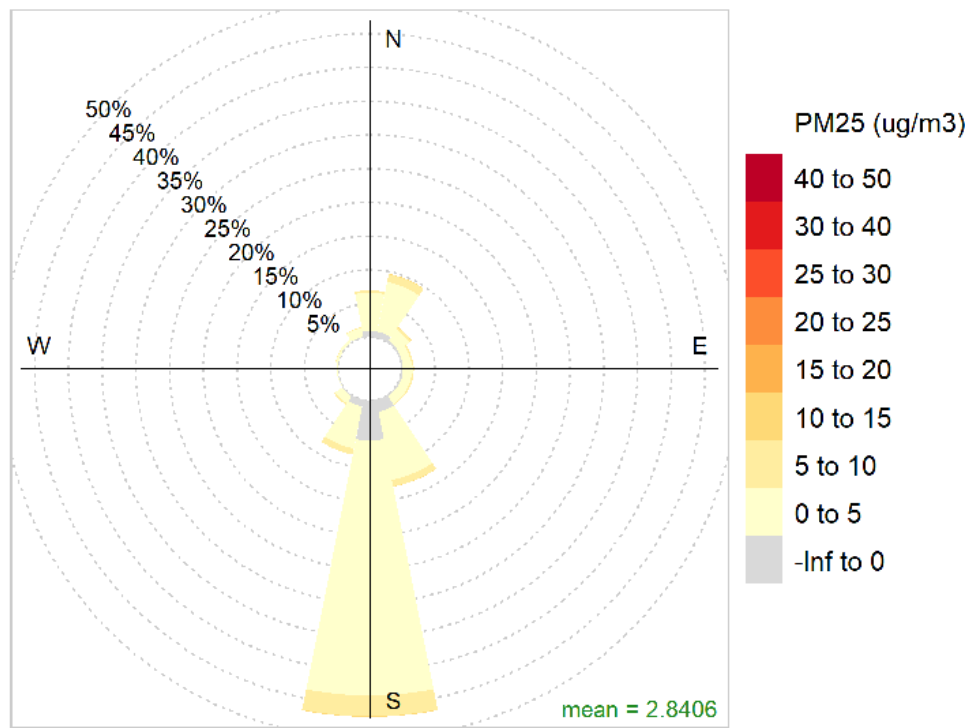


calms = 1.15%

SO2 pollution rose
Kitimat Whitesail - 2024 Q2



PM2.5 pollution rose
Kitimat Whitesail - 2024 Q2





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Automated Data Summary for

Kitimat Yacht Club 2024 Q2

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

Generated:
9 July 2024

Note

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Kitimat Yacht Club

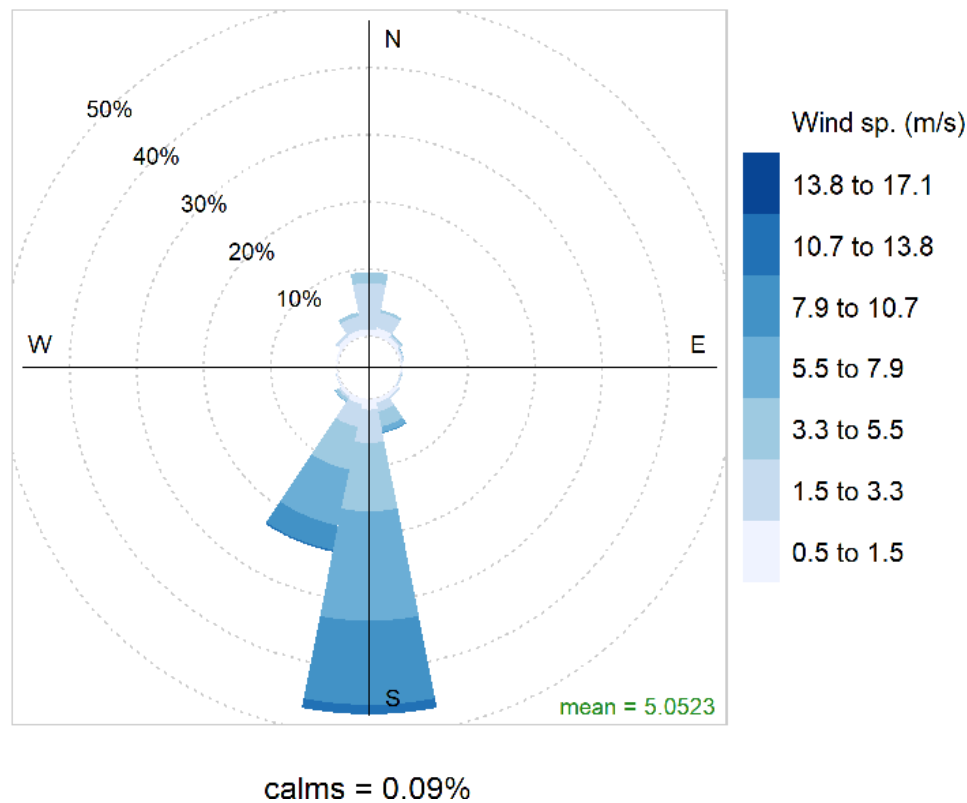
2024 Q2

Parameter	Unit	Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
Wind spd	m/s	1 H			5.0	0.0	0.47	12.9	2024-06-09 13:00:00	100.0	Y
Temp	°C	1 H			10.3		-0.6	23.7	2024-06-07 16:00:00	100.0	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 - 2024 Q2





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Automated Data Summary for

Terrace Skeena Middle School 2024 Q2

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

Generated:
9 July 2024

Note

This report is generated automatically and contains unvalidated data.

