



# KITIMAT AIRSHED GROUP

Quarterly Air Quality Data Reports 2022

January – March 2022

## Table of Contents

Quarterly Data Summary Reports	1
Automated Data Summary for Kitimaat Haisla Village Monitor	2
Automated Data Summary for Kitimat Haul Road Monitor	7
Automated Data Summary for Industrial Avenue Monitor	12
Automated Data Summary for Kitimat Riverlodge Monitor	15
Automated Data Summary for Kitimat Whitesail Monitor	20
Automated Data Summary for Kitimat Yacht Club Monitor	25
Automated Data Summary for Terrace Skeena Middle School Monitor	29
Station Audit Reports	34



# Kitimat Airshed Group Society

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## Quarterly Data Summary Reports for January 1 to March 31, 2022

This is our first quarterly data summary report including ambient air quality stations located in Kitimat, Haisla 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 with the purpose of providing an overview on the status of air quality in the Kitimat Terrace airshed.

The ambient air monitoring stations in Kitimat are currently owned by Rio Tinto and operated by Trinity Consultants with local support from Triton Environmental Consultants. The ambient air monitoring instruments were audited on March 2nd and 3rd by BC ENV's Air Audit Team. All instruments passed the Ministry's audit.

During the first quarter of 2022, Rio Tinto's aluminium smelter was operating at approximately 23% production capacity with the carbon process facilities shut down. The reduced production capacity for the smelter is a result of a 2021 labour dispute that was resolved in early October. Smelter restart activities are planned to start in May 2022 and continue to year end.

Other notable activities in the Kitimat airshed are the ongoing construction at LNG Canada's project site and the construction of the Haisla bridge replacement project.

We would like to thank Sneha John, a UBC co-op student with the Ministry of Environment and Climate Strategy for developing the automated KAG data summary reports per air quality station. These reports are reviewed and elaborated on by the Data Review Committee.

Submitted by Brittany Bayne  
Kitimat Airshed Data Review Committee  
May 27, 2022

# Automated Data Summary for Kitimat Haisla Village

Provided for the Kitimat Airshed Group by the Ministry of Environment and Climate Change Strategy

01 April 2022

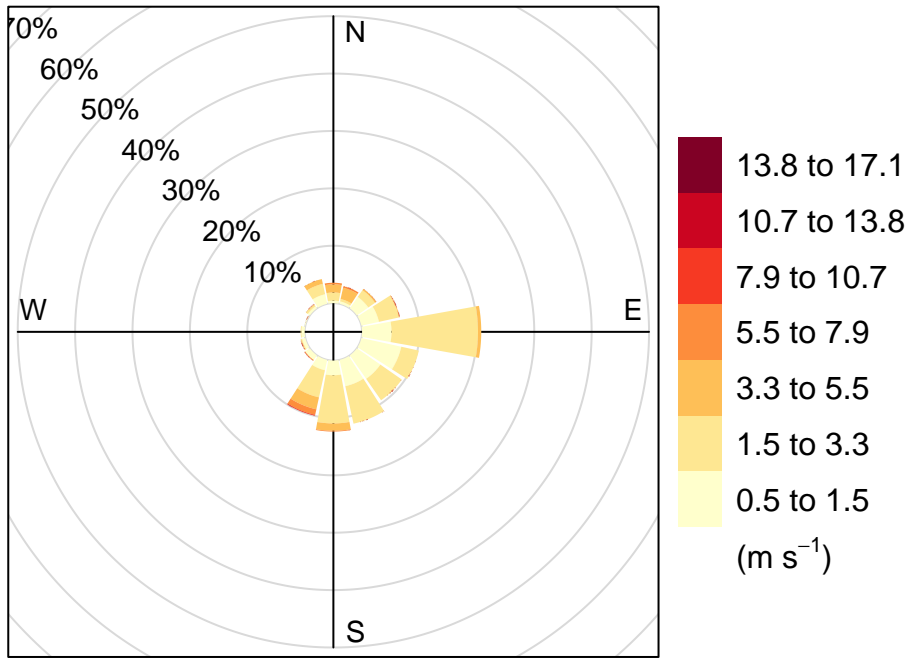
\*Note: Reports generated automatically and data are unvalidated.

**Kitimat Region, Q1 2022 Summary**  
**station\_name : Kitimat Haisla Village**

Parameter	Measure	Avg Pd.	Objective	Excd	Conc			Quarterly Avg	Op. Time
					Min	Max	day of Max conc		
SO2	ppb	1-hr	70	0	0.0	4.9	2022-03-13 15:00:00	0.6	94.9%
PM2.5	ug/m3	1-hr			0.0	17.0	2022-03-04 07:00:00	1.5	97.9%
		24-hr	25	0	0.4	5.0	2022-03-02	1.6	
Temp	°C	1-hr			-1.6	13.2	2022-03-27 16:00:00	4.5	100.0%
Wind sp.	m/s	1-hr			0.1	8.4	2022-03-29 21:00:00	2.0	100.0%

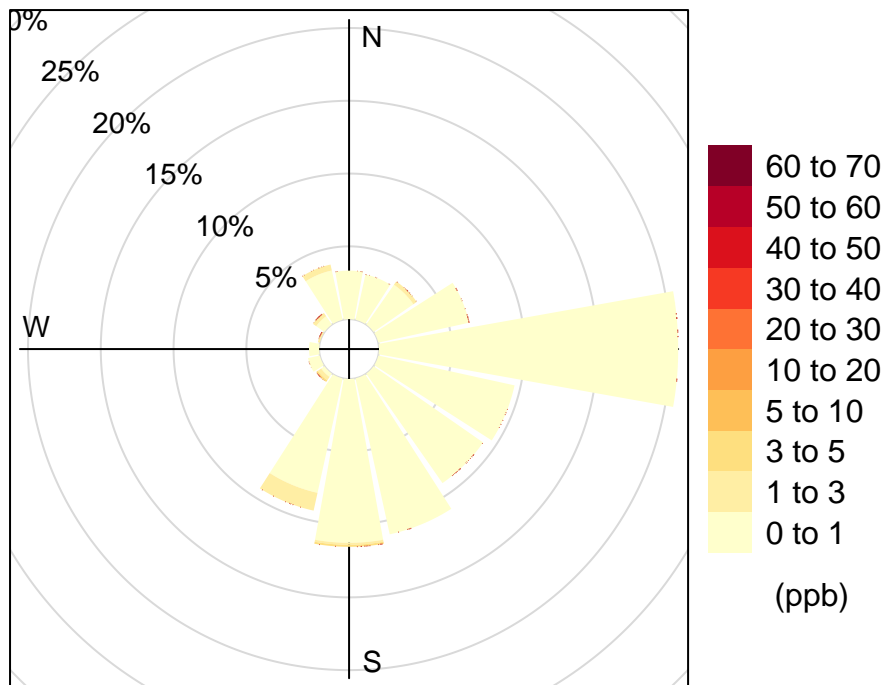
Parameter	Conversion ppb : ug/m3	Notes
SO2	1 : 2.62	
PM2.5		
Temp		
Wind sp.		

