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Ambient Air Quality Monitoring Report for Saldanha Bay and Vredenburg Sites – Q3 2026

July to September 2026

Prepared for

Saldanha Bay Municipality

EXECUTIVE SUMMARY

This report covers data from the Saldanha Bay and Vredenburg Air Quality Monitoring stations which have been commissioned and operated throughout the Saldanha Bay Municipality Area by Argos Scientific Africa (Pty) Ltd since 2015 and by Skyside South Africa (Pty) Ltd since September 2024.

This report covers activities during Q3 (July to September) of 2026.

The average data collection for Q3 at the Saldanha Bay Site was 95.8% for Oxides of Nitrogen, 96.2% for SO2 and 75.0% for Ozone (sample flow blockage persistent, analyser was removed from the station on 21 September 2026 to clear the blockage), and 98.6% for PM10/PM2.5 analyser.

The average data collection for Q3 at the Vredenburg Site was 99.7% for Ozone, 98.7% for SO2 and 99.7% for NOx analysers.

Meteorological conditions at Saldanha AQM site were characterised by moderate to strong winds from the south (S) and south-west (SW) with moderate to strong north-westerly (NW) bias, especially during July with an occurrence of 4.5% to 11.6% calm conditions.

Meteorological conditions at Vredenburg AQM site were characterised by moderate to strong winds from the south (S) and south-west (SW) with a moderate northerly (N) bias, especially during July with an occurrence of 1.5% to 8.7% calm conditions.

REPORT DETAILS

Reference	AQ244/sb/2026Q3
Report Title	Ambient Air Quality Monitoring Report for Saldanha Bay and Vredenburg Sites – Q3 2026 : July to September 2026
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Notice	

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1 INTRODUCTION AND BACKGROUND

1.1 SCOPE OF WORK

This project covers the communications, data processing and reporting for two Air Quality Monitoring (AQM) Stations in the Saldanha Bay Municipality Area. Argos Scientific's understanding of the scope of work is as follows:

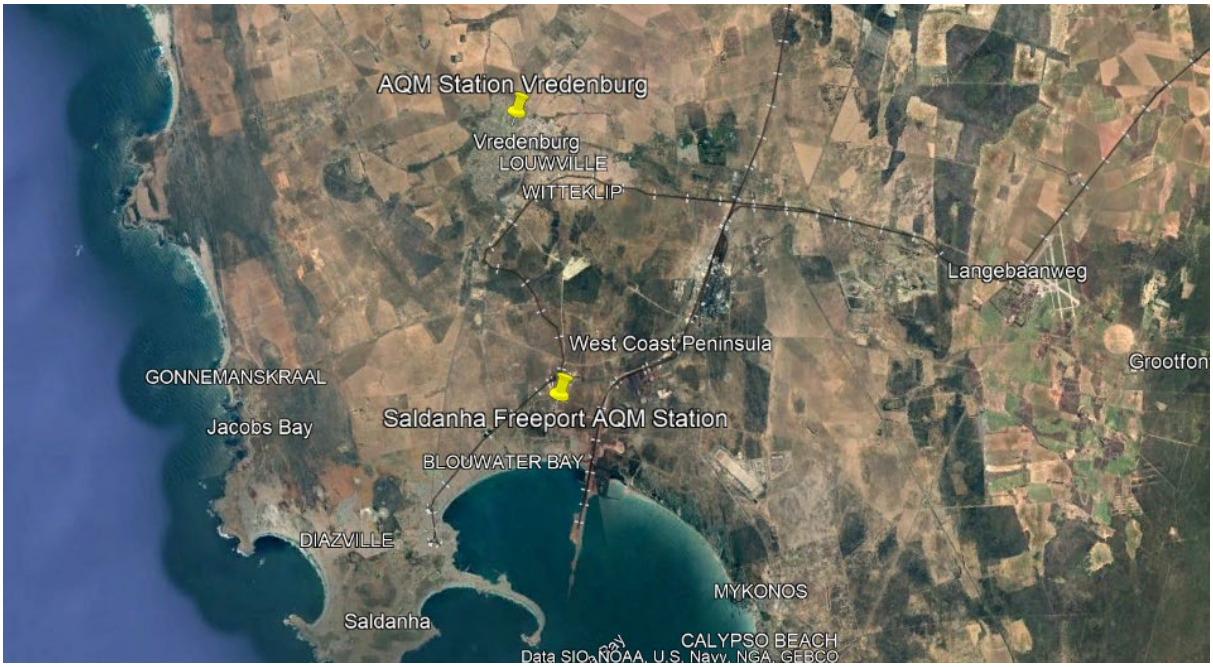
- Establish 3G communications from ambient air quality monitoring station loggers (PC with Linux Operating System) via 2G/3G modem to a centralised server.
- Provide SIM cards for 2G/3G modems.
- Ensure communication support stations and server.
- Provide real-time access to raw data and validated data from SBM offices.
- Provide real-time downloading of raw data and validated data from SBM offices.

Submission of monthly reports for each monitoring station, including data graphs, exceedance graphs, meteorology, analysis and station status.

1.2 PROJECT DESCRIPTION

This report evaluates data collected from the Saldanha Bay and Vredenburg Air Quality Monitoring Station. The Saldanha Bay station is located at 32°58'56.16"S, 17°59'21.57"E, at Freeport Saldanha to the north-east (NE) of the town of Saldanha and the Vredenburg station is located at 32°54'6.20"S, 17°59'31.94"E, to the north-east (NE) of the town of Vredenburg. These sites meet all the requirements as outlined in the US EPA's "Quality Assurance Handbook for Air Pollution Measurement Systems" and "SANS 1929" report.

Figure 1.2-1 Location of the Air Quality Monitoring Stations at Saldanha Bay & Vredenburg



2 GUIDELINES AND AIR QUALITY STANDARDS

The National Department of Forestry, Fisheries and the Environment (DFFE)) standards for air pollutants as listed in the Government Gazette No.32816, published 24 December 2009 and subsequent revisions, are listed in Table 2-1 below.

Table 2.1 National Ambient Air Quality Standards for SO_2, NO_2, O_3 and PM-10

Pollutant	SO_2	SO_2	NO_2	O_3	PM-10	PM-2.5
Period	10 minute	1 hour	1 hour	8 hour	1 day	1 day
RSA AQ Standard	191ppb	48ppb	106ppb	61ppb	75 µg/m^3	40 µg/m^3

3 METHODOLOGY

3.1 AMBIENT AIR QUALITY

Ambient concentrations of sulphur dioxide, oxides of nitrogen (NO, NO_2 and NO_X), ozone, and particulates less than 10 µm in diameter (PM-10 & PM-2.5) are measured at the Saldanha Bay monitoring site and Vredenburg monitoring site in accordance with the latest National Ambient Air Quality Standards (as above) and SANS standard methods.

3.2 DATA CAPTURE

Data is analysed for completeness against a required standard of 90% and presented in table form below.

Table 3.2-1 Percentage Data Capture at Saldanha Bay from July to September 2026

Pollutant\Station	Saldanha Bay	Vredenburg
Nitrogen Dioxide	95.8%	99.7%
Ozone	75.0%	99.7%
PM-10	96.8%	0%
PM-2.5	96.8%	0%
Sulphur Dioxide	96.2%	98.7%

4 RESULTS

4.1 AMBIENT AIR QUALITY TRENDS (SALDANHA BAY)

A graphical summary of pollutants at Saldanha Bay for July to September 2026, is provided in Figure 4.1-1 – Figure 4.1-5 below.