Terrace Skeena Middle School

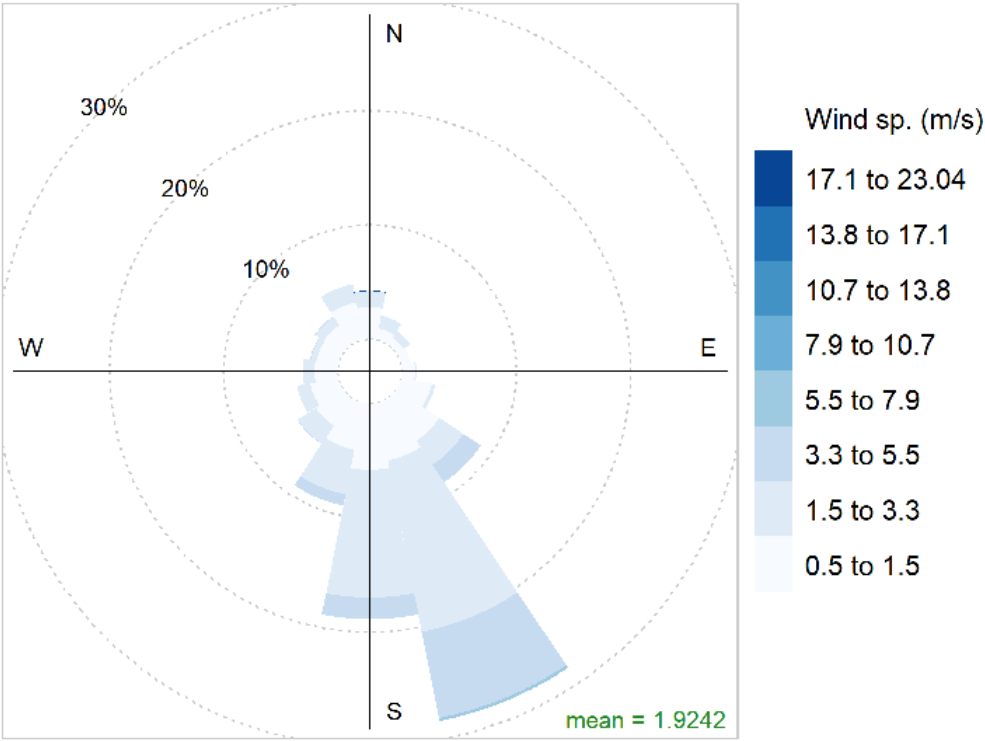
2024 Q2

Parameter	Unit	Avg Prd	Obj	Excd	Qtr Avg	% Neg	Min	Max	Prd of Max	% Comp	Comp
AQHI		1 H					1	4	2024-04-05 08:00:00	95.9	Y
NO2	ppb	1 H	60	0	-0.6	76.0	-2.1	11.5	2024-04-14	94.9	Y
SO2	ppb	1 H	70	0	1.0	4.9	-0.7	8.1	2024-06-28	83.0	Y
O3	ppb	1 H	82	0	24.1	1.3	-4.9	55.6	2024-04-19 18:00:00	90.7	Y
PM2.5	ug/m3	1 H			3.5	0.0	0	33	2024-04-05 08:00:00	95.8	Y
	ug/m3	24 H	25	0	3.5	0.0	0.4	6.4	2024-04-04	94.5	Y