# Kitimat Haisla Village – Wind Rose

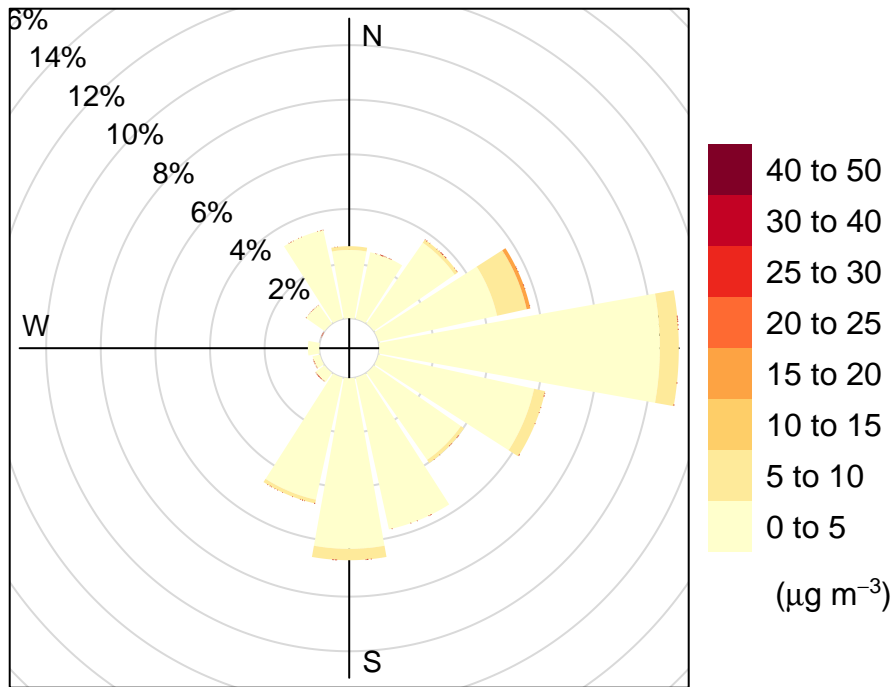


**calms = 2.22 %**

# Kitimat Haisla Village – SO<sub>2</sub> Pollution Rose



# Kitimat Haisla Village – PM<sub>2.5</sub> Pollution Rose



## **Kitimaat Haisla Village Station Notes Provided By Trinity Consultants (March 2022)**

### **Data Quality Notes**

- None.

### **Calibration / Maintenance Notes**

- On March 1, 2022, the PUF sample was changed out.
- On March 3, 2022, an MoE audit was conducted.
- On March 9, 2022, the PUF sample was changed out and maintenance was performed on the PUF  
PUF  
sampler.
- On March 15, 2022, the PUF sample was changed out.
- On March 25, 2022, flow and leak checks were performed on the PM2.5 sampler.
- On March 29, 2022, “as found” and “after adjustment” multi-point calibrations were performed on the  
SO2 analyzer. The PUF sampler was changed out.





Ministry of  
Environment and  
Climate Change Strategy

# Automated Data Summary for Kitimat Haul Rd

Provided for the Kitimat Airshed Group by the Ministry of Environment and Climate Change Strategy

01 April 2022

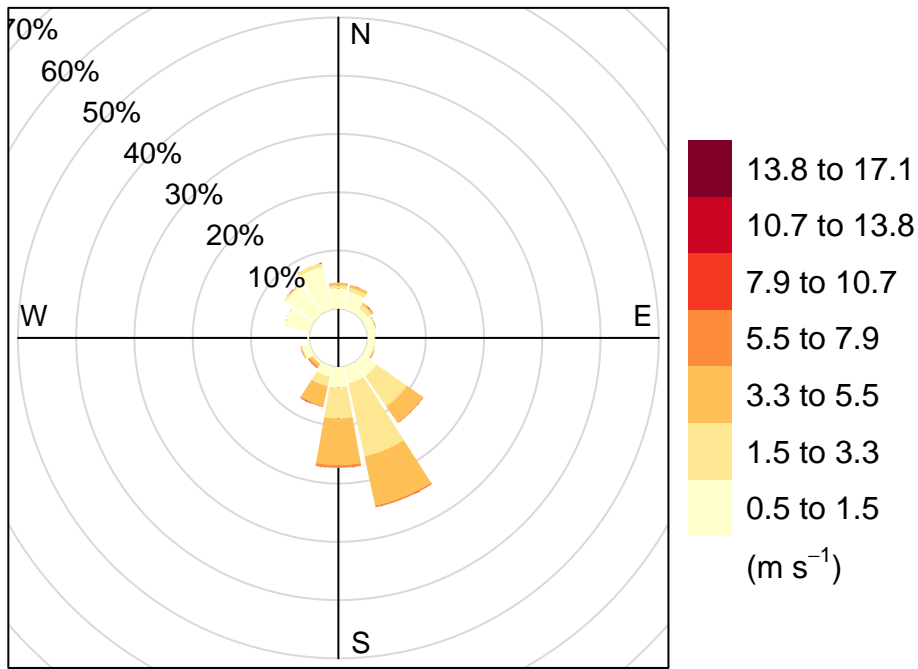
\*Note: Reports generated automatically and data are unvalidated.

