



Test Report: Dust Fallout & Metals Monitoring – April 2026

Prepared for

Saldanha Bay Municipality

Test Dates: 6 March to 7 April 2026

EXECUTIVE SUMMARY

Dust fallout sampling was conducted by Skyside South Africa (Pty) Ltd. since September 2024 at seven (7) sites in the Saldanha Bay Municipal area. Sampling commenced in February 2015, and samplers are exchanged and collected monthly.

There was valid data for all (7) samples collected, resulting in 100% data capture for the period under review. This report covers the period 6 March to 7 April 2026.

There were **no exceedances** of the South African National Dust Control Regulations residential limit of 600mg/m²/day for the period under review.

There were **no exceedances** of the South African National Dust Control Regulations non-residential limit of 1200mg/m²/day during the month for sites classed as non-residential.

Net lead masses ranged between 1µg and 36µg during the review period. These are possibly a better measure than concentration when assessing “heavy metal” levels in dust fallout.

Meteorological conditions at Saldanha for the review period were characterised by moderate to strong winds from the south (S) and south-west (SW), with a significant moderate to strong north-westerly (NW) bias. There was an 6.5% occurrence of calm conditions during the review period.

REPORT DETAILS

REFERENCE	AQ0344/202604
REPORT TITLE	Dust Fallout Monitoring, April 2026
DATE SUBMITTED	25 May 2026
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SIGNED	
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STATUS	Final
NOTICE	

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ABBREVIATIONS

BDL	Below Detection Limit
DEAT	Department of Environment Affairs and Tourism
EPA	See US EPA
ℓ/min	Litres per minute
m.s ⁻¹	Metres per second
m ³	Cubic metres
Max	Maximum
mg/m ³	milligrams per cubic metre
Min	Minimum
PM ₁₀	Particulate matter of aerodynamic diameter less than 10mm
ppm	Parts per million
SABS	South African Bureau of Standards
SW	Southwest
US EPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WHO	World Health Organisation

1 INTRODUCTION

Dust fallout sampling was conducted by Skyside South Africa (Pty) Ltd. since January 2024 at seven (7) sites, including the monitoring and heavy metals (iron, lead, zinc, manganese and copper), in the Saldanha Bay Municipal Area.

Sampling initially commenced in 2015, and samplers are exchanged and collected monthly.

A dust fallout and metals contamination impact assessment will be performed using this data.

1.1 Scope of Work

Skyside's understanding of the scope of work is as follows:

- To measure dust fallout rates at seven (7) sampling points.
- Monthly collection of samples for duration of the project.
- Monthly sample analysis of seven (7) gravimetric samples per month.
- Elemental sample analysis of samples for iron, lead, zinc, manganese and copper.
- Monthly results to be sent to the client in electronic format.
- Data interpretation and reporting to be submitted electronically.

2 METHODOLOGY

2.1 Sample Location

Dust fallout sampling was conducted the seven (7) sites detailed in Table 2.1 below.