Figure 4.1-1 Daily mean SO_2 concentrations during the 3rd Quarter of 2026 – Saldanha

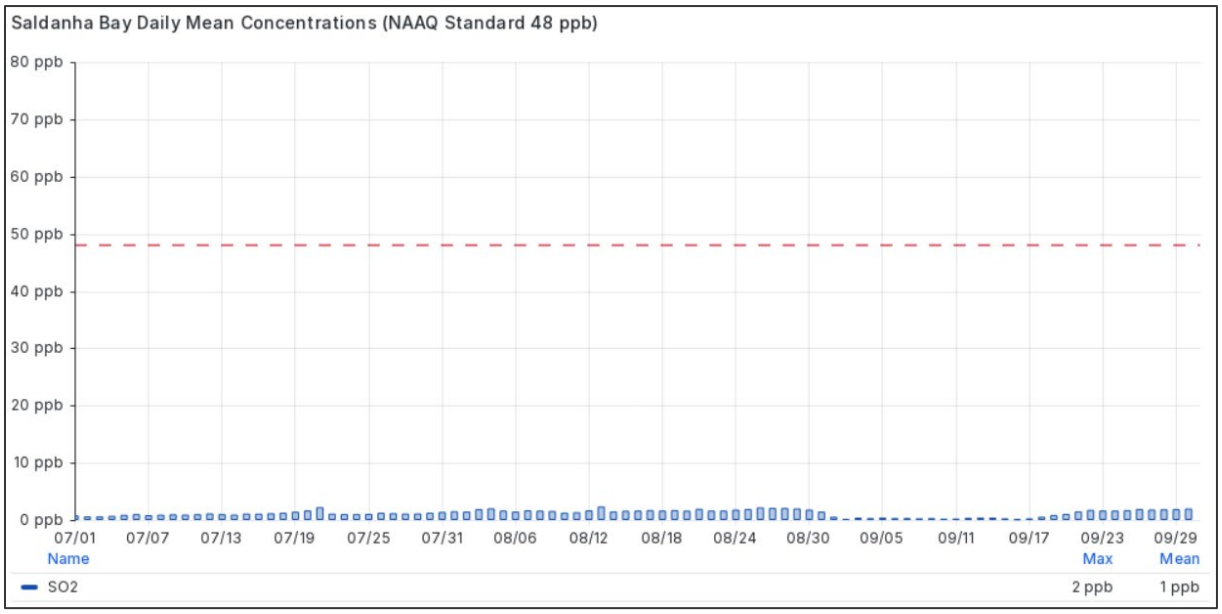


Figure 4.1-2 Hourly NO_2 concentrations during the 3rd Quarter of 2026 – Saldanha

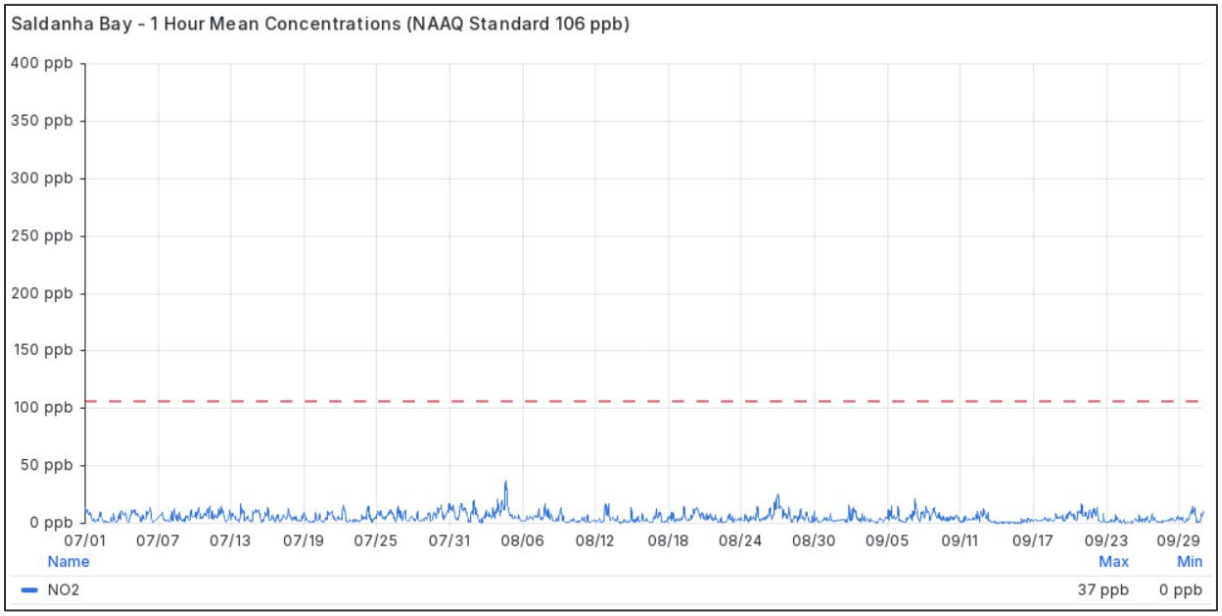


Figure 4.1-3 Running Eight Hourly O_3 concentrations during the 3rd Quarter of 2026 – Saldanha

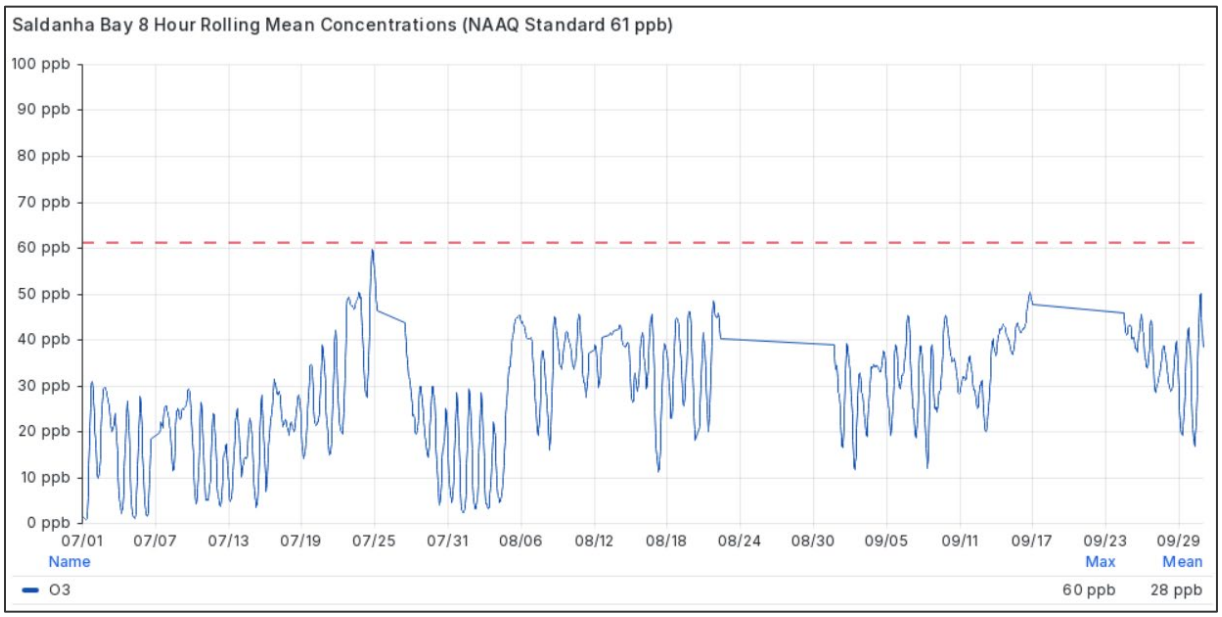


Figure 4.1-4 Daily Mean PM-10 concentrations during the 3rd Quarter of 2026 – Saldanha