**Kitimat Region, Q1 2022 Summary**  
**station\_name : Kitimat Haul Road**

Parameter	Measure	Avg Pd.	Objective	Excd	Conc			Quarterly Avg	Op. Time
					Min	Max	day of Max conc		
SO2	ppb	1-hr	70	0	0.2	17.3	2022-03-11 23:00:00	2.1	93.9%
HF	ppb	1-hr	73	0	0.0	0.2	2022-03-31 23:00:00	0.2	94.2%
		24-hr			0.1	0.2	2022-03-02	0.2	
PM2.5	ug/m3	1-hr			0.0	19.0	2022-03-28 13:00:00	1.4	93.6%
		24-hr	25	0	0.5	2.9	2022-03-29	1.4	
Temp	°C	1-hr			-2.1	13.5	2022-03-29 16:00:00	4.1	100.0%
Wind sp.	m/s	1-hr			0.0	6.1	2022-03-15 19:00:00	1.9	100.0%

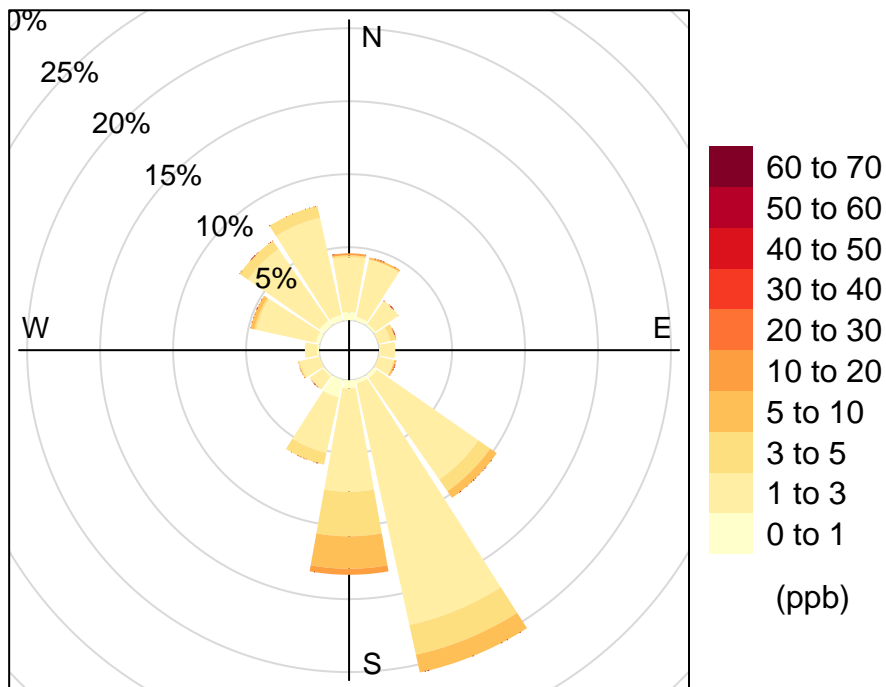
Parameter	Conversion ppb : ug/m3	Notes
SO2	1 : 2.62	
HF	1 : 0.82	
PM2.5		
Temp		
Wind sp.		

## Kitimat Haul Road – Wind Rose

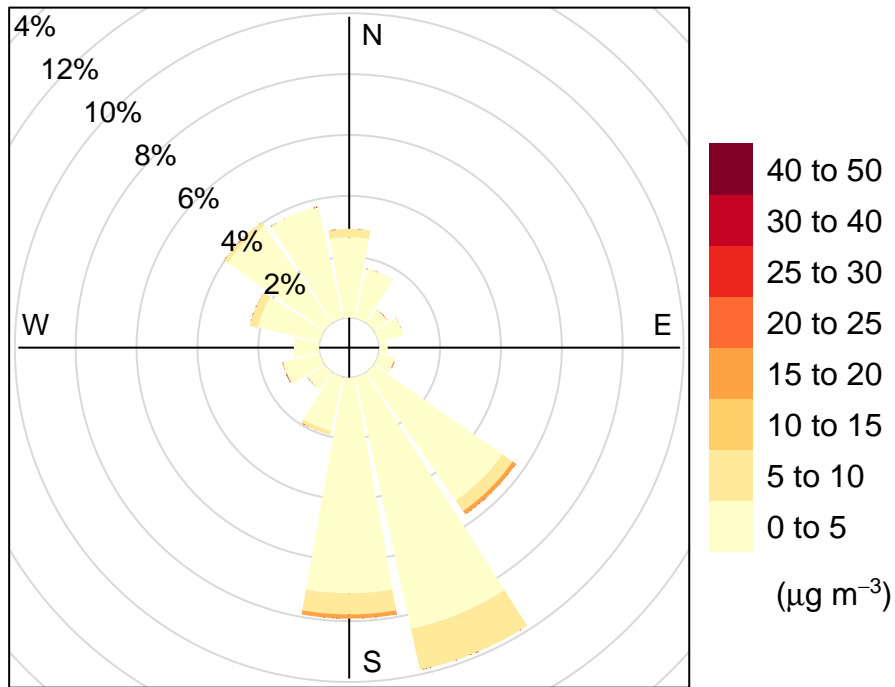


**calms = 16.25 %**

## Kitimat Haul Road – SO<sub>2</sub> Pollution Rose



# Kitimat Haul Road – PM<sub>2.5</sub> Pollution Rose



## Haul Road Station Notes Provided By Trinity Consultants (March 2022)

### Data Quality Notes:

- A MoE audit was conducted on March 2. The auditor noted that the SO<sub>2</sub> values were on the higher end of acceptable.

### Calibration / Maintenance Notes:

- On March 1, 2022, the site technician switched out the NADP sample and the PUF sample.
- On March 2, 2022, an MoE audit was conducted. The site passed the audit. O-ring replaced on Teflon tube at manifold attachment.
- On March 8, 2022, the site technician switched out the NADP and PUF samples. The PUF sampler was calibrated. Maintenance was performed on the PUF system.
- On March 11, 2022, maintenance was performed on the PUF sampler and HF analyzer.
- On March 15, 2022, the site technician switched out the NADP sample and the PUF sample.
- On March 22, 2022, the site technician switched out the NADP sample and the PUF sample.
- On March 25, 2022, flow and leak checks were performed on the PM<sub>2.5</sub> sampler and the sampler was calibrated. The HF analyzer was also calibrated.
- On March 28, 2022, “as found” and “after adjustment” multi-point calibrations were performed on the SO<sub>2</sub> analyzer.
- On March 29, 2022, the site technician switched out the NADP and PUF samples.

# Automated Data Summary for Kitimat Industrial Avenue

Provided for the Kitimat Airshed Group by the Ministry of Environment and Climate Change Strategy

01 April 2022

\*Note: Reports generated automatically and data are unvalidated.