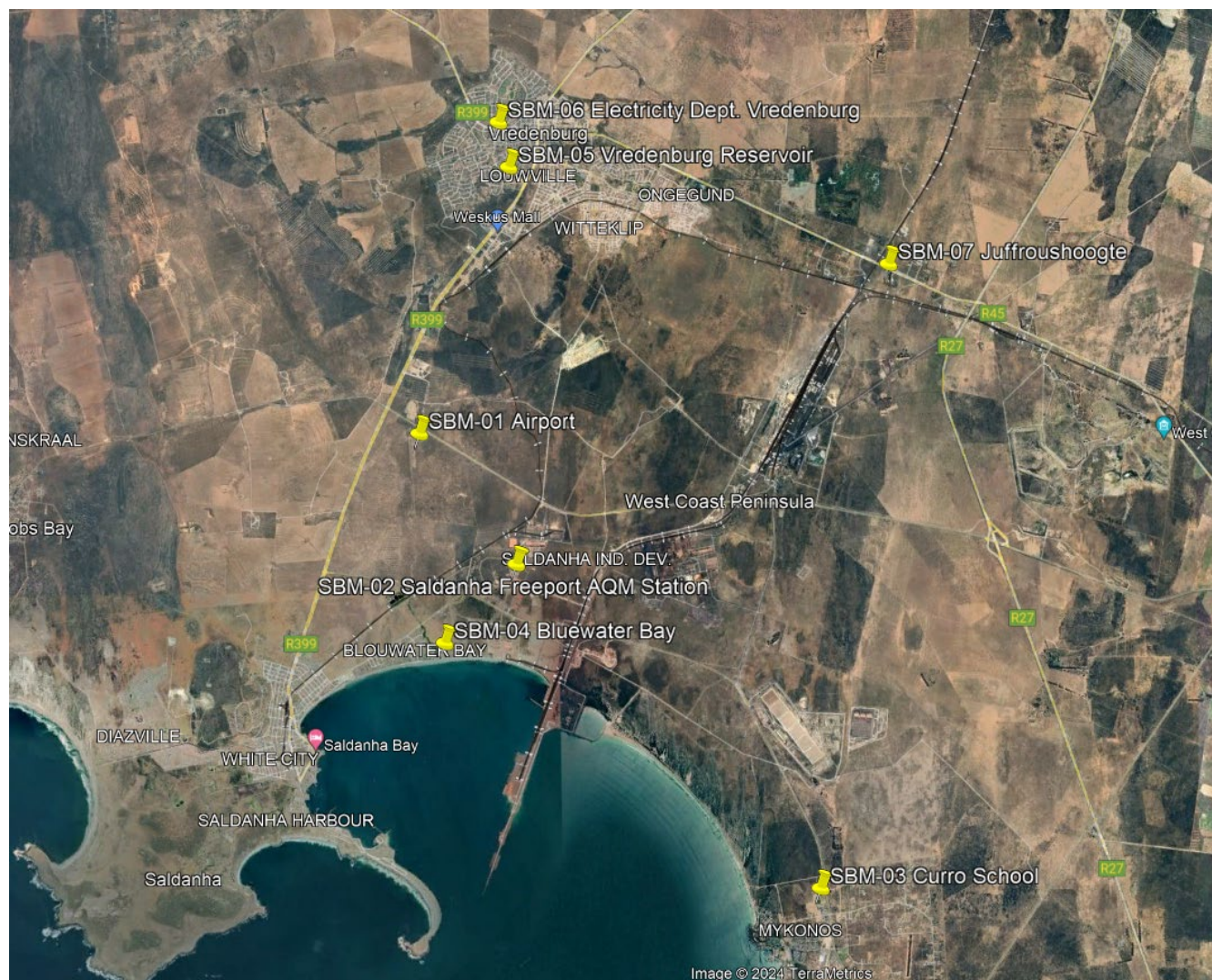
Table 2.1 Dust Fallout Monitoring Sites

Saldanha Bay Dust Fallout Monitoring Network Monitoring Site Locations		
<i>Vredenburg Electricity Dept.: SBM-06</i>	32° 54' 27.2" S	17° 59' 13.7" E
<i>Vredenburg Reservoir: SBM-05</i>	32° 54' 56.1" S	17° 59' 12.9" E
<i>Juffroushoogte: SBM-07</i>	32° 56' 13.8" S	18° 04' 33.6" E
<i>Airport: SBM-01</i>	32° 57' 34.5" S	17° 58' 12.5" E
<i>Saldanha AQM Freeport Station: SBM-02</i>	32°58'56.16"S	17°59'21.57"E
<i>Blue Water Bay: SBM-04</i>	32° 59' 43.8" S	17° 58' 24.7" E
<i>Curro School: SBM-03</i>	33° 02' 16.2" S	18° 02' 59.9" E

Sites selected had to be:

- Along the prevailing wind vector for the area.
- Distributed evenly within the Saldanha Bay Municipality Area and near areas of possible contamination.

Figure 2.1.: Location of Dust Fallout samplers for Saldanha Bay Municipality



2.2 Dust Fallout

Dust fallout samplers were initially deployed in Nov 2015, and samples are collected and analysed monthly at a SANS 17025 accredited facility for insoluble matter content using a gravimetric methodology, in accordance with ASTM D1739: 1970, or demonstrable equivalent, a requirement in terms of the SA National Standards (SANS 1929:2005 - Edition 1.1) and Dust Fallout Regulations.

The insoluble matter contest is then analysed for heavy metals using ICP (OES) by a SANAS Accredited Laboratory for Iron (Fe), Lead (Pb), Manganese (Mn), Copper (Cu) and Zinc (Zn).

3 GUIDELINES AND AIR QUALITY STANDARDS

3.1 Dust Fallout

In terms of the *Government Gazette* Volume 476, No. 27318, the South African Air Quality Act 39 of 2004 was promulgated in 2005. The South African National Dust Control Regulations describes the proposed guidelines for dust fallout, an extract of which is discussed briefly below.

A standard for the acceptable dustfall rate is set out in Table 3.1. The target, action and alert thresholds are shown in Table 3.2.