Wind spd	m/s	1 H			1.7	0.0	0.07	23.04	2024-05-22 14:00:00	100.0	Y
Temp	°C	1 H			11.2		-3.2	27.8	2024-06-08 15:00:00	100.0	Y
Humidity	% RH	1 H			64.1	0.0	1.4	96.3	2024-04-16 07:00:00	100.0	Y

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

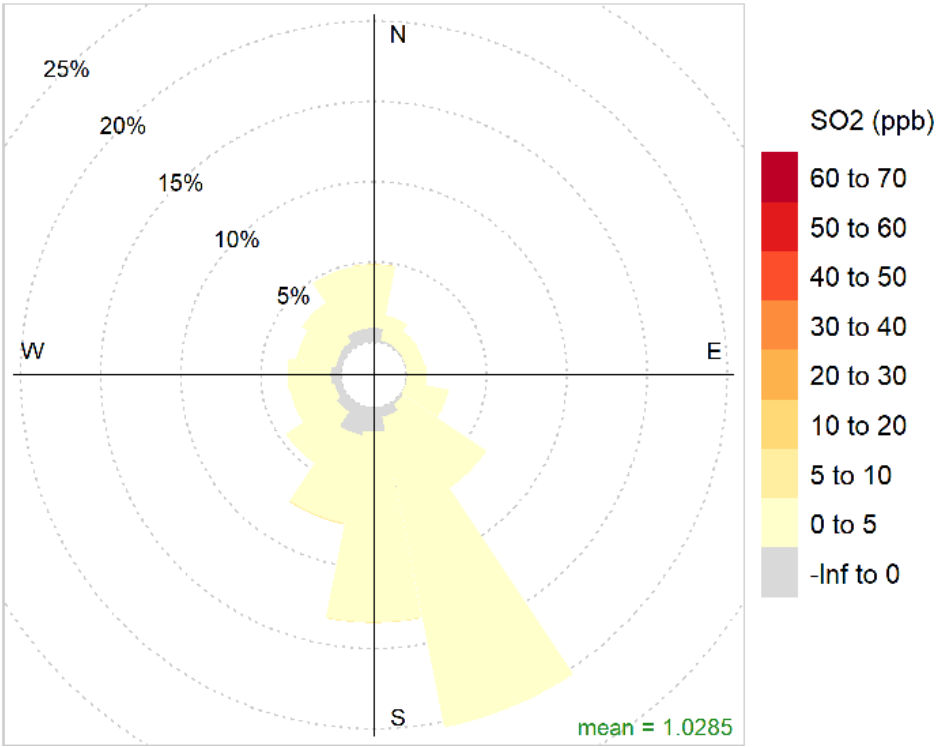
Parameter	Conversion	Unit	Notes
AQHI			
NO2	1 : 1.88	ppb : ug/m3	
SO2	1 : 2.62	ppb : ug/m3	
O3	1 : 1.96	ppb : ug/m3	
PM2.5			
Wind spd			
Temp			
Humidity			