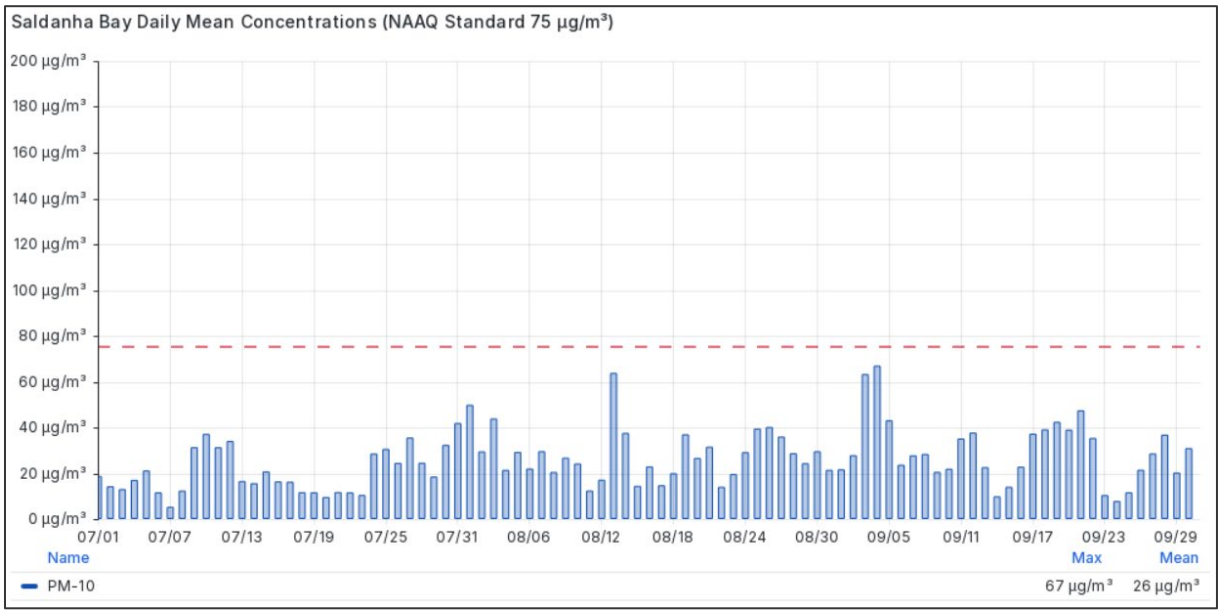
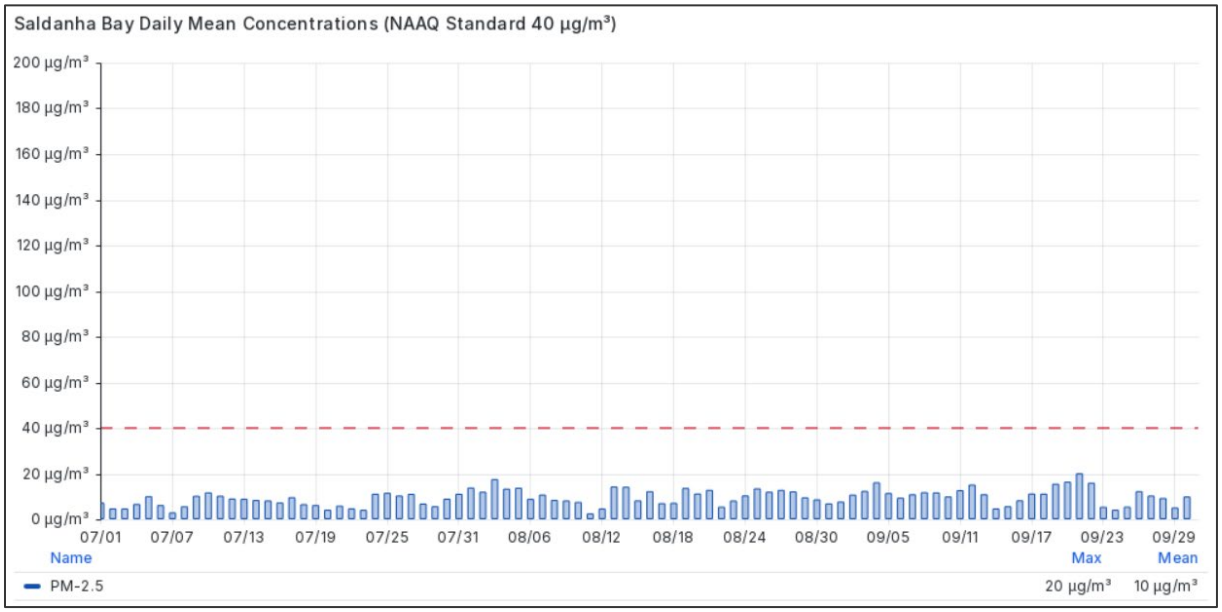


Figure 4.1-5 Daily Mean PM-2.5 concentrations during the 3rd Quarter of 2026 – Saldanha



4.2 AMBIENT AIR QUALITY TRENDS (VREDENBURG)

A graphical summary of pollutants at Vredenburg for July to September 2026 is provided in Figure 4.2-1 to Figure 4.2-3 below.