Table 3.1: Evaluation criteria for Dust Fallout

Restriction Areas	Dust Fall rate (D) mg/m ² /day. (30-day average)	Comment
Residential	D < 600	Permissible for residential and light commercial
Non-Residential	600 < D < 1200	Permissible for heavy commercial and industrial

For heavy commercial and industrial regions, the new guidelines state that monthly average dust fallout concentrations below 1200mg/m²/day “are permissible”. For residential regions, monthly average dust fallout concentrations not exceeding 600mg/m²/day “are permissible”.

Table 3.2: Acceptable Dust Fall Rates

Restriction Areas	Dust fallout rate (D) mg/m ² /day (30-day average)	Averaging period	Permitted frequency of exceeding dust fall rate
residential	D<600	30 days	2 within a year, not sequential months
Non-residential	600<D<1200	30 days	2 within a year, not sequential months

The target annual average dust fallout concentration is 300mg/m²/day. This is an ultimate goal set to achieve “ongoing improvement”, even in areas where compliance with all other guidelines can be demonstrated. The monthly average “action level” for residential regions is 600mg/m²/day and for industrial regions 1200mg/m²/day. Exceptions are granted where elevated concentrations arise on a regional scale from adverse meteorological conditions. Background dust monitoring sites can be used to identify and monitor impacts of such exceptions. Access to historical and current meteorological information, particularly wind conditions, can be used to distinguish between “adverse” and “normal” meteorological conditions.

4 RESULTS

4.1 Dust fallout and heavy metal results:

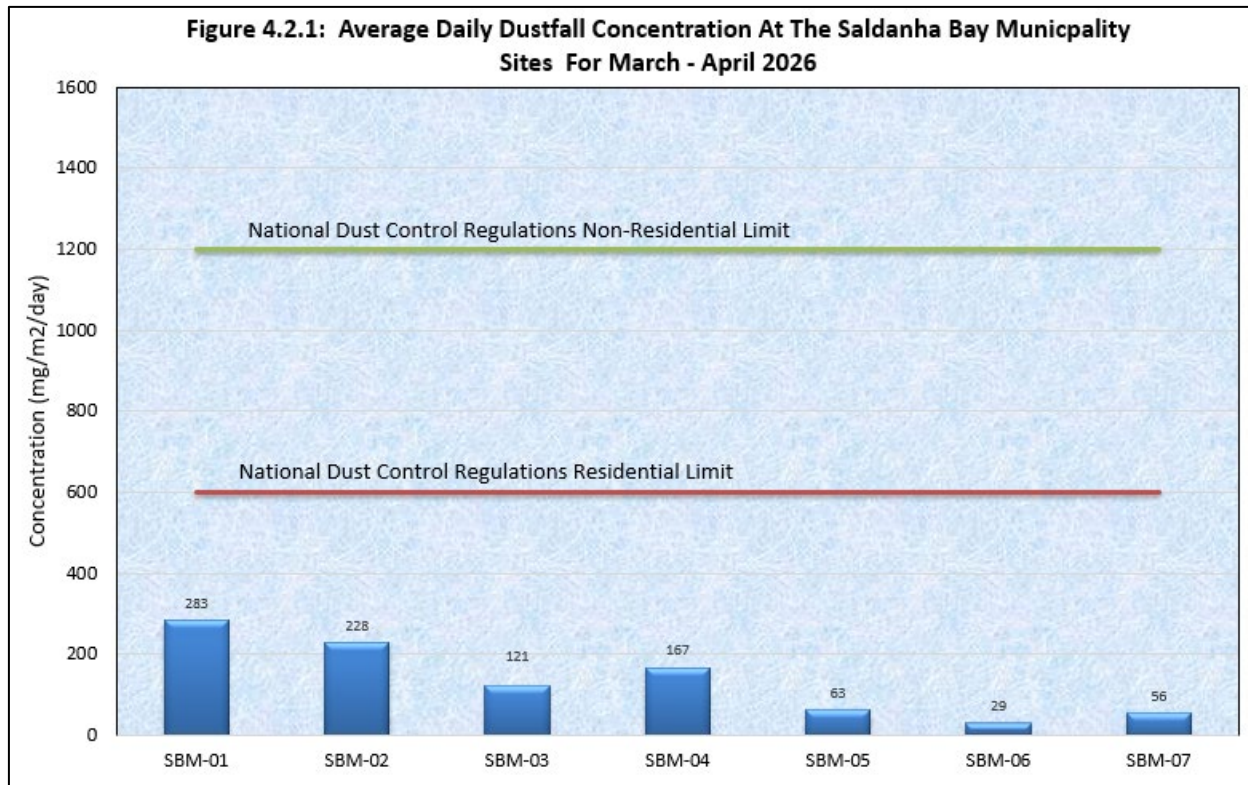
Table 4.1 Dust fallout and Heavy Metal Results for review period. Exceedance of Dust Fallout Industrial Standards in **Red**