Windrose
Terrace Skeena Middle School - 2024 Q2

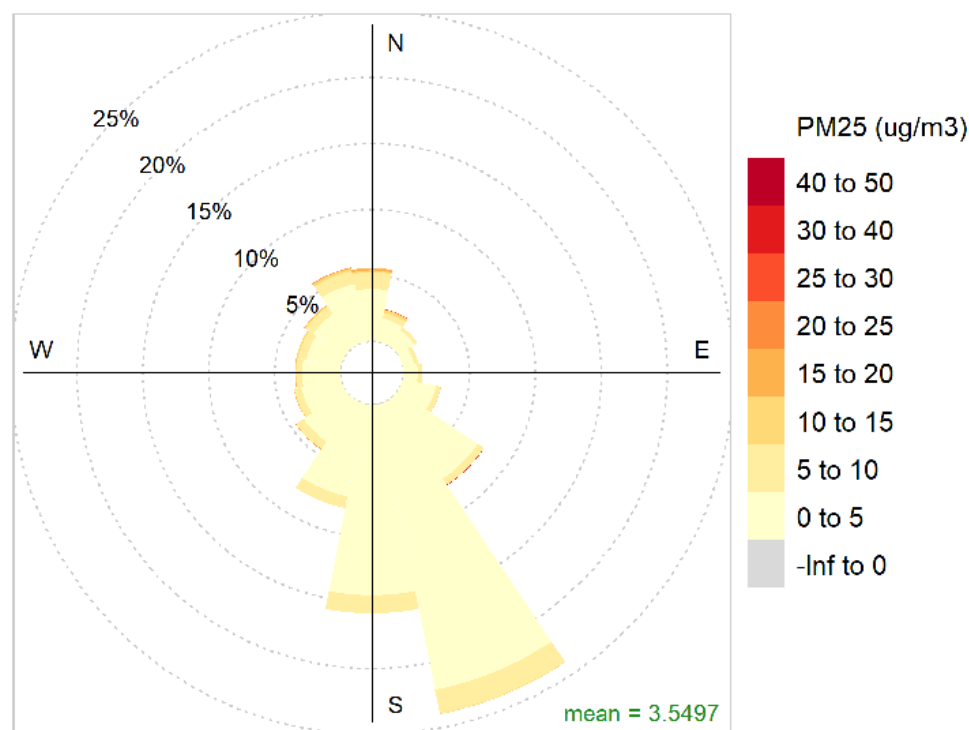


calms = 14.93%

SO2 pollution rose
Terrace Skeena Middle School - 2024 Q2



PM2.5 pollution rose
Terrace Skeena Middle School - 2024 Q2



Downtime and Maintenance Reports from Trinity Consultants

Significant Offline Periods

<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>
Riverlodge	2024-04-09	1300	2024-04-09	1600	SO2	Flatlined
Riverlodge	2024-04-12	1700	2024-04-12	1700	PM2.5	Tape Error
Haul Road	2024-04-02	1400	2024-04-03	1800	HF/SO2/PM2.5	Power Outage
Haul Road	2024-04-02	1800	2024-04-03	1400	HF	Flatlined; Rebooted
Haul Road	2024-04-04	200	2024-04-04	700	Wind	Frozen
Haul Road	2024-04-08	900	2024-04-08	1200	HF/SO2/PM2.5	Power Outage
Haul Road	2024-04-08	1300	2024-04-09	1100	HF	Flatlined; Rebooted
Haul Road	2024-04-25	800	2024-04-25	1200	HF/SO2/PM2.5	Power Outage
Haul Road	2024-06-24	800	2024-06-24	1600	HF/SO2/PM2.5	Power Outage
Industrial	2024-04-01	100	2024-04-02	800	Temp/RH	Envidas Logger Offline
Industrial	2024-04-17	900	2024-04-17	900	Temp/RH/SO2	Power Outage
Industrial	2024-04-30	1300	2024-04-30	1300	Temp/RH/SO2	Power Outage
Industrial	2024-06-18	1100	2024-06-20	1100	Temp/RH/SO2	Power Outage