Figure 4.2-1 Daily mean SO_2 concentrations during the 3rd Quarter of 2026

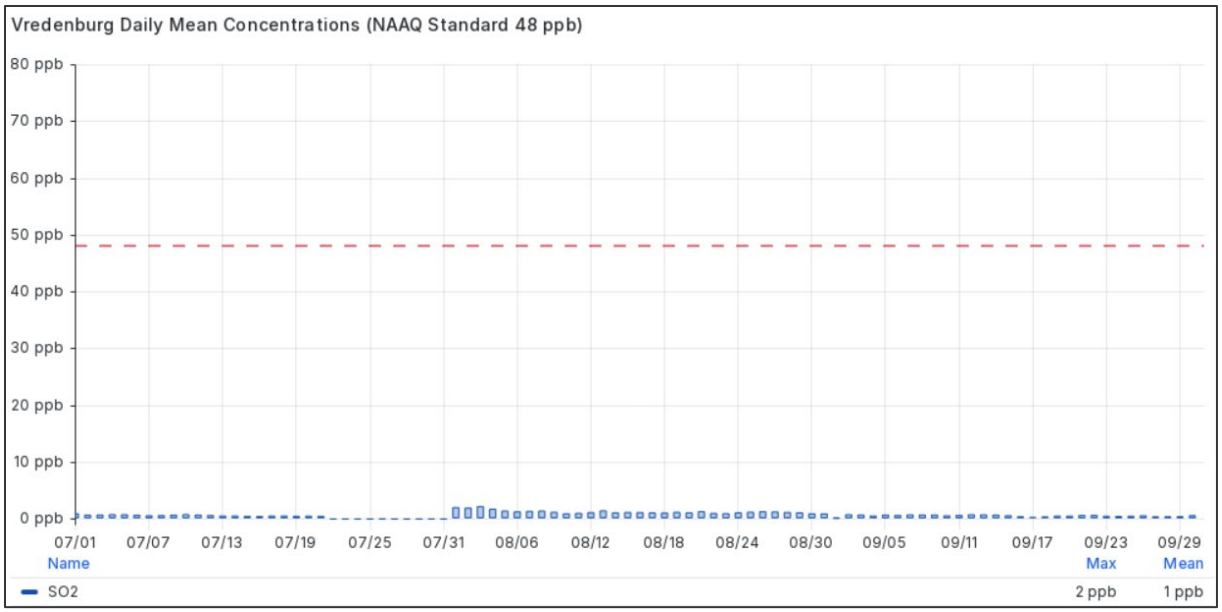


Figure 4.2-2 Daily maximum NO_2 concentrations during the 3rd Quarter of 2026

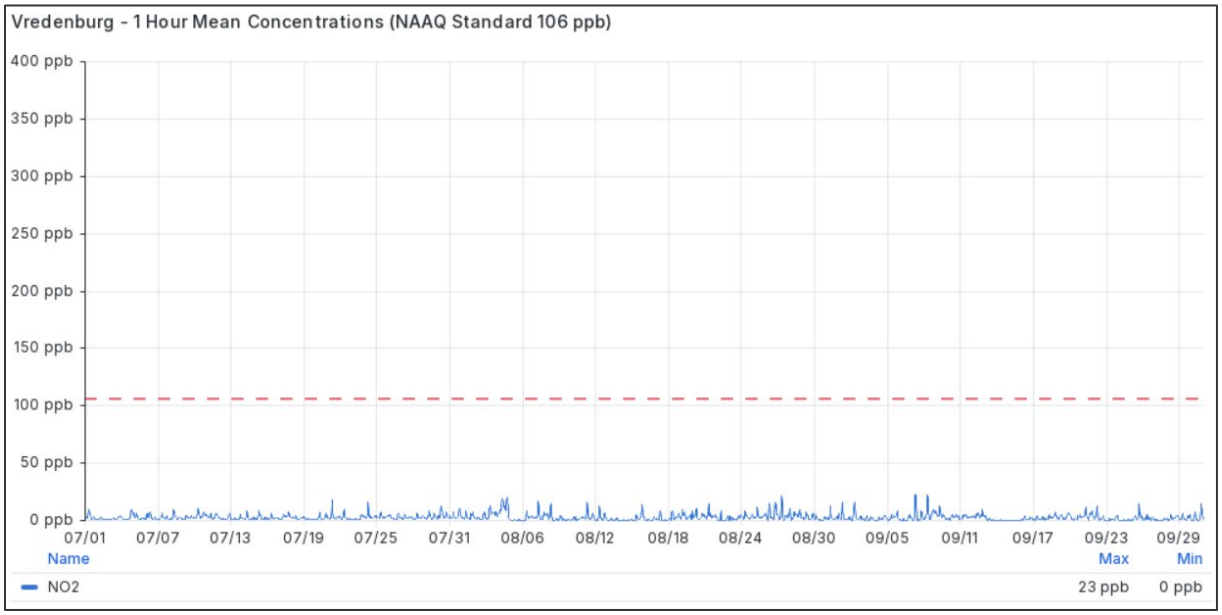
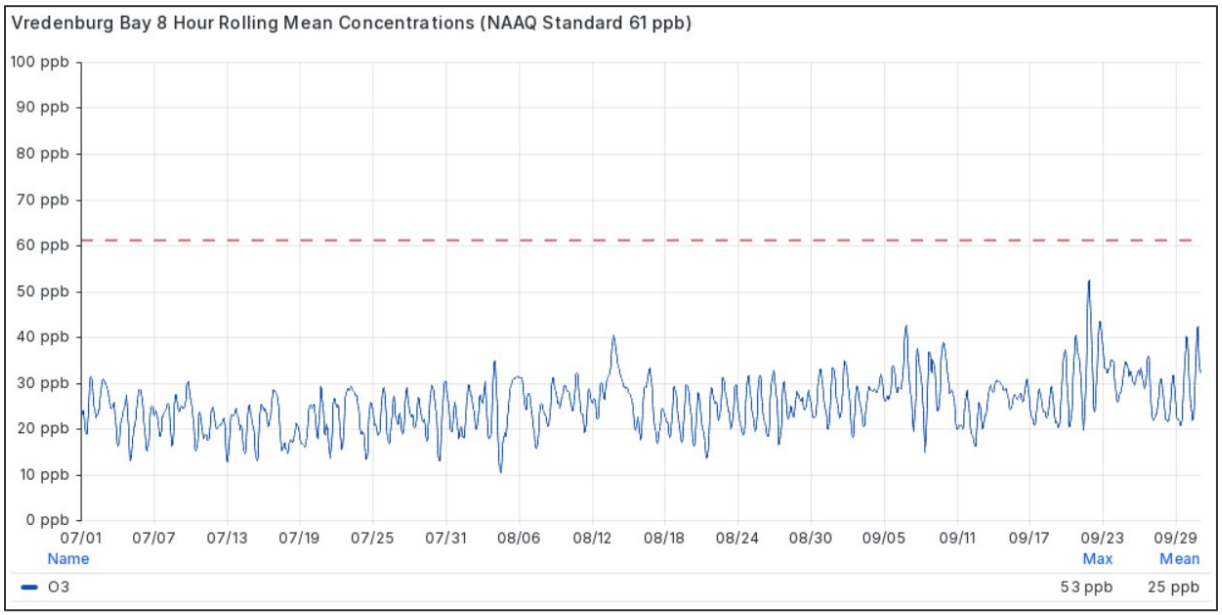


Figure 4.2-3 Running Eight Hourly O3 concentrations during the 3rd Quarter of 2026 – Vredenburg



4.3 COMPLIANCE

Table 4.3-1 Compliance with National Ambient Air Quality Standards

Pollutant	Saldanha	Vredenburg	Averaging Period	NAAQ Standard
Sulphur Dioxide	0	0	10 minutes	191
Sulphur Dioxide	0	0	1 hour	134
Sulphur Dioxide	0	0	24 hour	48
Nitrogen Dioxide	0	0	1 hour	106
Ozone	0	0	8 hour	61
PM-10	0	0	24 hour	75
PM-2.5	0	0	24 hour	40

4.4 MEAN AND MAXIMUM CONCENTRATIONS

Table 4.4-1 Mean and Maximum Pollutant Concentrations at Saldanha Bay & Vredenburg during Q3 2026

Pollutant	Saldanha	Vredenburg	Averaging Period
Sulphur Dioxide	1	1	Monthly Mean (ppb)
Sulphur Dioxide	2	2	24 Hour Avg Maximum (ppb)
Sulphur Dioxide	7	3	1 Hour Avg Maximum (ppb)
Nitrogen Dioxide	5	3	Monthly Mean (ppb)
Nitrogen Dioxide	16	11	24 Hour Avg Maximum (ppb)
Nitrogen Dioxide	37	23	1 Hour Avg Maximum (ppb)
Ozone	28	25	Monthly Mean (ppb)
Ozone	47	35	24 Hour Avg Maximum (ppb)
Ozone	63	63	1 Hour Avg Maximum (ppb)
PM-10	26	-	Monthly Mean (µg/m³)
PM-10	67	-	24 Hour Avg Maximum (µg/m³)
PM-10	532	-	1 Hour Avg Maximum (µg/m³)
PM-2.5	10	-	Monthly Mean (µg/m³)
PM-2.5	20	-	24 Hour Avg Maximum (µg/m³)
PM-2.5	52	-	1 Hour Avg Maximum (µg/m³)

4.5 DIURNAL TRENDS

Diurnal trends are indicated in Figure 4.5-1 and Figure 4.4-2 below. Trends are only shown for those stations where overall data capture was above 50%, which is considered representative enough for providing an indication of diurnal trends.