**Kitimat Region, Q1 2022 Summary**  
**station\_name : Kitimat Industrial Ave**

Parameter	Measure	Avg Pd.	Objective	Excd	Conc			Quarterly Avg	Op. Time
					Min	Max	day of Max conc		
SO2	ppb	1-hr	70	0	0.1	11.7	2022-03-29 12:00:00	1.4	80.3%

Parameter	Conversion ppb : ug/m3	Notes
SO2	1 : 2.62	

## **Industrial Avenue Station Notes Provided By Trinity Consultants (March 2022)**

### **Data Quality Notes**

- Intermittent power outages at the site continued during the month of March.

### **Calibration / Maintenance Notes**

- On March 2, 2022, an MoE audit was conducted.
- On March 25, 2022, the SO<sub>2</sub> analyzer inlet filter was replaced and the manifold was cleaned.
- On March 29, 2022, an “as found” and “after adjustment” multi-point calibrations were performed on the SO<sub>2</sub> analyzer.



# Automated Data Summary for Kitimat Riverlodge

Provided for the Kitimat Airshed Group by the Ministry of Environment and Climate Change Strategy

01 April 2022

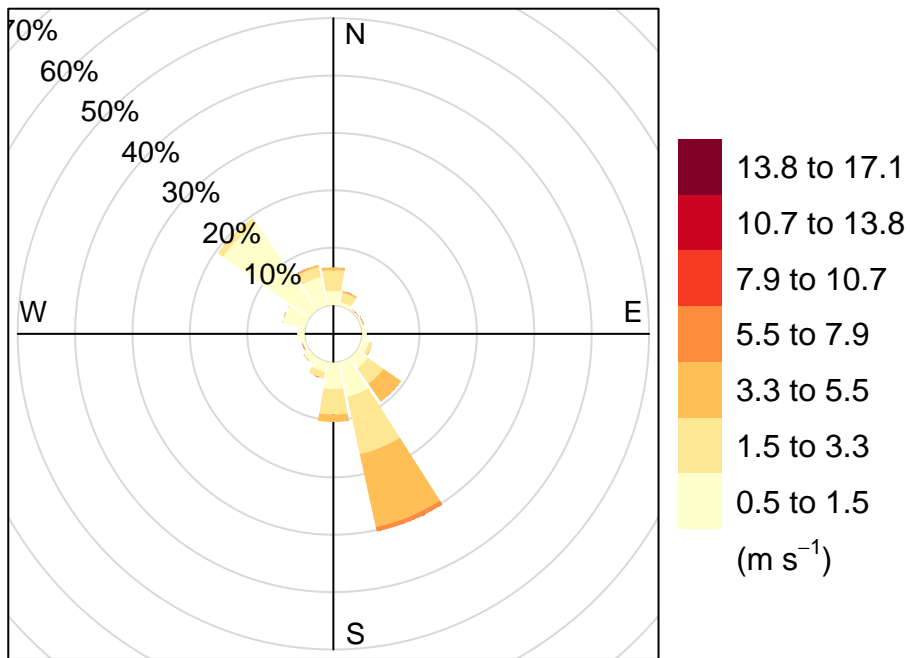
\*Note: Reports generated automatically and data are unvalidated.

**Kitimat Region, Q1 2022 Summary**  
**station\_name : Kitimat Riverlodge**

Parameter	Measure	Avg Pd.	Objective	Excd	Conc			Quarterly Avg	Op. Time
					Min	Max	day of Max conc		
SO2	ppb	1-hr	70	0	-0.1	4.4	2022-03-04 15:00:00	0.6	93.2%
HF	ppb	1-hr	73	0	0.0	0.2	2022-03-29 22:00:00	0.1	93.6%
		24-hr			0.0	0.2	2022-03-21	0.1	
PM2.5	ug/m3	1-hr			0.0	13.0	2022-03-20 22:00:00	2.1	97.9%
		24-hr	25	0	0.0	3.7	2022-03-08	2.0	
PM10	ug/m3	1-hr			0.0	157.0	2022-03-09 19:00:00	9.2	98.3%
		24-hr	50	0	3.0	20.9	2022-03-30	9.0	
Temp	°C	1-hr			-2.2	13.7	2022-03-29 16:00:00	4.1	99.2%
Wind sp.	m/s	1-hr			0.0	6.2	2022-03-06 16:00:00	1.7	99.2%

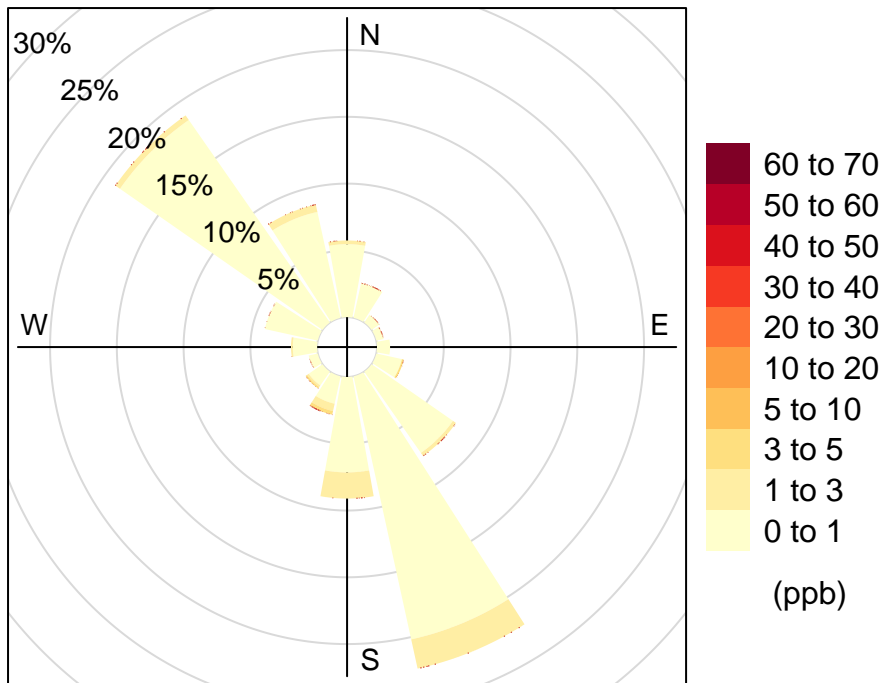
Parameter	Conversion ppb : ug/m3	Notes
SO2	1 : 2.62	
HF	1 : 0.82	
PM2.5		
PM10		
Temp		
Wind sp.		