Sampling Site	Sampling Start Date	Sampling End Date	Net Mass (g)	No. of Days	Dust Fall rate (mg/m ² /day)	Lead (ppm)	Copper (ppm)	Zinc (ppm)	Iron (ppm)	Manganese (ppm)
SBM-01	06-Mar-26	07-Apr-26	0.216	32	283	14	32	171	3 380	259
SBM-02	06-Mar-26	07-Apr-26	0.173	32	228	98	46	809	10 983	1 908
SBM-03	06-Mar-26	07-Apr-26	0.092	32	121	11	54	217	6 630	261
SBM-04	06-Mar-26	07-Apr-26	0.127	32	167	16	47	205	6 142	409
SBM-05	06-Mar-26	07-Apr-26	0.048	32	63	167	208	1 646	20 833	1 896
SBM-06	06-Mar-26	07-Apr-26	0.022	32	29	364	864	3 591	45 000	3 909
SBM-07	06-Mar-26	07-Apr-26	0.042	32	56	24	286	714	26 190	7 143

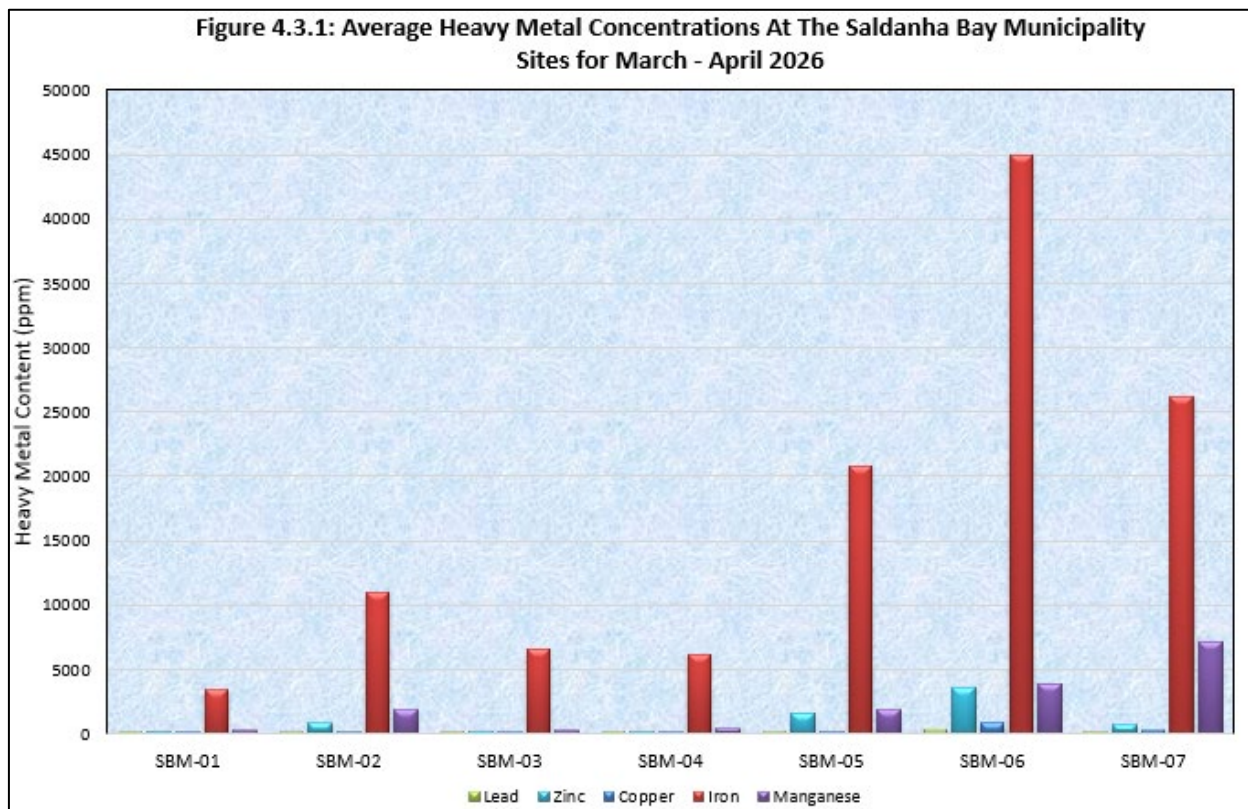
Table 4.2 Lead content (net mass, mg) in dust fallout, past 12 months: May 2025 – Apr 2026