Figure 4.5-1 Diurnal trend for Saldanha Bay during the 3rd Quarter of 2026

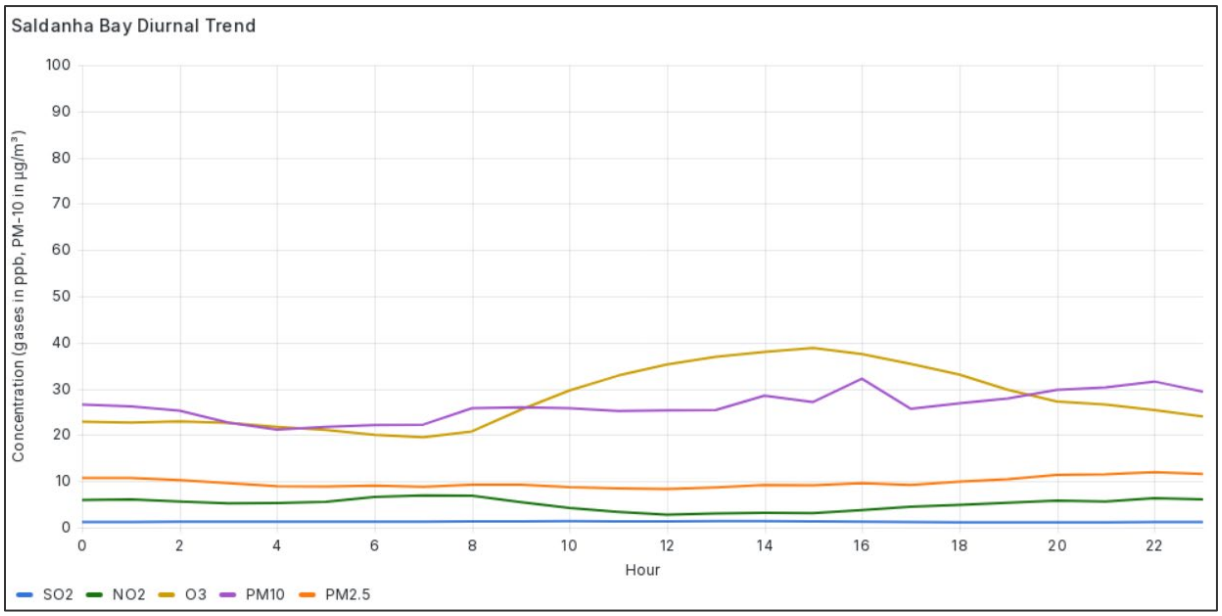
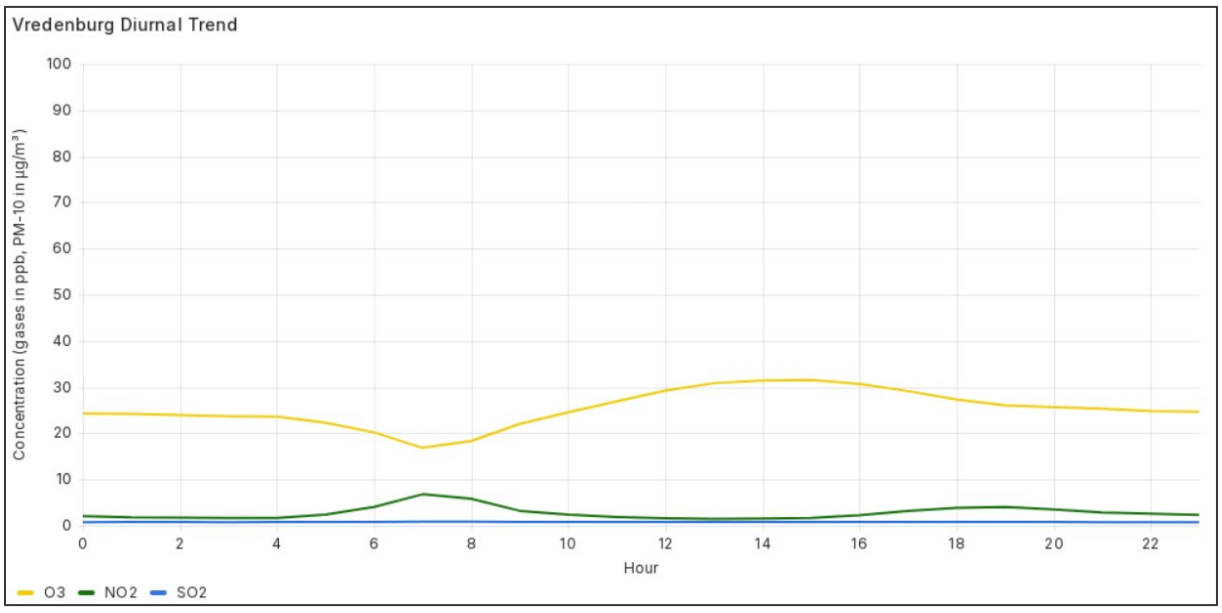


Figure 4.5-2 Diurnal trend for Vredenburg during the 3rd Quarter of 2026



4.6 WIND ROSES

Wind roses for Saldanha during July - September 2026 is shown in Figures 4.6-1 and 4.6-3 below.