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>
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Village	2024-04-03	1100	2024-04-03	1100	SO2	Filter Change
Village	2024-04-30	1200	2024-04-30	1200	PM2.5	Monthly BAM Maintenance
Village	2024-05-15	2100	2024-05-15	2100	SO2	As Found MP
Village	2024-05-18	900	2024-05-18	1100	SO2	LNG Canada Equipment Install and Calibrator/Zero Air Replacement
Village	2024-05-18	1500	2024-05-18	1700	SO2	LNG Canada Equipment Install and Calibrator/Zero Air Replacement
Village	2024-05-20	1000	2024-05-20	1700	SO2	Calibrator Maintenance and LNG Canada Equipment Setup
Village	2024-05-22	1300	2024-05-22	1700	SO2	LNG Canada Equipment Maintenance
Village	2024-05-23	900	2024-05-23	1000	PM2.5	Monthly BAM Maintenance
Village	2024-05-29	1200	2024-05-29	2100	SO2	SO2 Calibration
Village	2024-06-04	1100	2024-06-04	1100	SO2	Filter Change
Village	2024-06-10	1300	2024-06-10	1500	SO2	Calibration
Village	2024-06-25	1000	2024-06-25	1500	Met	Calibration Verification
Village	2024-06-25	1600	2024-06-25	1700	PM2.5	Monthly BAM Maintenance
Haul Road	2024-04-29	1600	2024-04-29	1600	PM2.5	Monthly BAM Maintenance
Haul Road	2024-05-07	1100	2024-05-07	1100	SO2/HF	Filters Replaced
Haul Road	2024-05-17	1200	2024-05-17	1200	SO2/HF	Calibrator Troubleshooting
Haul Road	2024-05-21	1500	2024-05-21	1500	SO2/HF	Calibrator Troubleshooting
Haul Road	2024-05-23	1500	2024-05-23	1500	PM2.5	Monthly BAM Maintenance
Haul Road	2024-05-29	1300	2024-05-29	1400	SO2/HF	Quarterly HF MP and Flow Verifications
Haul Road	2024-06-06	1300	2024-06-06	1300	SO2/HF	Filters Replaced
Haul Road	2024-06-19	1500	2024-06-19	1500	SO2/HF	SO2 MP Verification
Haul Road	2024-06-21	1000	2024-06-21	2300	Met	Calibration Verification
Haul Road	2024-06-23	900	2024-06-23	1200	SO2/HF	Calibrator MFC Verifications
Haul Road	2024-06-23	1200	2024-06-23	1300	Met	Calibration Verification
Haul Road	2024-06-23	1400	2024-06-23	1400	PM2.5	Monthly BAM Maintenance