Site/Period	Apr - May 25	May - Jun 25	Jun - Jul 25	Jul - Aug 25	Aug - Sep 25	Sep - Oct 25	Oct-Nov 25	Nov-Dec 25	Dec 25-Jan 26	Jan-Feb 26	Feb-Mar 26	Mar-Apr 26
SBM-01	0.008	0.004	0.001	0.001	0.003	0.004	0.002	0.003	0.002	0.002	0.001	0.001
SBM-02	0.023	0.055	0.007	0.043	0.010	0.044	0.015	0.008	0.009	0.018	0.017	0.010
SBM-03	0.001	0.005	0.001	0.001	0.001	0.002	0.002	0.0005	0.001	0.0005	0.001	0.001
SBM-04	0.003	0.006	0.002	0.003	0.001	0.005	0.002	0.0005	0.001	0.0005	0.002	0.002
SBM-05	0.004	0.003	0.004	0.003	0.004	0.011	0.017	0.006	0.013	0.012	0.011	0.017
SBM-06	0.013	0.003	0.003	0.003	0.005	0.013	0.012	0.009	0.016	0.01	0.018	0.036
SBM-07	0.002	0.002	0.001	0.001	0.001	0.002	0.002	0.001	0.003	0.002	0.003	0.002

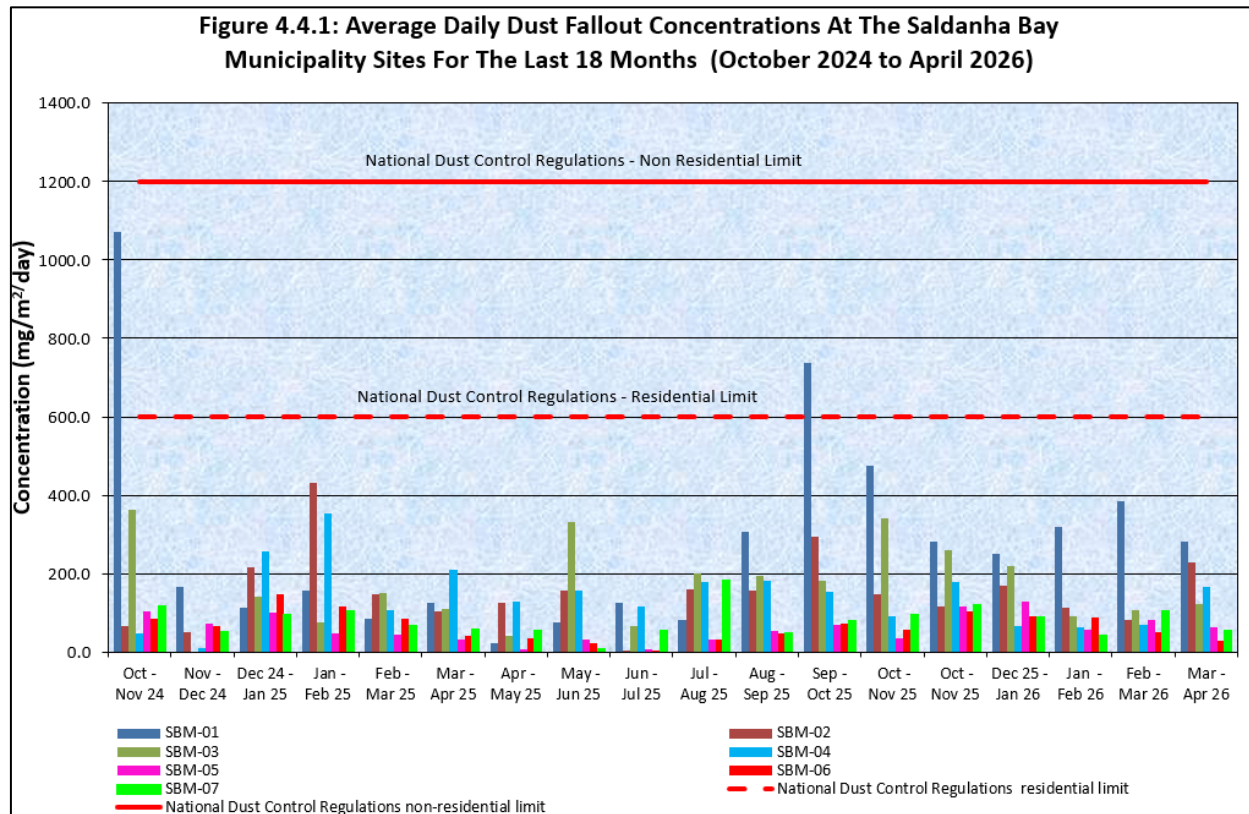
4.2 Dust fallout concentration:



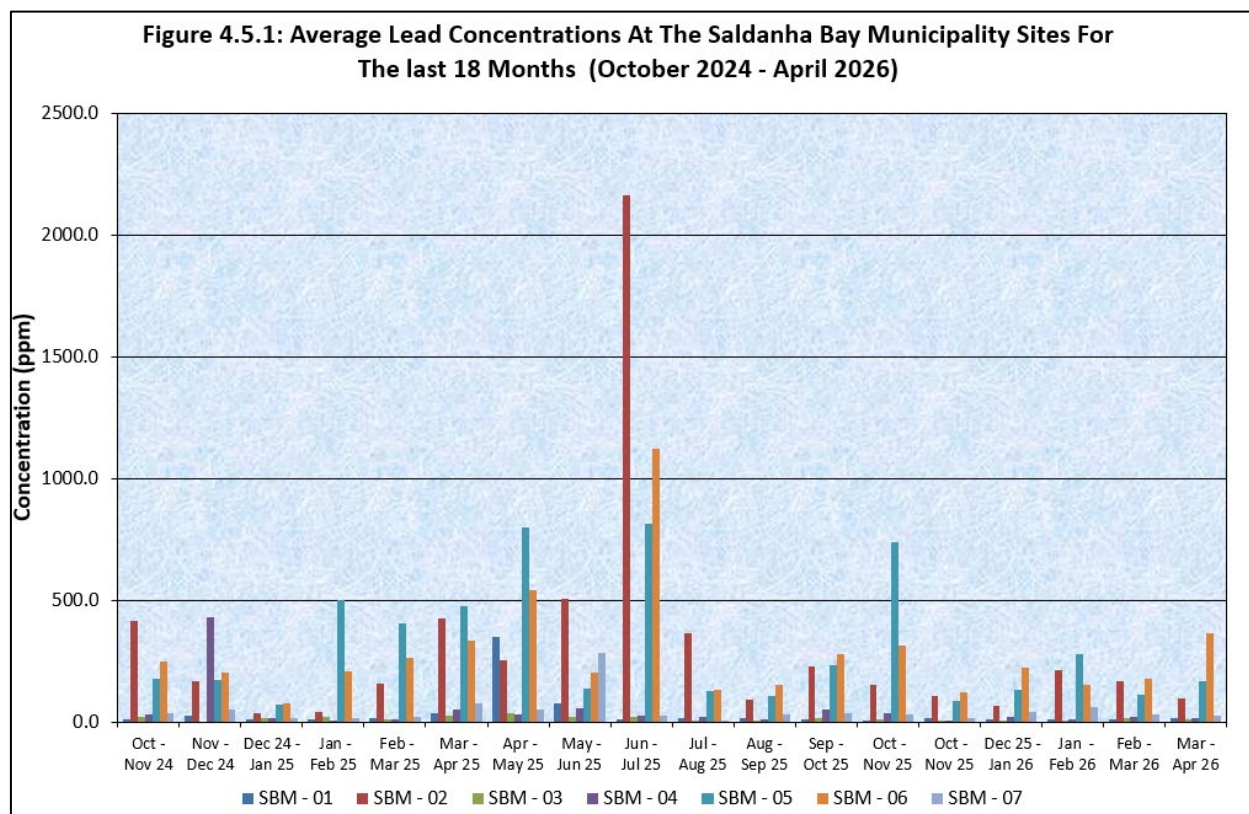
4.3 Heavy metal concentration



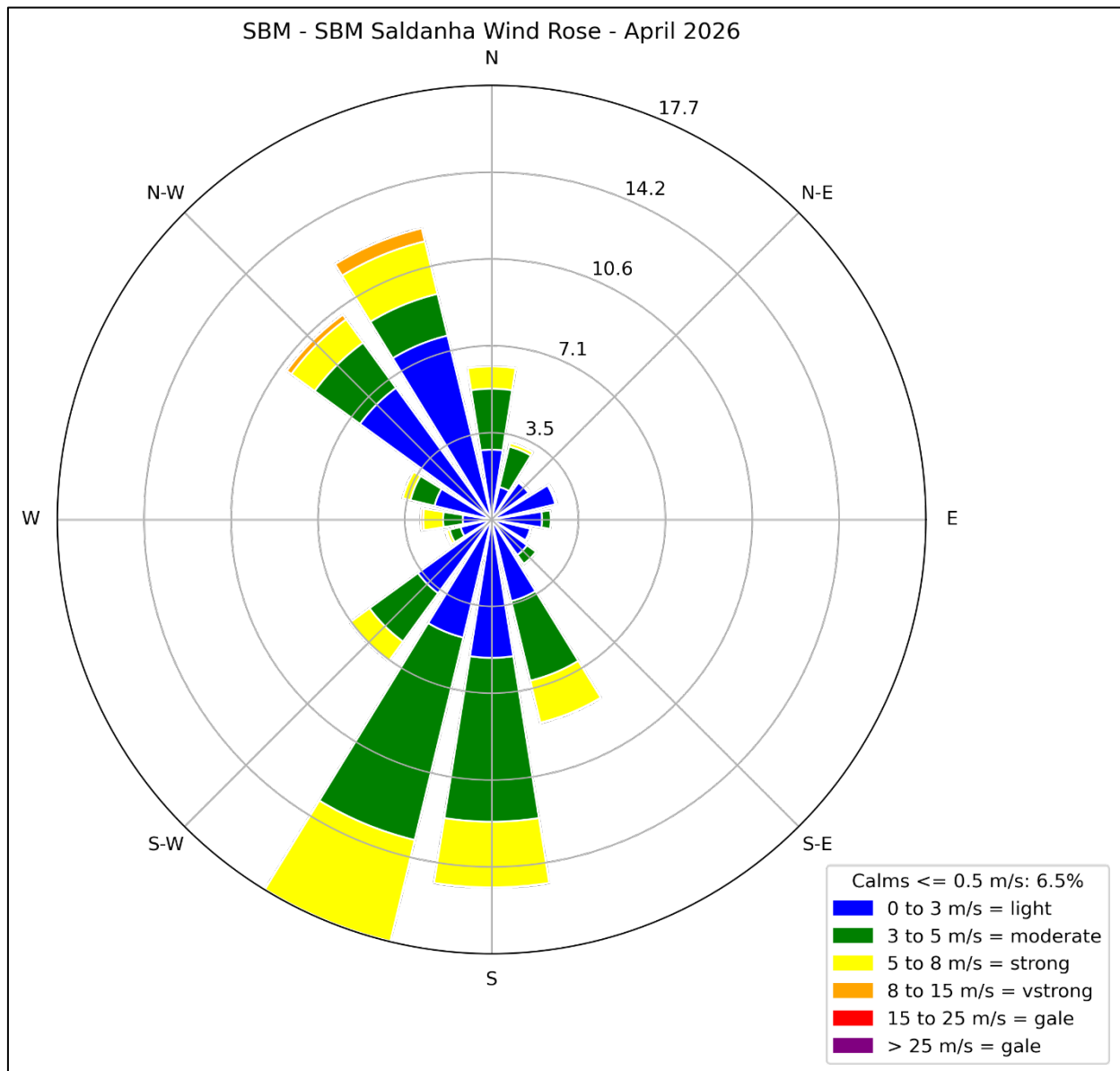
4.4.1: Average Historical Daily Dust fallout concentrations



4.5.1: Average Historical Lead fallout concentrations



4.6 Wind Roses for Saldanha Bay Municipality



5 CONSULTANT'S OBSERVATIONS AND CONCLUSIONS

- There was valid data for all seven (7) Metal results collected, resulting in 100% data capture for the period under review. This report covers the period 6 March to 7 April 2026.
- There were **no exceedances** of the South African National Dust Control Regulations residential limit of 600mg/m²/day for the period under review.
- There were **no exceedances** of the South African National Dust Control Regulations non-residential limit of 1200mg/m²/day during the month for sites classed as non-residential.
- Net lead masses ranged between 1µg and 36µg during the review period. These are possibly a better measure than concentration when assessing “heavy metal” levels in dust fallout.
- Meteorological conditions at Saldanha for the review period were characterised by moderate to strong winds from the south (S) and south-west (SW), with a significant moderate to strong north-westerly (NW) bias. There was an 6.5% occurrence of calm conditions during the review period.