Figure 4.6-1 Wind Rose for Saldanha Bay for July 2026

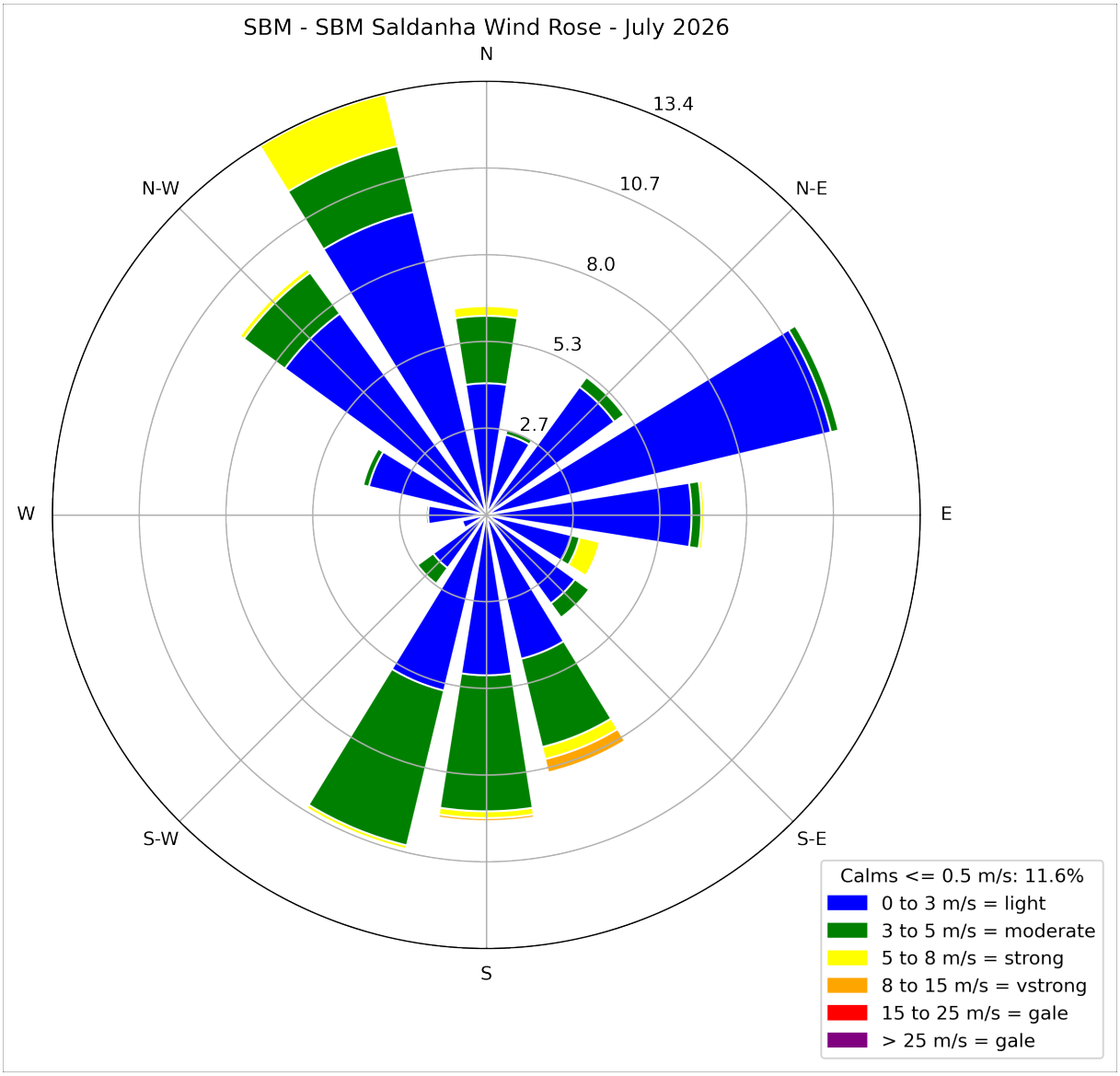


Figure 4.6-2 Wind Rose for Saldanha Bay for August 2026

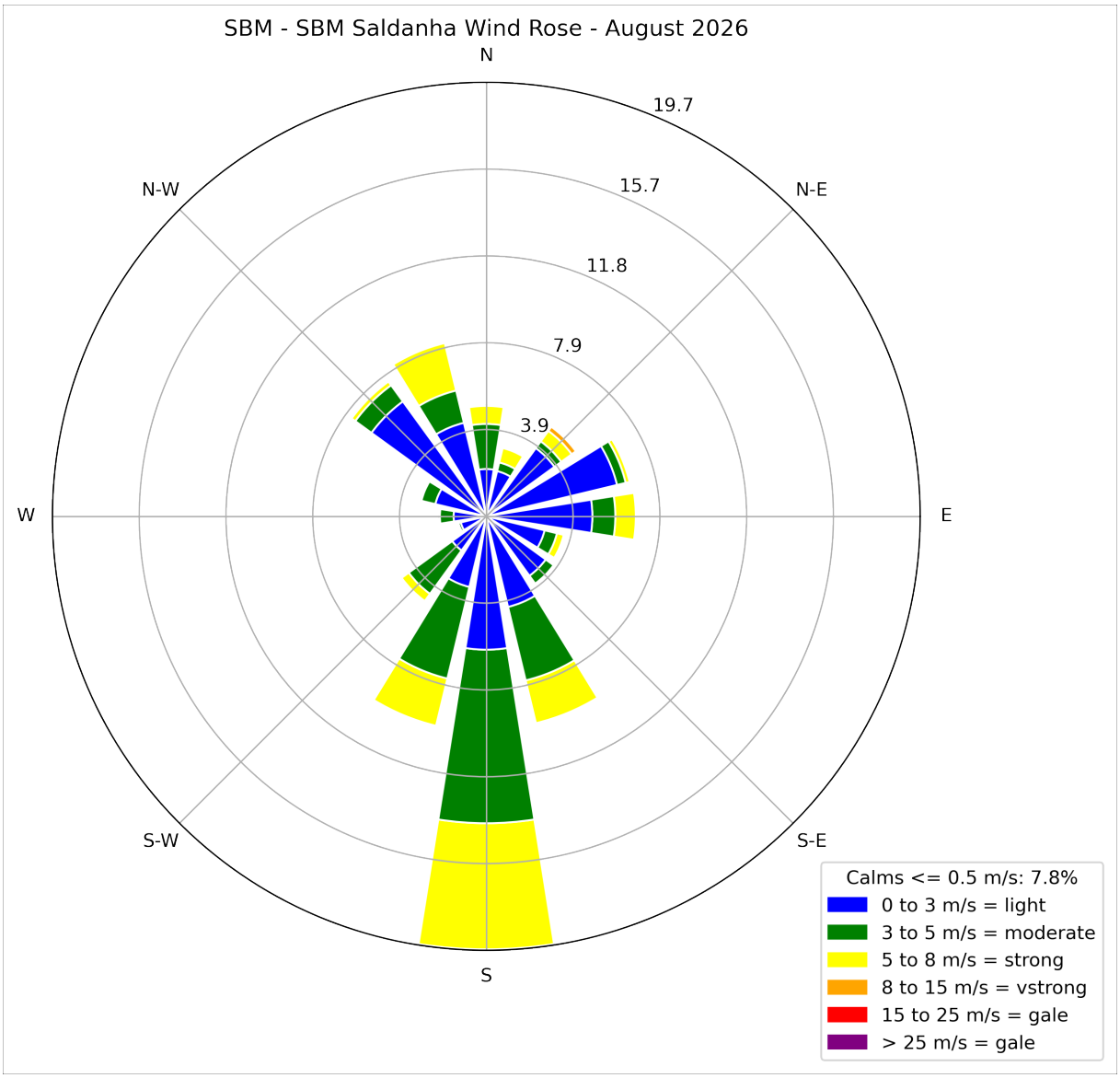
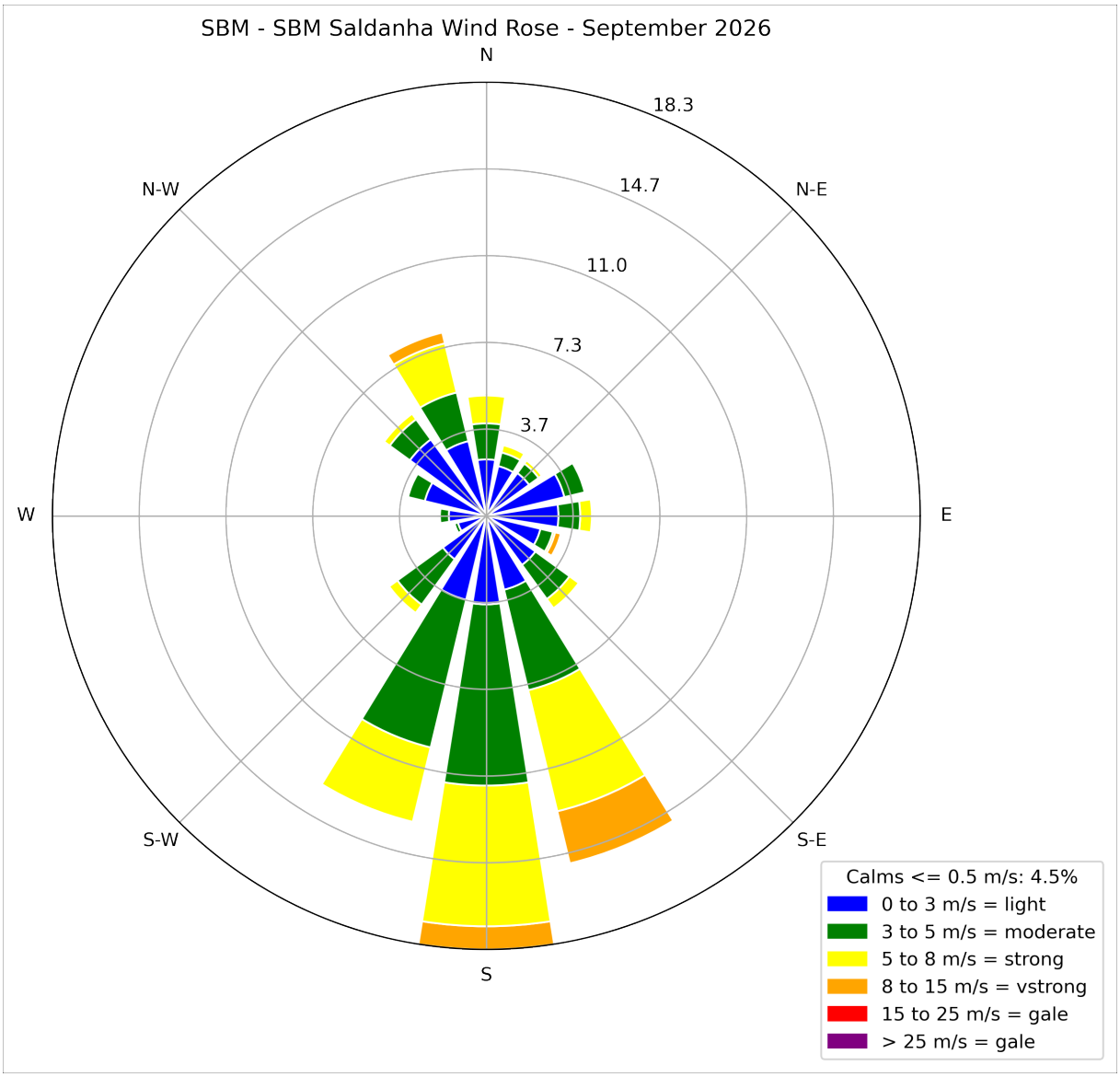