# Kitimat Riverlodge – Wind Rose

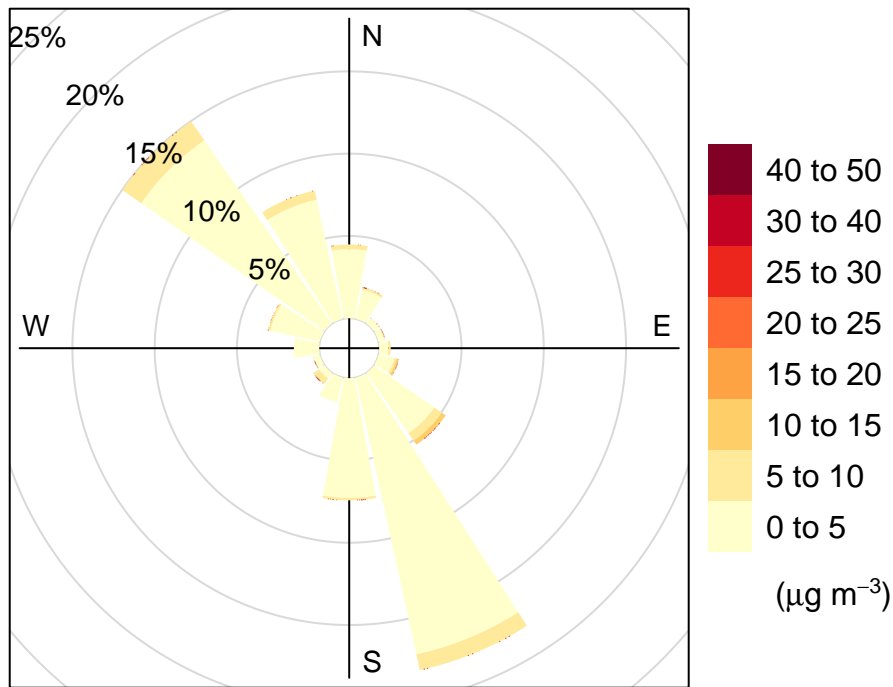


**calms = 14.29 %**

# Kitimat Riverlodge – SO<sub>2</sub> Pollution Rose



# Kitimat Riverlodge – PM<sub>2.5</sub> Pollution Rose



## **Kitimat Riverlodge Station Notes Provided By Trinity Consultants (March 2022)**

### **Data Quality Notes**

- None.

### **Calibration / Maintenance Notes**

- On March 2, 2022, an MoE audit was conducted.
- On March 11, 2022, stainless steel fittings on the HF supply line were replaced. HF exhaust line was run to the exterior of the building and the internal fittings in the HF analyzer were replaced.
- On March 24, 2022, maintenance was performed on the PM10 and PM2.5 BAMs and the PM10 and PM2.5
- BAMs were calibrated. BAM flow and leak checks were also performed. The inlet filters on the SO2 and HF inlets were replaced.
- On March 29, 2022, an “as found” and “after adjustment” multi-point calibrations were performed on the SO2 analyzer.

# Automated Data Summary for Kitimat Whitesail

Provided for the Kitimat Airshed Group by the Ministry of Environment and Climate Change Strategy

01 April 2022

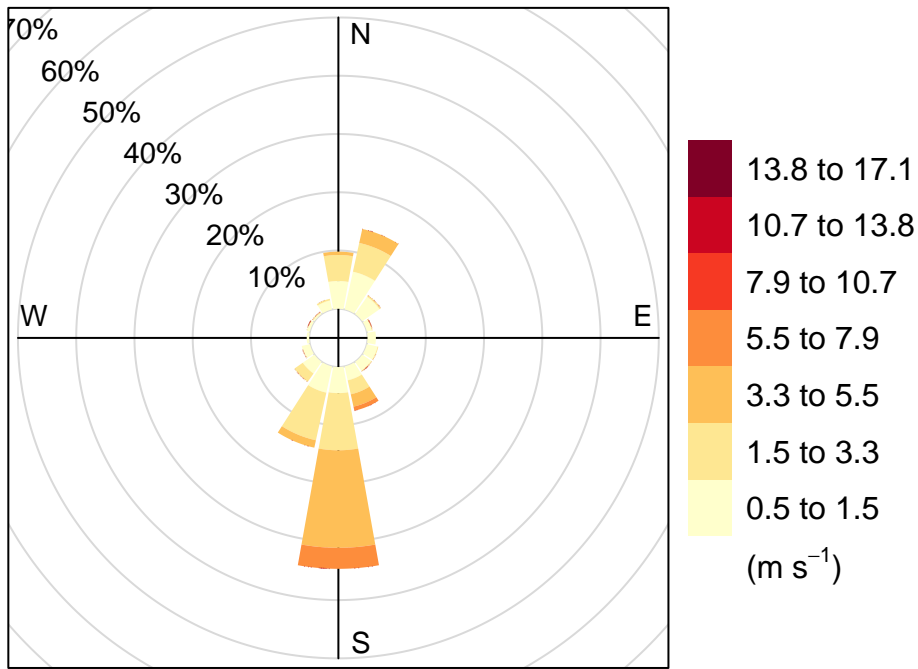
\*Note: Reports generated automatically and data are unvalidated.

**Kitimat Region, Q1 2022 Summary**  
**station\_name : Kitimat Whitesail**

Parameter	Measure	Avg Pd.	Objective	Excd	Conc			Quarterly Avg	Op. Time
					Min	Max	day of Max conc		
AQHI		1-hr			1.0	4.0	2022-03-27 19:00:00	1.5	100.0%
SO2	ppb	1-hr	70	0	0.1	4.6	2022-03-04 16:00:00	0.6	92.5%
NO2	ppb	1-hr	60	0	0.6	16.0	2022-03-02 21:00:00	2.6	92.8%
O3	ppb	1-hr	82	0	-0.7	39.4	2022-03-09 15:00:00	21.5	77.5%
PM2.5	ug/m3	1-hr			0.0	33.0	2022-03-27 19:00:00	4.2	97.6%
		24-hr	25	0	2.7	6.7	2022-03-06	4.3	
Temp	°C	1-hr			-2.2	13.0	2022-03-29 16:00:00	3.7	100.0%
Humidity	% RH	1-hr			28.9	97.4	2022-03-03 12:00:00	84.9	100.0%
Wind sp.	m/s	1-hr			0.0	7.7	2022-03-07 03:00:00	2.3	100.0%