5.1 SANAS Accredited Certificates of Analysis for Dust Fallout & Metals



Analytical Report

Report **SBM**
Issue date **08 April 2026**



Customer details

Company **Skyside**
Contact **Grant Ravenscroft**
Address **12 Main Rd
Vredenburg, 7380**
Project **SBM**
Reference **AS1138**
samples **7**

Laboratory details

Laboratory **SKYSIDE SA**
Contact **Quentin Hurt**
Address **50 6th Avenue
Saldanha Bay, 7395**
Telephone **(021) 300 8705**
Analysis **07 April 2026**
Received **07 April 2026**

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Report authorised by **Quentin Hurt**
Designation **Technical Signatory**

Signature


.....

Sampling data provided by Skyside

Samples deployed on	06-Mar-26
Samples retrieved on	07-Apr-26
Number of days sampled	32

Sample recovery and weighing follows ASTM D-1739

Sample	Net Mass (mg)	Dust fallout (mg/m ² /d)	Laboratory uncertainty (mg/m ² /d)
SBM1	216	283	17
SBM2	173	228	14
SBM3	92	121	7
SBM4	127	167	10
SBM5	48	63	4
SBM6	22	29	2
SBM7	42	56	3

Report produced by Zahra Swindell of Skyside.

Conditions during weighing 24 °C 44 % RH



TEST REPORT

Contact	Quentin Hurt	Project Number	SBM
Client	Skyside (South Africa) Cape Town	Lab Reference	JBX26-027147
Email	Lizanne@skyside.co.za,qh@skyside.co.za	Report Number	LIM26/0905
Address		Date Received	08-Apr-2026
Order Number	QH	Date Test(s) Started	08-Apr-2026
Samples	7	Date Reported	22-Apr-2026
Sample Matrix			

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Sampled 1 May 2026

Sample No.			JBX26-027147-01	JBX26-027147-02	JBX26-027147-03	JBX26-027147-04
Sample ID			SBM1	SBM2	SBM3	SBM4
Sample Comment			-	-	-	-
Analysis	Unit	LOR	Result	Result	Result	Result
Multi Element Determination of Metals by ICP OES (ME-AN-027) - LAB-QLT-MET-027						
Copper (Cu)	mg/filter	0.002	0.007	0.008	0.005	0.006
Iron (Fe)	mg/filter	0.005	0.73	1.9	0.61	0.78
Lead (Pb)	mg/filter	0.001	0.003	0.017	0.001	0.002
Manganese (Mn)	mg/filter	0.001	0.056	0.33	0.024	0.052
Zinc (Zn)	mg/filter	0.001	0.037	0.14	0.020	0.026

Sample No.			JBX26-027147-05	JBX26-027147-06	JBX26-027147-07
Sample ID			SBM5	SBM6	SBM7
Sample Comment			-	-	-
Analysis	Unit	LOR	Result	Result	Result
Multi Element Determination of Metals by ICP OES (ME-AN-027) - LAB-QLT-MET-027					
Copper (Cu)	mg/filter	0.002	0.010	0.019	0.012
Iron (Fe)	mg/filter	0.005	1.0	0.99	1.1
Lead (Pb)	mg/filter	0.001	0.008	0.008	0.001
Manganese (Mn)	mg/filter	0.001	0.091	0.086	0.30
Zinc (Zn)	mg/filter	0.001	0.079	0.079	0.030

Sasha Maistry
 Technical Signatory (Approver)

Sarah Newton
 Technical Signatory (Reviewer)

Method	Method Summary
Multi Element Determination of Metals by ICP OES (ME-AN-027)	Dissolved metals are determined on a filtered and acidified portion of aqueous sample by inductively coupled plasma optical emission spectrometry (ICP-OES). The method is based on US EPA 200.7 and Standard Methods for the Examination of Water and Wastewater Method 3120. Total metals are determined on a nitric acid digested portion of well-shaken aqueous sample by inductively coupled plasma optical emission spectrometry (ICP-OES). The method is based on US EPA 200.2 and 200.7. Recoverable metals are determined on an acid digested portion of sample by inductively coupled plasma optical emission spectrometry (ICP-OES). The method is based on US EPA 200.2, 3050B and 200.7. Silicon is not recovered. Metals are determined on acid digestions of filters by inductively coupled plasma optical emission spectrometry (ICP-OES). The method is based on NIOSH 7300 and 7301.

IS Insufficient sample for analysis
 LNR Sample listed but not received
 LOR Limit of reporting
 * Not SANAS accredited. This result is not included in the SANAS scope of accreditation for this laboratory

NA Not analysed
 - Not applicable
 UTD Unable to determine
 NR Not Requested

Samples analysed as received. Solid samples expressed on a dry weight basis.
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