Figure 4.6-3 Wind Rose for Saldanha Bay for September 2026



Wind roses for Vredenburg during July - September 2026 is shown in Figures 4.6-4 and 4.6-6 below.

Figure 4.6-4 Wind Rose for Vredenburg for July 2026

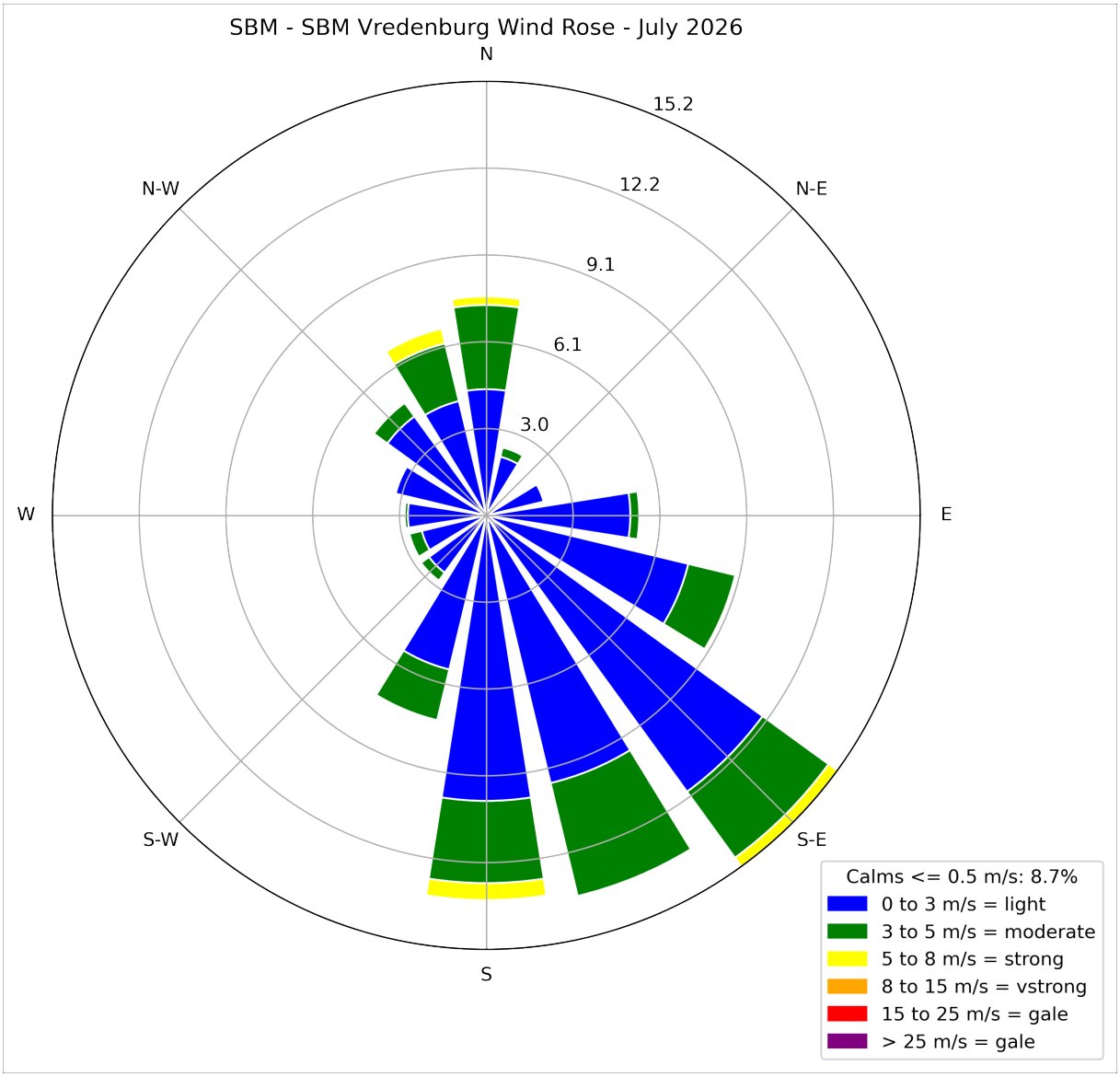


Figure 4.6-5 Wind Rose for Vredenburg for August 2026

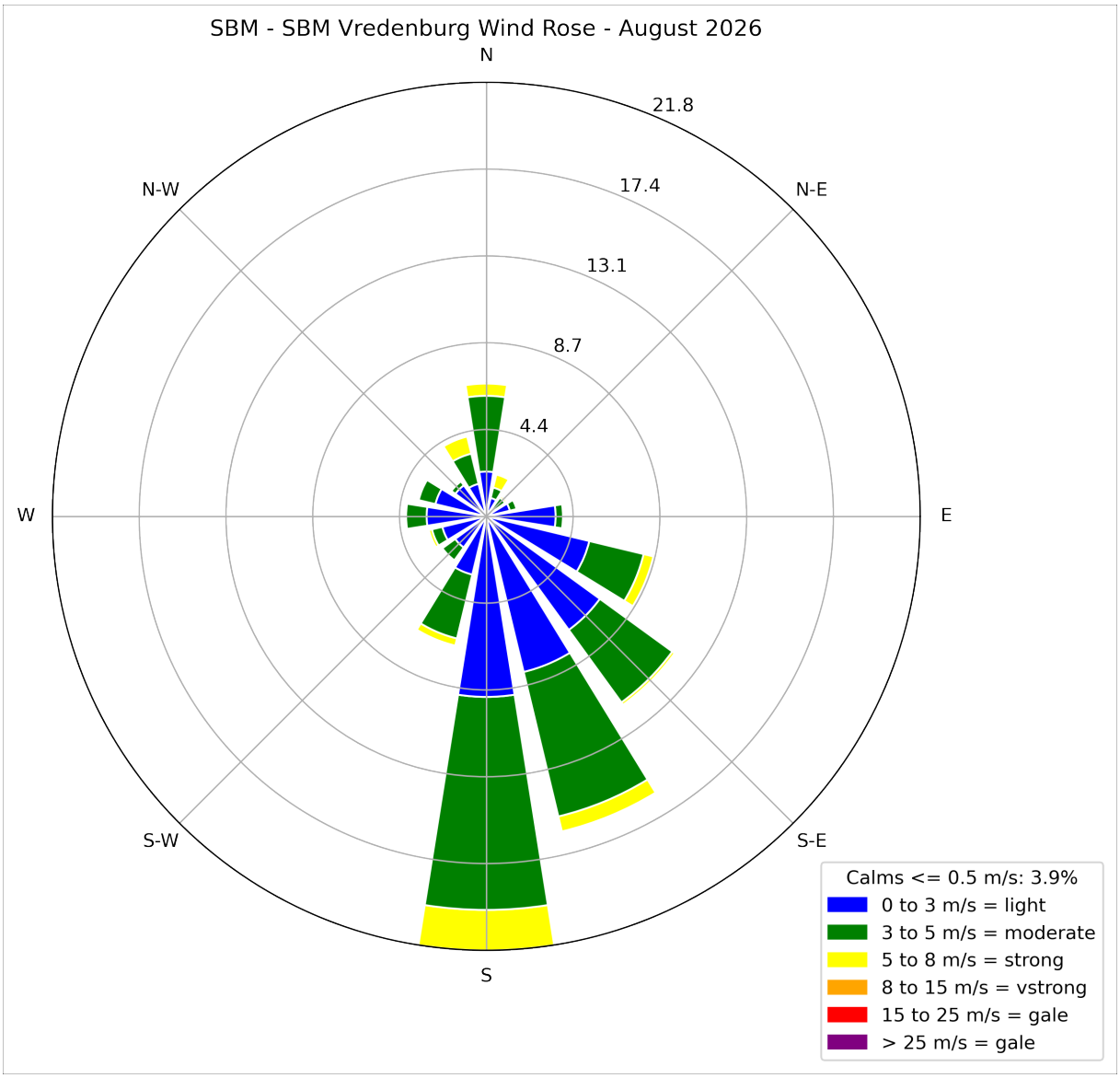
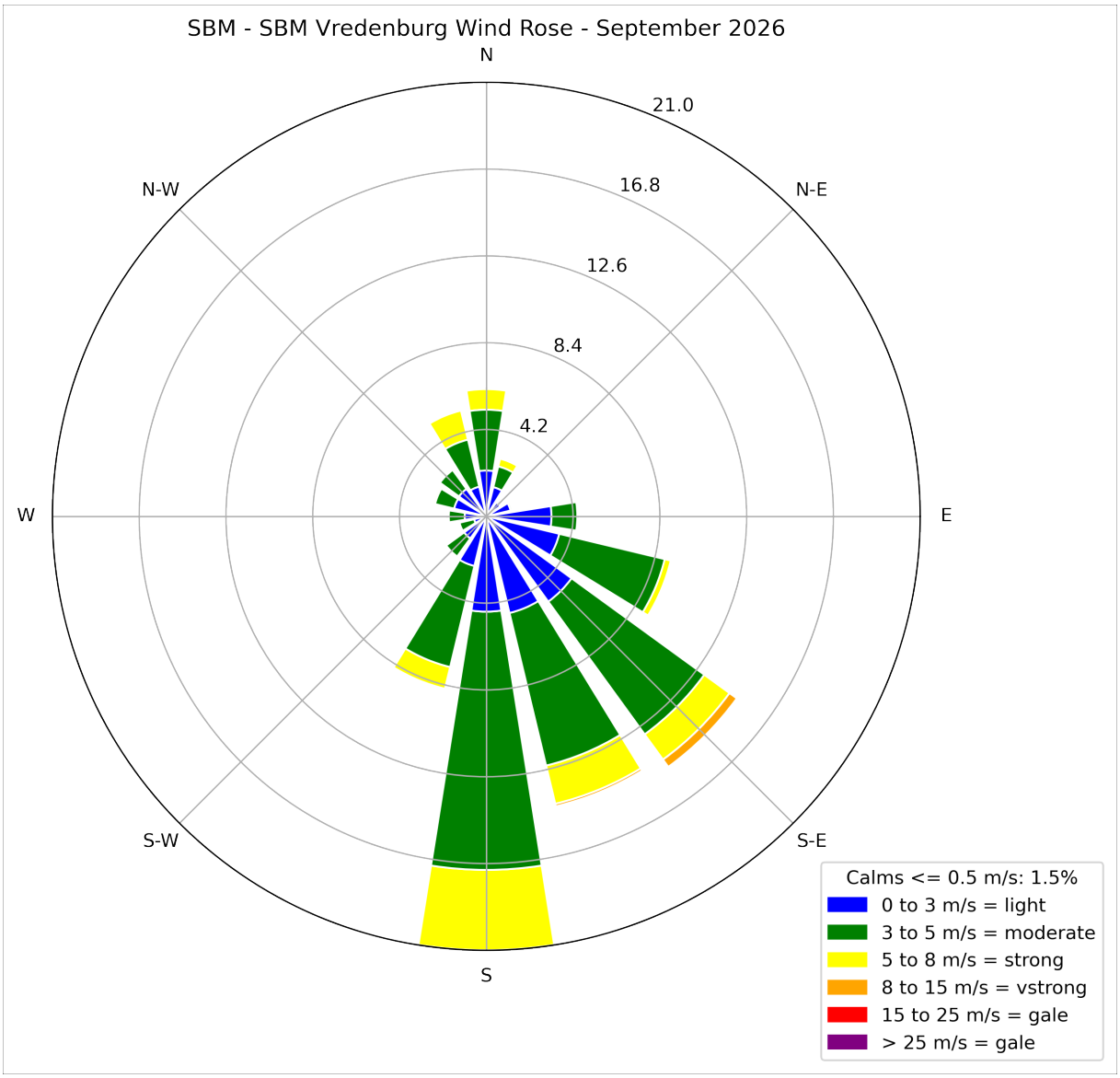


Figure 4.6-6 Wind Rose for Vredenburg for September 2026



5 CONCLUSIONS AND RECOMMENDATIONS

This report covers activities during Q3 (July to September) of 2026.

- The average data collection for Q3 at the Saldanha Bay Site was 95.8% for Oxides of Nitrogen, 96.2% for SO2 and 75.0% for Ozone (sample flow blockage persistent, analyser was removed from the station on 21 September 2026 to clear the blockage), and 98.6% for PM10/PM2.5 analyser.
- The average data collection for Q3 at the Vredenburg Site was 99.7% for Ozone, 98.7% for SO2 and 99.7% for NOx analysers.

Meteorological conditions at Saldanha AQM site were characterised by moderate to strong winds from the south (S) and south-west (SW) with moderate to strong north-westerly (NW) bias, especially during July with an occurrence of 4.5% to 11.6% calm conditions.

Meteorological conditions at Vredenburg AQM site were characterised by moderate to strong winds from the south (S) and south-west (SW) with a moderate northerly (N) bias, especially during July with an occurrence of 1.5% to 8.7% calm conditions.

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