Industrial	2024-04-02	900	2024-04-02	900	SO2	Filter Replaced
Industrial	2024-04-16	1100	2024-04-16	1300	SO2	Calibration
Industrial	2024-06-06	1200	2024-06-06	1200	SO2	Filter Replaced
Industrial	2024-06-10	800	2024-06-10	1000	SO2	Calibration
Industrial	2024-06-20	1200	2024-06-20	1200	SO2	Zero Check
Industrial	2024-06-21	1100	2024-06-21	1300	SO2	Calibration
Industrial	2024-06-24	900	2024-06-24	1200	Met	Calibration Verification
Industrial	2024-06-24	1000	2024-06-24	1200	SO2	Calibrator MFC Verifications
Riverlodge	2024-04-02	1300	2024-04-02	1300	PM10	BAM Inspection
Riverlodge	2024-04-02	1300	2024-04-02	1300	SO2/HF	Filters Replaced
Riverlodge	2024-04-29	1200	2024-04-29	1200	PM10	Monthly BAM Maintenance
Riverlodge	2024-04-29	1300	2024-04-29	1300	PM2.5	Monthly BAM Maintenance
Riverlodge	2024-05-08	1000	2024-05-08	1300	PM10/PM2.5	PM10 Tape Shuttle Repair
Riverlodge	2024-05-15	2100	2024-05-15	2100	SO2/HF	SO2 As Found
Riverlodge	2024-05-16	900	2024-05-16	1100	SO2/HF	LNG Canada Equipment Install and Calibrator/Zero Air Replacement
Riverlodge	2024-05-16	1300	2024-05-16	100	SO2/HF	LNG Canada Equipment Install and Calibrator/Zero Air Replacement
Riverlodge	2024-05-17	1000	2024-05-17	1300	SO2/HF	LNG Canada Equipment Maintenance
Riverlodge	2024-05-20	1800	2024-05-20	1900	SO2/HF	LNG Canada Equipment Maintenance
Riverlodge	2024-05-21	1100	2024-05-21	1300	SO2/HF	LNG Canada Equipment Maintenance
Riverlodge	2024-05-21	1600	2024-05-21	1600	SO2/HF	LNG Canada Equipment Maintenance
Riverlodge	2024-05-22	1000	2024-05-22	1500	SO2/HF	SO2 Calibration
Riverlodge	2024-05-23	1300	2024-05-23	1400	PM10/PM2.5	Monthly BAM Maintenance
Riverlodge	2024-05-29	1100	2024-05-29	1200	SO2/HF	Quarterly HF MP and Flow Verifications
Riverlodge	2024-06-06	1000	2024-06-06	1100	SO2/HF	Filters Replaced
Riverlodge	2024-06-10	900	2024-06-10	1200	SO2/HF	SO2 Calibration
Riverlodge	2024-06-20	1100	2024-06-20	1500	Met	Calibration Verification

Riverlodge	2024-06-20	1000	2024-06-20	1100	PM10/PM2.5	Monthly BAM Maintenance
Whitesail	2024-04-03	1300	2024-04-03	1300	O3/NOx/SO2	Filters Replaced
Whitesail	2024-04-29	1000	2024-04-29	1100	PM2.5	Monthly BAM Maintenance
Whitesail	2024-05-08	1700	2024-05-08	1700	O3/NOx/SO2	Filters Replaced
Whitesail	2024-05-13	1100	2024-05-13	1300	PM2.5	Monthly BAM Maintenance
Whitesail	2024-06-06	1600	2024-06-06	1600	O3/NOx/SO2	Filters Replaced
Whitesail	2024-06-10	1100	2024-06-10	1300	O3/NOx/SO2	SO2 Calibration / NOx MP Verification
Whitesail	2024-06-12	1400	2024-06-12	1800	Met	Flagged during pressure sensor move
Whitesail	2024-06-12	1000	2024-06-12	1900	O3/NOx/SO2	Calibrator MFC Verifications / O3 Transfer Standard Check
Whitesail	2024-06-12	2000	2024-06-13	800	O3/NOx/SO2	O3 Flagged Overnight
Whitesail	2024-06-13	900	2024-06-13	1800	O3/NOx/SO2	O3 Calibration / Transfer Standard Check / SO2 MP Verification
Whitesail	2024-06-14	900	2024-06-14	1800	O3/NOx/SO2	SO2 Repair Attempt; Analyzer Replacement
Whitesail	2024-06-14	1900	2024-06-14	2100	O3/NOx/SO2	SO2 Calibration / NOx Verification
Whitesail	2024-06-19	1700	2024-06-19	1700	PM2.5	Monthly BAM Maintenance
Whitesail	2024-06-19	1200	2024-06-19	1800	Met	Calibration Verification
Whitesail	2024-06-19	1300	2024-06-19	1500	O3/NOx/SO2	SO2 Calibration
Whitesail	2024-06-24	1300	2024-06-24	1300	Temp	Repair Loose Wire