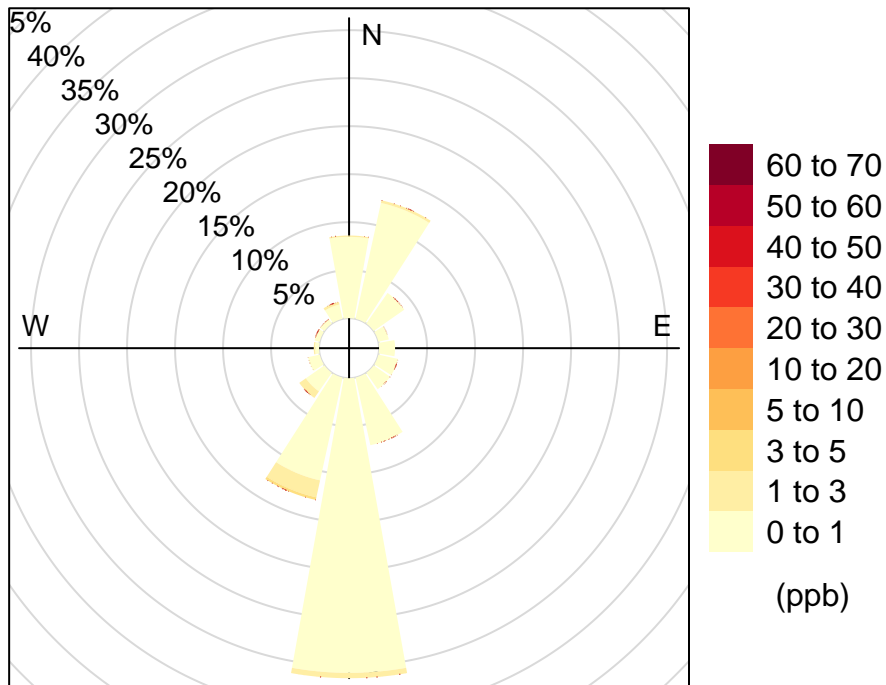
Parameter	Conversion ppb : ug/m3	Notes
AQHI		
SO2	1 : 2.62	
NO2	1 : 1.88	
O3	1 : 1.96	
PM2.5		
Temp		
Humidity		
Wind sp.		

## Kitimat Whitesail – Wind Rose



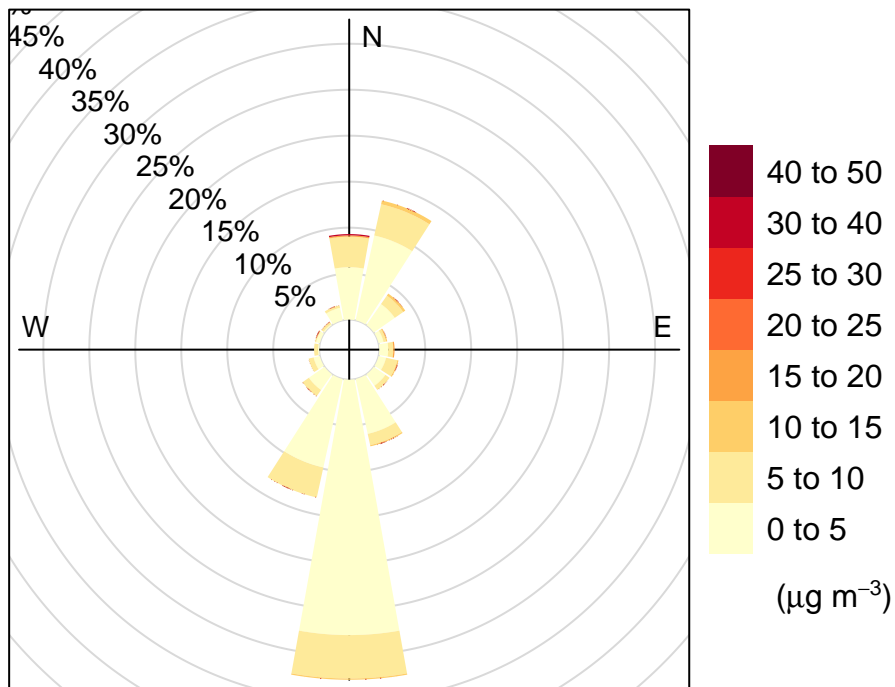
**calms = 3.61 %**

## Kitimat Whitesail – $\text{SO}_2$ Pollution Rose





# Kitimat Whitesail – PM<sub>2.5</sub> Pollution Rose



## **Kitimat Whitesail Station Notes Provided By Trinity Consultants (March 2022)**

### **Data Quality Notes**

None.

### **Calibration / Maintenance Notes**

- On March 2, 2022, the PUF sample was collected but a new sample was not deployed. O3 “Gen Ref” warning observed on calibrator.
- On March 3, 2022, an MoE audit was conducted. O3 “Gen Ref” warning observed on calibrator.
- On March 5, 2022, the PUF sample was deployed. O3 “Gen Ref” warning observed on calibrator. O3 analyzer had a photometer lamp stability warning.
- On March 9, 2022, the PUF sample was changed and the PUF pressure gauge was calibrated.
- Maintenance was performed on the PUF sampler. O3 analyzer had a photometer lamp stability warning.
- On March 15, 2022, the PUF sample and PUF field blank was changed. O3 analyzer still has a photometer lamp stability warning.
- On March 18, 2022, the calibrator was displaying a warning. Trouble shooting was performed on the calibrator and the warning was resolved.
- On March 19, 2022, the O3 analyzer had intermittent lamp stability warnings. As found and as left multi-point verifications were performed prior to and after lamp replacement.
- On March 22, 2022, the PUF sample was changed. O3 analyzer warning resolved after system reset.
- Rio Tinto BC Works / March 2022 Kitimat Monitoring Network Data Report  
Trinity Consultants 1-3
- On March 24, 2022, flow and leak checks and a calibration was performed on the BAM. O3 analyzer is still indicating lamp instability issue.
- On March 28, 2022, calibrations were performed on the NO2 and SO2 analyzers.
- On March 29, 2022, the PAH sample was changed and was calibrated.

# Automated Data Summary for Kitimat Yacht Club

Provided for the Kitimat Airshed Group by the Ministry of Environment and Climate Change Strategy

01 April 2022

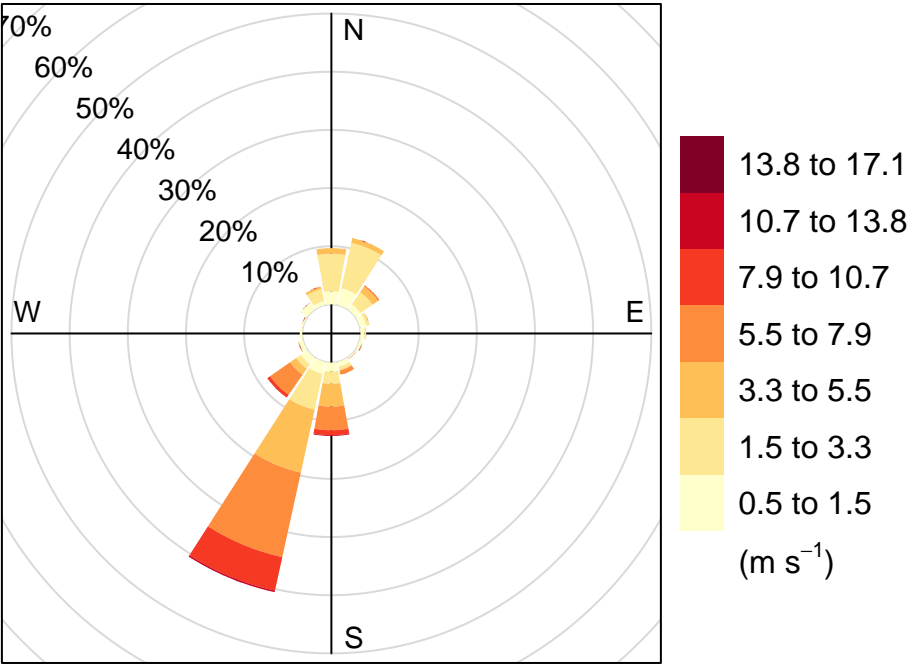
\*Note: Reports generated automatically and data are unvalidated.

**Kitimat Region, Q1 2022 Summary**  
**station\_name : Kitimat Yacht Club**

Parameter	Measure	Avg Pd.	Objective	Excd	Conc			Quarterly Avg	Op. Time
					Min	Max	day of Max conc		
Temp	°C	1-hr			-1.0	13.0	2022-03-27 16:00:00	4.3	99.9%
Wind sp.	m/s	1-hr			0.4	13.6	2022-03-06 16:00:00	4.0	99.9%

Parameter	Conversion ppb : ug/m3	Notes
Temp		
Wind sp.		

# Kitimat Yacht Club – Wind Rose



**calms = 0.7 %**

**Kitimat Yacht Club Meteorological Station Notes Provided By Trinity Consultants  
(March 2022)**

No Notes

# Automated Data Summary for Terrace Skeena Middle School

Provided for the Kitimat Airshed Group by the Ministry of Environment and Climate Change Strategy

01 April 2022

\*Note: Reports generated automatically and data are unvalidated.

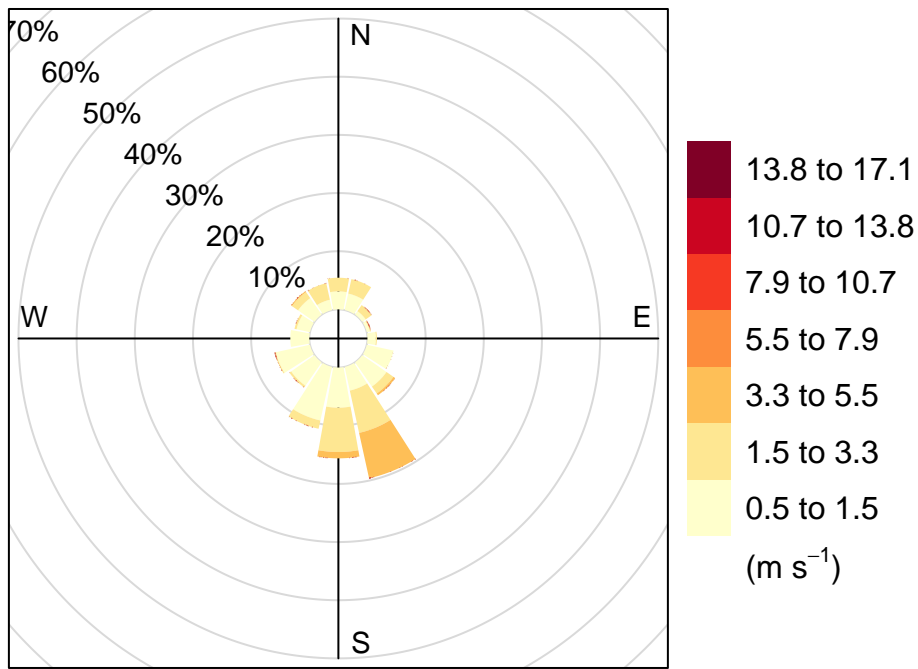
**Kitimat Region, Q1 2022 Summary**  
**station\_name : Terrace Skeena Middle School**

Parameter	Measure	Avg Pd.	Objective	Excd	Conc			Quarterly Avg	Op. Time
					Min	Max	day of Max conc		
AQHI		1-hr			1.0	10.0	2022-03-06 01:00:00	1.5	99.7%
SO2	ppb	1-hr	70	0	0.1	1.3	2022-03-28 08:00:00	0.6	95.8%
NO2	ppb	1-hr	60	0	-1.5	19.9	2022-03-10 01:00:00	1.9	95.8%
O3	ppb	1-hr			0.2	44.4	2022-03-06 17:00:00	22.6	47.6%
PM2.5	ug/m3	1-hr			0.3	94.9	2022-03-06 01:00:00	5.8	99.3%
		24-hr	25	0	1.5	19.4	2022-03-06	6.0	
Temp	°C	1-hr			-2.6	13.5	2022-03-28 16:00:00	4.6	100.0%
Humidity	% RH	1-hr			22.3	99.4	2022-03-02 09:00:00	77.7	100.0%
Wind sp.	m/s	1-hr			0.0	5.5	2022-03-15 15:00:00	1.3	100.0%

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

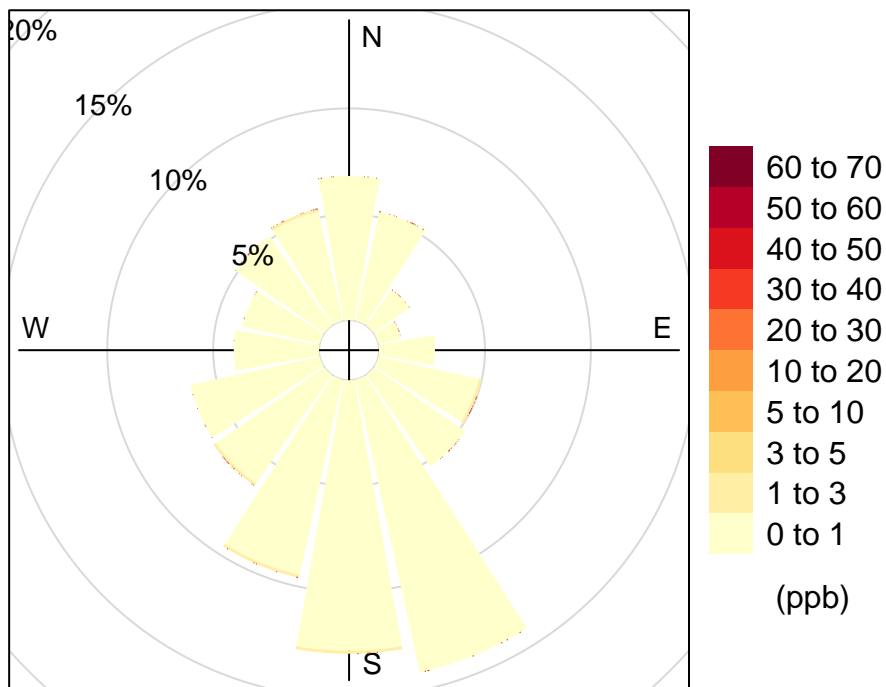


## Terrace Skeena Middle School – Wind Rose

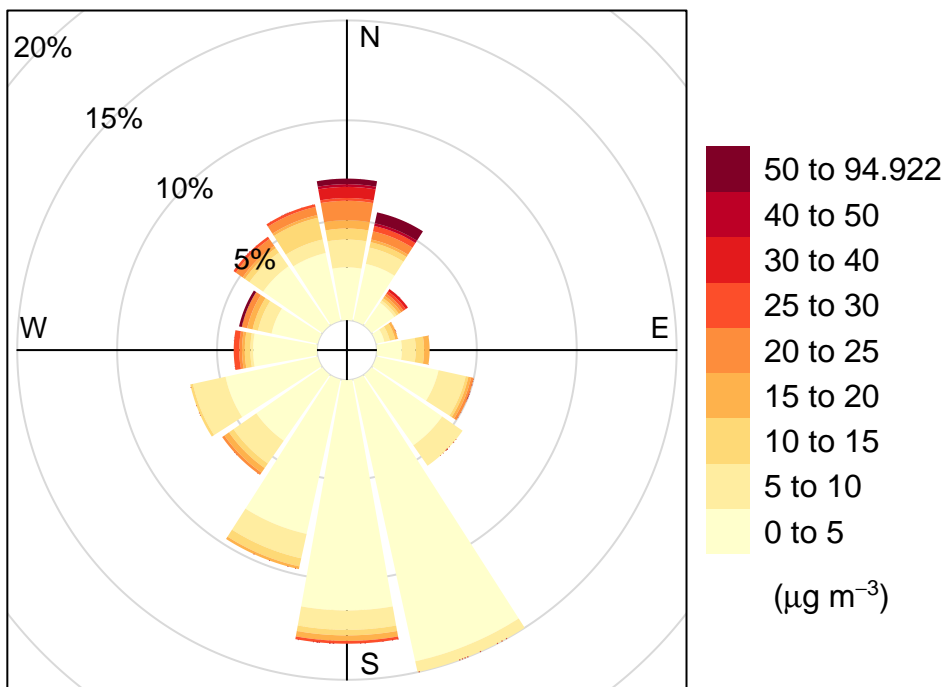


**calms = 22.64 %**

## Terrace Skeena Middle School – SO<sub>2</sub> Pollution Rose



# Terrace Skeena Middle School – PM<sub>2.5</sub> Pollution Rose



## Terrace Skeena Middle School Station Notes (March 2022)

No Notes

## **Ambient Air Quality Station Audit Reports**

The ambient air monitoring stations in Kitimat are currently owned by Rio Tinto and operated by Trinity Consultants with local support from Triton Environmental Consultants. The ambient air monitoring instruments were audited on March 2nd and 3rd by BC ENV's Air Audit Team. All instruments passed the Ministry's audit. Audit certificates can be found at:

[https://a100.gov.bc.ca/pub/acat/documents/r43325/2022-03-03KitimatHaislaVillage21-2\\_1646435883683\\_F568EB8309.pdf](https://a100.gov.bc.ca/pub/acat/documents/r43325/2022-03-03KitimatHaislaVillage21-2_1646435883683_F568EB8309.pdf)

[https://a100.gov.bc.ca/pub/acat/documents/r43326/2022-03-02KitimatHaulRoad21-2\\_1646435957187\\_F568EB8309.pdf](https://a100.gov.bc.ca/pub/acat/documents/r43326/2022-03-02KitimatHaulRoad21-2_1646435957187_F568EB8309.pdf)

[https://a100.gov.bc.ca/pub/acat/documents/r58973/2022-03-02KitimatIndustrialAve21-2\\_1646437034538\\_F568EB8309.pdf](https://a100.gov.bc.ca/pub/acat/documents/r58973/2022-03-02KitimatIndustrialAve21-2_1646437034538_F568EB8309.pdf)

[https://a100.gov.bc.ca/pub/acat/documents/r43327/2022-03-02KitimatRiverlodge21-2\\_1646436004711\\_F568EB8309.pdf](https://a100.gov.bc.ca/pub/acat/documents/r43327/2022-03-02KitimatRiverlodge21-2_1646436004711_F568EB8309.pdf)

[https://a100.gov.bc.ca/pub/acat/documents/r43329/2022-03-03KitimatWhitesail21-2\\_1646436060536\\_F568EB8309.pdf](https://a100.gov.bc.ca/pub/acat/documents/r43329/2022-03-03KitimatWhitesail21-2_1646436060536_F568EB8309.pdf)